Rekayasa Perangkat Lunak 2 (Implementation)

Oleh :

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Source : Managing Information Technology Project
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Preparation

- The completed system has to be handed over and installed in the user's premises.
- This means preparing the work environment, doing the data conversion, interfacing the system into the user's work procedures and tuning the system.
- The planning for this was all done in the systems development phase.

Preparation (2)

- The implementation phase is the most difficult one, because a technical product now has to be fitted into human organization.
- The new system has already led to suspicion and fear while under development.
- Now it is going to change the way people work and think.
- This stage must not be played down but must be completed in a positive, enthusiastic manner.

Setting Equipment

- Site preparation does not necessarily involve false floors, air conditioning and clean electrical power. However, even a computer terminal on a desk linked to the outside world needs careful consideration.
- Someone has to use this equipment effectively as a major part of the information system that just been developed, so put some effort into locating it correctly.
- System have failed because of the poor work setting of equipment.

Data Conversion

- Conversion of the data involves setting up the files and databases needed by the system.
- This area is problematical because one-off program have to be written, tested and implemented to capture manual and automated data from various sources into the system.
- Obviously the data take-on must be complete and validated.
- The controls and checking to do this exercise must not be underestimated.

Documentation

- Although a lot of documentation has already been produced (including user manuals), user operating procedure are needed to guide the user in the proper use of the system.
- This procedures include how to start up and close down the system, how to recover from problems and whom to contact when problems cannot be resolved.

Documentation (2)

- Despite the training and documentation the user has now received, there will still be a lot of hand-holding required in the early working sessions before user competence levels are reached.
- These tasks take time and patience – both of which are in short supply at this stage of the project.

Implementation Strategies

- The introduction of the system can be implemented using different strategies, depending on cost, risk and the users.

Big Bang Approach

Immediate Cutover
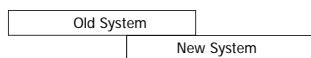
Old System
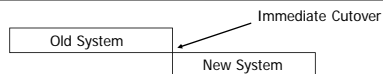
New System

- An immediate cutover ("big bang") from the old to the new system, requires a high degree of confidence in the new system by everyone.
- Although this is the least costly and fastest method, it usually creates a period of chaos in the organization which can lead to total rejection of the system.

Big Bang Approach (2)

- Because, once implemented, there is no going back, this method requires considerable planning and is often used when replacing mainframe computers or large computer components.
- However, because it is a very high-risk option, the project manager should avoid it unless there is no alternative.

## Parallel Run

Old System

New System

- Both systems are run together over a period of some months.
- This popular method is used to ensure that the results from the new system are reliable by reconciling output from one with the other.

Parallel Run (2)

- If things go wrong, the old system is still available, and both system can continue to be run until the new system works correctly in the user's hands.
- The major disadvantage is that there is a cost attached to this method, but more importantly, there is a considerable increase in the amount of work required by the user and also considerable confusion trying to run two different systems together.

Phased Implementation

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Old System
          New System
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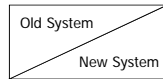
- When a system can be divided logically into subsystems and implemented as such.
- Could be functionally, geographically or number of user based.

Phased Implementation (2)

- Each subsystem can be introduced and assimilated into the organization before the next one is introduced.
- This reduces disruption and sometimes lowers the cost of implementation.

Pilot Implementation Approach

- This is particularly useful where there are multiple sites.
- The new system is implemented at a site were the users are more receptive to change.
- Teething problem are resolved before implementing at the other sites.
- The users at the pilot site automatically become the salesmen for the new system.

Time Consideration

- Having determined the implementation method, the final consideration is timing.
- Most accounting systems have to be implemented after the completing of a month-end, but quarter- and year-ends should be avoided if possible due to the extra workload and extra problems that could occur.

Implementation Problems

- There are three main reasons why systems fail at this late stage of the project :
  1. A poor quality system,
  2. A lack of commitment to implement the system from user management,
  3. Resistance from the end-user.

Management Awareness

- Given that we can develop a tested system that matches user requirements, how can we raise management awareness of the problems of system implementation?
- Clearly management must provide the time and resources for adequate training and parallel running (if appropriate).
- Users need time to adjust to major changes in work patterns and management must not force the pace.

Resistance to Change

- The most serious implementation problem is resistance to change.
- This resistance, which is quite natural, can lead to poor use of the new system or even total rejection.
- Resistance can be reduced by encouraging maximum project participation by as many users as possible and designing a user-friendly interface to the system.

Resistance to Change (2)

- To help minimize resistance to change, we use approaches from the field of psychology.
- Lewin-Schein propose a three-phase approach :
  1. To unfreeze people (get them involved and used to the idea that changes are coming so that they understand the implications),
  2. Followed by making the change (implementing the new system),
  3. Refreezing (giving support and assistance with the new environment).

Resistance to Change (3)

- The tuning and debugging of the system that occurs after cutover is an ideal time to work on the refreezing process with the users.

Project Review

- Before formally handing the system over to the maintenance function, the team should get together to carry out a project review.
- This is a means of identifying what went right and what went wrong with a view to improving things next time around.
- As a project is a learning process for everyone, it is worthwhile trying to formalize the lessons learned and communicate them to the whole team.

Project Review (2)

- Area like estimating and scheduling should be analyzed as should staffing and user problems.
- Used of project methods and tools should be evaluated for effectiveness – especially if new ones have been used.
- This information should be documented and circulated to all IS staff.

Project Review (3)

- After all, you have just completed a major endeavor successfully and you should tell everyone how you did it.
- In any event, another team will carry out a post-implementation audit in a short while so you had better get in first.