Modern Systems Analysis and Design

Ninth Edition
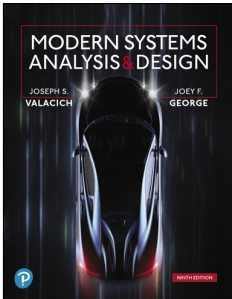
**Chapter 3
Appendix**

Object-Oriented Analysis
and Design

1

Learning Objectives

3A.1 Describe the unique characteristics of an OOSAD project

2

Introduction

- Unique Characteristics of an OOSAD project include:
  - Using a more iterative design approach, such as prototyping or object-oriented analysis and design
  - During the OOSAD process, the system evolves incrementally over the life of the project
    - A portion of the final system is constructed during each iteration phase

3

Figure 3-31: During the OOSAD Process, the System Evolves Incrementally Over the Life of the Project
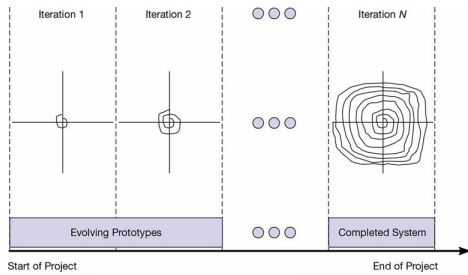
4

Define the System as a Set of Components (1 of 3)

3A.1 Describe the unique characteristics of an OOSAD project
- The project manager must subdivide the overall system into a set of components (each referred to as a "vertical slice")

- Earlier components will require more iterations

- Consider the following:
  – Complete hard problems first
    ▪ Allows the difficult problems to be examined first before substantial resource allocations are made
    ▪ Initial iteration should focus on system architecture (database or networking infrastructure)

5

Define the System as a Set of Components (2 of 3)

3A.1 Describe the unique characteristics of an OOSAD project
  – Use iterations to manage the project
    ▪ All systems life-cycle activities performed during each iteration
    ▪ Results from each iteration are the inputs to the next iteration
  – Don't plan too much up front
    ▪ More learned during each iteration
    ▪ Project manager able to make better predictions and plans
   ▪ Project manager should make detailed plans only for the next iteration, not the entire project

6

Define the System as a Set of Components (3 of 3)

3A.1 Describe the unique characteristics of an OOSAD project
- How many and how long are iterations?
  - Each should be the same length
  - Don't pack too many components into one iteration
  - OOSAD projects typically have 6 to 9 iterations
- Project activity focus changes over the life of the project
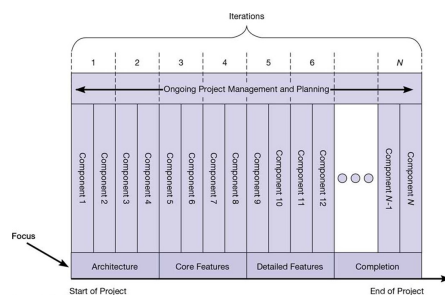 - As the project evolves, system functionality evolves

7

Figure 3-32: Object-Oriented Development Projects are Developed Using Ongoing Management and Evolving System Functionality
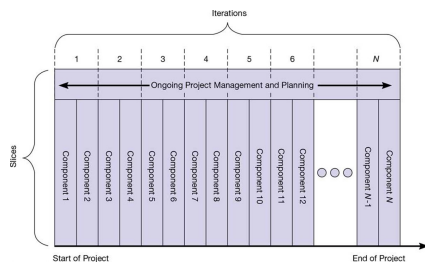
8

Figure 3-33: The Focus and Ordering of System Components Change Over the Life of the Project

9

Figure 3-34: The Workflow of an Iteration

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Figure 3-35: Planning Estimation Improves Over Time

11

Figure 3-36: An OOSAD Project Typically Has Six to Nine Iterations

12

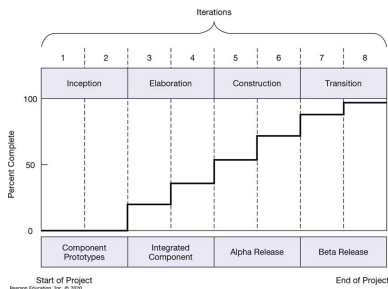## Figure 3-37: As the Project Evolves, System Functionality Evolves
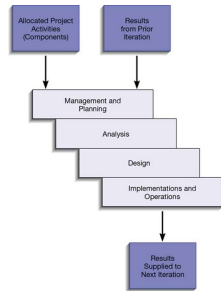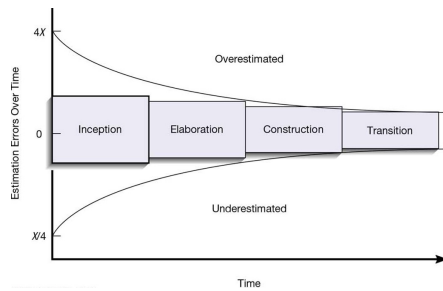
(**Source:** Based on Royce, 1998; George et al., 2007)

13

Figure 3-38: The Level and Focus of Activity Across the Systems Development Process Change from the Start to the End of the Project
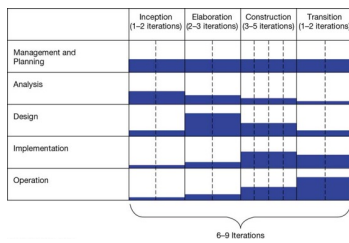
14

Summary

• Describe the unique characteristics of an OOSAD project

15

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16