

Essentials of Systems Analysis and Design Sixth Edition

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Chapter 2 The Sources of Software

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Learning Objectives

- ✓ Understand outsourcing
- ✓ Describe six different sources of software
- ✓ Discuss how to evaluate off-the-shelf software
- ✓ Explain reuse and its role in software development

Outsourcing

- Practice of turning over some or all responsibility for information systems applications and operations to another firm.
- Examples:
 - > Outsourcing firm develops and runs applications on their computers (Payroll application)
 - > Outsourcing firm runs applications at your site on your computers.
- Reasons to outsource
 - > Cost effective
 - > Overcome organizational problems in information systems unit
- Outsourcing should be considered during systems analysis

Sources of Software

○ Information Technology Service Firms

- > Utilized when
 - Organization lacks resources to develop in-house system
 - Suitable off-the-shelf solution is not available
- > Help companies develop custom information systems for internal use
- > Develop, host and run applications
- > Provide other services
- > IT Service firms employ consultants with domain-specific experience

Sources of Software (Continued)

- ◉ Packaged Software Producers
 - > Produce pre-packed or off the shelf systems
 - > Products range from broad-based packages to industry specific packages
 - > Two types of software
 - Turnkey – cannot be modified to meet specific users needs
 - Non-turnkey – can be modified
 - > Off-the-shelf software can meet up to 70% of an organization's needs.

Sources of Software (Continued)

● Enterprise Solutions Software

- Also called Enterprise Resource Planning (ERP) Systems
- Consist of a series of integrated modules
 - Each module supports individual traditional business function
 - Accounting
 - Distribution
 - Manufacturing
 - Human Resources
 - Integrated to focus on business processes rather than business functional areas
- Enables an organization to integrate all parts of a business process in a unified information system
 - All aspects of a transaction occur seamlessly in single information system

Sources of Software (Continued)

> Benefits

- Single repository for all aspects of a business process
 - Ensures more consistent and accurate data
 - Less maintenance
- Flexibility of modules
 - Additional modules can be added as needed
 - Additional modules are immediately integrated into existing system

Sources of Software

ERP Systems (Continued)

> Disadvantages

- Complexity of implementation
 - Extended implementation time
- Reliance upon consultants
- Often, organizations must change the way that they do business in order to use systems

> ERP vendors

- SAP
- Oracle

Sources of Software (Continued)

- ◉ Cloud Computing
 - > Software is rented or licensed from third party providers
 - Run at remote sites
 - > Applications are accessed through the Internet or a VPN
 - > Applications bought, installed and maintained by service provider
 - > Users pay per-use or month-to-month license
 - > Includes software as a service as well as hardware as a service
 - > Some examples:
 - Google Apps
 - Salesforce.com

Sources of Software

Cloud Computing (Continued)

- > Predicted that by 2015 will create 14 million new jobs.
 - Total market of \$1.1 trillion.
- > Reasons for Choosing Cloud
 - Freeing internal IT staff
 - Faster access to applications than internal development
 - Lower-cost access to corporate-quality applications

Sources of Software

Cloud Computing (Continued)

- > Concerns
 - Reliability
 - Security
 - Compliance with government regulations

Sources of Software (Continued)

- ◉ Open-Source Software
 - › (Freely?) available
 - › Includes source-code
 - › Maintained by a group of interested individuals
 - › Some examples
 - Linux
 - Firefox
 - mySQL

Sources of Software (Continued)

- ◉ In-House Development
 - › Complete system
 - › Hybrid systems

Choosing Off-the-Shelf Software

- Criteria
 - › Cost
 - In-house versus purchase
 - › Functionality
 - › Vendor Support
 - › Viability of Vendor
 - › Flexibility
 - › Documentation
 - › Response Time
 - › Ease of Installation

Validating Purchased Software Information

- Information from vendor
 - › Documentation
 - › Marketing literature
 - › Questionnaire
- Request for Proposal
- Software Test drive
- Feedback from other users
- Independent software testing services

Reuse

- ⦿ Use of previously written software resources in new applications
- ⦿ Most often applied to object-oriented and component-based development
- ⦿ Reuse of object classes
 - › Increases productivity
 - › Reduces defect density
 - › Reduces rework
- ⦿ Reuse plan must be matched with companies strategic business goals

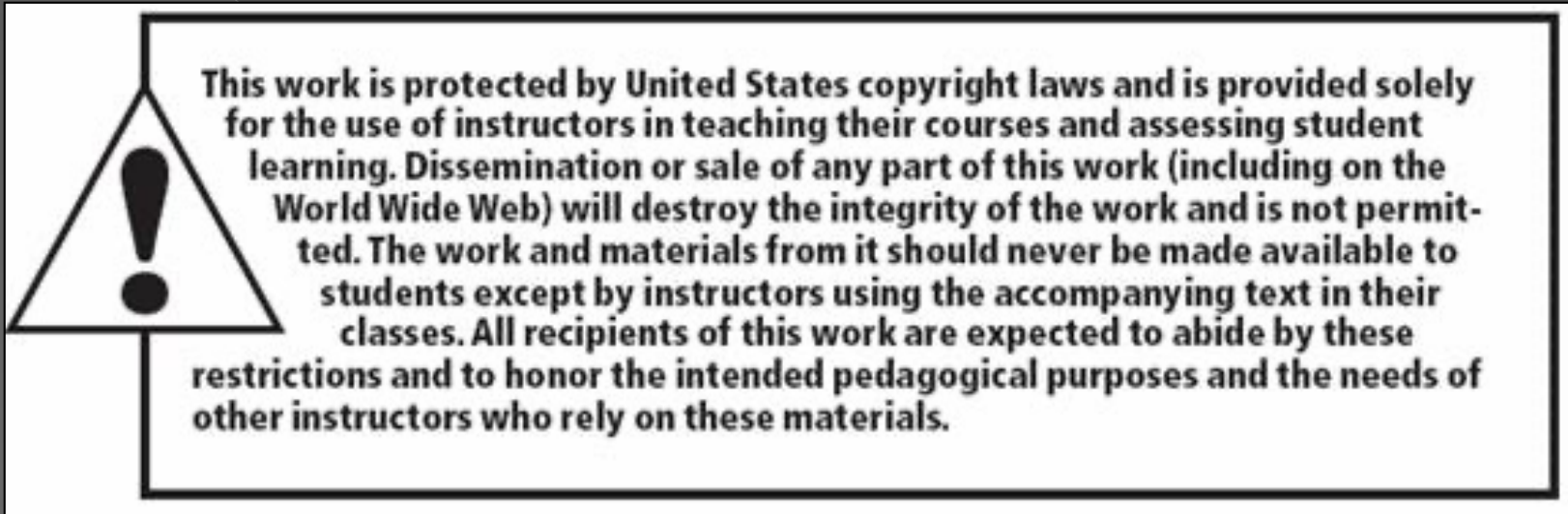
Reuse (Continued)

- Four Approaches

1. Ad hoc Reuse
2. Facilitated Reuse
3. Managed Reuse
4. Designed Reuse

Summary

- ◉ Outsourcing
- ◉ Six different sources of software
- ◉ Evaluation of off-the-shelf software
- ◉ Reuse



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