Achieving Operational Excellence and Customer Intimacy: Enterprise Applications

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Outline

❖ **Enterprise Systems (Enterprise Resource Planning)**

❖ **Supply Chain Management Systems**

❖ **Customer Relationship Management System**

❖**Enterprise Application: New Opportunities and Challenges**

Enterprise Systems

Enterprise systems (Enterprise Resource Planning (ERP) systems), which are based on a suite of **integrated software modules** and a **common central database**

How does it works ?

The database **collects data** from **many different divisions** and **departments in a firm**, and from a **large number of key business processes** in <u>manufacturing and production</u>, <u>finance and accounting</u>, <u>sales and marketing</u>, and <u>human resources</u>, making the **data** available for applications that **support nearly all of an organization's internal business activities**

When **new information is entered** by one process, the information is made immediately **available to other business processes**
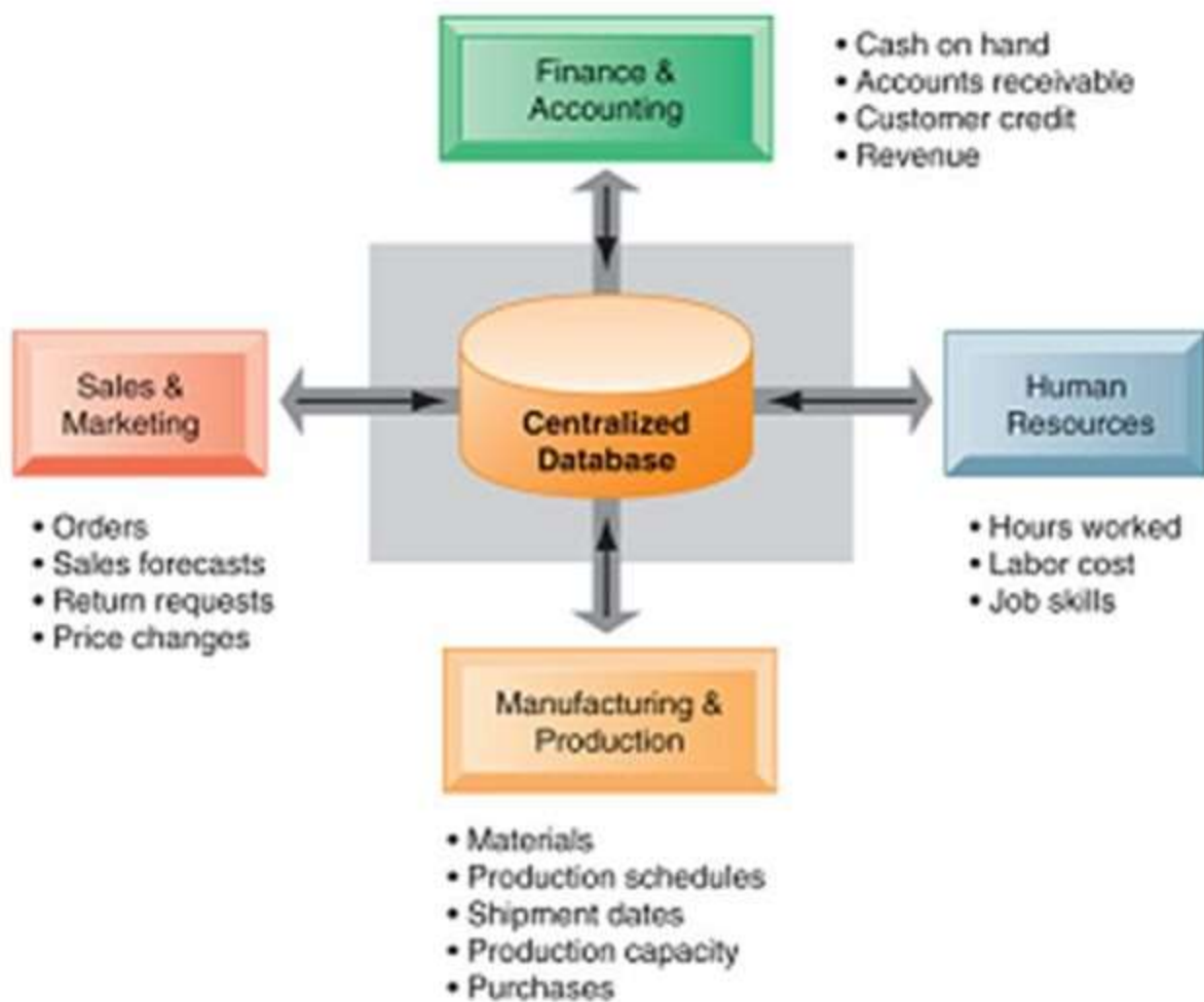
If a **sales representative** places an order for tire rims, for example, the **system** verifies the customer's credit limit, schedules the shipment, identifies the best shipping route, and reserves the necessary items from inventory

If **inventory stock** were insufficient to fill the order, the system schedules the manufacture of more rims, ordering the needed materials and components from suppliers

Sales and production forecasts are immediately updated

General ledger and corporate cash levels are automatically updated with the revenue and cost information from the order

Users could tap into the system and find out where that particular order was at any minute

Management could obtain information at any point in time about how the business was operating

The system could also generate enterprise-wide data for management analyses of product cost and profitability

Enterprise Software

Enterprise software is built around thousands of predefined business processes that reflect best practices

Identifying the organization's business processes to be included in the system and then mapping them to the processes in the enterprise software is often a major effort

Leading enterprise software vendors include SAP, Oracle (with its acquisition PeopleSoft) Infor Global Solutions, and Microsoft

Although initially designed to automate the firm's internal "back-office" business processes, enterprise systems have become **more externally-oriented and capable of communicating with customers, suppliers, and other entities**

Business Value of Enterprise Systems

Enterprise systems provide value both by **increasing operational efficiency** and by providing firm-wide information to help managers make better decisions

Enterprise systems provide much **valuable information** for improving management decision making

Large companies with many operating units in different locations have used enterprise systems to **enforce standard practices and data** so that everyone does business the same way worldwide

Lack of standard, company-wide business processes **prevented the company from leveraging its worldwide buying power to** **obtain lower prices for raw materials** and from reacting rapidly to market changes

Enterprise systems help firms **respond rapidly to customer requests** form information or products

Supply Chain Management System

A firm's supply chain is a **network of organizations and business processes for** procuring raw materials, transforming these materials into intermediate and finished products, and distributing the finished products to customers

It **links** suppliers, manufacturing plants, distribution centers, retail outlets, and customers to supply goods and services from source through consumption

Materials, information, and payments flow through the supply chain in both directions

Nike designs, markets, and sells sneakers, socks, athletic clothing, and accessories through-out the world. Its **primary suppliers are contract manufacturers** with factories in China, Thailand, Indonesia, Brazil, and other countries. These companies fashion Nike's finished products.

**Nike's contract suppliers** do not manufacture sneakers from scratch

They obtain components for the sneakers—the laces, eyelets, uppers, and soles— **from other suppliers** and **then assemble** them into finished sneakers. These suppliers in turn have their own suppliers

For example, the suppliers of soles have suppliers for synthetic rubber, suppliers for chemicals used to melt the rubber for molding, and suppliers for the molds into which to pour the rubber. Suppliers of laces would have suppliers for their thread, for dyes, and for the plastic lace tip

The **upstream portion** of the supply chain includes the **company's suppliers, the suppliers' suppliers, and the processes for managing relationships with them**

The **downstream portion** consists of the organizations and processes for distributing and delivering products to the final customers

Companies doing manufacturing, such as Nike's contract suppliers of sneakers, also manage their **own internal supply chain** processes for transforming materials, components, and services furnished by their suppliers into finished products or intermediate products (components or parts) for their customers and for managing materials and inventory
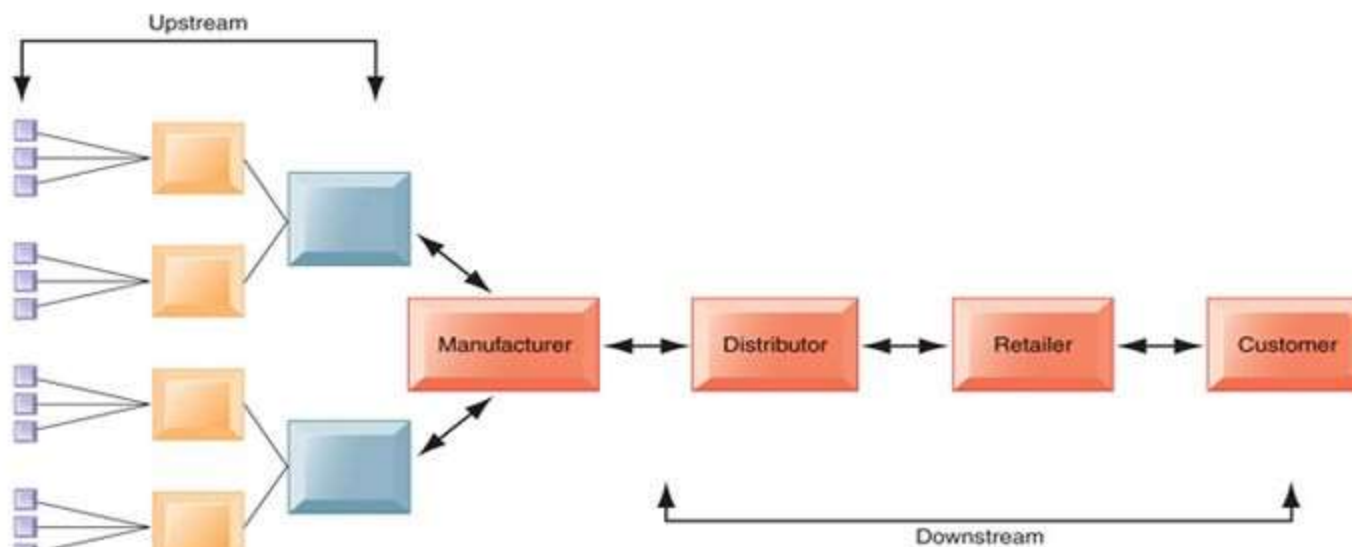
Information System and Supply Chain Management

Inefficiencies in the supply chain, such **as parts shortages, underutilized plan capacity, excessive finished goods inventory, or high transportation costs**, are caused by inaccurate or untimely information

For example, manufacturers may keep **too many parts in inventory** because they do not know exactly when they will receive their next shipments from their suppliers

Suppliers may order **too few raw materials** because they do not have precise information on demand. These supply chain inefficiencies waste as much as 25 percent of a company's operating costs

If a manufacturer had **perfect information** about exactly how many units of product customers wanted, when they wanted them, and when they could be produced, it would be possible to implement a highly efficient just-in-time strategy

Components would arrive exactly at the moment they were needed and finished goods would be shipped as they left the assembly line

One recurring problem in supply chain management is the **bullwhip effect**, in **which information about the demand for a product gets distorted as it passes from one entity to the next across the supply chain**

The bullwhip is tamed by **reducing uncertainties about demand and supply** when all members of the supply chain have accurate and up-to-date information

If all supply chain members share dynamic information about **inventory levels, schedules, forecasts, and shipments**, they have **more precise knowledge** about how to adjust their sourcing, manufacturing, and distribution plans

Supply chain management systems provide the kind of information **that helps members of the supply chain make better purchasing and scheduling decisions**

Information from Supply Chain Management System helps Firms:

- ❑ Decide when and what to produce, store, and move
- ❑ Rapidly communicate orders
- ❑ Track the status of orders
- ❑ Check inventory availability and monitor inventory levels
- ❑ Reduce inventory, transportation, and warehousing costs
- ❑ Track shipments
- ❑ Plan production based on actual customer demand
- ❑ Rapidly communicate changes in product design

Supply Chain Management Software

Supply chain software is classified as either **software to help businesses plan their supply chains (supply chain planning)** or **software to help them execute the supply chain steps (supply chain execution)**

Supply chain planning systems enable the firm to **model its existing supply chain, generate demand forecasts for products**, and **develop optimal sourcing and manufacturing plans**

Such systems help companies make better decisions such as **determining how much of a specific product to manufacture in a given time period;**
establishing inventory levels for raw materials, intermediate products, and finished goods;
determining where to store finished goods; and
identifying the transportation mode to use for product delivery
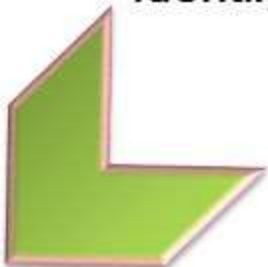
Global Supply Chain and The Internet

Before the Internet, supply chain coordination was **hampered by the difficulties of making information flow** smoothly among disparate internal supply chain systems for purchasing, materials management, manufacturing, and distribution

It was also **difficult to share information** with external supply chain partners because the systems of suppliers, distributors, or logistics providers were based on incompatible technology platforms and standards

Enterprise and supply chain management systems **enhanced with Internet technology supply some of this integration**

A manager will use a web interface to tap into suppliers' systems to determine **whether inventory and production capabilities match demand for the firm's products**

Business partners will use web-based supply chain management tools to **collaborate online on forecasts**.

Sales representatives will **access suppliers' production schedules**

logistics information to **monitor customers' order status**

Global Supply Chain Issues

More and more companies are entering international markets, outsourcing manufacturing operations, and obtaining supplies from other countries as well as selling abroad. Their **supply chains extend across multiple countries and regions**

There are additional **complexities and challenges to managing a global supply chain**

Global supply chains typically **span greater geographic distances and time differences than domestic supply chains and have participants from a number of different countries**

Although the **purchase price of many goods might be lower abroad**, there are often **additional costs for transportation, inventory (the need for a larger buffer of safety stock), and local taxes or fees**

All of these **factors impact how a company takes orders, plans distribution, sizes warehousing, and manages inbound and outbound logistics throughout the global markets it services**

The **Internet** helps companies manage many aspects of their global supply chains, **including sourcing, transportation, communications, and international finance**

Today's apparel industry, for example, relies heavily on outsourcing to contract manufacturers in China and other low-wage countries. Apparel companies are starting to use the Web to manage their global supply chain and production issues

As goods are being sourced, produced, and shipped, **communication is required among retailers, manufacturers, contractors, agents, and logistics providers**

Many, especially **smaller companies**, still **share product information over the phone, via e-mail, or through faxes**. These **methods slow down the supply chain and also increase errors and uncertainty**

With e-SPS, all supply chain members **communicate through a Web-based system**

Demand-Driven Supply Chains: From Push to Pull Manufacturing and Efficient Customer Response

In addition to **reducing costs**, supply chain management systems **facilitate efficient customer response, enabling the workings of the business to be driven more by customer demand**

Earlier supply chain management systems were driven by a **push-based model (also known as build-to-stock)** → production master schedules are based on **forecasts or best guesses of demand for products, and products are "pushed" to customers**

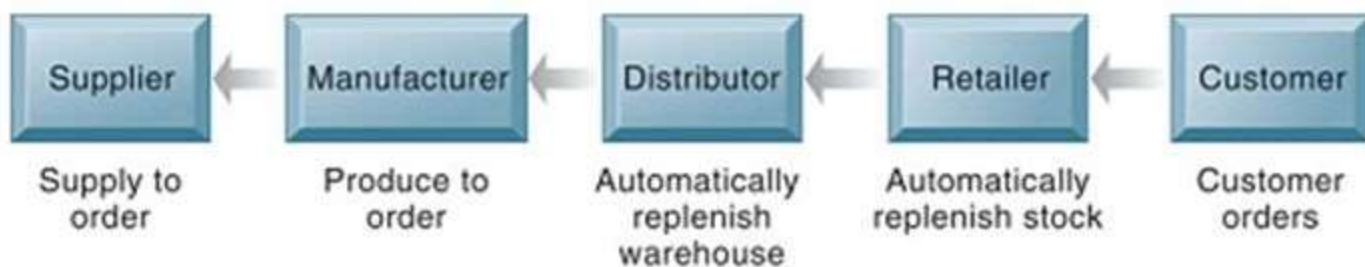With new flows of information made possible by Web-based tools, supply chain management more easily follows a **pull-based model** (demand-driven model or build-to-order, actual customer orders or purchases trigger events in the supply chain) → **Transactions to produce and deliver only what customers have ordered move up the supply chain from retailers to distributors to manufacturers and eventually to suppliers**

Push-Based Model

Supplier	←	Manufacturer	→	Distributor	→	Retailer	→	Customer
Supply to forecast		Production based on forecasts		Inventory based on forecasts		Stock based on forecasts		Purchase what is on shelves

Pull-Based Model

Supplier	←	Manufacturer	←	Distributor	←	Retailer	←	Customer
Supply to order		Produce to order		Automatically replenish warehouse		Automatically replenish stock		Customer orders

The difference between push- and pull-based models is summarized by the slogan "Make what we sell, not sell what we make."

Business Value of Supply Chain Management Systems

Supply chain management systems enable firms to **streamline both their internal and external supply chain processes** and **provide management with more accurate information about what to produce, store, and move**

By implementing a networked and integrated supply chain management system, companies **match supply to demand, reduce inventory levels, improve delivery service, speed product time to market, and use assets more effectively**

Total supply chain costs represent the majority of operating expenses for many businesses and in some industries approach 75 percent of the total operating budget. Reducing supply chain costs may have a major impact on **firm profitability and increasing sales**

Supply chain **enhances the firm's ability to have the right product available for customer purchases at the right time**

Customer Relationship Management Systems

Customer relationship management (CRM) systems capture and integrate customer data from all over the organization, consolidate the data, analyze the data, and then distribute the results to various systems and customer touch points across the enterprise

A **touch point** (also known as a **contact point**) is a method of interaction with the customer, such as telephone, e-mail, customer service desk, conventional mail, web site, wireless device, or retail store

Well-designed CRM systems provide a single enterprise view of customers that is useful for **improving both sales and customer service**

CRM systems examine customers from a multifaceted perspective. These systems use a set of integrated applications to address all aspects of the customer relationship, including customer service, sales, and marketing

Customer Relationship Management Software

Commercial CRM software packages range from niche tools that perform limited functions, such as **personalizing web sites for specific customers**, to large-scale enterprise applications that **capture myriad interactions with customers, analyze them with sophisticated reporting tools, and link to other major enterprise applications**, such as supply chain management and enterprise systems

The more comprehensive CRM packages contain modules for **partner relationship management (PRM)** and **employee relationship management (ERM)**

PRM uses many of the **same data, tools, and systems** as customer relationship management to **enhance collaboration between a company and its selling partners**

It provides a company and its selling partners with the **ability to trade information and distribute leads and data about customers, integrating lead generation, pricing, promotions, order configurations, and availability**.

It also provides a firm with **tools to assess its partners' performances so it can make sure its best partners receive the support they need to close more business**

ERM software deals with **employee issues** that are closely related to CRM, such as **setting objectives, employee performance management, performance-based compensation, and employee training**

Major CRM application software vendors include **Oracle-owned Siebel Systems and PeopleSoft**, **SAP**, **Salesforce.com**, and **Microsoft Dynamics CRM**

Customer relationship management systems typically provide software and online tools for **sales, customer service, and marketing**

Sales Force Automation (SFA)

SFA modules in CRM systems help sales staff **increase their productivity by focusing sales efforts** on the most profitable customers, those who are good candidates for sales and service

CRM systems provide **sales prospect** and **contact information, product** information, **product configuration capabilities, and sales quote generation capabilities**

CRM software enables **sales, marketing, and delivery departments to easily share customer and prospect information; increases each salesperson's efficiency in reducing the cost per sale as well as the cost of acquiring new customers and retaining old ones; sales forecasting, territory management, and team selling**

Customer Service

Customer service modules in CRM systems **provide information and tools to increase the efficiency of call centers, help desks, and customer support staff for assigning and managing customer service requests**

CRM systems may also include **Web-based self-service** capabilities: The company Web site can be set up to provide inquiring customers personalized support information as well as the option to contact customer service staff by phone for additional assistance

Marketing

CRM systems support **direct-marketing campaigns** by providing capabilities for **capturing prospect and customer data**, for **providing product and service information**, for **qualifying leads for targeted marketing**, and for **scheduling and tracking direct-marketing mailings or e-mail**

Marketing modules also include tools for **analyzing marketing and customer data**, **identifying profitable and unprofitable customers, designing products and services to satisfy specific customer needs and interests**, and **identifying opportunities for cross-selling**
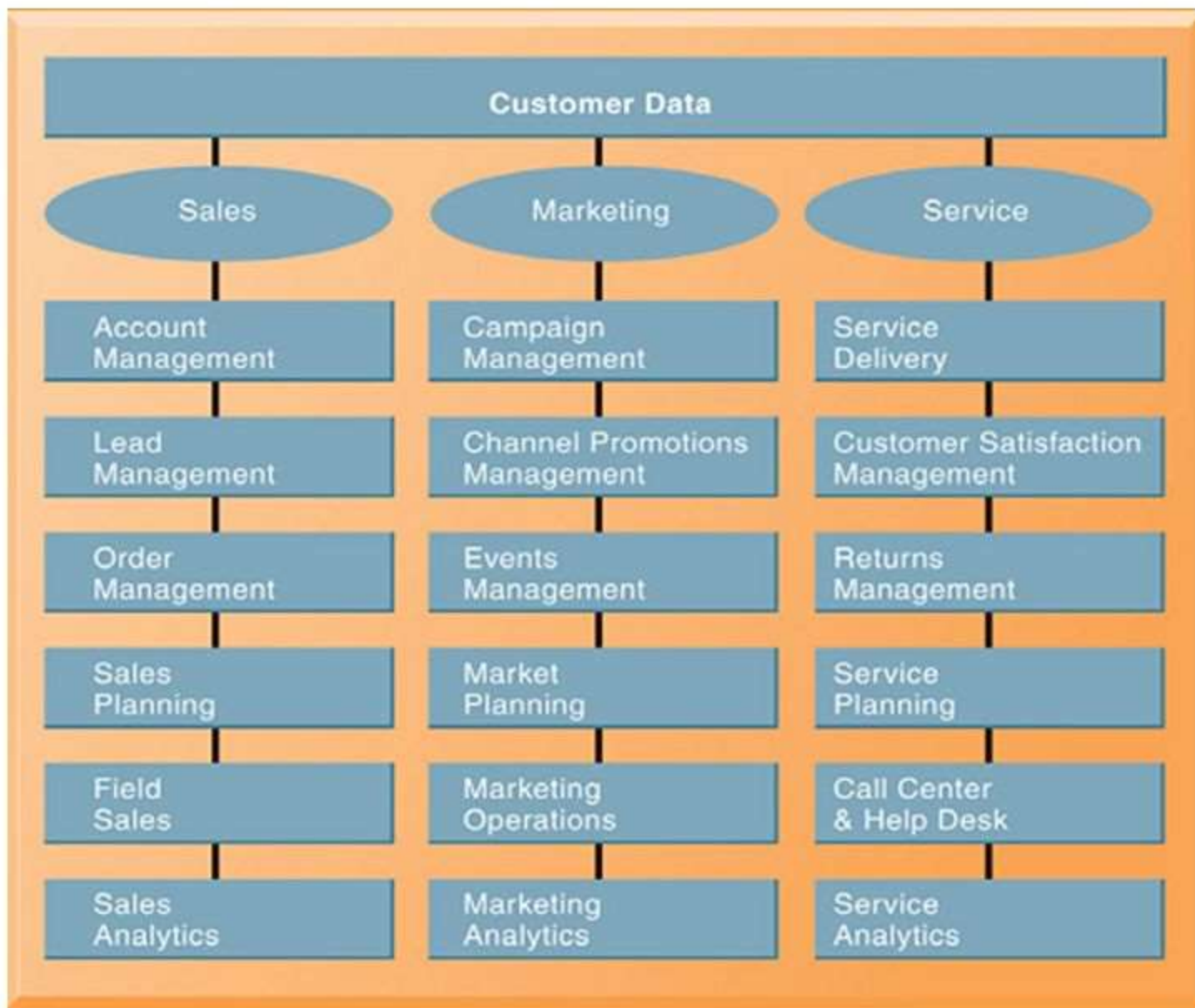
Cross-selling is the marketing of complementary products to customers

For example, in financial services, a customer with a checking account might be sold a money market account or a home improvement loan

CRM tools also help firms **manage and execute marketing campaigns at all stages, from planning to determining the rate of success for each campaign**

The most important capabilities for sales, service, and marketing processes that would be found in major CRM software products

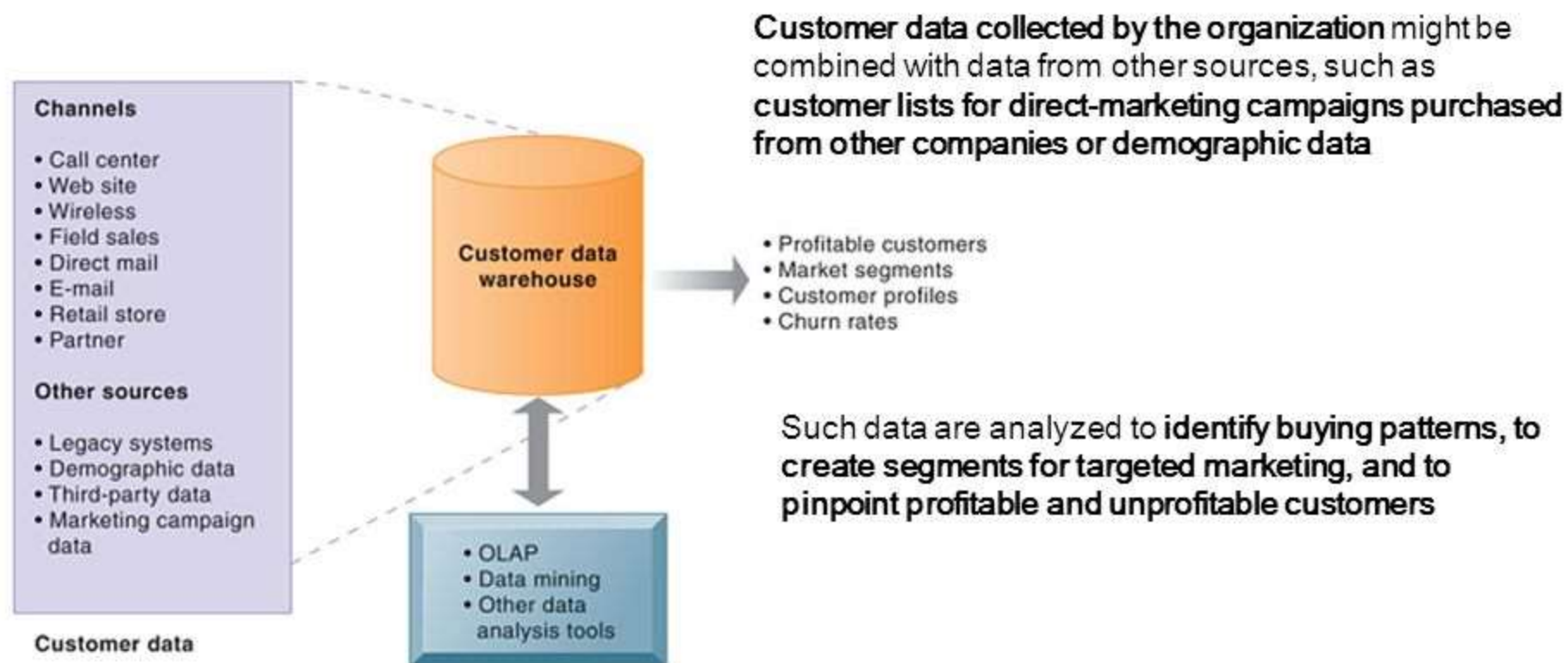| Customer Data		
Sales	**Marketing**	**Service**
Account Management	Campaign Management	Service Delivery
Lead Management	Channel Promotions Management	Customer Satisfaction Management
Order Management	Events Management	Returns Management
Sales Planning	Market Planning	Service Planning
Field Sales	Marketing Operations	Call Center & Help Desk
Sales Analytics	Marketing Analytics	Service Analytics

Operational and Analytical CRM

Operational CRM includes customer-facing applications, such as tools for sales force automation, call center and customer service support, and marketing automation

Analytical CRM includes applications that analyze customer data generated by operational CRM applications to provide information for improving business performance

Analytical CRM applications are based on **data warehouses** that consolidate the data from operational CRM systems and customer touch points for use with **online analytical processing (OLAP), data mining, and other data analysis techniques**

Channels

- Call center
- Web site
- Wireless
- Field sales
- Direct mail
- E-mail
- Retail store
- Partner

Other sources

- Legacy systems
- Demographic data
- Third-party data
- Marketing campaign data

Customer data

Customer data warehouse

- OLAP
- Data mining
- Other data analysis tools

Customer data collected by the organization might be combined with data from other sources, such as **customer lists for direct-marketing campaigns purchased from other companies or demographic data**

- Profitable customers
- Market segments
- Customer profiles
- Churn rates

Such data are analyzed to **identify buying patterns, to create segments for targeted marketing, and to pinpoint profitable and unprofitable customers**

Another important output of analytical CRM is the customer's lifetime value to the firm

Customer lifetime value (CLTV) is based on the relationship between **the revenue produced by a specific customer, the expenses incurred in acquiring and servicing that customer, and the expected life of the relationship between the customer and the company**

Business Value of CRM

Companies with effective CRM realize many benefits, **including increased customer satisfaction, reduced direct-marketing costs, more effective marketing, and lower costs for customer acquisition and retention**

Information from CRM systems **increases sales revenue by identifying the most profitable customers and segments for focused marketing and cross-selling**

Customer churn is reduced as sales, service, and marketing better respond to customer needs

The churn rate measures the number of customers who stop using or purchasing products or services from a company

Enterprise Application: New Opportunities and Challenges

Enterprise Application Challenges

Promises of **dramatic reductions in inventory costs, order-to-delivery time**, as well as more **efficient customer response** and **higher product and customer** profitability make enterprise systems and systems for supply chain management and customer relationship management very alluring

Enterprise applications involve complex pieces of software that are very expensive to purchase and implement

Enterprise applications require not only deep-seated technological changes but also fundamental changes in the way the business operate

Supply chain management **systems require multiple organizations to share information and business processes**. Each participant in the system may have to change some of its processes and the way it uses information to create a system that best serves the supply chain as a whole

Enterprise applications also introduce "**switching costs**." Once you adopt an enterprise application from a single vendor, such as SAP, Oracle, or others, it is **very costly to switch vendors**, and your **firm becomes dependent on the vendor to upgrade its product** and **maintain** your installation

Companies adopting enterprise applications can also **save time and money by keeping customizations to the minimum**

Next-Generation Enterprise Applications

Next-generation enterprise applications include **open source and on-demand solutions**

Compared to commercial enterprise application software, **open source products** such as Compiere, Apache Open for Business (OFBiz), and Openbravo are **not as mature, nor do they include as much support**

However, companies such as small manufacturers are choosing this option because there are no software licensing fees and fees are based on usage

Enterprise application vendors have also beefed up their business intelligence features to help managers obtain more meaningful information from the massive amounts of data generated by these systems

Service Platforms

A service platform **integrates multiple applications from multiple business functions, business units, or business partners to deliver a seamless experience for the customer, employee, manager, or business partner**

Enterprise application vendors provide middleware and tools that use XML and Web services for integrating enterprise applications with older legacy applications and systems from other vendors

Thank You