Implementation of software

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Implementation

- Implementation is the process of changing from old system to new or modified one.
- The objective of implementation is to put the tested system into operational.
- An implementation can be done as “all at once” implementation all modules at all locations at the same time; or, it can be done staged. These are the two main strategies used to implement ERP systems.
- There are other implementation strategies like location based and parallel.

Types of implementation

There are three types of implementation:

- **Implementation of a computer system to replace a manual system**.
  The problem encountered in this implementation are converting files, training users, creating accurate files and verifying results or outputs for integrity.
- **Implementation of a new computer system to replace an existing one**.
  This is a difficult conversion. If not properly planned, there can be many problems.
- **Implementation of a modified application to replace an existing one, using the same computer.**
  This type of conversion is relatively easy to handle, provided there are no major changes in the files.

Activities in Implementation

Mainly two types of activities are performed during implementation.

- Conversion
- Training

Conversion

Conversion is the process of changing from old system to new or modified one. The objective of conversion is to put the tested system into operational.

There are **Four** methods are for conversion.

- Parallel Conversion
- Direct Cutover / Abrupt Cutover
- Location Conversion
- Phase – In Method

Parallel Conversion

- While implementing a new system, often companies don't want to immediately close their old system either partially or as a whole because they want to ensure that new system is running as expected.
- In that case both systems run in parallel for some period of time.
- This is most secured method. It ensures that all major problems in the new system have been solved before the old system is discarded.
- This method is best used when a computerized system replaces a manual one.

Advantages of Parallel Conversion

- It offers greatest security.
- This Strategy minimizes the risk of major flaws in the new system.
- Users are more at ease, as they do not have to make an abrupt change to the new changes.
- Workings and outputs of new system can be compared to the old one, and old system provides a backup in case new system does not behave as expected.

Disadventages of Parallel Conversion

- This approach doubles the operating costs as resource requirement will be higher because two separate systems will be run and maintained.
- Burdens employees involved with double workload.
- Because people know that old system will be closed after some period of time, they will no longer give enough attention to old system. This can lead to errors when comparing new system's outputs with the old one.
- Having the old system available for a long period of time may have negative impact on acceptance of the new system, because people may have greater confidence to old system.
- In case the old system is not manual, then it is difficult to make comparisons with old and new outputs.

Direct Cutover / Abrupt Cutover Conversion

- In direct cutover, the old system is dropped on a specific date, and new system is placed into operation.
- In this strategy, tested system is converted to productive system in a short time period.
- This is **high-risk approach** because there may still be major problems exist in the system.
- It requires large amount of up front testing before going to productive system.

Advantages of Direct Cutover Conversion

1. Because old system is canceled completely there is no need to build and maintain interfaces to them, thus reducing the resources that had to be used otherwise. Also, there is no need to spend time and resources for maintaining and changing the old system because there will be no old system is running.
2. There is also lower risk for canceling the new system and return to old system. Because old system is cancelled as a whole, there would be no old system to return to immediately. This issue may help people concentrate on the new system even if there are some problems during the implementation. This concentration can lead to find solutions more rapidly.

3. Whole project time can be shorter. The more the project time gets longer the more the requirements will change. Implementing new system using direct cutover generally leads to shorter project time.
4. Cost will also to be lower because there would be no old system to support and maintain temporary interfaces between the old system and new system.
5. This approach may be necessary, if a government or business policy becomes effective on a specific date and the system couldn't be implemented before that date.

Disadvantages of Direct Cutover Conversion

•There is a risk of total system failure because old system is already cancelled as a whole. Besides that, there is no easy way for old system fallback in case of problems because there is no old system is running.
•It requires most careful planning and extensive testing so that system does not fail.
•In order to demonstrate a working part of the new system one has to wait entire project to complete.
•User may be forced to work on an unfamiliar system.
•There is no way to compare new result with the old as old system is already dropped.

Location Conversion

- When the same system need to be implemented at numerous geographical locations, it is usually converted at one location first (using either direct cutover or parallel conversion).
- As soon as that site has approved the system, it can be cut over directly because major errors have been fixed.
- The first production test site is often called a **beta test site**.

Advantages of Location Conversion

- Implementation in each location, individually provide feedback to implementation in following locations about progress and problems of implementation. If an implementation in one location is completed successfully then it will provide confidence to team members during following implementations.
- Other sites benefit from the learning experiences of the first test site.
- Provide the live test data before implementation.

Disadvantages of Location Conversion

- In case implementation is not handled properly at first test site, then users at other sites may develop the impression that system is not error free and may think it unreliable.

Phase – In – Method / Staged Conversion

- The phase – in – method is used when it is not possible to implement a new system throughout the organization all at once.
- Whole system is divided into number of modules and only one module of the system is implemented at a time.
- Coordination with old system is very important because old systems functionality will be used for unimplemented modules thus far.
- Staged implementation strategy has smaller iterations of design development, testing, and implementation.
- This forces the staging of implementation over a period of time. This could be weeks or months.

Advantages of Staged Implementation

1. Amount of resources used at a given moment is far less than direct cutover implementation. So if a company has limited resources than it may consider staged implementation instead of direct cutover implementation.
2. Whole project team and all resources can be concentrated on one particular stage. If a company has fewer resources than staged strategy may help it to achieve implementation goals with limited resources.
3. Staff involved in implementation gains experience in one stage and uses it in the following stages.

4. Staged implementation strategy has lower risks because there is no probability of total system failure. In contrast, direct cutover implementation strategy has the drawback that total system failure is sometimes probable because it is implemented in all or nothing fashion. In case of problems in staged implementation strategy, temporary fallback to old system is possible because old system is not cancelled as a whole.
5. A working system can be demonstrated earlier in a staged implementation strategy. If a module is successfully implemented than it can be shown that the system is working. This can help convincing management that the new modules will be implemented successfully and it also helps to get support from management. Best utilization of this advantage is when the easiest modules are implemented first.

6. Implementation time per module will be shorter. In contrast, with direct cutover implementation strategy duration between implementation and going into production will be longer. Longer duration may lead participants to lose the link between development and usage.

Disadvantages of Staged Implementation

1. Temporary interfaces between old system and new system have to be built and maintained; old applications need to be maintained and changed;
2. Risk of losing personnel is greater because a single module is completed in relatively shorter time; therefore personnel will gain experience faster;
3. Some functionality requires cooperation of more then one module, so it cannot be used until whole set is completed;
4. Not closing down old system may lead to tendency to fallback to old system in case of even small problems; and total installation duration is longer and total cost is higher.

Training

- While implementing the system, it is essential to provide the right training to right people at right time.
- The first step is to identify the users who will receive training and what level of training is to be needed.
- There are two classes of users – **end users** and **IT users**.
- **End users** are the people who use the system from day to day to achieve the system business purpose.
- **IT users** are people who perform administrative functions and maintain the system to keep it operative.

End user activities	IT user activities
Creating records or transactions	Starting or stopping the system
Modifying database contents	Querying system status
Generating reports	Backing up data to archive
Querying database	Recovering data from archive
Importing or exporting data	Installing or upgrading software