Part 3

Using IS for Competitive Advantage

Experiencing MIS

Fifth Canadian Edition

Chapter 7

Organizations and Information Systems

What Are the Fundamental Ways of Achieving Competitive Advantage?

- Recall from Chapter 3, there are two basic ways to develop **competitive advantage** through systems:
  - **Changing the product**: By introducing new products or services or enhancing current products or services
  - **Business processes**: Organizations use technology to help lock in customers, reduce costs, and create entry barriers for competitors in the market

How Information Systems Can Affect Competitive Advantage

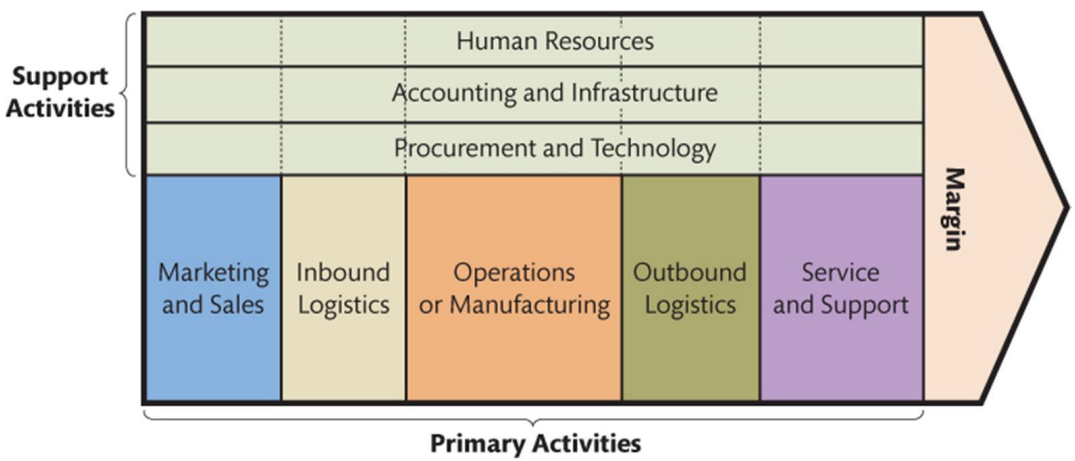
- By making the **primary** and **support** activities in an organization more productive than those of competitors
- Increased productivity is realized when **business processes** within the organization become more effective and more efficient
- True for commercial companies as well as for non-profit organizations and government

Q7-2: What Are Business Functions and Functional Systems?

- Recall Porter's **value chain model** (Ch 3)
- Two types of activities:
  - Primary: main core parts of the goods/services
  - Support: secondary or ancillary to the main goods or services produced
- **Classification** determined by the organization and what it produces

Figure 7-1
Reorganized Porter Value Chain Model

Primary and support activities are also referred to as ***business functions,*** and almost always present in organizations.

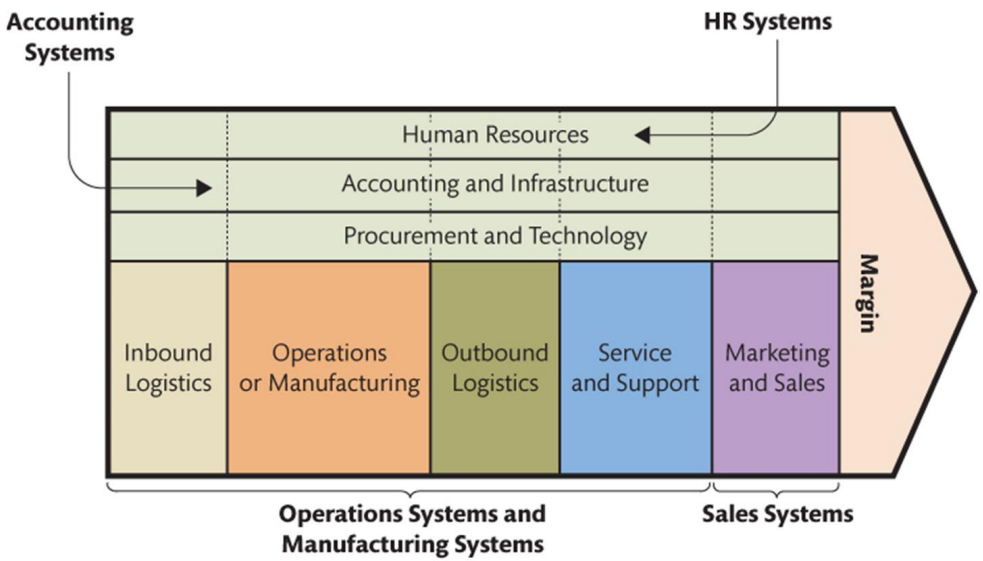


Source: Based on Michael E. *Porter Competitive Advantage: Creating and Sustaining Superior Performance* (The Free Press, a Division of Simon & Schuster), Copyright © 1985, 1998.

Functional Systems

- Facilitate the work of a single department or business function
- Examples: Accounting systems, HR Systems, Sales systems

Figure 7-2
Reorganized Porter Value Chain Model and Its Relationship to Functional Systems



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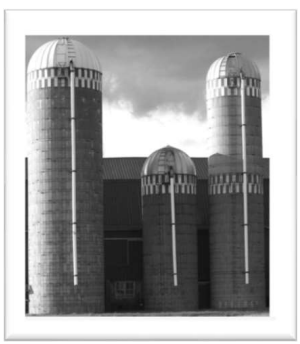
Organization

- each branch of the organization
  - their own function (what they do for the company)
  - their own business models

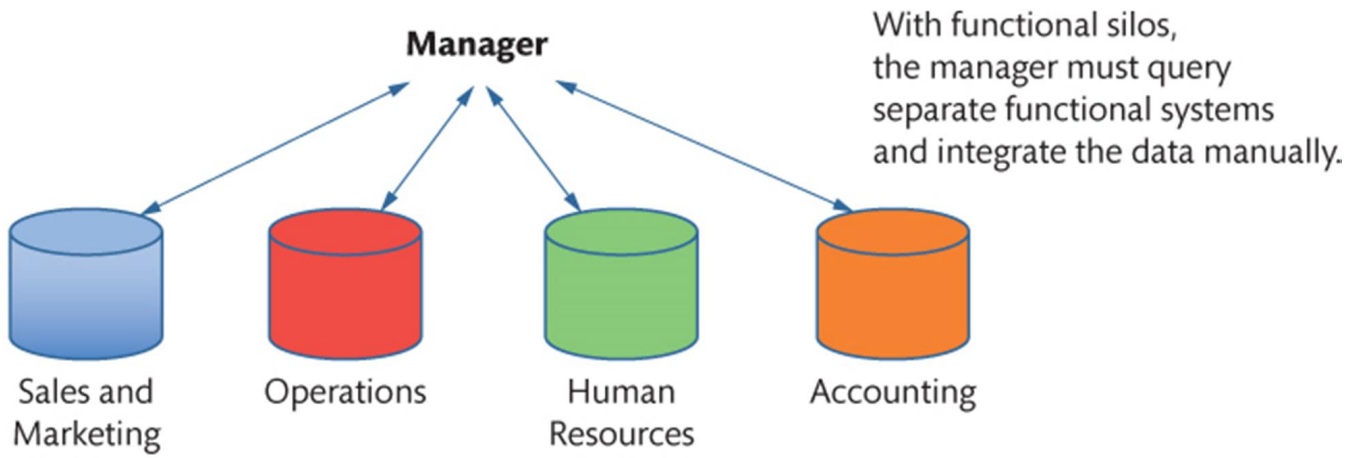
- their own data



- information needed for sales is different
  from
  information needed for production

- each have their own functional information systems
  - Functional Silos

Figure 7-3
Separate Functional Systems



Cross-Functional Systems (1 of 2)

- **Cross-departmental systems** operate **across departmental boundaries**,
  designed to reduce isolation systems caused by functional systems
- Transition from **functional** systems to **integrated cross-functional** systems is difficult
- Integrated processing needs many departments to **coordinate** activities

Cross-Functional Systems (2 of 2)

- **Interorganizational systems** are **cross-functional** systems used by two or more related companies
- Most organizations today have a **mixture** of functional and integrated systems

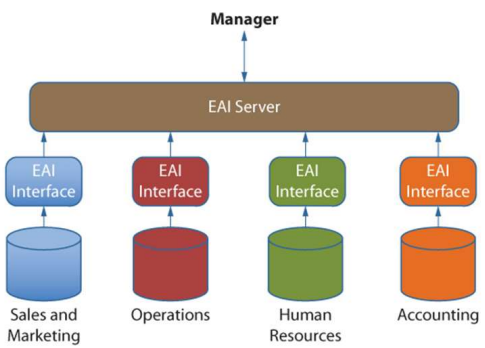
Integrating Functional Systems: EAI and ERP

- **Enterprise Application Integration (EAI)**
  - An approach to combining functional systems, which uses layers of software as a bridge to connect different functional systems together
- **Enterprise Resource Planning (ERP)**
  - A second approach to combining functional systems
  - Main design principle – one central database is combined with a set of standard processes built on top of the database to ensure integration between functional area

Organization

Enterprise Application Integration (EAI)

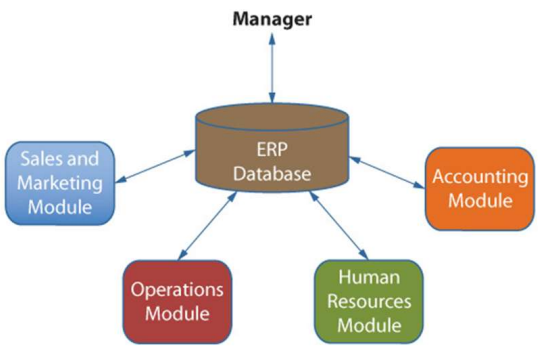
- THE DATA **STAYS** IN THE FUNCTIONAL SYSTEM
- THE MANAGER **ACCESSES** THE DATA THROUGH THE EAI INTERFACE
- THE MANAGER SEES A **SINGLE DATABASE**
- THE EAI INTERFACE **SENDS** DATA TO THE EAI SERVER
- THE FUNCTIONAL SYSTEMS **STILL EXISTS** SEPARATELY AND STORE ACTUAL DATA



Organization

Enterprise Resource Planning (ERP)

- THERE IS A **SINGLE** DATABASE
- THE MANAGER ACCESS THE DATA THROUGH THIS **ONE** DATABASE
- PEOPLE IN THE FUNCTIONAL AREAS USE **ERP** TO SEND AND RECEIVE DATA DIRECTLY FROM THE CENTRAL DATABASE
- **NO FUNCTIONAL SYSTEM** EXISTS
- THEY WERE **REPLACED** BY THE ERP MODULES



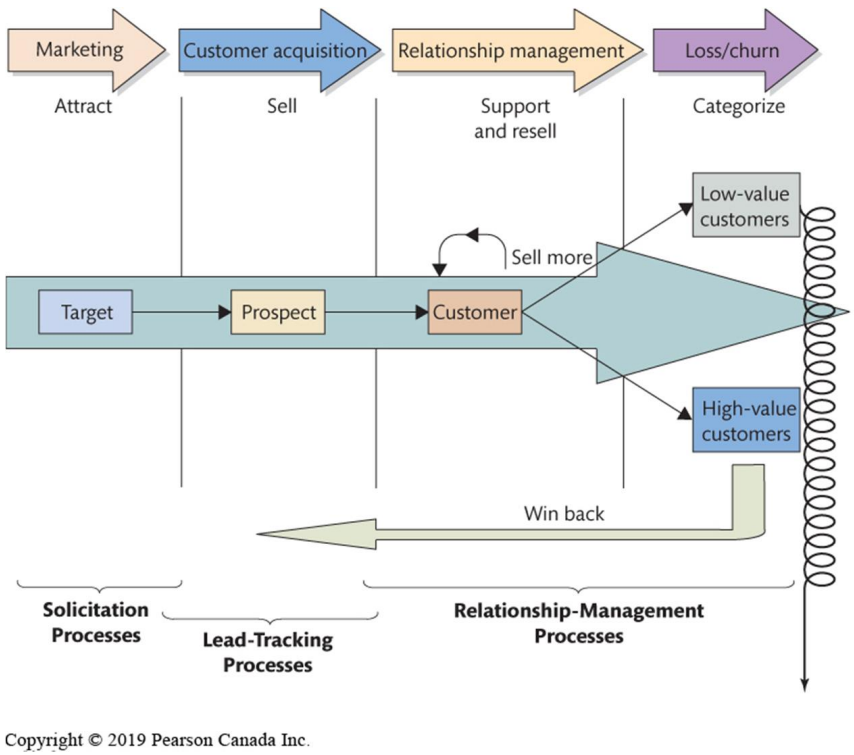
Q7-4: What Are Challenges of Implementing Business Process Changes?

- Process design projects are expensive and difficult; three reasons for this are:
  - There is a lot of detailed work to be done to determine what to change and make an effective decision
  - Hard to estimate the business value that will emerge from business process changes
  - Many people like change but do not want to change
- May take a long time
- Very **expensive** and outcomes are **uncertain**

Q7-7: What Are CRM Systems?

- **Customer Relationship Management (CRM)**
- Type of cross-functional system
- Developed to overcome problems in functional silos
- Supports all direct value chain activities involving **customers**
  - Attracting, selling, managing, delivering, and supporting customers
- Provides single repository for data about customer interactions

Figure 7-12
The Customer Life Cycle



Source: Douglas MacLachlan, University of Washington.

Customer Relationship Management

"nothing happens in business until someone sells something."

- any business's customer relationships are important.
  Businesses that nurture these relationships benefit from repeat purchases.
  Businesses that don't must find new customers

Information Systems are important to maintaining customer relationships.

Systems that have this as their main purpose are called customer relationship management (**CRM**) systems.

Customer Relationship Management

There are two main types of **CRM**:

operational

used in working with customers:

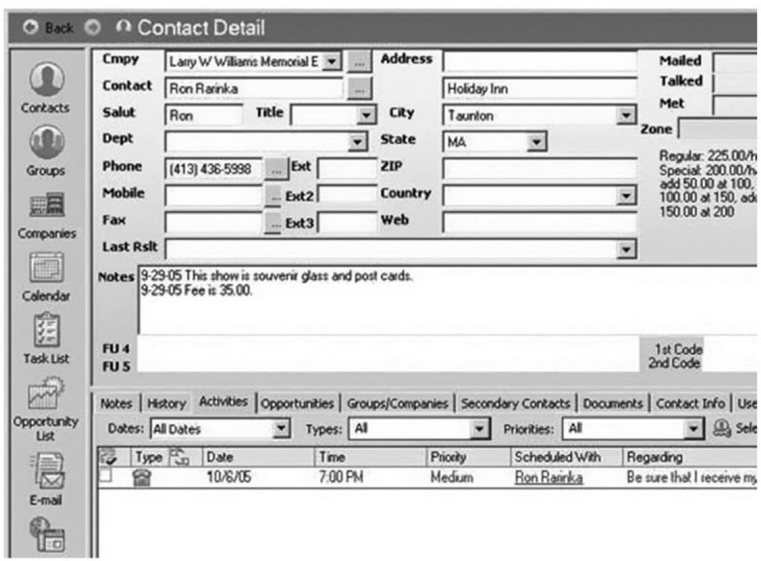
contacting them
selling to them
helping them use a product or service

analytical.

is about customers as a group
rather than any one customer
focusing on overall information and patterns

Customer Relationship Management

A basic contact management system is little more than a personal contact list.



Customer Relationship Management

Operational CRM:

Level 1: Contact Management

must handle additional information beyond 'contacts'

Call and purchase history

Callback dates

Conversation notes

etc. , and more.

Shared database makes sales contact information available to an entire sales and support team

Everyone on the team must know what everyone else is doing.

Customer Relationship Management

Operational CRM:

Level 2: Sales Management

Sales management systems coordinate the selling process,
reminding salespeople
to go through the right steps
in the right order
and providing a variety of aids

- standard presentations
boilerplate content for proposals,
competitive analyses
sales arguments

Customer Relationship Management

Operational CRM:

Level 3: Opportunity Management

extends sales management earlier in the selling process by identifying new or potential customers.

can track the type of sale,
the person or group responsible for it,
its expected value, the probability of closing it

It can be a tool for salespeople to optimize the use of their time and for sales management to monitor the selling process overall.

Customer Relationship Management

Analytical CRM:
about customers as a group rather than any one customer

focusing on overall information and patterns.

Uses of analytical CRM include:

- **Segmentation**, grouping customers based on purchase
- **Personalization**: Information about customers
- **Response analysis** enables a company to determine the effectiveness of different marketing approaches
- **Attrition analysis** helps understand why customers leave to reduce future customer losses.
- **Aligning supply** (production) with expected demand.

Customer Relationship Management

Analytical CRM:

about customers as a group rather than any one customer

focusing on overall information and patterns.

Customers drive business …
use analytical CRM so the business can drive the customer.

anticipate based on turning data into meaningful knowledge

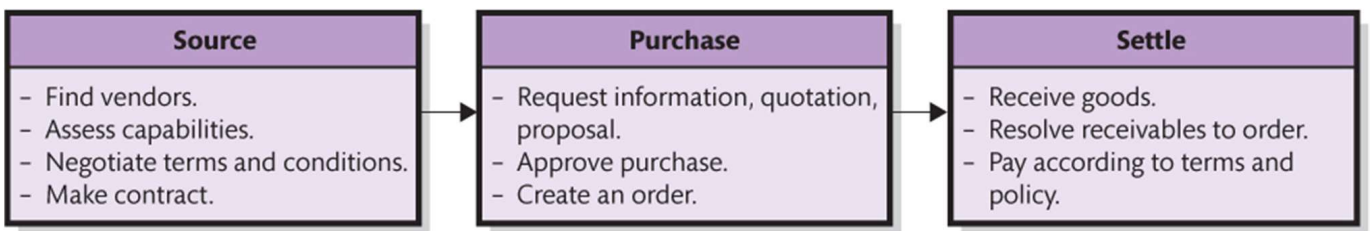
market basket analysis:

data about items that are purchased together.
- upsale

Supplier Relationship Management (SRM)

- Business process for managing all contacts between an organization and its suppliers
- Supplier is any organization that **sells** something to the organization that has the SRM application
- Supports both the in-bound logistics primary activity and the procurement support activity
- Support basic business processes
  - source, purchase, and settle

Figure 7-18
Summary of SRM Processes



Putting it together

Organization (company):

Supplier Chain Management (SCM)

Benefits of Information Systems on Supply Chain Performance

- Reduce costs of buying and selling
- Increase supply chain speed
- Reduce size and cost of inventories
- Improve delivery scheduling—enable just-in-time inventory