

Chapter 6

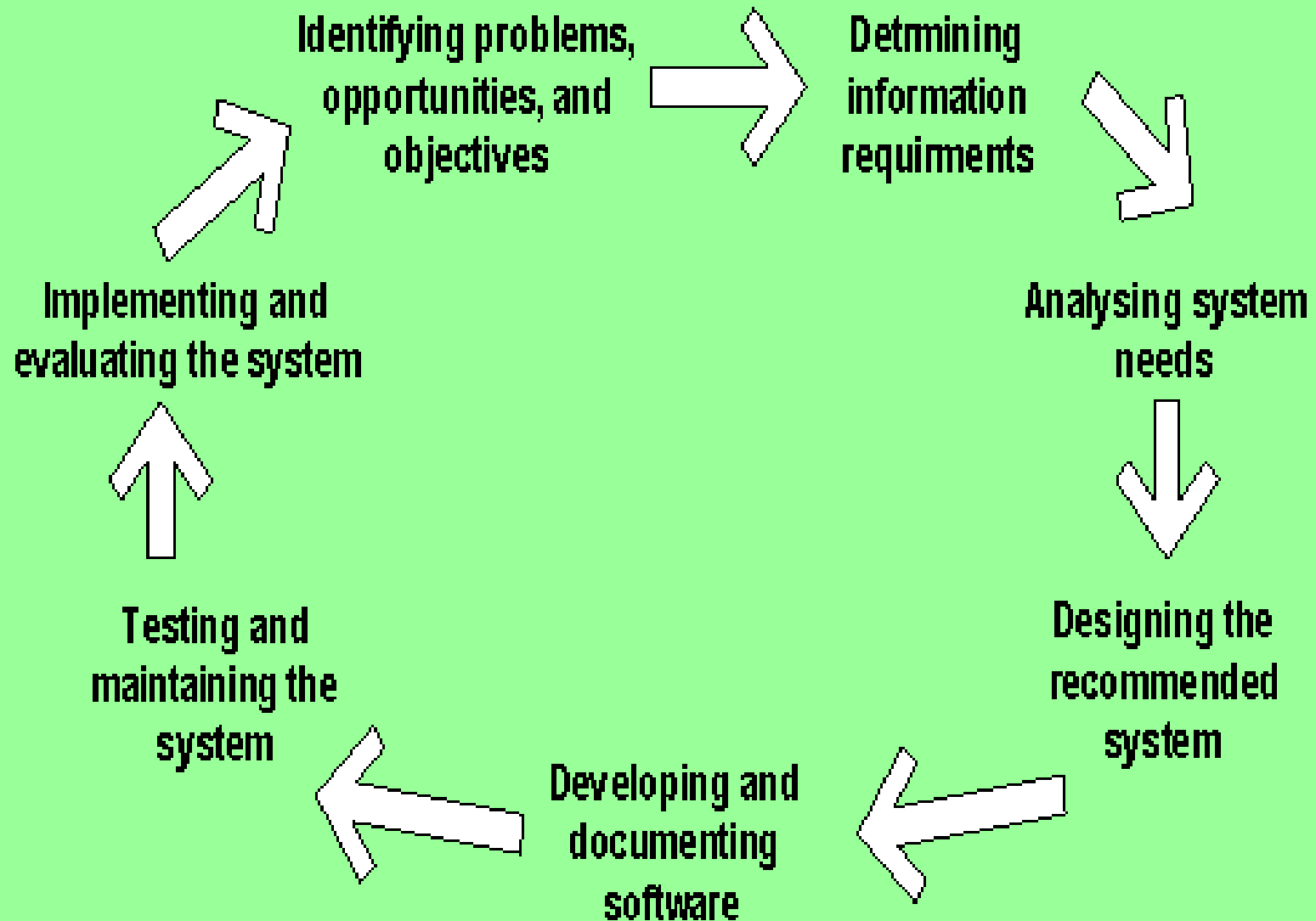
Implementation of information systems

Keshav Raj Joshi

CONTENTS

- Information system implementation
- Change Management
- Critical Success Factors
- Next Generation Balanced Scorecards

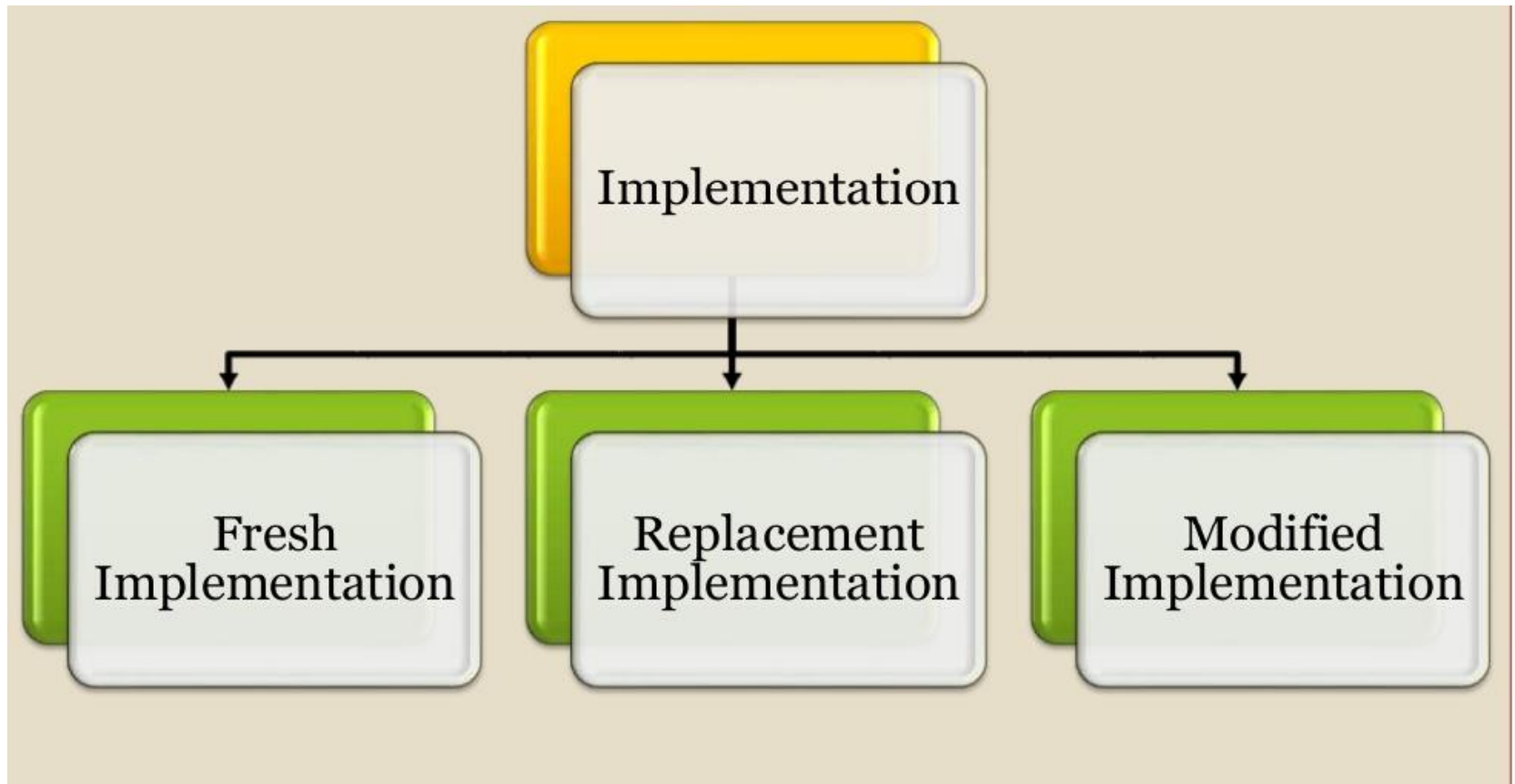
System Development Life Cycle



CONCEPT OF IMPLEMENTATION

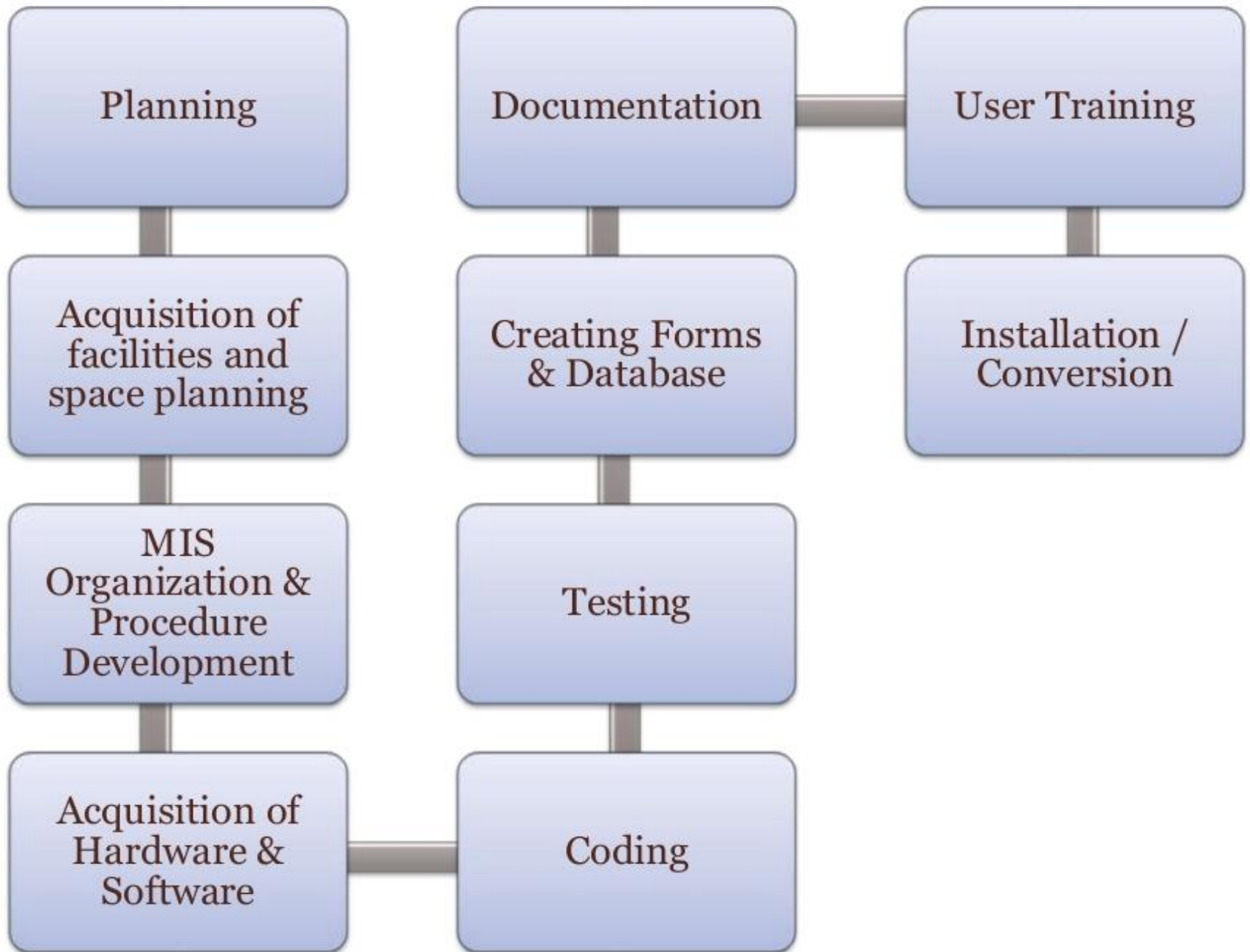
- Implementation means constructing and putting the new system into operation.
- Creation of system based on analysis and design document.
- Implementation refers to all of the organizational activities working towards the ,
 - Adoption,
 - Management, and
 - Reutilization of an innovation.
- Implementation activities are needed to transform a newly developed IS into an operational system for end users

Types of Implementation



IMPLEMENTATION PROCESS

- Implementation is a process of
 - Coding,
 - Testing,
 - Installation,
 - Documentation,
 - Training, and
 - Support.
- These steps are based on the design specification.
- All the requirements of the system, such as input, processing, output equipment etc. are provided by design specification.



PLANNING THE IMPLEMENTATION

- Pre-implementation activity.
- Activities required are identified and sequenced accordingly.
- Time and cost estimation for each activities are being made.
- Plan and implementation schedule are being made by system analyst using various tools like Gantt charts, network diagrams etc

ACQUISITIONS OF FACILITIES AND SPACE PLANNING

- The IS to be implemented may be for,

New Organization

- Where no old system is in existence
- New systems are to be implemented New organization

Existing Organization

- Information system needs to be modified to great extent
- New system needs to be developed Existing organization

- This requires acquisition of facilities like office, computer room, computer library etc.
- Proper estimation of floor space requirement and roughs layouts are to be prepared by MIS manager.

ACQUISITION OF HARDWARE & SOFTWARE

- Large business firms or government agencies formalize their hardware and software requirements by listing them in a document called RFP (Request for proposal) or RFQ (Request for quotation). Business Firms Vendor RFQ Purchase Agreement



Coding and testing

- Physical design created by the system designer team are turned into working computer code by the programming team.
- Depending on the size and complexity of the system, coding can be an involved, intensive activity.
- Immediately after coding process has begun, testing can be started. System testing involves,
 - Testing and debugging software,
 - Testing Website performance, and
 - Testing new hardware.
- It's important part is, review of prototype of displays, reports and other output.

Documentation

- There are Two types of documentation

System Documentation

For maintenance
programmers or
technical persons

Detailed information about
system's design
specification, it's internal
working and its
functionality

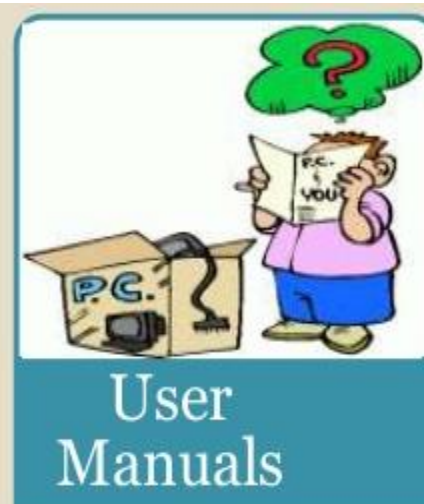
User Documentation

For Users

Consist of written or other
visual information about
an application system,
how it works and how to
use it.

User Training

- Educate and train management, end users, customers, and other business stakeholder.
- Proper user training is an important factor in promoting the required culture and thus ensuring the acceptance of new system.
- METHODS AND AIDS OF TRAINING:



Installation/Conversion

- Installation or changeover is the event of switch-over from the old system to the new system, which takes place after the system is tested and found reliable.
 - In new organization, there are no old systems to replace, so for fresh implementation, new developed and tested systems are installed as it is.
 - In existing organizations, old systems are replaced with the new developed systems.
- So for replacement implementation, there are 4 conversion methods.

Conversion Methods

- **DIRECT CONVERSION**

- Old system is completely dropped out, and new system is turned on in its place.
- Least expensive
- High risk of failure
- Should be considered only in extreme circumstances.

- **PARALLEL CONVERSION**

- Old system is not dropped out at once, Both old and new systems are simultaneously operated.
- Until the end-users and project coordinators are fully satisfied that the new system is functioning correctly.
- Highly expensive
- Least risky

- **PILOT CONVERSION**

- Use where the new system is to be installed in multiple locations. It allows for conversion to the new system, either a direct or parallel method, at a single location.
- Less risky in terms of any loss of time or delay in processing.

- **PHASE-IN CONVERSION**

- Gradual Conversion or Cutover by segments.
- The new system is implemented in many phase. Each phase is carried out only after successful implementation of previous phase.
- Very less risk is involved.
- Prolonged process.

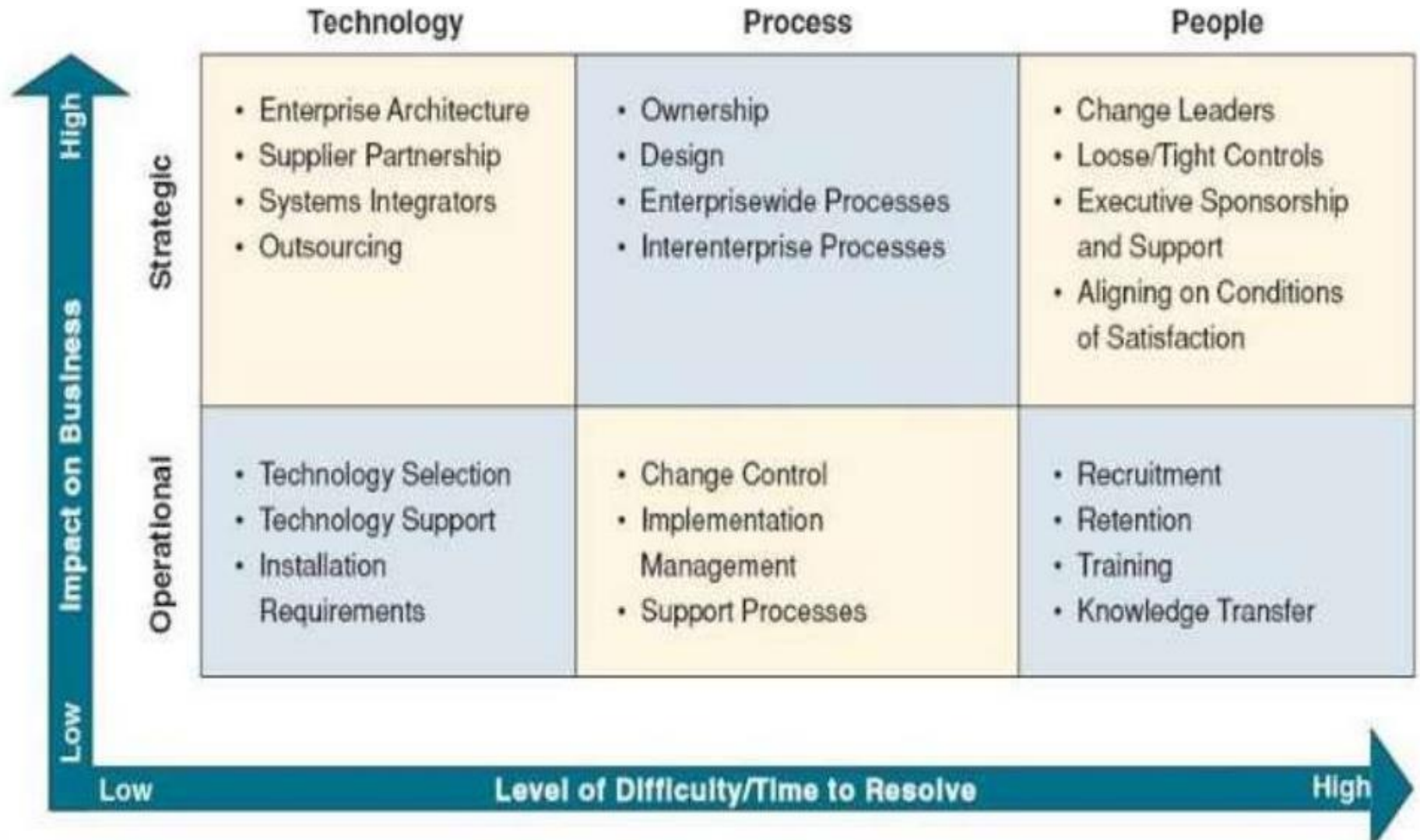
CHANGE MANAGEMENT

- Implementation of IS may result in many changes in organizations.
- POTENTIAL AREAS OF IMPACT: -
 - Organizational Structure
 - Centralization of Authority
 - Job Content
 - Relationships
 - Resistance to change

Concept of Change Management

- Information system development and implementation projects often tend to end in failure.
- changes are difficult to predict, and tend to occur with growing frequency, change management is becoming an increasingly significant subject.
- Change management involves analyzing and defining all changes facing the organization, and developing programs to reduce the risks and costs, and to maximize the benefits of change.
- It is a structured, disciplined approach that facilitates the adoption of new and modified of various groups and individual within the system.

Key Dimensions of Change Management



Change Management Process

- The change management process is the sequence of steps or activities that a change management team or project leader would follow to apply change management to a project or change. a change management process that contains the following three parts.:
- **Preparing for change** (Preparation, assessment and strategy development)
- **Managing change** (Detailed planning and change management implementation)
- **Reinforcing change** (Data gathering, corrective action and recognition)

Prepare communication and Planning

Execute and Review Transition and Change Management Plans

Prepare

Design

Execute

Sustain

- **Understand** the problem and the need to change.
- **Understand** the environmental factors affecting the business.

- **Create** the Vision
- **Identify** the possible resistance to change
- **Understand** change readiness
- **Create** a change management plan
- **Create** Change Path
- **Create** project deployment plan

- **Execute** the deployment plan
- **Use** the appropriate change model. E.G. *ADKAR, EASIER, 7 S Model, etc*
- **Lead** Fundamental change

- **Regular** Reviews of Milestones
- **Feedback** and consensus
- **Envisioning**, leading and supporting change and practices

Critical Success Factors

- Success of IS Projects

- As stated in several studies in the literature, nearly 80% of IS projects fail
- An unsuccessful project exceeds its schedule and budget yet might not still reach to end
- Companies try to avoid such project failures due to high investments in terms of money, time and man power
- The Critical success factors can be listed that affect the success of the project

What are Critical Success Factors?

- Those few things that must be done well for the organization to survive and/or prosper
- These factors are common in most of the studies, yet the weights and the priorities may change according to the company's structure, culture, region and IS project's volume

Sources of CSFs

- Characteristics of the industry
- Company competitive strategy, industry position and geographic location
- Environmental factors
- Extraordinary temporal factors
- Managerial position

CSFs in IS Applications

- Factors about internal organizational structure
 - Strategic alignment between organizational structure / infrastructure and IT structure / infrastructure
 - Top management support and commitment to IS
 - User participation in IS project
 - Matching IT capabilities to organizational needs and goals
 - Organizational structure context
 - Enough managerial and technical skills

- Factors about project team structure
 - Project leader feedback to team
 - Experience of project leader
 - Project monitoring and control
 - Adequate training for team members
 - Peer review on project progress
 - Experience of team members
 - Team member commitment
 - Team member self control

- Appropriate technology and project methodology
 - Clearly stated objectives
 - Detailed project plan
 - Proper project scope
 - Utilizing effective methodology
 - Use of appropriate technology
 - Effective system implementation

- After project support
 - Training of users
 - Software support
 - Training of IT staff
 - On time help to users
- Environmental factors
 - Globalization
 - Environmental dynamism
 - Competition

CSF: Why have them?

- So that you can pay attention to them!
- To help an individual manager determine his/her information needs
- To aid an organization in its general planning process (i.e. business planning)
- To aid an organization in its information system planning process

Critical Success Factors For whom?

- For senior and middle management – but not as the same group
- Different levels of management will have different CSFs
- To use CSFs effectively, you need to be capable of creative thinking

Critical Success Factors What are the benefits?

- For specifying critical information systems
- To focus attention on important matters
- Help to link IS strategy to business strategy
- help to give projects corporate justification

Rank	Critical Success Factor		Rank	Critical Success Factor
1	Top management support		12	Dedicated resources
2	Project team competence		13	Use of steering committee
3	Interdepartmental cooperation		14	User training on software
4	Clear goals and objectives		15	Education on new business processes
5	Project management		16	Business process reengineering
6	Interdepartmental communications		17	Minimal customization
7	Management of expectations		18	Architecture choices
8	Project champion		19	Change management
8	Vendor support		20	Partnership with vendor
10	Careful package selection		21	Use of vendors' tools
11	Data analysis and conversion		22	Use of consultants

Thank You!