Information Systems

… Integrating Organizations

MIS - Infrastructure and Integration

Organization

- Congratulations!
- your business has really taken off
  your company is a blazing success
- as business grew, so did your company
  - everything you did on your own, is now done by staff
  - you added incrementally as the need arose
  - what positions did you fill (and why) ?

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- Departments of a typical business:
  - Accounting
  - Finance (Spending and Spending Decisions)
  - Sales
  - Marketing (not ‘closing’ but the what and how)
  - Production (actually producing the product/service)
  - Delivery
  - Purchasing (Procurement)
  - Support
  - Research and Development
  - IT (Information Technology)
  - HR (Human Resources)

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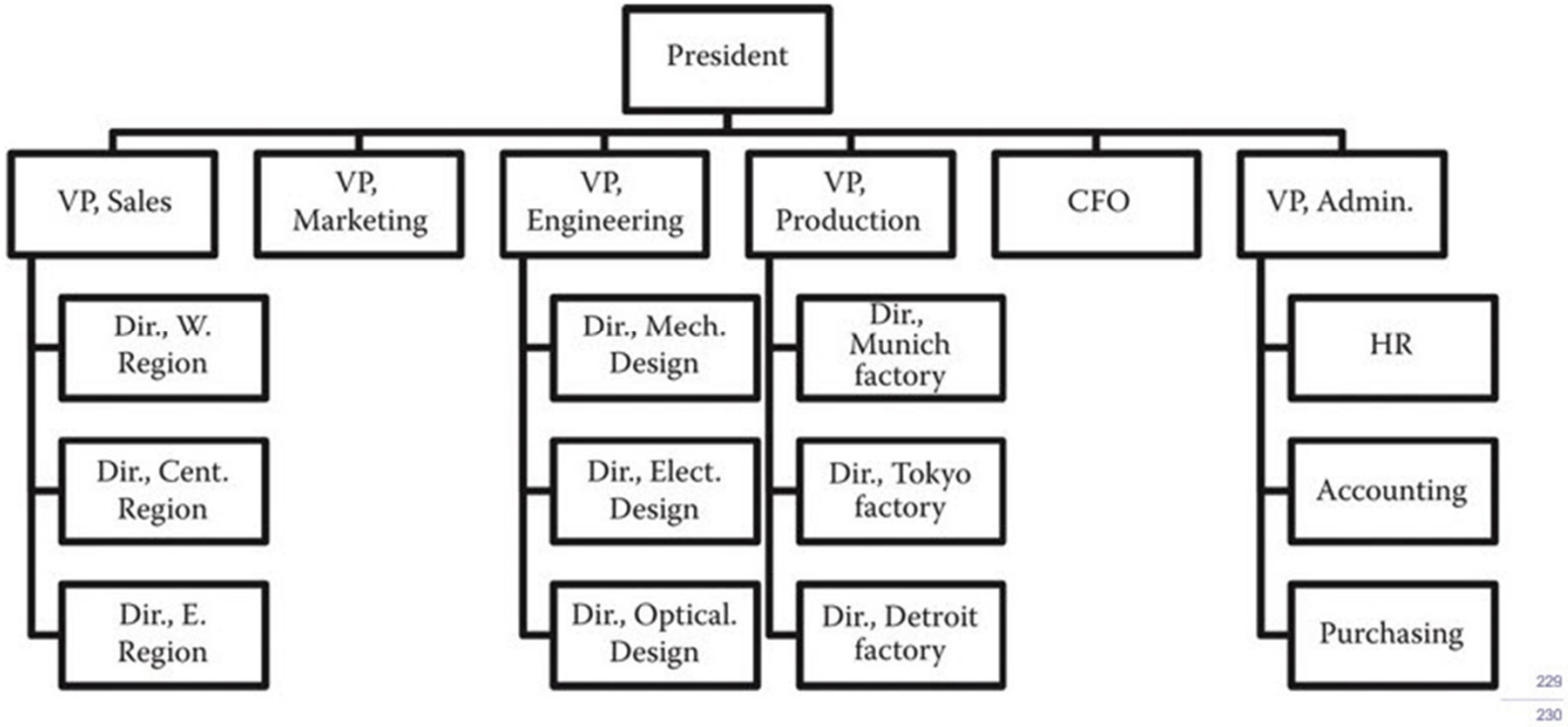
FIGURE 7.2 Typical organization chart.



229
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*separate fiefdoms

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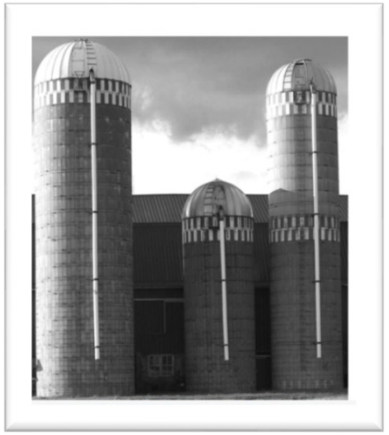
- each branch of the organization
  - their own function (what they do for the company)
  - their own business models
  - their own data



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

- each have their own functional information systems
  - Functional Silos

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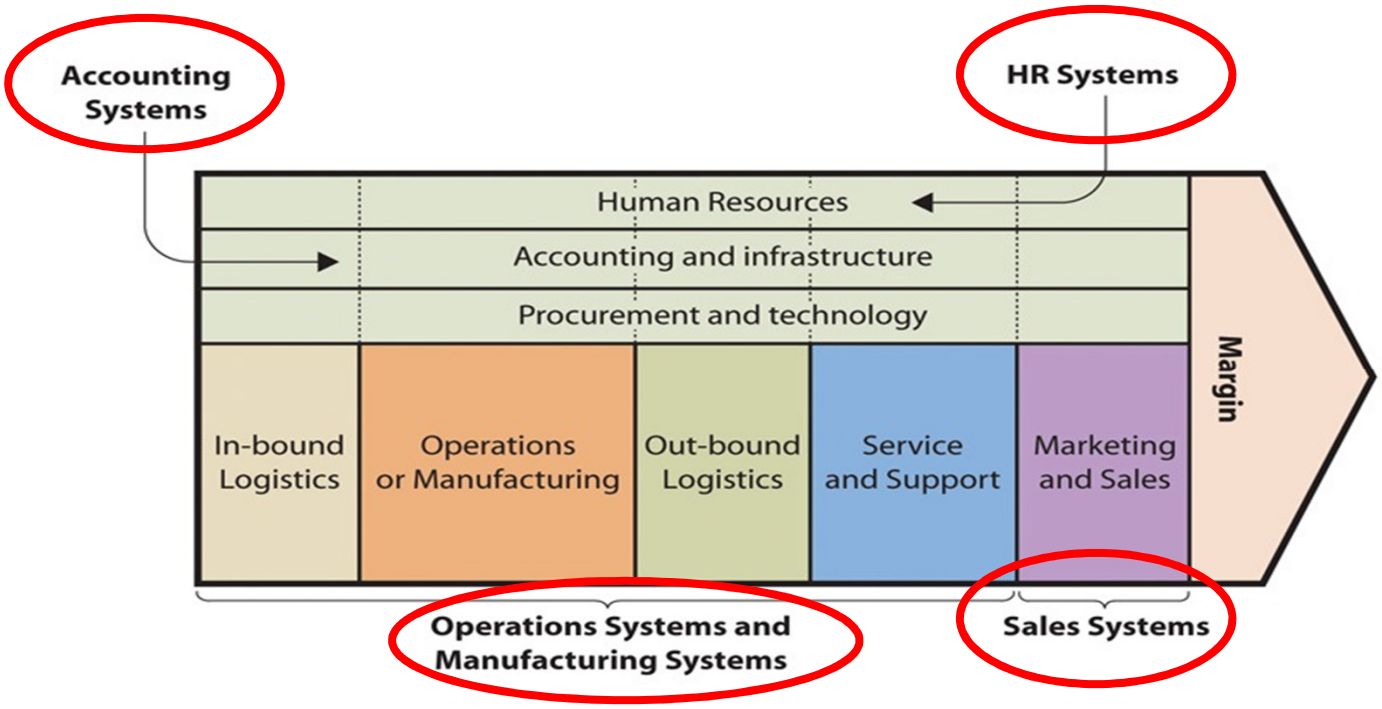
Reorganized Porter's Value Chain: Relationship to Functional Systems

Examples of Functional Systems



Function	Example Information Systems
Marketing & sales	Product management Lead tracking Sales forecasting Customer management
Operations	Order entry Order management Inventory management Customer service
Manufacturing	Inventory Planning Scheduling Manufacturing operations
Human resources	Payroll and compensation Recruiting Assessment Development and training Human resources planning
Accounting and finance	General ledger Financial reporting Accounts receivable Accounts payable Cost accounting Budgeting Cash management Treasury management

Basic Types of Functional Systems:

- Marketing & Sales Systems
- Operations systems
- Manufacturing systems
- Human Resource systems
- Accounting systems

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- **Functional silos**:
  Systems designed to work independently of one another

- Functional systems are inter-related in reality
- Purchasing *influences* **inventory**, which *influences* **production**, which *influences* **customer satisfaction**, which *influences* **future sales**
- Decisions that are appropriate for only single business function may be **inefficient** for an entire business process

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- Cross-departmental systems **operate** across departmental boundaries
- **Transition** from functional systems to integrated cross-functional systems is difficult
- Most organizations today have a mixture of **functional** and **integrated** systems

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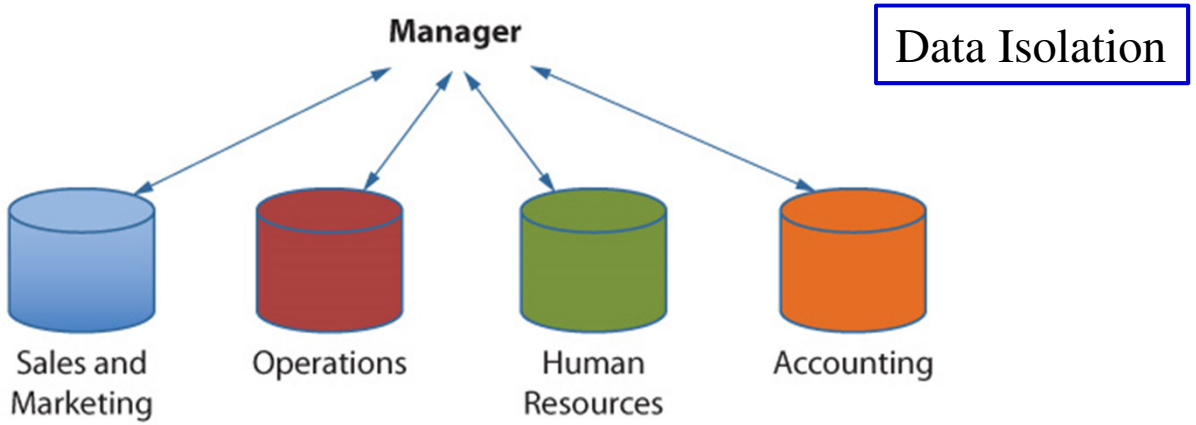
Separate Functional Systems:



With **Functional Silos**:

- the manager must query separate functional systems
  and
  integrate the data manually.

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Example:

- as you started your business:
  you tracked and stored all your data in a MS Access database
- you then hired production workers and a manager
  who tracked their data with a database
- next came a sales staff, who again
  tracked their data with a database
- eventually, you have five or six separate databases with data

question: How will you gather the data you need to make a business decision ?

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Example of data in a Functional Silo:

FUNCTION- Operations

- Order Entry
- Order Management
- Inventory Management and Control
- Supplies and Raw Material

FUNCTION- Manufacturing

- Scheduling
- Manufacturing Operations
- Performance
- Staffing

Functional systems provide tremendous benefits, but are limited because they operate in isolation

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Integrating Functional Systems (Silos) - ERP and EAI

- Enterprise Resource Planning **(ERP)**
  - An 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

- Enterprise Application Integration (EAI)
  - An approach to combining functional systems, which uses layers of software as a bridge to connect different functional systems together

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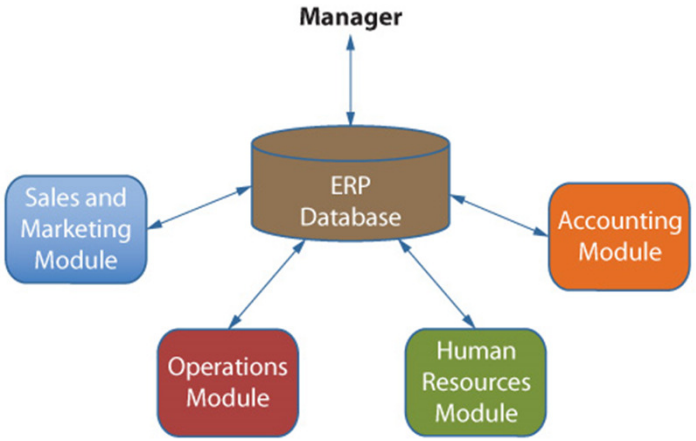
Enterprise Resource Planning (ERP)

- 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



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Enterprise Resource Planning (ERP)

Benefits of ERP:

(Companies go to the expense of acquiring, customizing, and installing ERP software because it offers valuable benefits.)

- a complete picture of all aspects of the business
- eliminates inconsistent views of the same data in different departments
- financial reporting is faster
  Information is available quickly to those who need it
- Inventory costs can be reduced with better tracking of requirements
- eliminating delays in processes can lead to shorter delivery times and improved customer satisfaction

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Enterprise Resource Planning (ERP)

Concerns with ERP:

- ERP software can be expensive
- Customizing an ERP package is complex
- implementation, including training, is time-consuming and expensive
- The business processes in an ERP package may require changing how an organization works
- ERP software may require expensive hardware upgrades

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Enterprise Application Integration (EAI)

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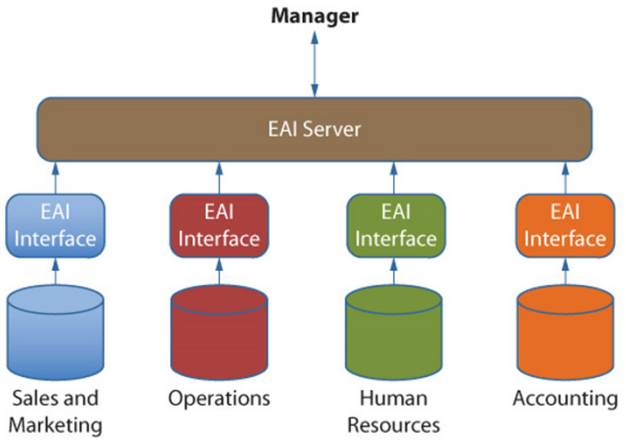
Enterprise Application Integration (EAI)

- 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



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ERP -or- EAI ?

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ERP -or- EAI ?

Advantages of ERP over EAI:

- The ERP system has a single source, updates apply to entire system
- The organization's technical staff must deal with one system, not several
- Moving to an ERP system can push an organization to upgrade its technology
- The common “look and feel” of all applications reduces training requirements
- It can be easier to provide security for a single database than for several databases

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ERP -or- EAI ?

Advantages of EAI over ERP:

- EAI lets an organization take a "best-of-breed" approach to choosing applications
- Each application can be chosen for its fit with the organization
- An organization can continue to use existing satisfactory applications thus reduces training costs and implementation costs
- Separate files and databases may be less attractive to thieves
- Technical skills may be easier to find within the organization, especially if some existing software is kept

MIS - Business

Common Sense

- how can it be applied to adapting your company to changes and evolution ?