Information System
ITEC-522
5th Semester Third Year Information Technology

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Week-6

Enterprise Systems

- What are enterprise systems
  - Suite of integrated software modules and a common central database
  - Collects data from many divisions of firm for use in nearly all of firm's internal business activities
  - Information entered in one process is immediately available for other processes

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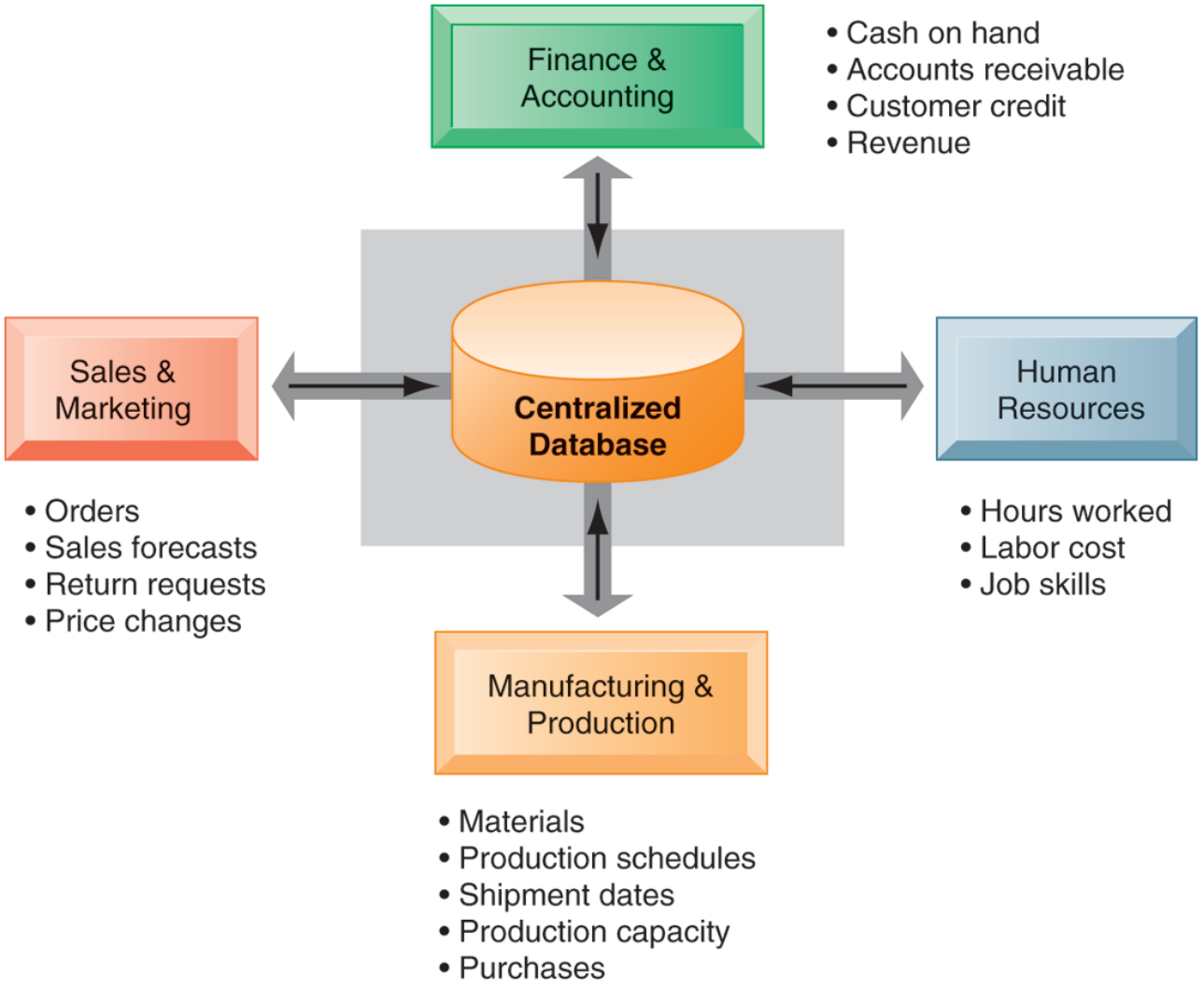
Cont.

- Enterprise Software
  - **Built around thousands of predefined business processes that reflect best practices**
    - Finance/accounting: General ledger, accounts payable, etc.
    - Human resources: Personnel administration, payroll, etc.
    - Manufacturing/production: Purchasing, shipping, etc.
    - Sales/marketing: Order processing, billing, sales planning, etc.
  - **To implement, firms:**
    - Select functions of system they wish to use
    - Map business processes to software processes
    - Use software's configuration tables for customizing

How Enterprise Systems Work



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Enterprise systems feature a set of integrated software modules and a central database that enables data to be shared by many different business processes and functional areas throughout the enterprise.

Enterprise systems are classified in three main categories:

- **Enterprise Resource Planning System**
- **Supply Chain Management System**
- **Customer Relationship Management System**

Enterprise Resource Planning (ERP) Systems

- **Interdependent software modules with a common central database that support basic internal business processes for finance and accounting, human resources, manufacturing and production, and sales and marketing.**
- **"a business strategy and set of industry-domain-specific applications that build customer and shareholder communities value network system by enabling and optimising enterprise and inter-enterprise collaborative operational and financial processes"(Source: Gartner's Research Note SPA-12-0420)**

Historical system architectures

Historically, organizations created “islands of automation”.

Various systems that operated or managed various divergent business processes. Sometimes these systems were integrated with each other and sometimes they weren’t. Sometimes they were loosely interfaced and sometimes they were more tightly interfaced.

ERP Packages

- Integrated systems
- Examples
  - SAP
  - PeopleSoft
  - Oracle Financials

- International environment
  - Multiple currencies
  - Multiple languages
  - Procedures and practices
  - Follows local (national) rules
  - Follows consolidation rules
  - Example
    - U.S. firm with European subsidiaries.
    - Data is entered once
    - European reports are generated for subsidiaries following local rules
    - Results are converted and consolidated to U.S. firm following international and U.S. rules

ERP Primary Functions

- Accounting
  - All transaction data and all financial statements in any currency
- Finance
  - Portfolio management and financial projections
- Human Resources Management
  - Employee tracking from application to release
- Production Management
  - Product design and manufacturing lifecycle
- Logistics/Supply Chain Management
  - Purchasing, quality control, tracking
- Customer Relationship Management
  - Contacts, orders, shipments

SAP

- Based in Germany, now worldwide
- Support for international transactions and multinational firms
- Runs on multiple database and hardware platforms
- Can handle large and small companies
- Expensive, but price is relative.

- Financials
- Logistics
- Human resource management

SAP Financials

- Financial Accounting
  - General ledger
  - Accounts receivable/payable
  - Special ledgers
  - Fixed assets
  - Legal consolidation
- Investment Management
  - Investment planning/budgeting/control
  - Depreciation forecast/simulation/calculate
- Controls
  - Overhead cost
  - Activity based costing
  - Product cost
  - Profitability analysis
- Treasury
  - Cash management
  - Treasury management
  - Market risk management
  - Funds management
- Enterprise Control
  - Executive information system
  - Business planning and budgeting
  - Profit center accounting
  - Consolidation

SAP Logistics

- Purchasing
- Materials management
- Manufacturing
- Warehousing
- Quality management
- Plant maintenance
- Service management
- Sales
- Distribution

- Product data management
  - Master data management
  - Design and change process
  - Product structure
  - Development projects
- Sales and distribution
  - Sales activities
  - Sales order management
  - Shipping and transportation
  - Billing
  - Sales information system

SAP Logistics

- Production planning and control
  - Production planning
  - Material requirements planning
  - Production control and capacity planning
  - Costing
  - Order information system
  - Shop floor information system
- Project system
  - Work breakdown structures
  - Network planning techniques, milestones
  - Cost, revenue, financial, schedule, and resource management
  - Earned value calculation
  - Project information system

SAP Logistics

- Materials management
  - Purchasing
  - Inventory management
  - Warehouse management
  - Invoice verification
  - Inventory controlling
  - Purchasing information system
- Quality management
  - Quality planning
  - Quality inspections
  - Quality control
  - Quality notifications and certificates
  - Quality management information system
- Plant maintenance
  - Structuring technical systems
  - Maintenance resource planning
  - Maintenance planning
  - System for technical and cost accounting data
  - Maintenance information system

SAP HRM

- Personnel management
  - HR master data
  - Personnel administration
  - Information systems
  - Recruitment
  - Travel management
  - Benefits administration
  - Salary administration
- Organizational management
  - Organization structure
  - Staffing schedules
  - Job descriptions
  - Planning scenarios
  - Personnel cost planning
- Payroll accounting
  - Gross/net accounting
  - History function
  - Dialog capability
  - Multi-currency capability
  - International solutions
- Time management
  - Shift planning
  - Work schedules
  - Time recording
  - Absence determination
  - Error handling

SAP HRM

- Personnel development
  - Career and succession planning
  - Profile comparisons
  - Qualifications assessments
  - Additional training determination
  - Training and event management
- Other features
  - SAP Business workflow
  - Internet scenarios
  - Employee self-service

ERP – Key Characteristics

Integration

seamless integration of all the information flowing through a company – financial and accounting, human resource information, supply chain information, and customer information.

Cont.

Best Practices

- ERP vendors talk to many different businesses within a given industry as well as academics to determine the best and most efficient way of accounting for various transactions and managing different processes. The result is claimed to be “industry best practices”.
- The general consensus is that business process change adds considerably to the expense and risk of an enterprise systems implementation. Some organisations rebel against the inflexibility of these imposed business practices.

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Packages

Enterprise systems are not developed in-house

- IS life cycle is different
  1. Mapping organizational requirements to the processes and terminology employed by the vendor.
  2. Making informed choices about the parameter setting.
- Organizations that purchase enterprise systems enter into long-term relationships with vendors.

Cont.

Some Assembly Required

Only the software is integrated, not the computing platform on which it runs. Most companies have great difficulty integrating their enterprise software with a package of hardware, operating systems, database management systems software, and telecommunications suited to their specific needs.

- Interfaces to legacy systems
- Third-party applications
- Best of Breed Strategy

Cont.

Evolving

Enterprise Systems are changing rapidly

- Architecturally: Mainframe, Client/Server, Web-enabled and Object-oriented
- Functionally: front-office (i.e. sales management), supply chain (advanced planning and scheduling), data warehousing, specialised vertical industry solutions, etc.

Benefits and Challenges of ERP Systems

- Benefits
  - Firm structure and organization: One Organization
  - Management: Firm wide Knowledge-based Management Processes
  - Technology: Unified Platform
  - Business: More Efficient Operations and Customer-driven Business Processes
- Challenges
  - Implementation is an issue
  - High Up-front Costs and Future Benefits
  - Inflexibility

Supply Chain Management System

- **Network of organizations and business processes for procuring raw materials, transforming into products, and distributing them to customers**

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

- **Coordination of business processes to speed information, product, and fund flows up and down a supply chain to reduce time, redundant effort, and inventory costs**

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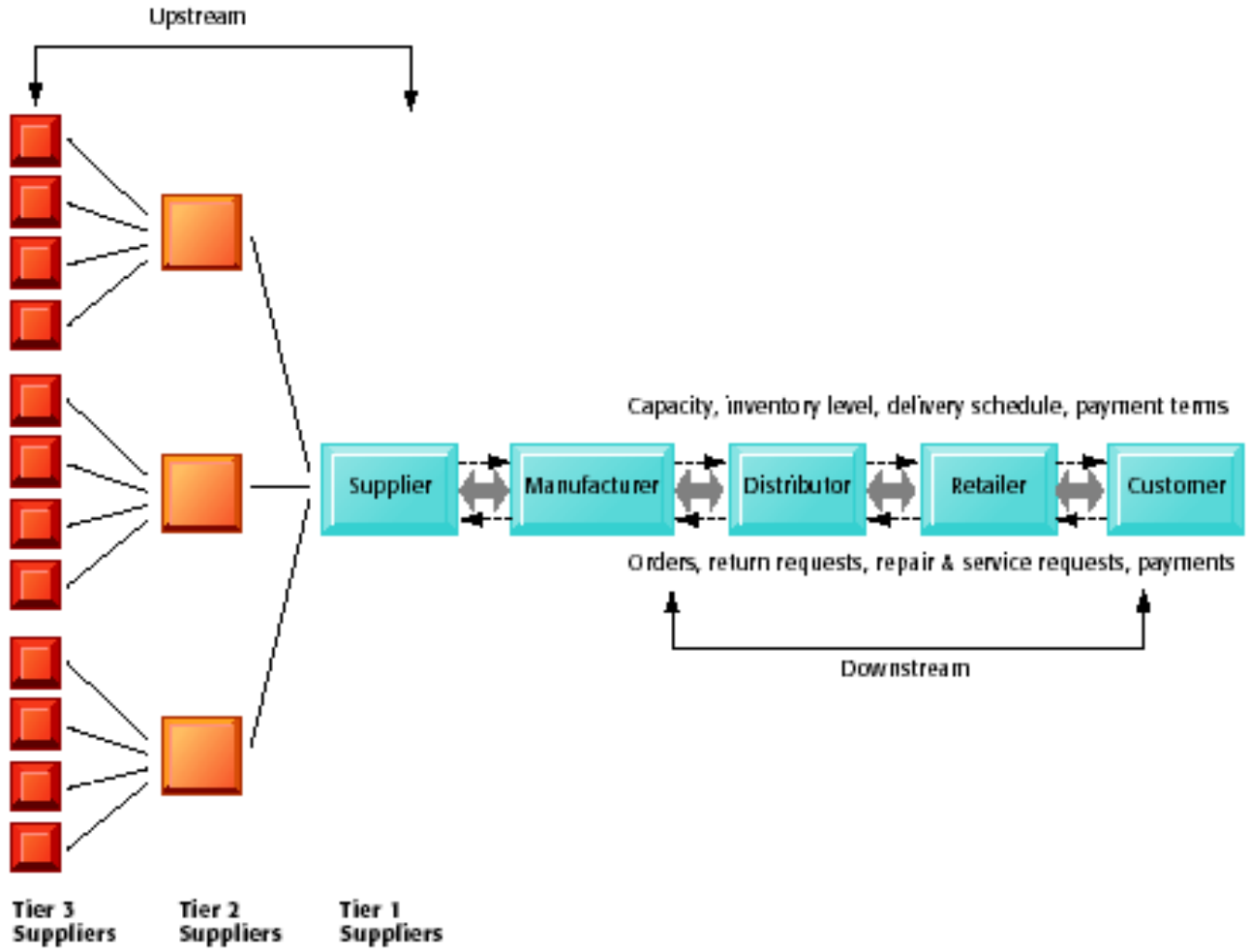
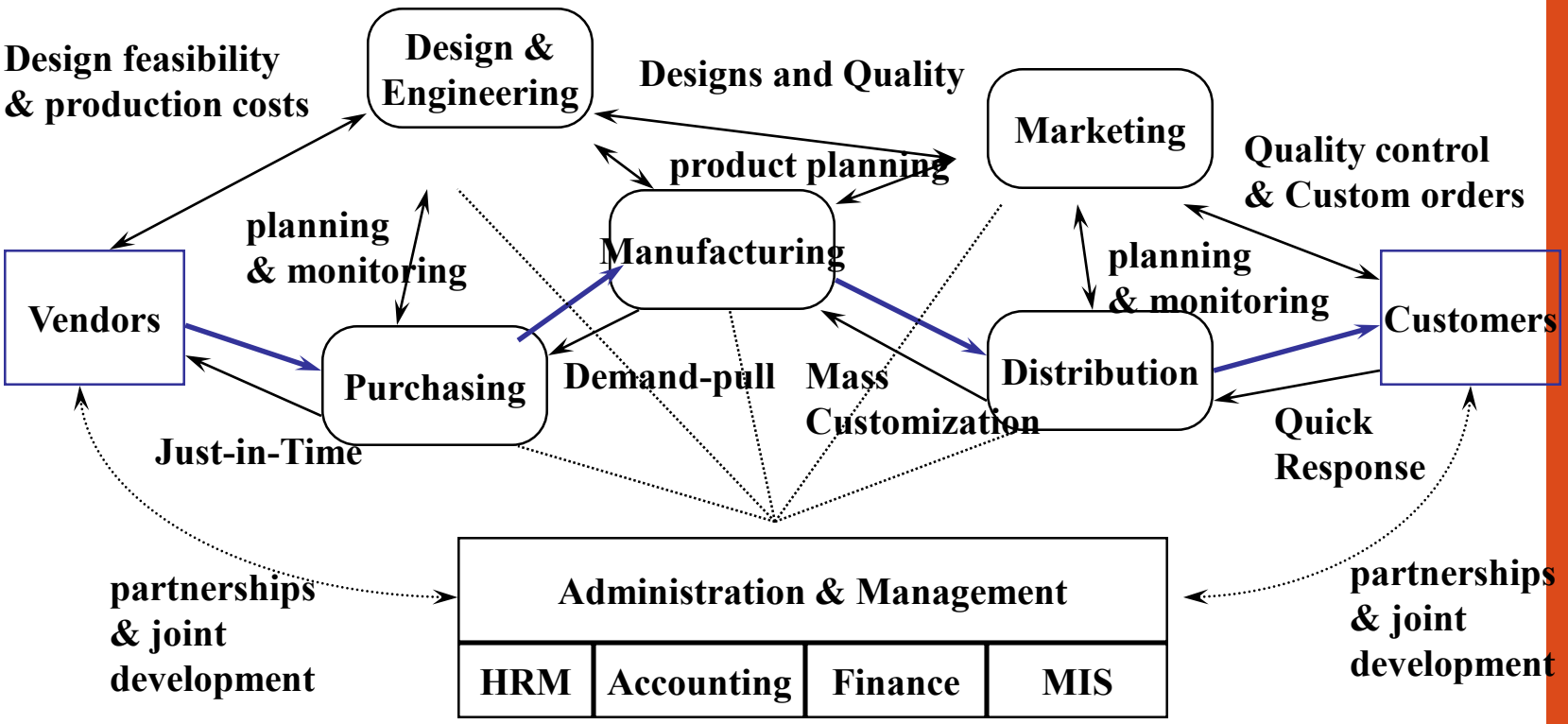
A Supply Chain



Supply Chain Management



Purchasing/Logistics




Buyer	Suppliers
Identify product features	
	Provide product details
Request for Proposal	
Evaluate suppliers	
Negotiate contract	Negotiate contracts
Identify exact items and costs	
	Verify orders and times
Correct errors	Correct errors
	Schedule delivery
Receive products	Monitor shipments
Match receipts against order	
Return items	Handle returns
Pay supplier	Monitor payments

Supply Chain Processes

SCOR (Chain Operations Reference Model) identifies five major supply chain processes:

- **Plan: Balancing demand and supply to meet sourcing, production, and delivery requirements**
- **Source: Procurement of goods and services needed to create a product or service.**
- **Make: Processes that transform a product into a finished state.**
- **Deliver: Processes to manage order transportation and distribution**
- **Return: Processes associated with product returns and post delivery customer support**

Key Supply Chain Management Processes

Figure 11-4

Supply Chain Management Applications

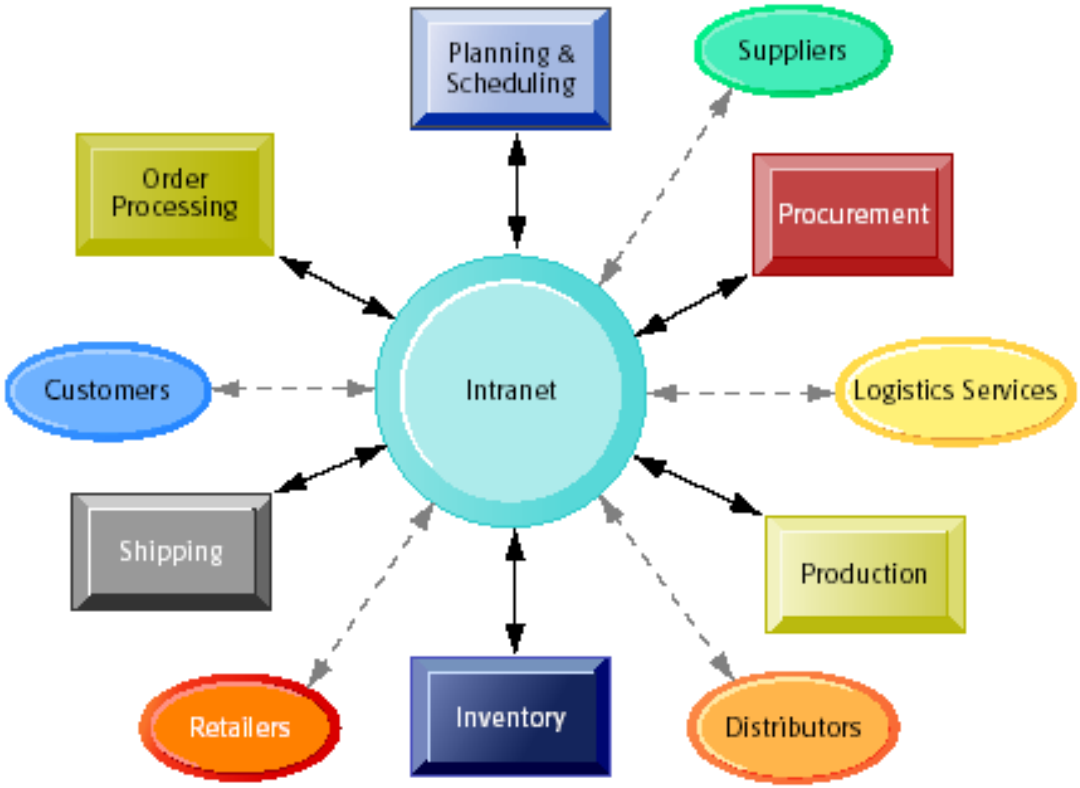
Supply chain management systems: Automate flow of information between company and supply chain partners.

Supply chain planning systems: Generate demand forecasts for a product (demand planning) and help develop sourcing and manufacturing plans for that product.

Supply chain execution systems: Manage the flow of products through distribution centers and warehouses to ensure that products are delivered to the right locations in the most efficient manner

Supply Chain Management and the Internet

Intranets and Extranets for Supply Chain Management



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Internet-based supply chain management applications:

- **Provide standard set of tools**
- **Facilitate global supply chains**
- **Enable efficient customer response**
- **Allow concurrent supply chains**

Customer Relationship Management

- "An integrated sales, marketing & service strategy"

  Kalakota & Robinson
- "A business strategy to select and manage the most valuable customer relationships. CRM requires a customer-centric business philosophy and culture to support effective marketing, sales, and service processes" - Bob Thompson – CRMGuru.com
- IT definition

  "Methodologies, software and usually internet capabilities that help an organisation manage customer relationships in an organised manner"

Cont.

"An approach which effectively manages customer relationships"

"A business strategy which pro-actively builds a bias or preference for an organisation with its individual employees, channels and customers resulting in increased [customer] retention and increased performance"

(Carlson Marketing Group 2001)

Customer Relationship Management Applications

CRM systems:

- **Capture and integrate customer data from all over the organization**
- **Consolidate and analyze the data**
- **Distribute results to various systems and customer touch points across the enterprise**

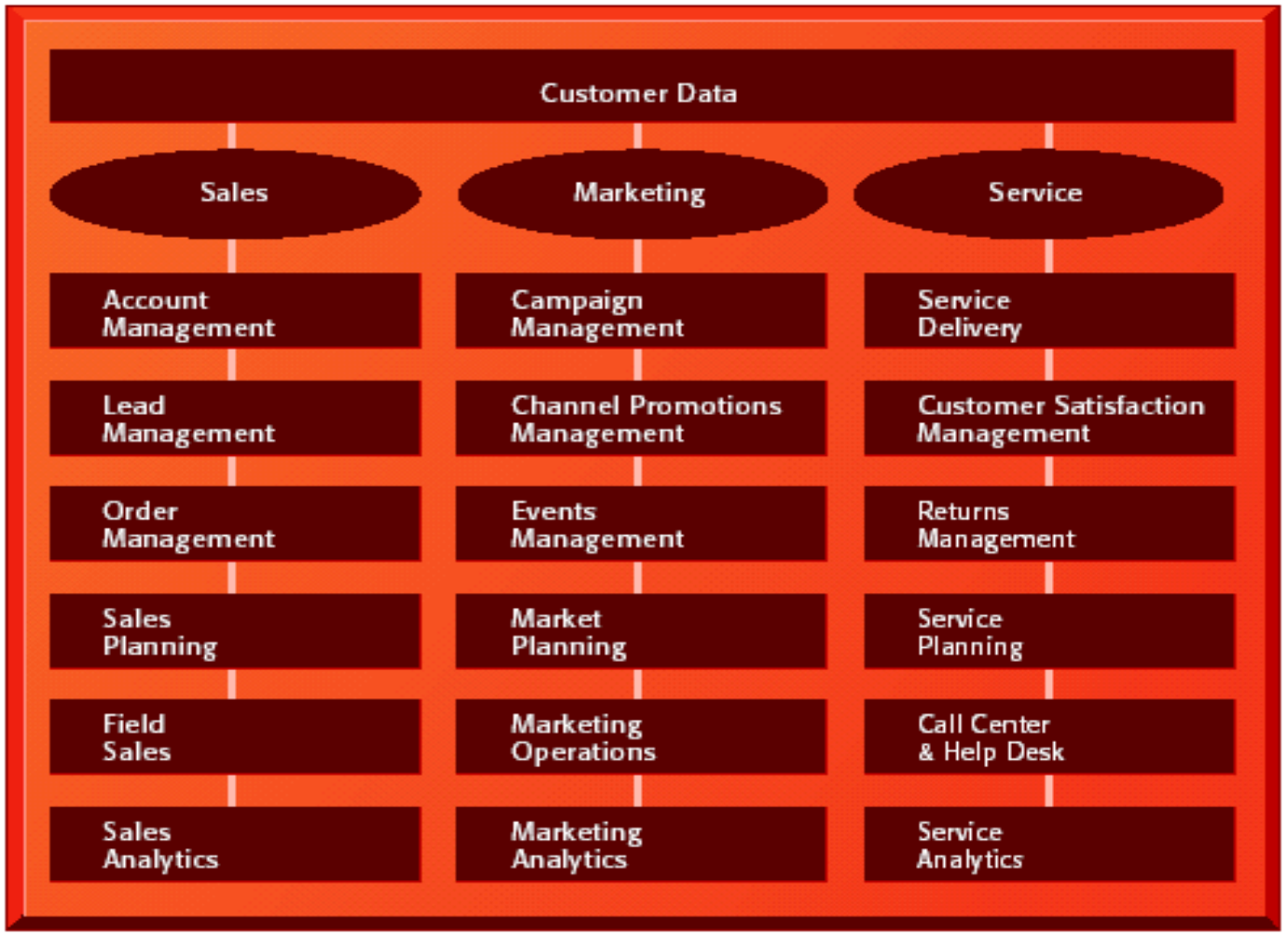
CRM Objectives

- Use existing customer relationships to grow revenue.
- Use integrated information systems & services to better serve customer needs.
- Introduce more excellent repeatable sales processes and procedures.
- Create new value and instil loyalty.
- Overall more pro-active strategy towards customer focus.

Customer Relationship Management (CRM) Software

- Can range from niche tools to large-scale enterprise applications
- Can link to other major enterprise applications, such as supply chain management
- Can include modules for PRM and employee relationship management (ERM)

CRM Software Capabilities



CRM - Stages

1. Customer Acquisition

   Promotion of products – build a relationship – first date

2. Customer Extension

   An established relationship – cross-selling & up-selling

3. Customer Retention

   Adapt to customer requirements – requires a complex understanding of customer needs.

Can an organisation pursue all 3 objectives – extremely difficult

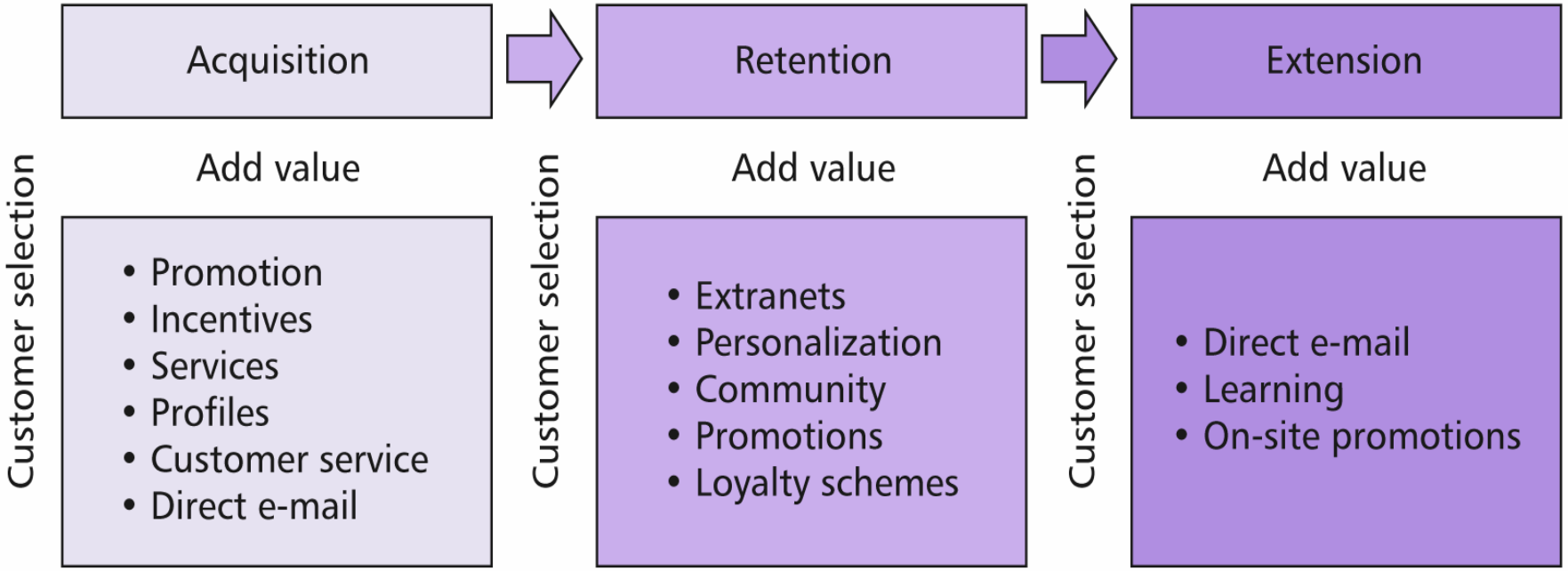


Figure 9.1 Three phases of customer relationship management

CRM – Put into Practice

- Requires the development of a set of integrated applications that address all aspect of front-office needs.
  - Automate customer service
  - Cross Sell & Up-selling activities
  - Facilitate field services
  - Customer Service and Support - help desks etc
  - Support Sales & marketing activities
- Organise around the customer - the new CRM oriented architecture
- Move away from fragmented organisational & functional structures
- Manage all activities that identify, attract and retain customers

CRM – the way forward

- **Implement a customer focussed strategy before a technological CRM strategy**
- **Customer focus has to be implemented first.**
- **Low tech solutions can be implemented appropriately**
- **Beware of scaring away the customer**

Discussion

Questions?