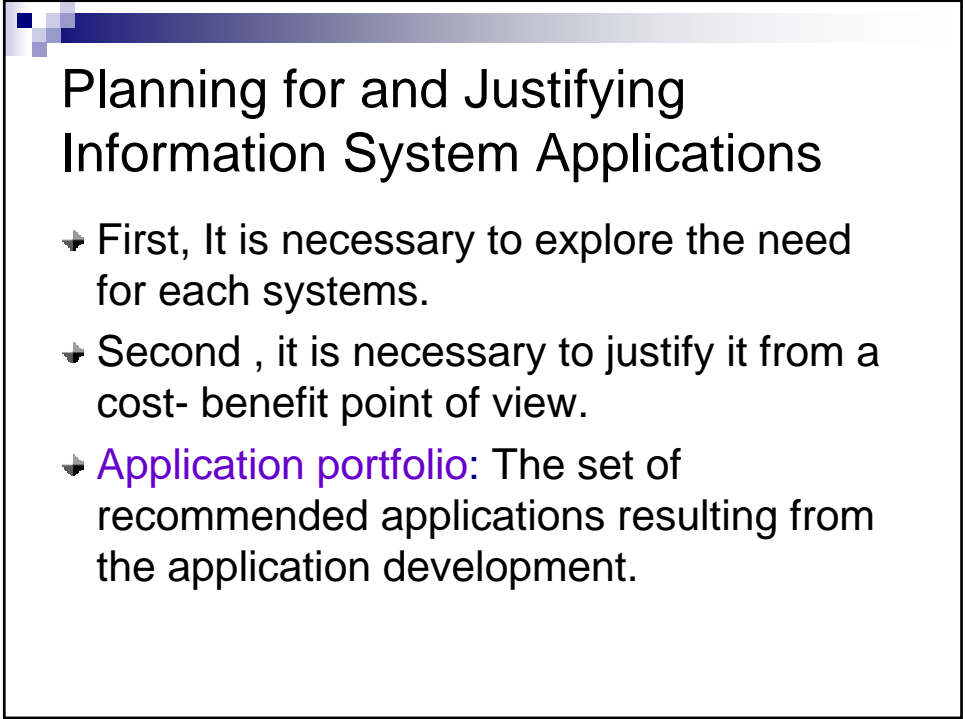




# IS Strategy and Acquisition



## Planning for and Justifying Information System Applications

- First, It is necessary to explore the need for each systems.
- Second , it is necessary to justify it from a cost- benefit point of view.
- **Application portfolio:** The set of recommended applications resulting from the application development.

## The IS Planning Process




## The IT Strategic Plan

A set of long range goals that describe the IT infrastructure and major IS initiatives needed to achieve the goals of the organization.


The IT plan must meet three objectives:

- It must be aligned with the organization's strategic plan
- It must provide for an IT architecture
- It must efficiently allocate IS development resources among competing projects



## Three Major Issues of IT Strategic Planning

- Efficiency
- Effectiveness
- Competitiveness



## IT alignment with organizational plans and IT strategy

The IT strategic plan must be aligned with overall organizational planning, whenever relevant, so that the IT unit and other organizational personnel are working toward the same goals, using their respective competencies.

## Alignment of business and IT strategies and IS operational plan



## The IS Operational Plan

The IS operational plan is a clear set of projects that will be executed by the IS department and by functional area managers in support of the IT strategic plan

- Mission
- IS environment
- Objectives of the IS function
- Constraints on the IS function
- The application portfolio
- Resource allocation and project management

## Evaluating and justifying IT investment

Justifying IT investment includes three aspects:

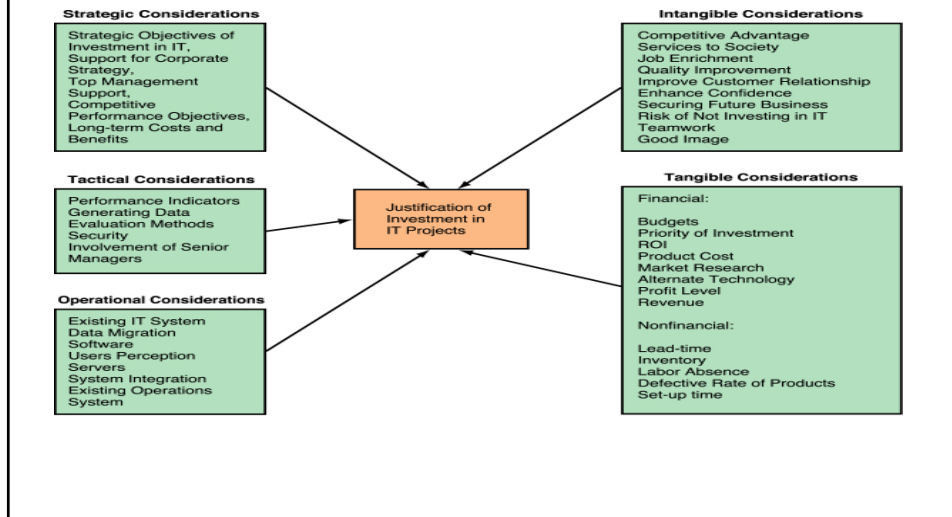
- assessment of costs,
- assessment of benefits (values), and
- comparison of the two.

## IT investment categories

Investment in infrastructure and investment in specific applications:

- The IT infrastructure: Include the physical facilities, components, services, and management.
- The IT applications: are computer programs designed to support a specific task, a business process or another application program.

## A Model for Investment Justification



## Costing IT Investment

- Fixed costs:** are those costs that remain the same regardless of change in the activity level. For IT, fixed costs include infrastructure cost of IT services, and IT management cost
- Total cost of ownership (TCO):** Formula for calculating the cost of acquiring, operating and controlling an IT system.

## Evaluating the Benefits

**Intangible benefits.** Benefits from IT that may be very desirable but difficult to place an accurate monetary value on.

## Conducting Cost-Benefit Analysis

- **Using NPV in cost-benefit Analysis.** Using the NPV method, analysts convert future values of benefits to their present-value equivalent by discounting them at the organization's cost of funds.
- **Return on investment.** It measures the effectiveness of management in generating profits with its available assets.
- **The business case approach.** A business case is one or more specific applications or projects. Its major emphasis is the justification for a specific required investment, but it also provides the bridge between the initial plan and its execution.




## Consideration of Emerging Information Technologies (EIT)



### Issues in EIT Adoption

- *Ability to gain competitive advantage*
- *Ability to sustain competitive advantage*
- Security aspects involved
- *Appropriateness for customers/clients*
- Reliability of the technology
- Compatibility with existing IS
- *Support of current business processes*
- *Capable of supporting future processes*
- Standardization of technical specifications






## Business Alignment – Gain/Sustain Competitive Advantage

Continuously identify and integrate emerging technologies that contribute to a more effective/efficient firm

Questions:

- Can the technology foster greater organizational efficiency in areas such as production cycle time or inventory control?
- Can the technology provide additional useful information to decision makers?



## Business Alignment – Appropriateness for use by External Entities

Consider technology preferences of customers/clients/suppliers

Question:

- Will the technology disrupt current client/supplier/regulatory relationships?



## Business Alignment – Compatibility with Current/Future Business Operations

Establish a 'Fit' between core competencies of the business and the emerging technology

Questions:

- Can business continue to be conducted in the current fashion?
- Will this technology support planned future objectives?




## Technical Alignment – Current/Future Uses for Technology

Identify specific existing/future application of the emerging technology within the organization

Question:

- What aspects of the technology are useable today/tomorrow?



## Technical Alignment – Performance Aspects

Assess the quantifiable operational aspects of the technology within the organizational context

Questions:

- How secure, robust, and reliable is the technology?
- What are the training requirements?



## Technical Alignment – Systems Compatibility

Evaluate the implementation impact of the emerging technology on existing systems

Question:

- Can the technology be seamlessly integrated with existing information systems?




## EIT Review Methodologies

- Review new technologies on a continuing basis
  - weekly
- Model business processes and supporting IT
- Create a resource of EIT for future consideration
  - Collect and catalog trade journals and online references
  - Consult programmers and analysts
  - Get or create overviews of EITs
  - Correspond with new product developers



## Acquiring Information Technology Applications and Infrastructure



## The Landscape and Framework of IT Application Acquisition

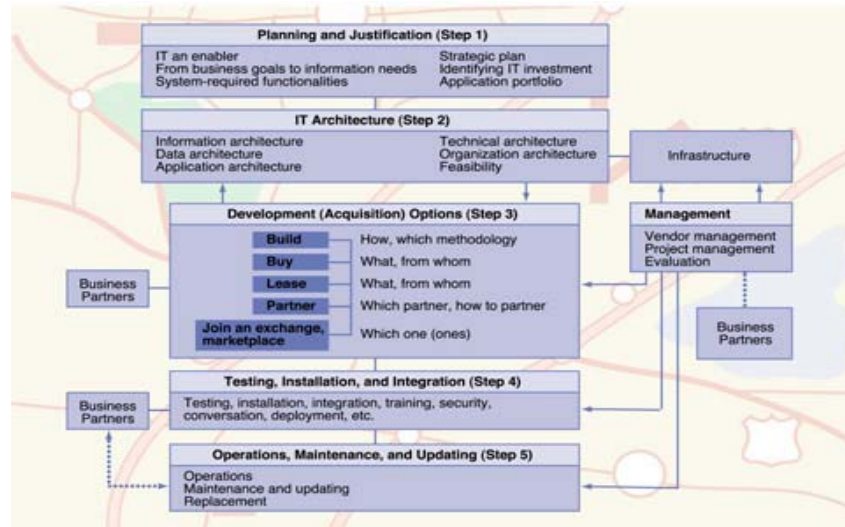
We include in “acquisition” all approach to obtaining systems: buying, leasing or building.



## The Acquisition Process

- **Step 1:** planning for and justifying information systems.
- **Step 2:** IT architecture creation-A systems analysis approach.
- **Step 3:** select a development option and acquire the application.
- **Step 4:** installing, connecting, and more.
- **Step 5:** operation and maintenance.

## Progress of application acquisition



## Strategies for Acquiring IT Applications: Available Options

- Buy the applications (off-the-shelf approach)
- Lease the applications
- Develop the applications in-house (insourcing)
- End-user development
- Other acquisition options

## Types of Leasing Vendors

- to lease the application from an outsourcer and install it on the company's premise. The vendor can help with the installation and frequently will offer to also contract for the operation and maintenance of the system. Many conventional applications are leased this way.
- using an application system provider (ASP).

## In-House Development Approach

- Build from Scratch: used for applications for which components are not available
- Build from components. Companies with experienced IT staff can use standard components (e.g., secure Web server), some software languages (e.g., Java, Visual Basic, or Perl), and third-party subroutines to create and maintain applications on their own.



## Building in-house Methodologies

- System Development Life Cycle (SDLC)
- Prototyping methodology



## Outsourcing and Application Service Providers

- **Outsourcing:** use of outside contractors or external organizations to acquire IT services
- **Several type of vendors offer services for creating and operating IT system including e-commerce applications:**
  - ☐ Software houses
  - ☐ Outsourcers and others
  - ☐ Telecommunications companies





## Application Service Providers (ASP)

An agent or vendor who assembles the software needed by enterprises and packages them with outsourced development, operations, maintenance, and other services.



## Additional criteria for selecting an ASP vendor

- Database format and portability .
- Application and data storage
- Scope of service
- Support services
- integration

## Criteria for determining approach

<input type="checkbox"/> The functionalities of package	<input type="checkbox"/> How to measure benefits
<input type="checkbox"/> Information requirement	<input type="checkbox"/> Personnel needed
<input type="checkbox"/> User friendless	<input type="checkbox"/> Forecasting and planning for technological evolution
<input type="checkbox"/> Hardware and software resources	<input type="checkbox"/> Scaling
<input type="checkbox"/> Installation	<input type="checkbox"/> Sizing
<input type="checkbox"/> Maintenance services	<input type="checkbox"/> Performance
<input type="checkbox"/> Vendor quality and track record	<input type="checkbox"/> Reliability
<input type="checkbox"/> Estimated costs	<input type="checkbox"/> Security

## Advantage and disadvantage of system acquisition methods

### Traditional system development (SDLC)

- force staff to systematically go through every step in a structure process
- Enforce quality by maintaining standards
- Has lower probability of missing important issues in collecting user requirements.
- may produce excessive documentation
- users may be unwilling or unable to study the specifications they approve
- takes too long to go from the original ideas to a working system
- User have trouble describing requirement for a proposed system.

### Prototyping

- helps clarify user requirements
- helps verify the feasibility of the design
- promotes genuine user participation
- Promotes close working relationship between systems developers and users.
- Work well for ill-defined problems
- May produce part of the final system
- may encourage inadequate problem analysis
- Not paractical with large number of users
- User may not give up the prototype when the system is complete.
- may generate confusion about whether the system is complete and maintainable
- system may be built quickly, which may result in lower quality

## Advantage and disadvantage of system acquisition methods (con't)

### End user development

- bypasses the IS department and avoids delays
- User controls the application and can change it as needed
- directly meets user requirement
- increased user acceptance of new system
- Frees up IT resources
- May create lower-quality systems.
- may eventually require maintenance assistance from IT department
- documentation may be inadequate
- poor quality control
- System may not have adequate inferences to existing systems

### External acquisition (buy or lease)

- Software can be tried out
- Software has been used for similar problem in other organizations
- Reduces time spent for analysis, design and programming
- Has good documentation that will be maintained
- controlled by another company with its own priorities and business considerations.
- Package's limitations may prevent desired business processes
- May be difficult to get needed enhancements.
- lack of intimate knowledge about how the software work and why it works that way

## Vendor and software selection and other implementation issues

Martin et al. (2000) identified six step in selecting software vendor and an application package.

- **Step 1** : Identify potential vendors
- **Step 2**: determine the evaluation criteria
- **Step 3**: evaluate vendors and packages
- **Step 4**: choose the vendor and package
- **Step 5**: negotiate a contract.

## Criteria for selecting a software application package

<input type="checkbox"/> Cost and financial terms
<input type="checkbox"/> Upgrade policy and cost
<input type="checkbox"/> vendor' reputation and availability for help
<input type="checkbox"/> System flexibility
<input type="checkbox"/> ease of Internet interface
<input type="checkbox"/> Availability and quantity of documentation
<input type="checkbox"/> Necessary hardware and networking resources
<input type="checkbox"/> Required training (check if provide be vendor)
<input type="checkbox"/> Security
<input type="checkbox"/> Learning (speed of) for developers and users
<input type="checkbox"/> Graphical presentation
<input type="checkbox"/> Data handling
<input type="checkbox"/> System- requirement hardware

## Other Implementation Issues

- In-house or outsource Web site
- Consider an ASP
- Do a detailed IT architecture study
- Security and ethics
- Evaluate the alternatives to in-house systems development