Chapter Two: Enterprise Systems

LEARNING OBJECTIVES

- To describe enterprise systems.
- To describe enterprise resources planning systems.
- To explain the organization value chain.
- To describe the relationship of the organization value chain and an enterprise system.
- To illustrate the value of systems integration.
- To show how an enterprise system provides support for an organization’s processes.
- To summarize the major modules contained in an enterprise resource planning system.
- To describe how an enterprise system supports major business event processes.
- To enumerate the pros and cons of implementing enterprise systems.

KEY TERMS INTRODUCED IN CHAPTER TWO

<table>
<thead>
<tr>
<th>Enterprise Systems</th>
<th>Middleware</th>
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<tbody>
<tr>
<td>Enterprise-Wide Information Systems</td>
<td>Application Program Interface (Api)</td>
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<td>Enterprise Information Systems</td>
<td>Enterprise Application Integration (Eai)</td>
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<tr>
<td>Enterprise Resource Planning (ERP) Systems</td>
<td>Enterprise Services Bus (ESB)</td>
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<tr>
<td>Customer Relationship Management (CRM) Software</td>
<td>Event-Driven Architecture (EDA)</td>
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<td>Customer Self-Service (CSS) Software</td>
<td>Business Event</td>
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<td>Sales Force Automation (SFA) Software</td>
<td>Value Chain</td>
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<td>Supply Chain Management(SCM) Software</td>
<td>Order-To-Cash Process</td>
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<td>Product Lifecycle Management(PLM) Software</td>
<td>Purchase-To-Pay Process</td>
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<td>Supplier Relationship Management (SRM) Software</td>
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**CHAPTER SYNOPSIS**

Nestlé undertook their SAP project to take advantage of the benefits, including the competitive advantage that can accrue for organizations that integrate business processes and implement ERP systems. But, as Nestlé learned, significant costs and business disruptions may be endured before the benefits are realized. To function effectively in any modern organization, you will need to understand the benefits and costs of organization-wide integration of information systems and the ERP software used in the integration process.

In this chapter, we explore the enterprise systems that assist in the operation of all of an organization’s business processes and integrate, in the enterprise database, all of the data related to those business processes. We describe these systems and the functionality they provide. We broadly introduce the business processes that ERP systems support. What you learn here, while it is important in its own right, will provide important background for your study in later chapters of the text.

**DISCUSSION GUIDE**

The information presented in this chapter may be entirely new to students with little to no practical familiarity with an ERP. It may be advantageous to center your discussion around an information system about which they are familiar – your school. This information system contains student records, purchasing, payroll, HR, capital planning and improvements, budgeting, scheduling, etc.

Because many schools still run multiple legacy systems among which little integration exists, your school may be a perfect and recognizable example of an inefficient information system.
Assign discussion questions relevant to your coverage prior to class, and use some of the class time by calling on students to respond to aspects of these questions.

LECTURE NOTES – CHAPTER 2

1. Use PPT slide 4 to show that enterprise Systems integrate business process functionality and information from all functional areas by:
   a. Providing an electronic order form
   b. Routing the order for appropriate approvals
   c. Sending the order to a buyer for preparation of a PO
   d. Connecting to a vendor (business partner) system
   e. Making the data available to:
      1. Receiving
      2. Budgeting for fund availability
      3. Management for vendor performance evaluation
      4. Cost Accounting comparisons of budget and actual expenditures

   NOTE: Information for all of these processes was entered into the system just one time. Consider how this will cut down significantly on inputting errors.

   Use Discussion question number 6 to illustrate different levels of integration based on the students’ experience.

2. Enterprise Resource Planning Systems are software packages that are necessary to support an enterprise system. If all modules of an ERP vendor are adopted, the ES and the ERP are one and the same.

   Display PPT 5 (Table 2.1) to show a list of the top ERP vendors

   Display PPT 6 (Figure 2.1) to discuss the ERP modules and to discuss the third party modules that “bolt on” to the empty boxes in the figure. Give examples of business processes that are included in each module. For example, a customer order would come into the “Sales and Distribution” module.

   Use Discussion Question 1 to guide discussion of the add-on modules:
Discuss the trade-off between getting “best-of-breed” for a business function vs. the compatibility issues of third party software and the core ERP system. Introduce concept of “middleware” to integrate disparate systems.

**PPT slides 7 and 8** define the specialize software listed below:
- a. Customer relationship management (CRM) software
- b. Customer self-service (CSS) software
- c. Sales force automation (CFA) software
- d. Supply chain management (SCM) software
- e. Product lifecycle management (PLM) software
- f. Supplier Relationship Management (SRM) Software

3. **PPT 9** Organization value chains are the chains of activities preformed by an organization to transform inputs into valued outputs. These are the source of a company’s competitive advantages.

4. The value chain and ERPs

   **PPT 10 (Figure 2.2)** will be helpful in a discussion of both the primary and secondary activities involved in how a company adds value. This slide depicts a manufacturing organization. You might supplement this with discussion of a service organization, like a law or CPA firm.

   Ask: “How might Jones and Jones, the local CPA firm, instill value?”

   ANS: By reducing the cost of an audit or improving the quality of performing an audit.

   Ask: How might Bogle and Gates, Atty instill value.

   ANS: By reducing the cost of will preparation or improving the quality of the will or other legal service.

5. Systems integration

   The case of Sudbury presented in the text and via **PPT 12-20** provides a very good discussion of in inefficient customer service department. It might be illustrative to create a scenario where the customer is on the telephone with Sally First as she goes through each of the steps:

   a. Sally checks to see if the customer exists (**Arrow 1**)
   b. Sally checks if the warehouse can promise the goods ordered (**Arrow 2**)
   c. If not, Sally checks with the factory (**Arrow 3**)
d. If not available there, when will it be produced (Arrow 4)
e. Factory must check with its vendors (Arrow 5)
f. The price must then be approved through marketing (Arrow 6)
g. Sally checks to see if customer has sufficient credit (Arrow 7)
h. Sudbury has a policy to not turn away a customer for insufficient credit, so the credit department must increase customer line of credit (Arrow 8)

PPT 21 – An enterprise system can solve the problems of inefficient customer service.

NOTE: You might make this discussion more personal to the students by discussing a colleague who was recently married and had to walk from building to building on campus submitting name-change information (i.e. HR – and often the various benefit and annuity vendors – payroll, faculty IDs, library, parking, and computing resources)

6. Support for the organization processes

PPT 22 and FIGURE 2.4
Data in an ERP is captured and stored in tables. This data includes the normal accounting data of:
   a. Who (agent)
   b. What (resource)
   c. When (historic)

As well as the data not typically found in accounting information of:
   d. When (future)
   e. Where

PPT 22 - 24 (Figures 2.4 2.5 and 2.6) may be helpful in a discussion of using data stored in multiple tables for sales processing, accounting information and for management decision making information.

Use Discussion Question 2 to facilitate a discussion of what information might be used and how that information might be stored in an ERP.
The concept of information silos (Discussion Question 7) might also be discussed as one motivation for adopting an ERP.

7. Major modules of and ERP

   **PPT 25 – 29** presents the 5 major ERP modules. As you discuss these modules, you might use Discussion Question 8 to illustrate why a company might not adopt all of these modules. For example, a service organization may not have a need for the Materials Management module.

8. How enterprise systems support event processing

   The Order-to-Cash system (Chapters 10 and 11) and the Purchase-to-Pay systems (Chapter 13) are introduced here to illustrate processing in an ERP.

   You might use **PPT 30 – 40** to provide an overview of these activities. You might also find it helpful to revisit these slides when you introduce these chapters.

9. Pros and cons of implementing enterprise systems

   Have students list the pros and cons of enterprise systems – either in groups or individually. Write their responses on the board. Compare the students’ list to the list in the text. These facts will be helpful in the discussion of Discussion Question 3.