Part 4

Information Systems Management

Experiencing MIS

Fifth Canadian Edition

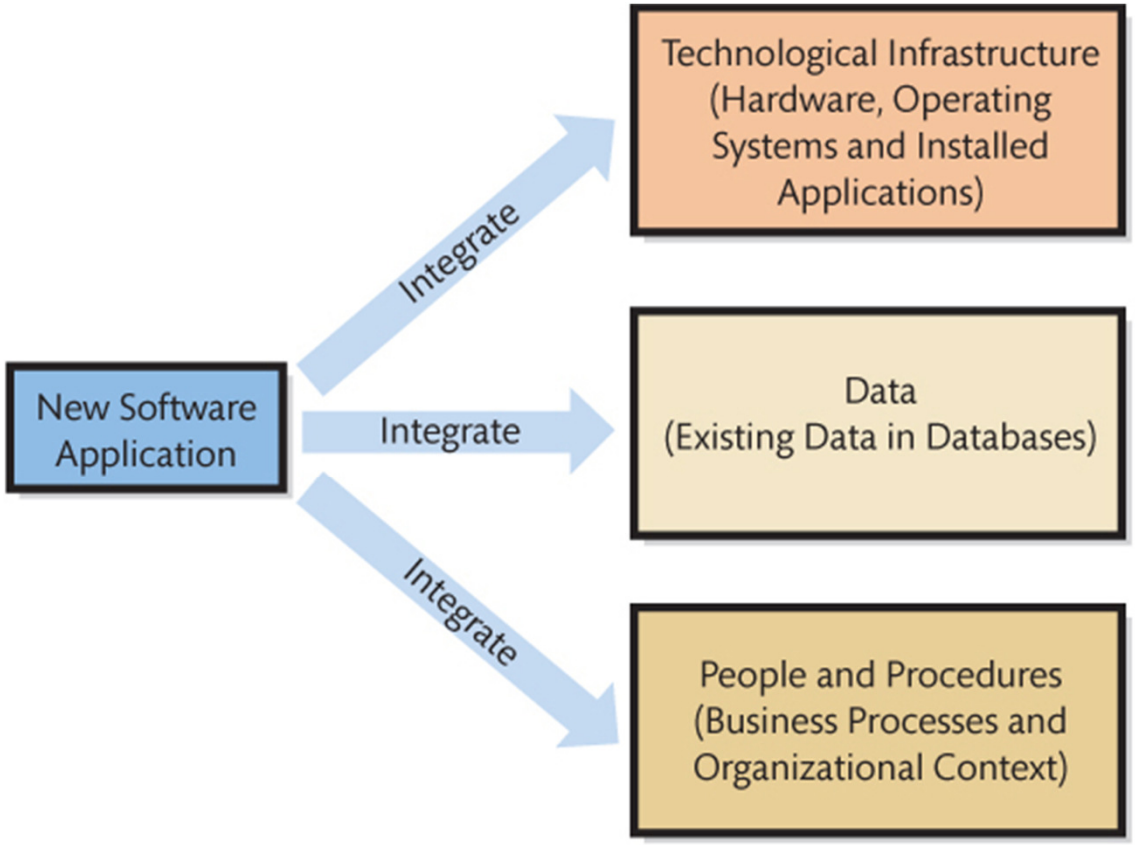
Chapter 10

Acquiring Information Systems Through Projects

Q10-1: How Can Information Systems be Acquired?

- **Five basic ways** for acquiring software applications:
  1. Buy it and use it as is
  2. Buy it and customize it
  3. Rent or lease it
  4. Build it yourself
  5. Outsource it
- Acquiring **new software** is **NOT** the same as acquiring **new information systems**, because there is a lot more to think about in systems than just software

Figure 10-1
New Software Must Be Integrated into Existing Systems



IT Projects

- IT projects have a large information technology component (in terms of budget or personnel)
  - Scope (objective)
  - Start and end date
  - Temporary use of resources
  - Unique
  - Accomplish something new
- Hard to estimate time, budget, and scope

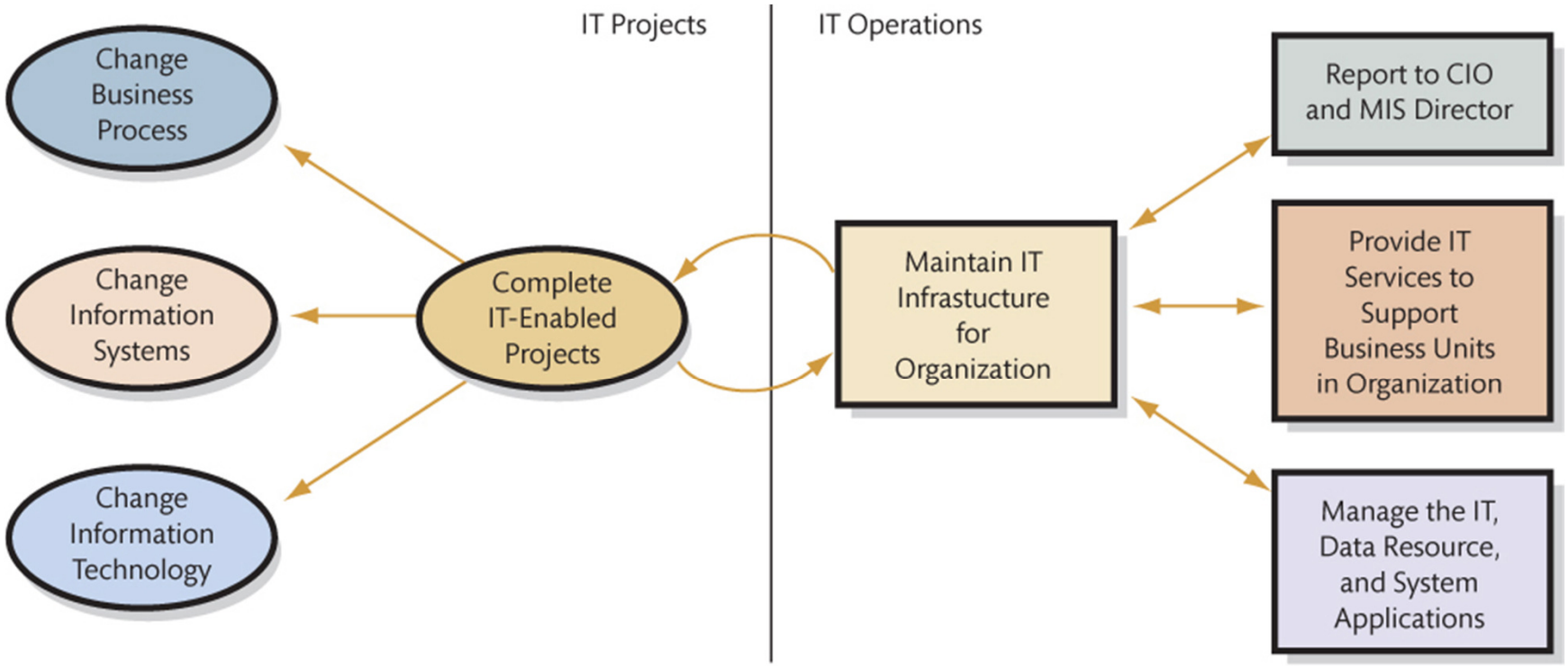
Q10-3: What Should You Know About IT Operations and IT Projects?

- **IT Operations or IT Services**: delivery of service, maintenance, protection, and management of IT infrastructure.
  - Often include Production systems, are specialties such as networks, databases
- **IT Projects**: renewal and adaptation of IT infrastructure
  - Broader skill set since working on different projects

Information Technology Infrastructure Library (ITIL)

- well-recognized collection of books that provide a framework of best-practice approaches to **IT operations**
- large set of management procedures designed to help businesses achieve value from IT operations
- has gone through several revisions; core books from the latest refresh (ITIL V4) were published in June 2011

Figure 10-2
What the IT Department Does



What About the Web?

- An important avenue for **delivering** IT services to internal employees and external customers
- Internal website may include frequently asked questions (FAQ), web-based forms for requesting services, and some web-based applications that help support tasks
- Public website provides support for external customers, such as FAQ, customer support information, and company contact information

Why Are IT Projects so Risky?

- Most IT project definitions not easy to graphically represent
- Lack of a good model is an important risk to recognize in IT projects
- Good estimates difficult to develop because the technology is continually changing
- Being able to monitor progress is another challenge for IT projects

Q10-5: What Is an SDLC?

- **Systems development life cycle (SDLC):** process used to acquire information systems
- To successfully acquire and maintain information systems, there are basic tasks that need to be performed
- These basic tasks are combined into phases of **systems development**

SDLC

- Classical process with five phases:
  1. System definition
     - Management's statement defines new system
  2. Requirements analysis
     - Identify features and functions
  3. Component design
     - Based on approved user requirements
  4. Implementation
     - Implement, test, and install new system
  5. System maintenance
     - Repair, add new features, maintain

Figure 10-3
Phases in the SDLC

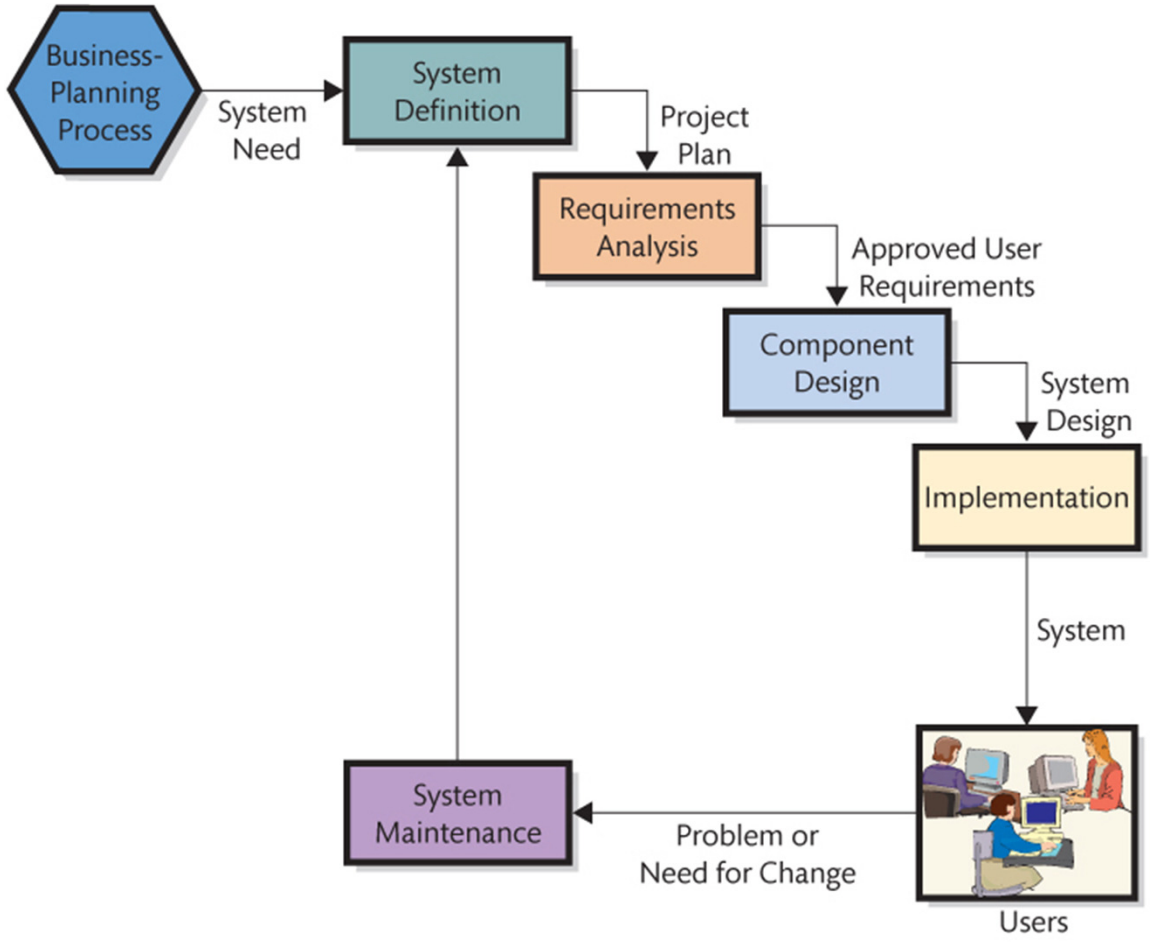
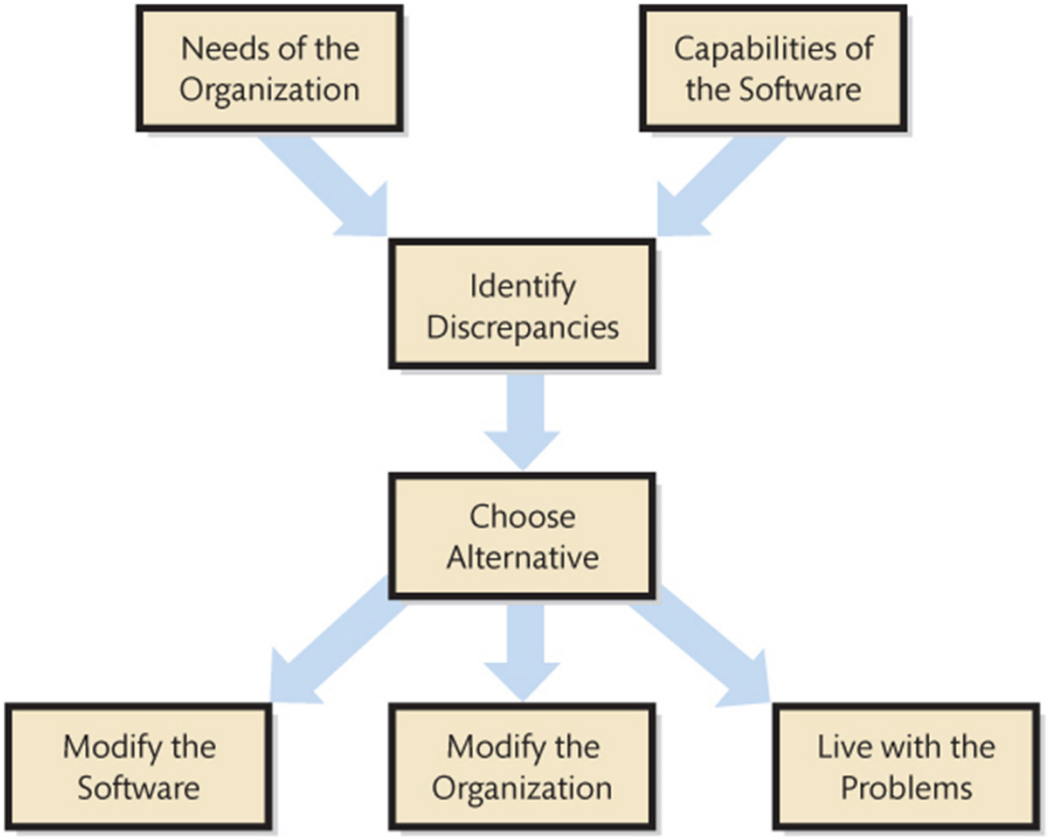


Figure 10-5
Matching Organizational Needs and COTS Software Capabilities



Phase 3: Component Design (1 of 2)

- **Develop** and **evaluate** alternatives
  - Accurate requirements critical
- Hardware design determined by project team
- Software design depends on source
  - Off-the-shelf
  - Off-the-shelf with alterations
  - Custom-developed programs

Phase 3: Component Design (2 of 2)

- Data model converted to database design
- Procedures developed for normal processing, backup, and failure recovery operations
- Job descriptions created for users and operations personnel

Phase 4: Implementation

- System must be built
  - Components constructed independently
  - Document and review
- System testing
  - Individual components tested
  - System integrated and tested
- Users must be converted to new system

Systems Testing

- **Test plan**
  - Sequences of actions that users take when employing system
  - Both normal and incorrect actions should be considered
  - Labour intensive
- **Product quality assurance (PQA)**
  - Testing specialists
- **Beta testing**
  - Future system users try out system on their own

System Conversion (1 of 3)

- Converting business activity from the old system to the new

1. **Pilot**
   - Organization implements entire system on single, limited unit
   - If systems fails, it only affects limited boundary
   - Reduces exposure

System Conversion (2 of 3)

2. Phased

- New system installed in phases
- Tested after each phase
- Continues until installed at entire organization
- Can't be used in tightly integrated systems

System Conversion (3 of 3)

3. Parallel

- New system runs in parallel with old system during testing
- Expensive and time consuming
- Data must be entered twice
- Provides easy fallback position

4. Plunge

- Direct installation
- Install new system and discontinue old
- There is no backup position

Problems with SDLC

- SDLC **waterfall method**
  - Phases are not supposed to be repeated
  - Often teams have need to repeat requirements and/or design phases
- Difficulty in documenting requirements
  - Analysis paralysis or uncertain requirements
- Scheduling and budget difficulties
  - Multiyear projects difficult to properly schedule
  - Estimations on labour often produce insufficient budgets

Q10-7: What Is Outsourcing, and What Are Application Service Providers?

- **Outsourcing:** process of hiring another organization to perform a service
- The outsourced vendor can be domestic or international
  - Offshoring is when vendor is overseas (e.g., China, India, and Russia)
- **Application Service Providers (ASPs):** special form of outsourcing

Reasons for Outsourcing

- An easy way to gain expertise
- Concern cost reductions
- To reduce development risk

Figure 10-11
Outsourcing Risks

Loss of control	Benefits outweighed by long-term costs	No easy exit
–Vendor in driver's seat. –Technology direction. –Potential loss of intellectual capital. –Product fixes, enhancements in wrong priority. –Vendor management, direction, or identity changes. –CIO superfluous?	–High unit cost, forever. –Paying for someone else's mismanagement. –In time, outsource vendor is de facto sole source. –May not get what you pay for but don't know it.	–Critical knowledge in minds of vendors, not employees. –Expensive and risky to change vendors.

Application Service Providers

- **ASP** agreement
  - Organization contracts with a vendor to "rent" applications from the vendor company on a fee-for-service basis
- Vendor maintains the system at its own web location and the client organization accesses the application on the vendor's website
- Payments
  - Monthly or yearly
  - Based on number of employees or "users"