COURSE TITLE: SYSTEM ANALYSIS AND DESIGN

PAPER CODE: CSE 4205

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TOPIC: SYSTEM IMPLEMENTATION AND MAINTENANCE

Objective

By the end of this session, students will be able to:

Explain how on to do **system implementation and maintenance**

SYSTEM IMPLEMENTATION AND MAINTENANCE

Implementation is a process of ensuring that the information system is operational. It involves:

- Constructing a new system from scratch

- Constructing a new system from the existing one.

Implementation allows the users to take over its operation for use and evaluation. It involves training the users to handle the system and plan for a smooth conversion.

Training

The personnel in the system must know in detail what their roles will be, how they can use the system, and what the system will or will not do. The success or failure of well-designed and technically elegant systems can depend on the way they are operated and used.

Training Systems Operators

Systems operators must be trained properly such that they can handle all possible operations, both routine and extraordinary. The operators should be trained in what common malfunctions may occur, how to recognize them, and what steps to take when they come.

Training involves creating troubleshooting lists to identify possible problems and remedies for them, as well as the names and telephone numbers of individuals to contact when unexpected or unusual problems arise.

Training also involves familiarization with run procedures, which involves working through the sequence of activities needed to use a new system.

User Training

- End-user training is an important part of the computer-based information system development, which must be provided to employees to enable them to do their own problem solving.
- User training involves how to operate the equipment, troubleshooting the system problem, determining whether a problem that arose is caused by the equipment or software.
- Most user training deals with the operation of the system itself. The training courses must be designed to help the user with fast mobilization for the organization.

Training Guidelines

1. Establishing measurable objectives
2. Using appropriate training methods
3. Selecting suitable training sites
4. Employing understandable training materials

Training Methods

Instructor-led training

It involves both trainers and trainees, who have to meet at the same time, but not necessarily at the same place. The training session could be one-on-one or collaborative. It is of two types:

Virtual Classroom

In this training, trainers must meet the trainees at the same time, but are not required to be at the same place. The primary tools used here are: video conferencing, text-based Internet relay chat tools, or virtual reality packages, etc.

Normal Classroom

The trainers must meet the trainees at the same time and at the same place. They primary tools used here are blackboard, overhead projectors, LCD projector, etc.

Self-Paced Training

It involves both trainers and trainees, who do not need to meet at the same place or at the same time. The trainees learn the skills themselves by accessing the courses at their own convenience. It is of two types:

Multimedia Training

- In this training, courses are presented in multimedia format and stored on CD-ROM.
- It minimizes the cost in developing an in-house training course without assistance from external programmers.

Web-based Training

In this training, courses are often presented in hyper media format and developed to support internet and intranet. It provides just–in-time training for end users and allow organization to tailor training requirements.

Conversion

It is a process of migrating from the old system to the new one. It provides understandable and structured approach to improve the communication between management and project team.

Conversion Plan

It contains description of all the activities that must occur during implementation of the new system and put it into operation. It anticipates possible problems and solutions to deal with them.

It includes the following activities:

- Name all files for conversions.
- Identifying the data requirements to develop new files during conversion.
- Listing all the new documents and procedures that are required.
- Identifying the controls to be used in each activity.
- Identifying the responsibility of person for each activity.
- Verifying conversion schedules.

Conversion Methods

The four methods of conversion are:

- Parallel Conversion
- Direct Cutover Conversion
- Pilot Approach
- Phase-In Method

File Conversion

It is a process of converting one file format into another. For example, file in WordPerfect format can be converted into Microsoft Word.

For successful conversion, a conversion plan is required, which includes:

1. Knowledge of the target system and understanding of the present system Teamwork
2. Automated methods, testing and parallel operations
3. Continuous support for correcting problems
4. Updating systems/user documentation, etc
5. Many popular applications support opening and saving to other file formats of the same type. For example, Microsoft Word can open and save files in many other word processing formats.

Post-Implementation Evaluation Review (PIER)

PIER is a tool or standard approach for evaluating the outcome of the project and determine whether the project is producing the expected benefits to the processes, products or services. It enables the user to verify that the project or system has achieved its desired outcome within specified time period and planned cost.

PIER ensures that the project has met its goals by evaluating the development and management processes of the project.

Objectives of PIER

The objectives of having a PIER are as follows:

1. To determine the success of a project against the projected costs, benefits, and timelines.
2. To identify the opportunities to add additional value to the project.
3. To determine strengths and weaknesses of the project for future reference and appropriate action.
4. To make recommendations on the future of the project by refining cost estimating techniques.

The following staff members should be included in the review process:

Project team and Management

- User staff
- Strategic Management Staff
- External users

System Maintenance / Enhancement

Maintenance means restoring something to its original conditions. Enhancement means adding, modifying the code to support the changes in the user specification.

System maintenance conforms the system to its original requirements and enhancement adds to system capability by incorporating new requirements.

Thus, maintenance changes the existing system, enhancement adds features to the existing system, and development replaces the existing system. It is an important part of system development that includes the activities which corrects errors in system design and implementation, updates the documents, and tests the data.

Maintenance Types

System maintenance can be classified into three types:

Corrective Maintenance: Enables user to carry out the repairing and correcting leftover problems.

Adaptive Maintenance: Enables user to replace the functions of the programs.

Perfective Maintenance: Enables user to modify or enhance the programs

according to the users' requirements and changing needs.