

Chapter 2: Enterprise Systems

Teaching Objectives

The teaching objectives of this chapter are to:

- Describe the different types of enterprise systems and their roles in managing business processes
- Identify the different vendors that supply ES and analyze their market positions
- Explain the architecture of a typical ES
- Compare and contrast the different types of master data in an ES
- Portray the hypothetical company Super Skateboard Builders (SSB) in terms of its history and growth, products, customers, suppliers, and the types of information systems it uses

Chapter Outline and Teaching Suggestions

1. Enterprise Systems
 - a. Stage 1: Stand-Alone Mainframe Systems
 - b. Stage 2: Client-Server Architecture
 - c. Stage 3: Service-Oriented Architecture

Briefly explain the evolution of enterprise system through the three stages. Highlight the technological innovations that spurred the next stage.

- d. Types of Enterprise Systems
 - i. Classification based on capabilities
 1. ERP
 2. SCM
 3. SRM
 4. CRM
 5. PLM
 - ii. Best of breed vs. niche applications
 - iii. Classification based on company size
 - iv. Classification based on delivery mechanism

Discuss the different types of enterprise systems in terms of their role in intra and intercompany processes.

Highlight the various capabilities of each type of enterprise system and where they are appropriate.

Discuss the concept of an application suite.

2. Types of data in ES
 - a. Transaction Data
 - b. Master Data
 - c. Organizational Data

A good understanding of the various types of data is essential to understanding the explanations of the three key processes later in the book. Explain the three types of data and how they are related.

3. Super Skateboard Builders (SSB), Inc.
 - a. Product Line
 - b. Customers
 - c. Vendors (Suppliers)
 - d. Employees
 - e. Information Systems

The SSB case is used throughout the book to illustrate the various processes. Students should be very familiar with the products, customers, vendors and employees in the company. This knowledge is assumed in later chapters.

The discussion of information systems serves to recap the role of IS in organizations discussed in chapter 1 and to illustrate the inefficiencies of non-integrated systems. Make a point about this.

4. SAP Overview

Review the growth of SAP over the years highlighting the evolution of SAP products.

5. SAP Software (simulation)

Note that there are two options for adopting this text. One includes the simulations and one does not. Each option has a different ISBN number. This section is applicable if you choose the package with the simulated SAP exercises.

Explain the goal of the simulation and how it works.

Demonstrate one of the simulation exercises included in this chapter.

Explain your expectations with regard to how the students complete these simulations. How will they be considered in grading? What do students need to submit? The simulations are designed in three parts:

- a. *Part one is a demonstration of how the task is completed*
- b. *In part two students are required to complete the exercise on their own. The task will be very similar to the one demonstrated. Students should pay close attention to the information in this part as the short quiz in part three will refer to this.*

- c. *Part three is a short quiz to test students knowledge about the task completed. The quiz is available via WileyPlus and student performance data is automatically captured and stored in WileyPlus.*

Review questions

1. Describe the differences among the three generations of enterprise systems – mainframe architecture, client-server architecture, and service-oriented architecture.

Mainframe architecture is a large, expensive, and isolated system. The main problem with mainframe architecture is that it cannot be scaled up very easily. Scaling refers to increasing the number of users and volume of operation.

Client-server architecture is separated into the presentation, application, and data layers. Separating the application into distinct layers allows for easier scaling.

Service-oriented architecture is the latest generation in the evolution. In this architecture, capabilities of the system are delivered via services that can be consumed by any application. This makes scaling and the development of new composite capabilities very easy.

2. Explain the functions of the different systems in an application suite. How are they related?

The different systems in an application suite include ERP, SCM, SRM, CRM, and PLM systems. ERP systems are internally focused while the others are externally focused. ERP systems focus on executing the various processes within a company. SCM and SRM systems link a company's ERP system to those of its supplier. CRM systems connect a company's ERP system with those of its customers. PLM helps an organization manage its product development life cycle.

3. What are the roles of organizational data, master data, and transaction data in an ES?

Organizational data identifies the organizational structure of the company. It identifies such things as divisions, departments, production and storage facilities, etc. Organizational data rarely changes.

Master data describes the key entities associated to the organization. Examples include customers, materials, and vendors. Master data changes infrequently.

Transaction data is data associated with the execution of a specific activity or task. Typical transaction data is who did what, when, and where, as well as specialized data that relate to the specific task, such as quantities.

4. What functional areas are included in SSB's organizational structure? Is this a common organizational structure? Draw the organizational structure of a small or medium-sized company that you are familiar with.

SSB's organizational structure includes the following areas: Accounting, Sales, Operations (plant), Purchasing, and warehouse. This is fairly typical. However, variations are definitely possible. Students will provide several different structures for the last part of the question.

5. Describe the key problems SSB faced with its use of technology to manage its operations before it implemented an enterprise system. How can the ES improve SSB's operations?

Some of the key problems that SSB faced with its systems before they implemented SAP was that all of the different functions had their own systems and they had to use floppy disks to update each of the systems. There was no consistency of data between the various systems. One example of a negative consequence of this is that they ordered too many helmets because the purchasing department did not have the correct inventory amount as they used an old version of a data file. SSB also had problems with their accounting system; it is never synced correctly with the other databases. The enterprise system keeps all the data in one common database and helps provide easy access to this data to all that need it. This reduces, if not eliminates the problems faced by SSB.

Assignments

1. Provide two examples of organizational data, master data, and transaction data within the context of your university or another organization you are familiar with.

Students will provide a variety of answers. It is important that they correctly distinguish between the three types of data.

2. Service-oriented architecture is touted as a technology that will drastically change the way organizations utilize enterprise systems. Research the use of SOA in organizations, and argue whether SOA will be the next major technological development.

Students will provide a variety of answers.

3. In this chapter we provided you with examples of vendors that provide suite, best-of-breed, and niche applications. Conduct your own research, and develop a list of vendors and the types of applications they develop.

Student responses will vary.

Test Questions

Three types of test questions are provided – True/False, Multiple Choice (one right answer), and multiple answer (at least two right answers). These are provided in MS word format as well as in a format that can be imported as a test in blackboard.

The files are:

Chapter02 Test Questions True False.docx
Chapter02 Test Questions Multiple Choice.docx
Chapter02 Test Questions Multiple Answer.docx

Blackboard versions of these files are also provided. These versions end with the word Blackboard. Remember that these are zipped files that should be uploaded to blackboard as they are, without unzipping. Your blackboard administrator can help with problems uploading these to your course on blackboard.

If you include all three types of questions, the following grading suggestion is offered.

T/F questions 1 point each

Multiple Choice questions 2 points each

Multiple Answer questions 3 (or 4) points each.

Partial credit is recommended. Grading is typically as follows:

All correct answers selected; no incorrect answers selected: full points

X of Y correct answers selected; no incorrect answers selected: x/y * points

Each incorrect answer selected negates a correct answer selected