Learning Objectives

Upon completion of this unit, students should be able to:

1. Explain approaches for analyzing requirements for e-business systems.
2. Identify key elements of approaches to improve the interface design and security design of e-commerce systems.
3. Analyze the critical success factors for analysis and design of e-business systems.
4. Explain the balance between requirements for usable and secure systems and the costs of designing them in this manner.
5. Describe the best approaches for incorporating new IS solutions with legacy systems into the architectural design of the e-business.
6. Differentiate between process and data modeling.
7. Explain security design for e-business.
8. Analyze the impact of poor analysis and design on customer satisfaction.

Unit Summary

Each industry uses the Web effectively to improve current business practices and to diversify into new areas. Each industry understands the importance of providing unique and highly targeted information.

E-Learning – the use of the Internet and related technologies for the development, distribution and enhancement of learning resources – has enormous potential as a new medium for education. It provides an efficient means for undergraduates, graduate students, postgraduates, international students and professional with skills for career advancement, enabling busy people to learn new technologies. Corporations are also implementing Web-based training to keep employees up-to-date on new products, services and protocols.

This unit is structured according to different aspects of e-business analysis and design, each of which can be covered as a separate subsection. The analysis section includes a discussion on analysis for e-business which introduces different types of analysis emphasizing the importance of analyzing information flows and the workflows that make up business processes. There is also an emphasis on process modeling which is illustrated as a generic high level business processes that can be related to the value chain and supply chain management.

A business process can be broken down into a series of activities and work items. The different forms of flow process charts are presented in this unit. The unit highlights the importance of analysis of business and user requirements for e-business systems in delivering usable and relevant systems.

Key Terms

1. Activity-based process definition method
2. Analysis and Design
3. Analysis for e-business
4. Attributes
5. Database tables
6. Entities
7. Fields
8. Flow process charts
9. Primary key
10. Process mapping
11. Process
12. Record
13. Task analysis
14. Thin client
15. Three-tier client-server
16. Workflow management (WFM)

Reading Assignment

Chapter 11: Analysis and Design
Case Study 11.1: dabs.com Refines its Web Store
While process modeling is used to assess existing business processes and suggests revised processes, data modeling for e-business systems mainly involves traditional entity relationship approaches. Architectural designs involve assessing appropriate integration between legacy systems and new e-commerce systems.

Security design is important to maintain trust amongst the customer bases. Security solutions which target protecting servers from attack and prevent interception of messages when they are in transit are covered in this unit. The principles of secure systems are presented in this unit including authentication, privacy and confidentiality, integrity, non-reputability, and availability. Digital certificates which consist of keys made up of large numbers that are used to uniquely identify individuals, symmetric encryption (where both parties to a transaction use the same key to encode and decode messages, and asymmetric encryption (where both parties use a related but different key to encode and decode messages are covered in detail in this unit.