

Systems Analysis and Design 11th Edition



Chapter 7

Development Strategies

Chapter Objectives

- ▶ Describe software outsourcing options, including offshore outsourcing and the role of service providers
- ▶ Explain advantages and disadvantages of in-house software development

Outsourcing

- ▶ Transfer of information systems development, operation, or maintenance to an outside firm
- ▶ **The Growth of Outsourcing**
 - **Service provider: Offers outsourcing solutions**
Application service provider (ASP)
 - Delivers a software application or access to an application by charging a usage or subscription fee
 - **Internet business services (IBS)**
 - Also called **managed hosting**
 - Provide web-based support for transactions

Outsourcing (Cont.1)

▶ Outsourcing Fees

- **Fixed fee model:** Uses a set fee based on a specified level of service and user support
- **Subscription model:** Has a variable fee based on the number of users or workstations that have access to the application
- **Usage model or transaction model:** Charges a variable fee based on the volume of transactions or operations performed by the application

Outsourcing (Cont.2)

▶ Outsourcing Issues and Concerns

- Mission–critical IT systems are outsourced if the result is a cost–attractive and reliable business solution
- Overseas outsourcing can raise issues with control, culture communication, and security
- Reviewing the outsourcing firm’s history and financial condition is vital
- Outsourcing clients can be affected by mergers and acquisitions
- Employee job security is a major concern

Outsourcing (Cont.3)

- ▶ **Offshore Outsourcing**
 - Called **global outsourcing**
 - Shifting IT development, support, and operations to other countries
 - Reason – Lower bottom–line costs
 - Risks and concerns
 - Impact on the economy
 - Project control
 - Security issues

In-House Software Development Options

- ▶ Software development options
 - Develop own systems
 - Purchase, possibly customize, and implement a software package
- ▶ Most important consideration is the total cost of ownership (TCO)
- ▶ Companies can develop user applications based on commercial software packages

In-House Software Development Options (Cont.1)

► Make or Buy Decision

- Refers to the choice between developing and purchasing
- A company's IT department makes, builds, and develops **in-house software**
- A **software package** is obtained from a vendor or application service provider

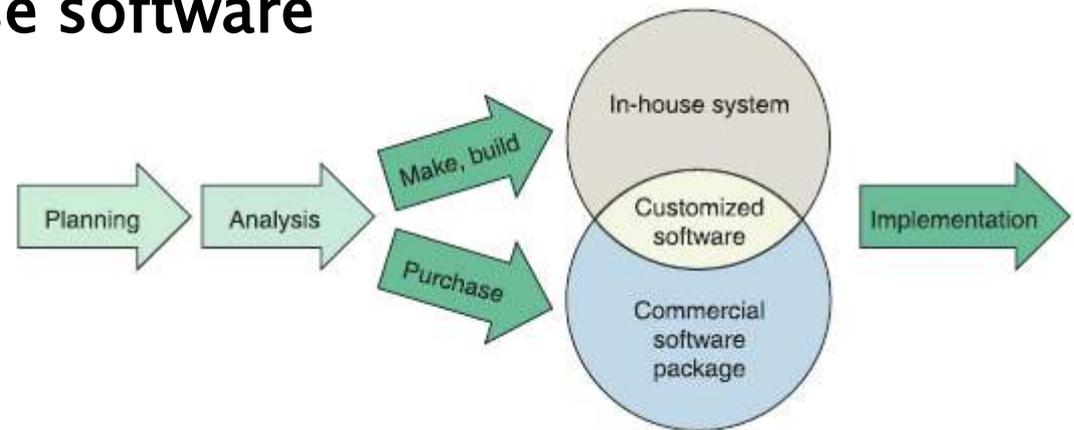


FIGURE 7-8 Instead of outsourcing, a company can choose to develop a system in-house, or purchase and possibly customize a commercial package.

In-House Software Development Options (Cont.2)

- ▶ **Make or Buy Decision** (cont.)
 - **Software package:** Obtained from a vendor or application service provider
 - **Software vendors:** Develop software for sale
 - **Value-added reseller (VAR):** Enhances a commercial package by adding custom features and configuring it for a particular industry
 - **Horizontal application:** Can be used by many different types of organizations
 - **Vertical application:** Developed to handle information requirements for a specific type of business

In-House Software Development Options (Cont.3)

REASONS FOR IN-HOUSE DEVELOPMENT	REASONS FOR PURCHASING A SOFTWARE PACKAGE
Satisfy unique business requirements	Lower costs
Minimize changes in business procedures and policies	Requires less time to implement
Meet constraints of existing systems	Proven reliability and performance benchmarks
Meet constraints of existing technology	Requires less technical development staff
Develop internal resources and capabilities	Future upgrades provided by the vendor
Satisfy unique security requirements	Obtain input from other companies

FIGURE 7-10 Companies consider various factors when comparing in-house development with the purchase of a software package.

In-House Software Development Options (Cont.4)

▶ **Developing Software In-House**

- Satisfies unique business requirements
 - Not possible with standard commercial software packages
 - Minimizes changes in business procedures and policies
 - Installing a new software package almost always requires some degree of change in how a company does business
- Meets constraints of existing systems
 - Any new software installed must work with existing systems

In-House Software Development Options (Cont.5)

- ▶ **Developing Software In-House** (Cont.)
 - Meets constraints of existing technology
 - The new system must work with existing hardware and legacy systems
 - Develops internal resources and capabilities
 - Companies can develop and train IT staff who understand the organization's business functions and information support needs

In-House Software Development Options (Cont.6)

▶ Purchasing a Software Package

- Lower costs
 - A software package is less expensive than the one developed in-house
- Requires less time to implement
 - Packages have already been designed, programmed, tested, and documented
- Proven reliability and performance benchmarks
 - Major problems would have been detected and corrected by the vendor

In-House Software Development Options (Cont.7)

- ▶ **Purchasing a Software Package** (Cont.)
 - Requires less technical development staff
 - Companies can reduce the number of programmers and systems analysts on the IT staff
 - Future upgrades provided by the vendor
 - Improvements and enhancements are included in regular updates
 - Input from other companies
 - Users in other companies can be contacted to obtain their input and opinions

In-House Software Development Options (Cont.8)

▶ Customizing a Software Package

- Purchase a basic package that vendors will customize to suit project requirements
- Negotiate directly with the software vendor to make enhancements to meet project needs by paying for the changes
- Purchase the package and make project-specific modifications
 - Ensure modifications are permissible under the terms of the software license

In-House Software Development Options (Cont.9)

▶ **Creating User Applications**

- **User application:** Utilizes standard business software
- **User interface:** Enables effective interaction with the application
- **Service desk or information center (IC):** Provides user support
- **Screen generators and report generators:** Allow users to design their own data entry forms and reports
- **Appropriate controls must be provided to ensure data security and integrity**

In-House Software Development Options (Cont.10)

Figure 7-11 Microsoft Access includes Form Wizard and a Report Wizard tools that ask a series of questions and then create the form or report.

Source: Screenshots used with permission from Microsoft

