Chapter -6

Implementation of Information Systems

Information System *(CT 751)* **BCT IV/II**

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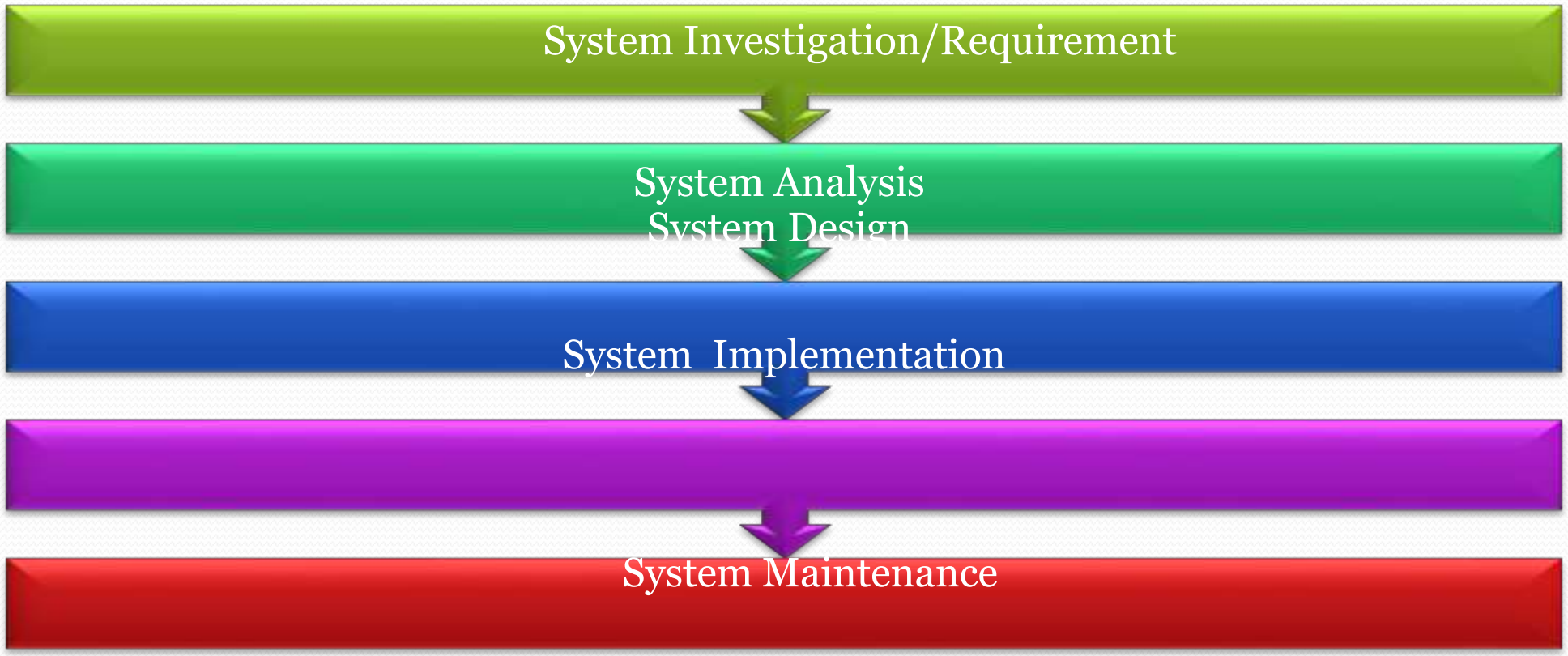
Outline

- **Implementation of information systems**
  - Change Management
  - Critical Success Factors
  - Next generation Balanced scorecard

Review of SDLC

Development of information system undergoes 5 stages,

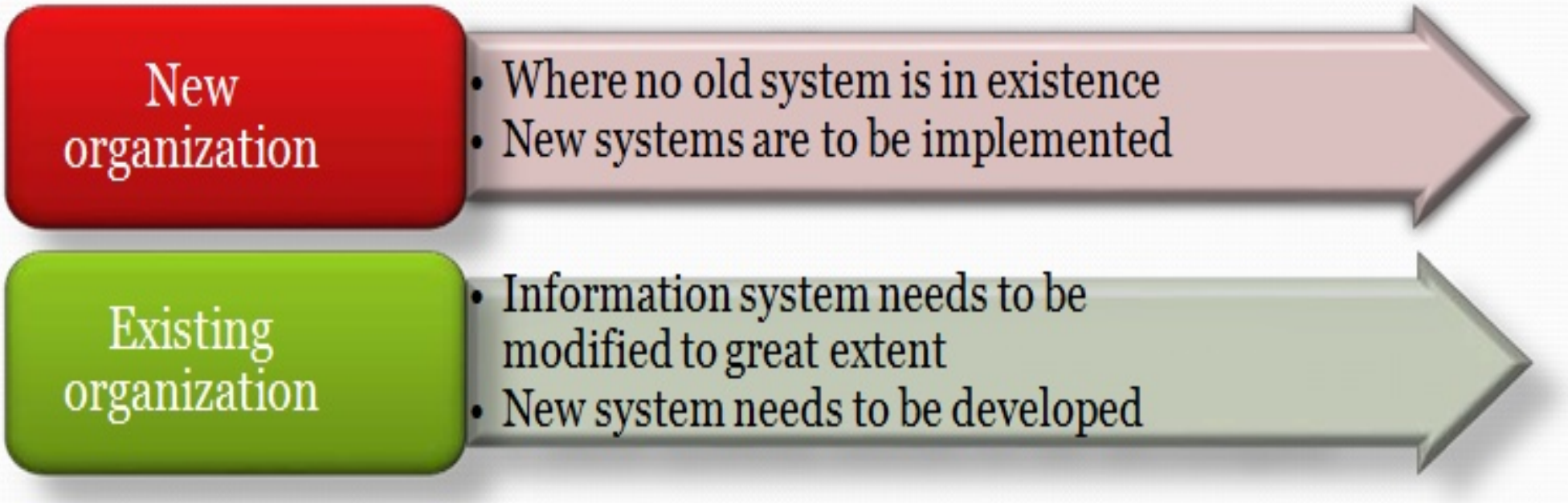


Implementation

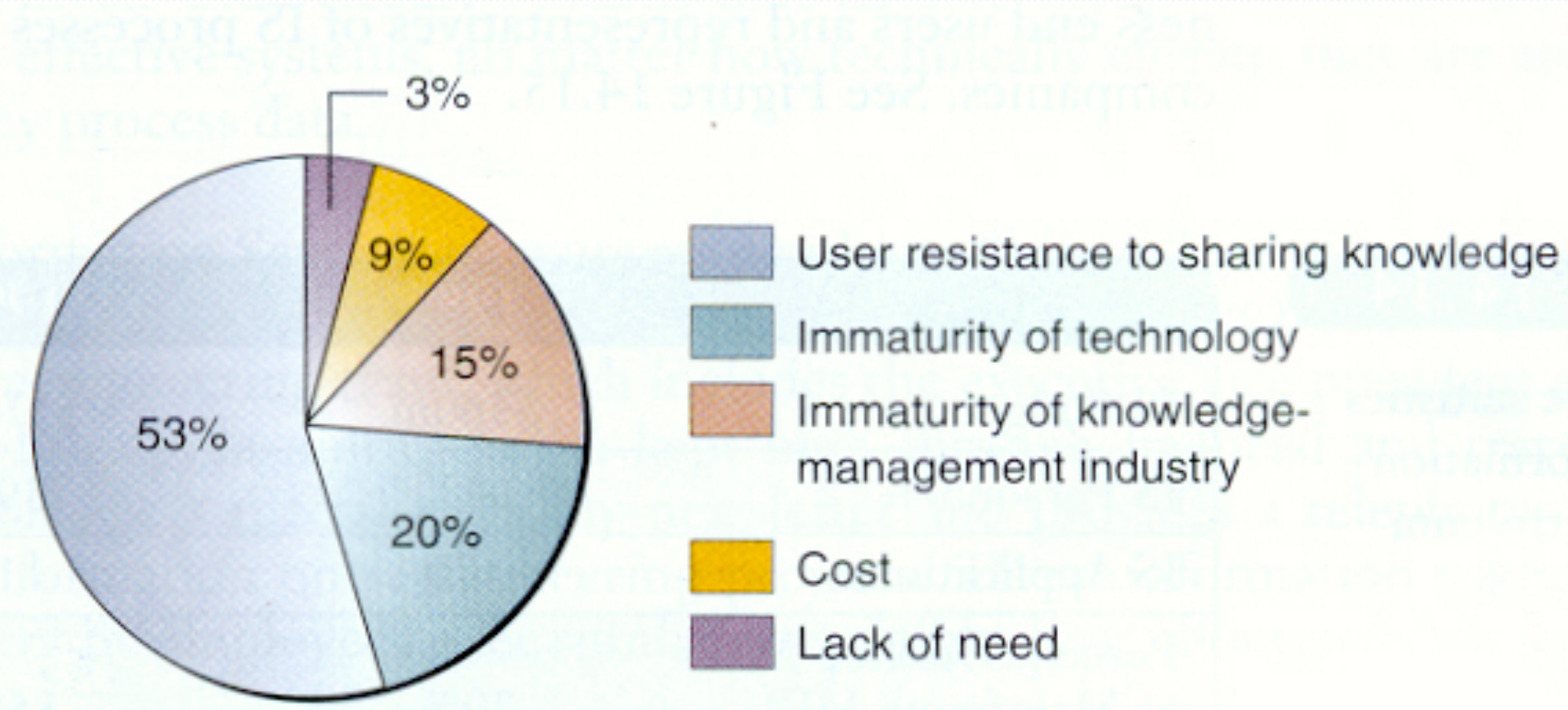
- The final step of the systems development process:
  - The conversion to a live system, doing real work within the organization.
- Implementation activities are needed to transform a newly developed IS into an operational system for end users.
- The challenge is to accomplish this in the most efficient, least disruptive but cost-effective manner as possible.

Types of Implementation

- Fresh implementation
- Modified implementation
- Replacement implementation



Obstacles in IS Implementation



Implementation Process

- Acquisition
- Development
- Testing
- Documentation
- Training
- Conversion
- Maintenance

Implementation Activities

- Possible Acquisition of Hardware, Software and Services
- Evaluation
- Training
- Testing
- Documentation
- Conversion

❖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.

Acquisition

- Acquire necessary hardware and software resources and information systems services.
- The firm can evaluate a companies product or service by submitting a RFP (**request for proposal**) or a RFQ (**request for quotation**).
- Typically, large firms will put the proposal through a formal evaluation process. This helps to reduce the possibility of buying unnecessary or inadequate computer hardware or software.

Evaluation Factors

- **Some hardware factors:** performance, cost ,compatibility, connectivity.

- **Some software factors:** features/functions, language, integration compatibility, cost, documentation.

- **Some service factors:** systems development, conversion, training, backup, accessibility.

Development

- Either deals with the internal development of application software or the acquisition of this software from vendors.

Testing

- System testing involves:
  - Testing of hardware devices.
  - Testing and debugging computer programs.
  - Testing information processing procedures.
- An important part of testing is the production of prototypes of **displays, reports, and other output.**
- It is important to **involve end users** in the testing stage to recognize errors, and to provide feedback.

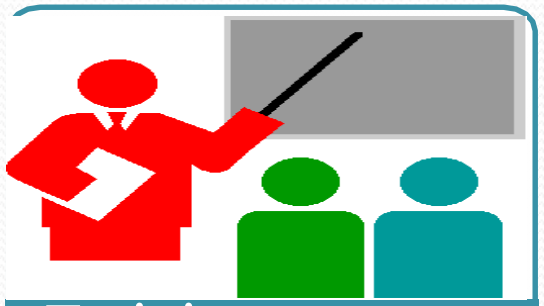
Documentation

- Developing good user documentation is an important part of the implementation process.
- An example of documentation is a **manual of operating procedures** and sample data input and output.
- Documentation is extremely important when solving problems or making changes, especially if the people who developed the system are no longer with the firm.
- Two types:
  - System documentation
  - User documentation

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:



Training Programe

Seminars

User Manuals

Help Screens

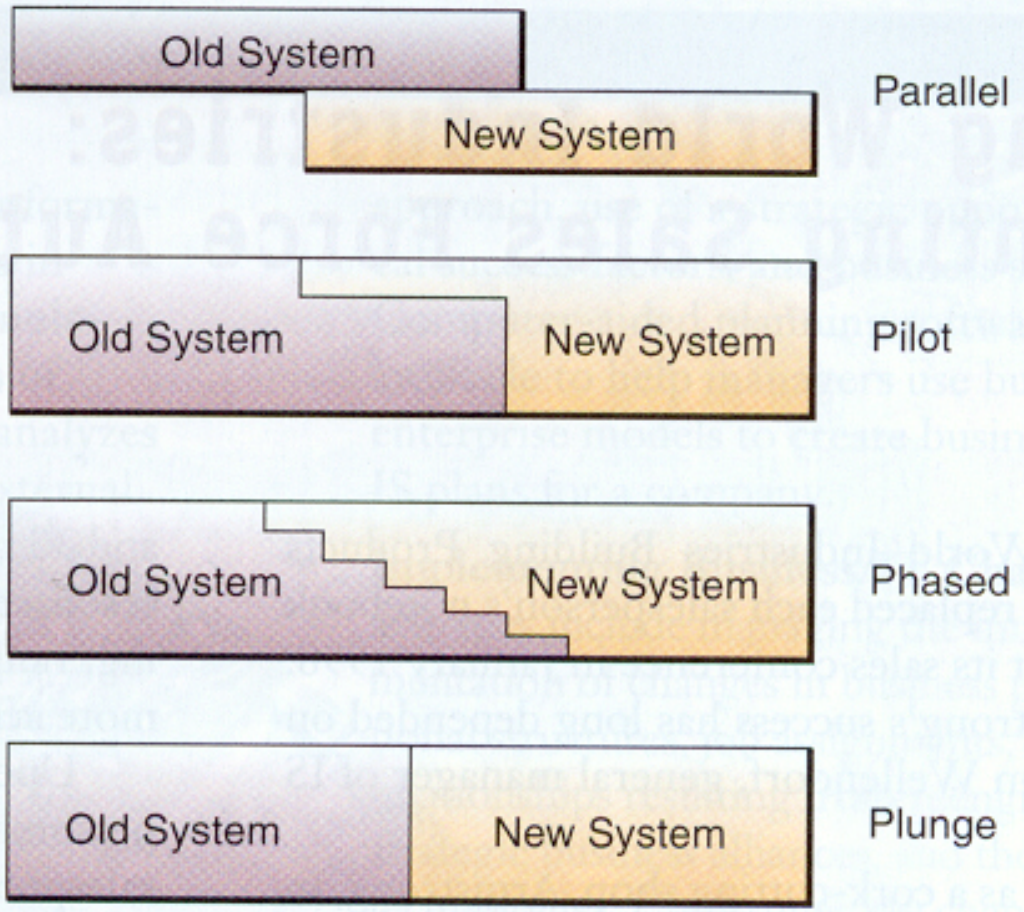
Installation/Conversion

- 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.

Major forms of conversion are:

- Parallel conversion.
- Phased conversion.
- Pilot conversion.
- Plunge or direct cutover.

Major Forms of Conversion



Parallel: both old and new systems are operated until IS team and management agrees to convert.

Pilot: *Modular Approach*, allows for conversion to the new system, either a direct or parallel method, at a single location.

Phased: only parts of the new system or only a few departments, offices, or plant locations at a time are converted

Plunge/Direct: direct abandonment

IS Review and Maintenance

- IS implementation involves acquisition, development, testing, documentation, training and conversion activities that transform a newly designed information system into an actual system for end users.
- Post-implementation review is a part of IS maintenance where the new system is evaluated to be certain that the newly implemented system meets the system objectives established for them.
- Maintenance involves monitoring, evaluating, and modifying of existing information systems to make needed or necessary improvements.

HW

1. What is the biggest challenge in IS implementation? What can be done to make implementation easier to deal with?

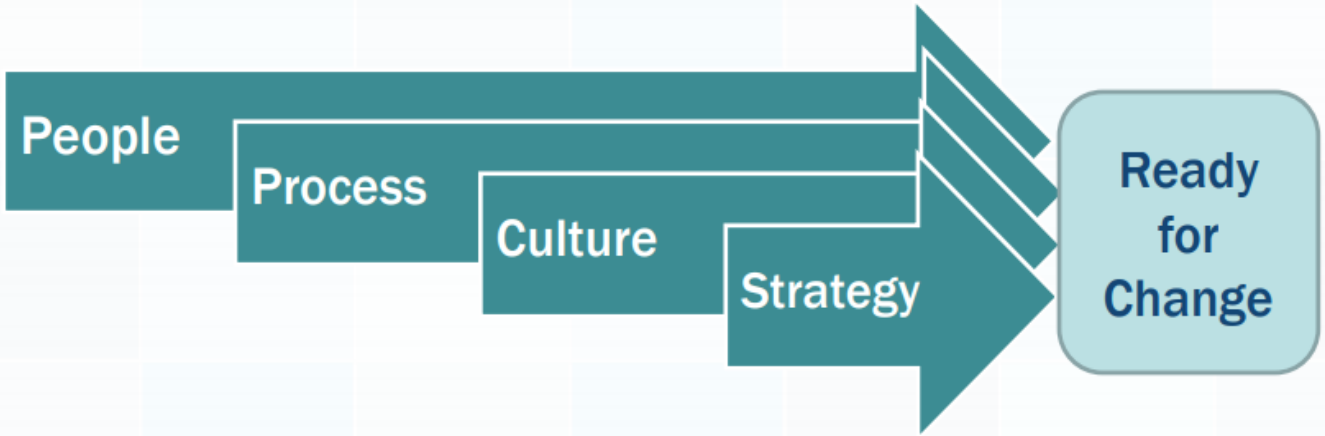
2. Present a Case study of IS implementation in any one organization.

Change Management

- Change management is a structured process and set of tools for leading the people side of change.
- Change management **proactively** plans for and addresses both the **organizational** and **people** side of change.
- **Integrated with project management**, change management recognizes the importance of individual and environmental factors in supporting necessary behavior changes.
- Change management is the process of **planning, organizing, coordinating and controlling** the compositions of the **environment**, internal and external; to ensure that the process changes are implemented according to **approved plans** and the overall objectives of introducing the changes are achieved with as **little disruption as possible**.

Change Management

- **Change management is :** managing the process of implementing major changes in IT, business processes, organizational structures, and job assignments to reduce the risks and costs of change, and to optimize its benefits.
- Implementation of IS may result is many changes in organization. Potential area of impact are:
  - Organizational Structure
  - Centralization of Authority
  - Job Content
  - Relationships
  - Resistance to change



Organizational change can be represented as three states

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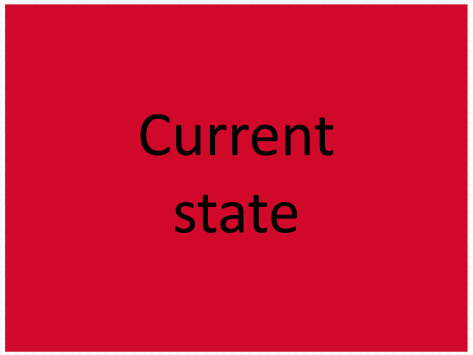
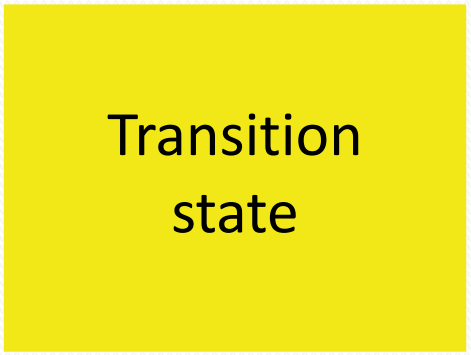
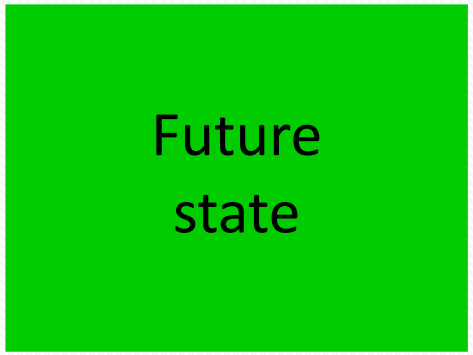




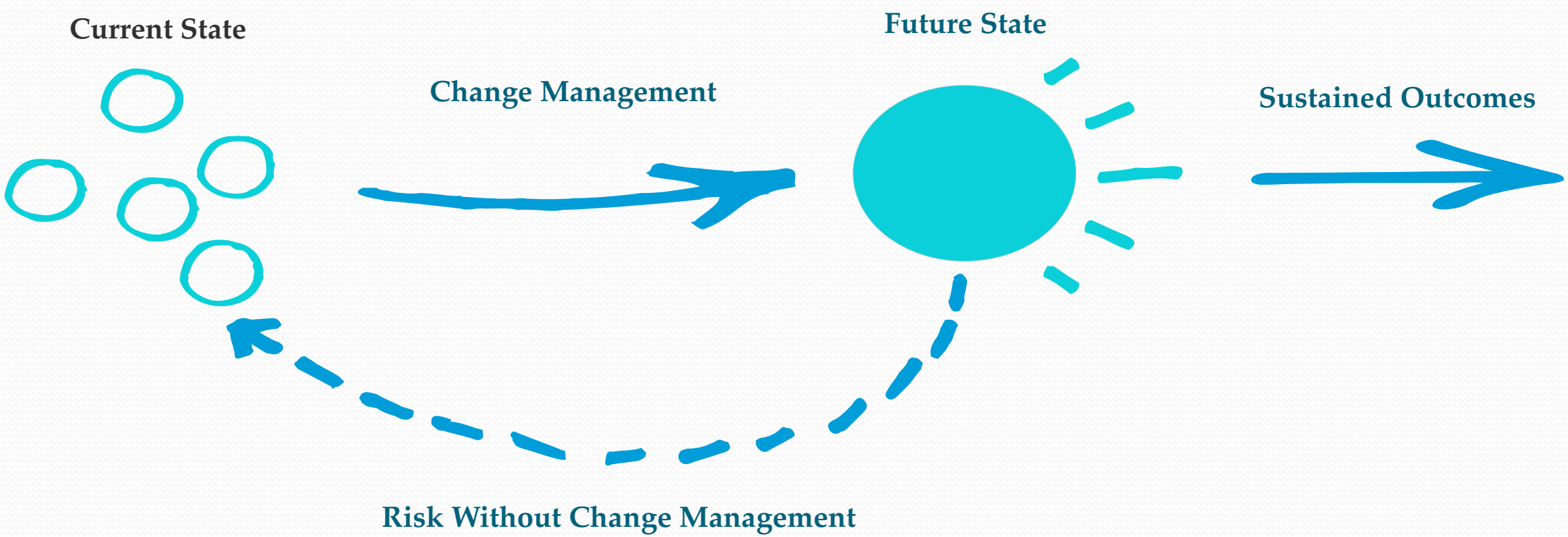


How things are done today?

How to move from current to future?

How things will be done tomorrow?

States of Change



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.

Human Aspects of Change

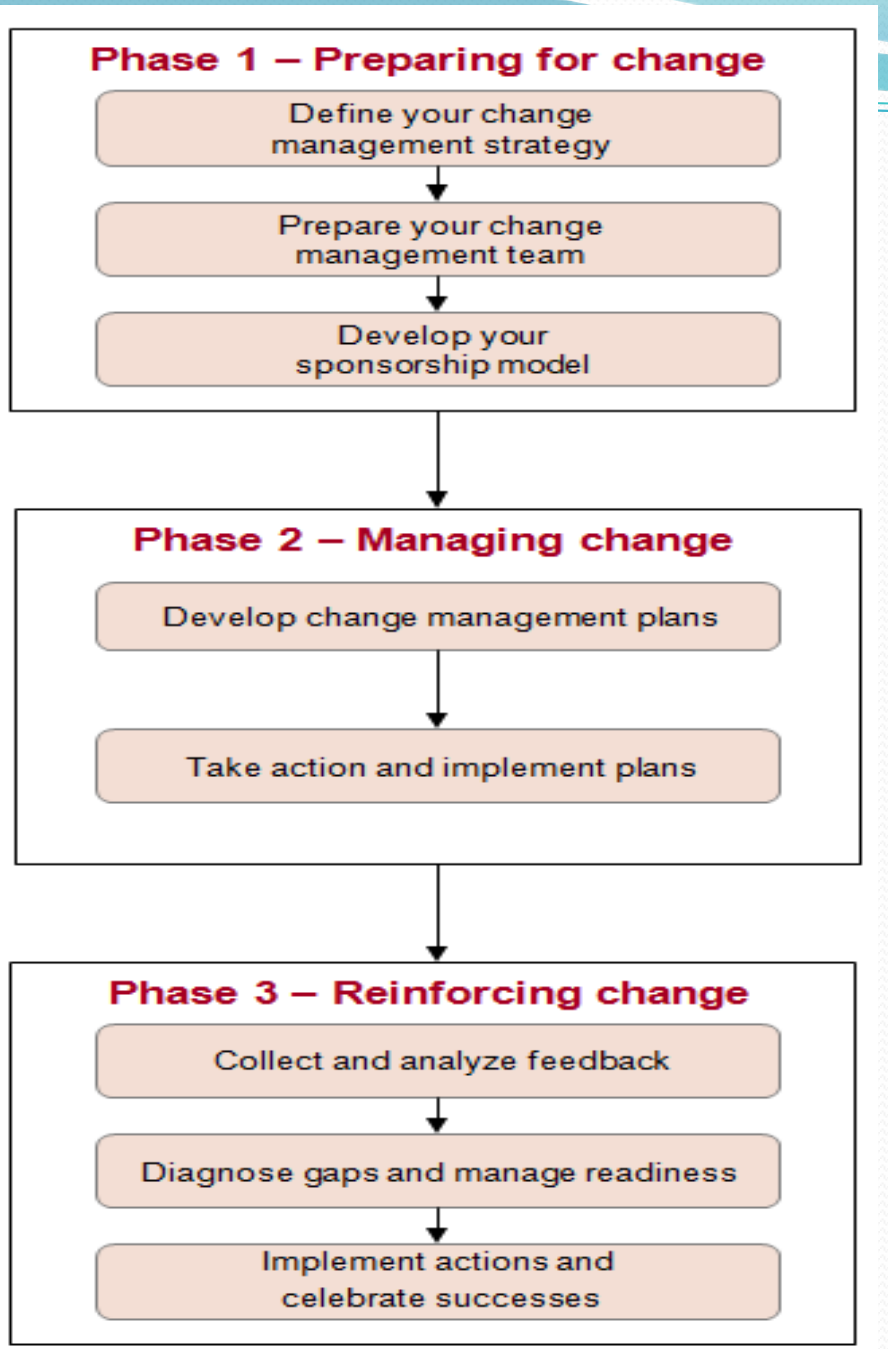
- New skills are required.
- Patterns of communication are altered.
- Time spans between communications are decreased.
- Points of influence, authority and control are redefined.
- Roles, work relationships and reporting responsibilities are modified.
- Data ownership shifts.
- Privacy and security concerns increase.
- New management techniques and organizational structures evolve.

Change is a significant alteration or disruption in peoples' expectation patterns.

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 contains the following **three steps:**
  - **Preparing for change** (Preparation, assessment and strategy development)
  - **Managing change** (Detailed planning and change management implementation)
  - **Reinforcing change** (Data gathering, corrective action and recognition)

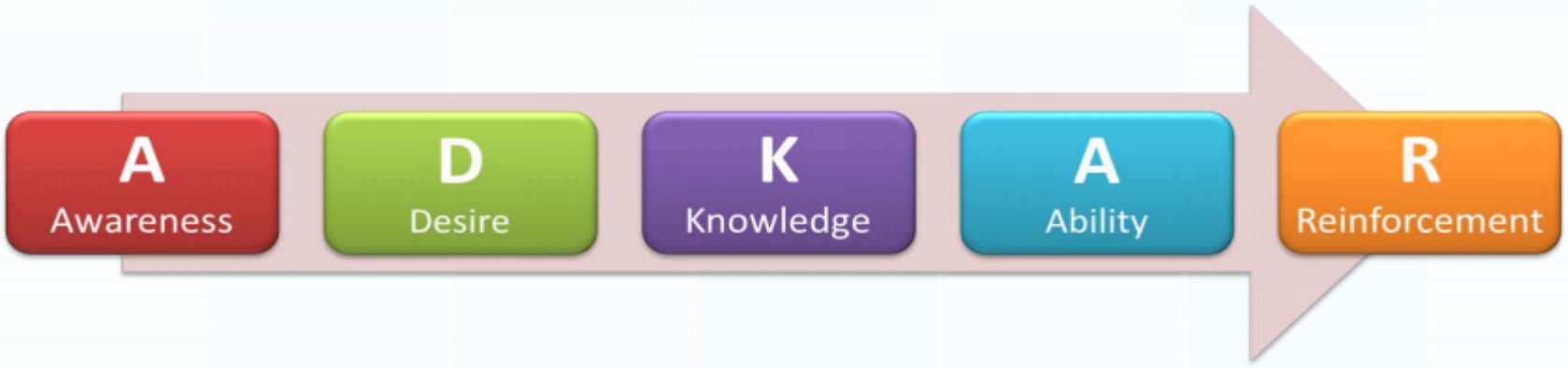
Phases:


Phase 1 – Preparing for change
Define your change management strategy
Prepare your change management team
Develop your sponsorship model
Phase 2 – Managing change
Develop change management plans
Take action and implement plans
Phase 3 – Reinforcing change
Collect and analyze feedback
Diagnose gaps and manage readiness
Implement actions and celebrate successes

The ADKAR Model

- ADKAR is a foundational tool for understanding "how, why and when" to use different change management tools.
- The five building blocks of successful change.
  - **Awareness** of the need for change (why).
  - **Desire** to support and participate in the change (our choice).
  - **Knowledge** about how to change (the learning process).
  - **Ability** to implement the change (turning knowledge into action).

cess).



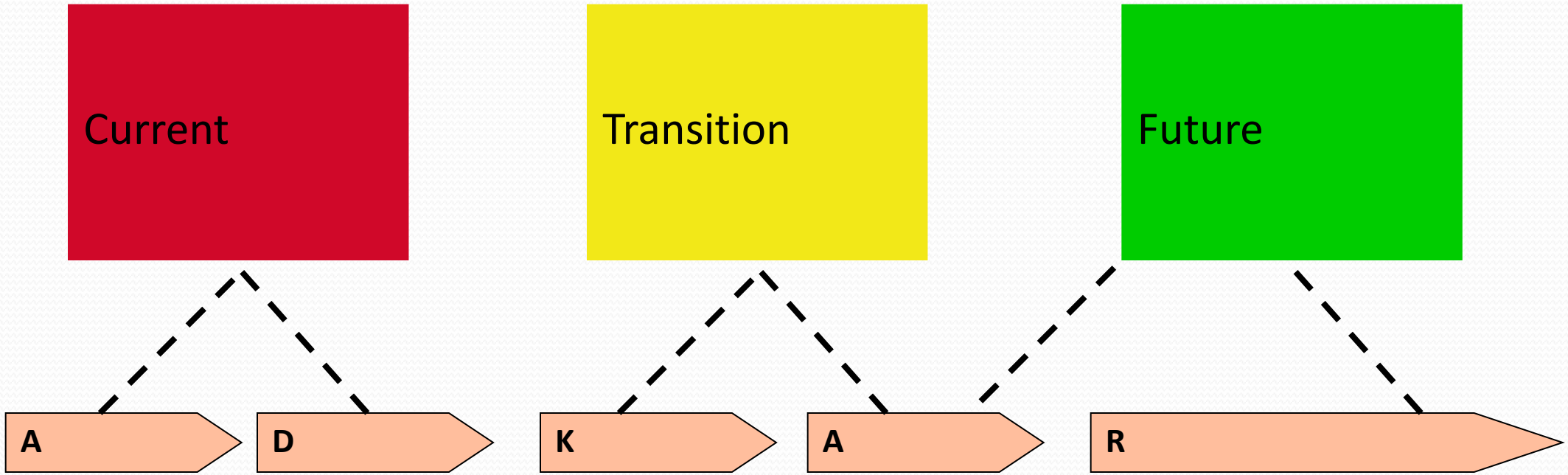
The ADKAR Model

- **Awareness** of the need for change.
  - What is the nature of the change?
  - Why is the change happening?
  - What is the risk of not changing?
- **Desire** to support the change.
  - Personal motivation to support the change.
  - Organizational drivers to support the change.
- **Knowledge** on how to change.
  - Understanding **how** to change.
  - The details of **what** to do.

The ADKAR Model

- **Ability to implement new skills.**
  - Demonstrated ability to implement the change.
  - Barriers that may inhibit implementing the change
- **Reinforcement to sustain the change.**
  - Mechanisms to keep the change in place
  - Recognition, rewards, incentives, successes

Connecting ADKAR and the current, transition and future states.



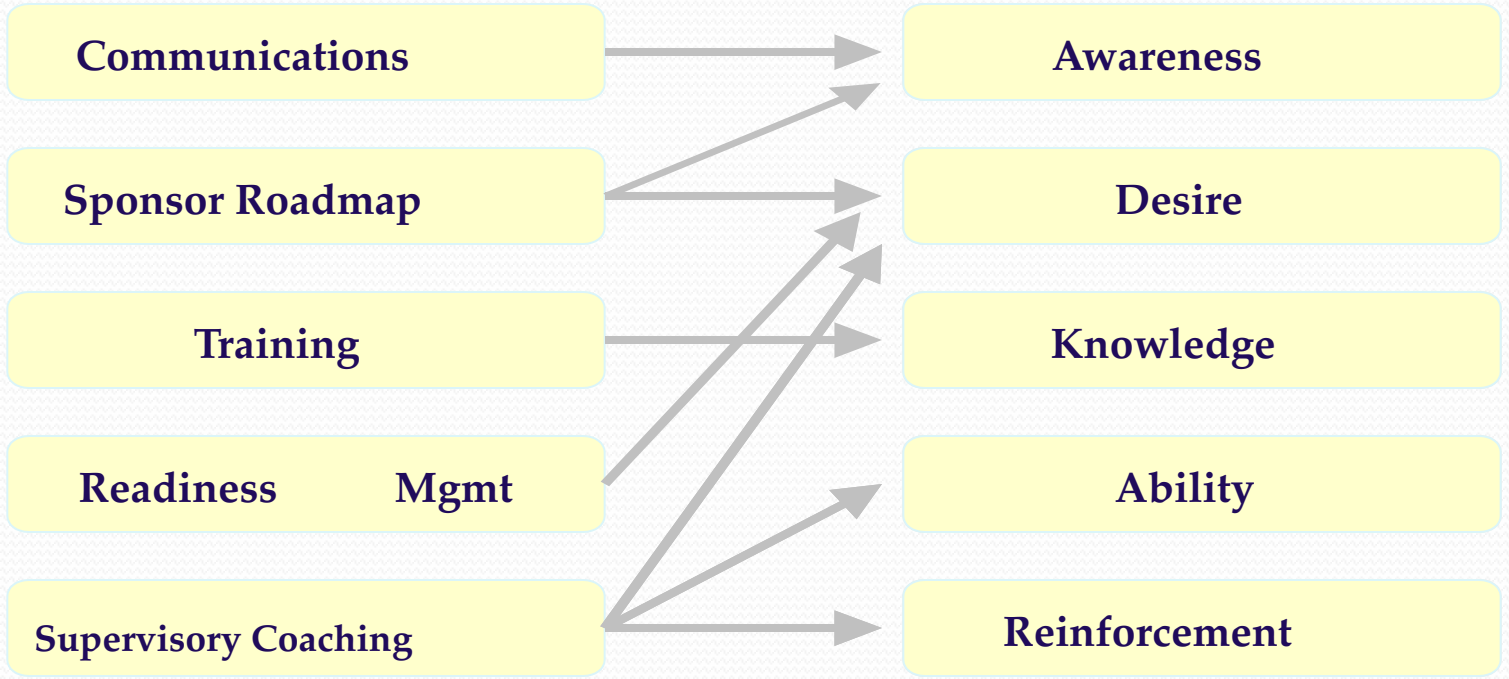
Mapping ADKAR to Change Management Tools

- Communications
- Sponsor Roadmap
- Training
- Readiness Mgmt
- Supervisory Coaching

Why are these channels critical for change management?

Mapping ADKAR cont.

These channels enable project team to facilitate organization through phases of ADKAR.



Manage Changes:

The management system should consider the following:

- Identification of changes
- Categorization, prioritization and emergency procedures
- Impact assessment
- Change authorization
- Release management
- Software distribution
- Use of automated tools
- Configuration management

5 Pillars of Successful Change

1. Communication
2. Sponsorship
3. Stakeholder Management
4. Readiness
5. Training and Turnover

Common Change Management Error

- A common mistake change management teams make is to **not train managers and supervisors in the basic principles and tools for managing change.** These managers will be instrumental in your overall success.

Top 5 Organizational Change Challenges:

1. Resistance from the people who need to change
2. Navigating the political landscape
3. Addressing team dysfunctions
4. Difficult conversation/coaching/feedback to senior leaders
5. Dealing with ambiguity, uncertainty, inability to forecast the future

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.

Critical Success Factors

- What are they?
- Why have them?
- For whom?
- What are the benefits?

What is CSF?

- Critical Success Factor (CSF) is the term for an element that is necessary for an organization or project to achieve its mission.
- It is a critical factor or activity required for ensuring the success of your business.
- The term was initially used in the world of data analysis, and business analysis.
- For example, a CSF for a successful IT project is user involvement.

Following CSF should be considered

- **Intellectual capital**: Create assets from the tools you make to run your business.
- **Strategic relationships**: New sources of business, products and outside revenue.
- **Employee attraction and retention**: Your ability to find, train, and keep employees and to let go employees that are not a good fit.
- **Sustainability**: Your personal ability to keep it all going.

Importance of CSF

- Critical success factors are those few things that must go well to ensure success for a manager or an organization, and, therefore, they represent those managerial or enterprise area, that must be given special and continual attention to bring about high performance

Characteristics of CSF

- CSFs are quite different from “Key performance indicators” which have been used in the past for IS planning. They are not a standard set of measures that can be applied to all organisations. Rather, they are specific to a particular situation at a particular time.
- **CSFs can also be categorised as monitoring and building.**
- Monitoring CSFs involves the scrutiny of existing situations, such as monitoring the percentage of defective parts.
- Building CSFs is related to changes in the organization for future planning.
- Managers who spend most of their time in control functions are concerned mostly with monitoring CSFs, whereas those who are concerned primarily with planning are concerned mostly with building CSFs.

Sources of CSF

- **Industry CSF's** resulting from specific industry characteristics;
- **Strategy CSF's** resulting from the chosen competitive strategy of the business;
- **Environmental CSF's** resulting from economic or technological changes; and
- **Temporal CSF's** resulting from internal organizational needs and changes.

CSF analysis

- There are three major uses of the CSF concept :
  - To help an individual manager determine his or her information needs.
  - To aid an organisation in its IS planning process.
  - To aid an organisation in its organisational strategic planning process.

CSF analysis

- The CSF analysis process involves a series of interviews conducted in two or three sessions.
- In the first session, the manager is asked his or her goals and the CSFs that underlie these goals.
- The second session focuses primarily on identifying specific measures and possible reports.
- The main strengths of CSF analysis are that it provides effective support to planning since the consideration of critical activities develops management insights and CSF analysis may serve as the effective top level for a subsequent structured analysis.

Critical Success Factor (CSF) analysis

- Critical success factors are the limited number of areas in which satisfactory results will ensure competitive performance for the individual, department or organisation.
- CSFs include issues vital to an organisation's current operating activities and to its future success.

Assignment-2

Next generation Balanced scorecard

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Deadline of submission: 2075-03-17

Thank you

Next Class:

Chapter-7: Web based information system and navigation