Automation process

Phases to follow

1. **Detecting a need for automation**

- The detection of a need for automation generally comes from:
- A business plan
- Of the request from a department
- Observation of malfunctions

Phases to follow

2. **Feasibility study**

- The feasibility study will make it possible to study the automation project and decide on its technical, human or financial feasibility.

Phases to follow

a) Setting up a study group: it must be made up of **developers, but also of the organisers and future users**. One of the managers will follow the progress of the automation until it is implemented.

b) Establishment of a provisional schedule: it is established by the study group and will cover the following three stages.

Phases to follow

1) Analysis of the existing situation: it is a question of identifying the flows of information and the stations through which these flows pass by recording documents, information, processing, etc.

Phases to follow

+ All the people concerned by the information must be interviewed. We ask the traditional questions: who, what, where, when, how, why, how much.

+ The study of all documents (invoices, forms, notes, verbal information)

+ All this information will be summarized in diagrams:

"Flow diagram"

Phases to follow

2) Critique of the existing: provides a state of the current situation and tries to reveal the defects and qualities of what already exists.

3) Outline of solutions: this involves establishing one or more proposals for a global solution.

   It is necessary to highlight the fundamental axes of the proposed solutions and the means to be implemented in order to achieve the objectives set while respecting the constraints detected.

"Document circulation scheme"

Phases to follow

3. The specifications

- The specifications are a document mentioning the deadlines, costs, duties and obligations of each of the parties to the contract. This document therefore commits the designer and promoter of automation.

Phases to follow

4. Study of the information system

- This is the conceptual part of the analysis.
- This study will take into account all the elements of the system:

+ information inputs and outputs

+ Automatable and manual processing

+ data

+ Data structure

Data Dictionary

The inventory of information and its categories makes it possible to constitute the Data Dictionary.

It is a table listing all the information encountered during the preliminary analysis or making it possible to meet the objectives of the information system and sometimes mentioning the classification of the information, its mode of representation and its length.

Data Dictionary

The collection of information is the absolute prerequisite for any automation approach.

There are 2 methods:

- **The bottom-up method:**

Very practical for a new computerization; It consists of studying all the outputs to be obtained and going back to the data necessary to obtain the results appearing on these outputs.

Data Dictionary

- **The top-down method:**

For use on an existing system;

It consists of identifying all the system information encountered on the various documents in service and adding the new data necessary for the new processing.

Phases to follow

5. Study of the computer system

- This is the organic part of the analysis. It will define the architecture of the elements of the computer system to be implemented (files, databases, inputs, outputs, processing, etc.) in accordance with the specifications highlighted by the study of the information system and specified by the specifications.

Phases to follow

6. Programming and testing

- Program design (algorithms, ...)
- Writing Programs Using Appropriate Language
- Developing programs using test sets

Phases to follow

7. Setting up the app

- By making the application directly available to the customer
- Replacing the old procedures
- In parallel with the old procedures

System Approach To Problem Solving

- System is developed for specific object, which has it’s own SDLC (System Development Life Cycle).

- In SDLC there are seven stages, the first stage is to identify the need to develop such system, i.e. to identify the problem for which this system is developed to solve that particular problem.

System Approach To Problem Solving

System approach to problem solving is clearly understood through the seven stages of SDLC.

1) To identify the need, problem, gather relevant information.
2) Feasibility Study.
3) System Design.
4) System Development.
5) Implementation.
6) Testing.
7) Post –Implementation, feedback, maintenance.