PROJECT MANAGEMENT PART 1

DR. KRISHNENDU GUHA

ASSISTANT PROFESSOR (ON CONTRACT)
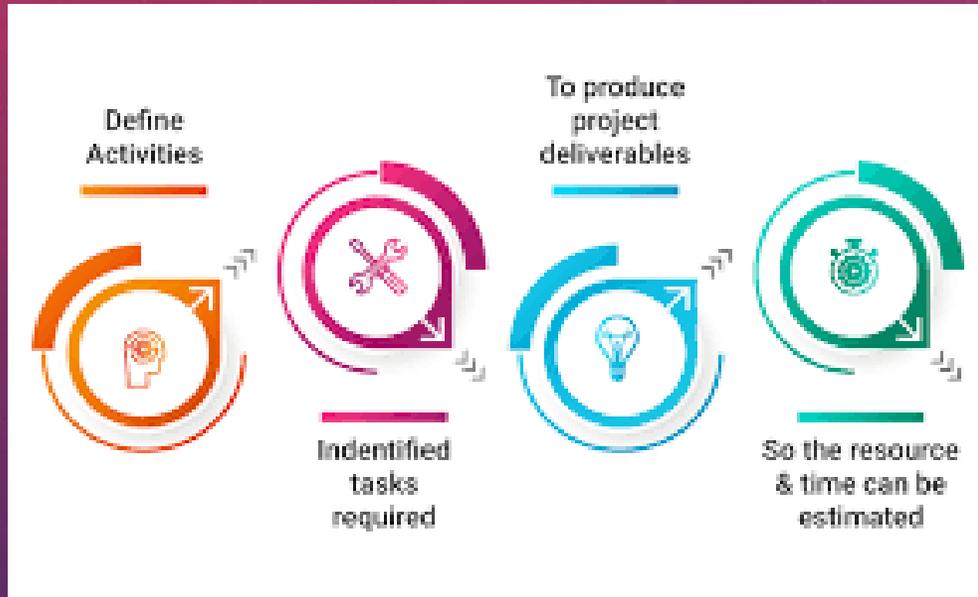
NATIONAL INSTITUTE OF TECHNOLOGY (NIT), JAMSHEDPUR

EMAIL: KRISHNENDU.CA@NITJSR.AC.IN

INTRODUCTION

- For project management, system analyst has to do the following activities:

- Initiating projects,

- determining project feasibility,

- scheduling projects,

- planning and

- managing activities and team members for productivity

ACTIVITIES IN A NUTSHELL

- A systems project begins with problems or with opportunities for improvement in a business

- The increasing popularity of ecommerce forces businesses to move their internal operations as well as external relationships to, the Internet.

- Changes that require a systems solution occur in the legal environment as well as in the industry's environment.

- Analysts work with users to create a problem definition reflecting current business systems and concerns.

- Once a project is suggested, the systems analyst works quickly with decision makers to determine whether it is feasible.

- If a project is approved for a full systems study, the project activities are scheduled through the use of tools such as Gantt charts and Program Evaluation and Review Techniques (PERT) diagrams so that the project can be completed on time.

- Part of assuring the productivity of systems analysis team members is effectively managing their scheduled activities.

PROJECT INITIATION

- Systems projects are initiated by many different sources for many reasons

- Businesspeople suggest systems projects for two broad reasons:

- (1) because they experience problems that lend themselves to systems solutions, and

- (2) because they recognize opportunities for improvement through upgrading, altering, or installing new systems when they occur.

- Both situations can arise as the organization adapts to and copes with natural, evolutionary change.

A. PROBLEMS IN THE ORGANIZATION

- Good managers,

  - realize that recognizing symptoms of problems or,

  - at a later stage, diagnosing the problems themselves and

  - then confronting them are imperative if the business is to keep functioning at its highest potential.

- Problems surface in many different ways:

- (i) Goals are never been met or are no longer being met

- (ii) Useful feedback gives information about the gap between actual and intended performance.

- (iii) problems that require the services of systems analysts are uncovered because performance measures are not being met, i.e. excessive errors and work performed too slowly, incompletely, incorrectly, or not at all.

- (iv) when people do not meet baseline performance goals.

- (v) Changes in employee behavior such as unusually high absenteeism, high job dissatisfaction, or high worker turnover should alert managers to potential problems.

- Feedback from external environment or outside, in the form of complaints or suggestions from customers, vendors, or suppliers, and lost or unexpectedly lower sales.

To Identify Problems	Look for These Specific Signs:
Check output against performance criteria.	• Too many errors • Work completed slowly • Work done incorrectly • Work done incompletely • Work not done at all
Observe behavior of employees.	• High absenteeism • High job dissatisfaction • High job turnover

Listen to external feedback from:
   Vendors.
   Customers.
   Suppliers.
	• Complaints
	• Suggestions for improvement
	• Loss of sales
	• Lower sales

B. DEFINING THE PROBLEM

What's the Problem?

WHAT WHO ? WHERE WHEN

- Whether using the classical SDLC or an object-oriented approach, the analyst first defines the problems and objectives of the system.

- These form the foundation of determining what needs to be accomplished by the system.

- A problem definition usually contains a problem statement, summarized in a paragraph or two.

- This is followed by a series of issues, or major, independent pieces of the problem.

- The issues are followed by a series of objectives, or goals that match the issues point by point.

- Issues are the current situation; objectives are the desired situation.

- The objectives may be very specific or worded using a general statement.

- examples of business questions relating to business objectives:
- What are the purposes of the business?
- Is the business profit or nonprofit?
- Does the company plan to grow or expand?
- What is the business's attitude (culture) about technology?
- What is the business's budget for IT?
- Does the business's staff have the expertise?

- The requirements section may include security, usability, government requirements, and so on.
- Constraints often indicate a limitation, and may contain budget restrictions or time limitations.
- The problem definition is produced after completing interviews, observations, and document analysis with the users.

- Once the issues have been created, the objectives must be stated.

- At times the analyst may have to do a follow-up interview to obtain more precise information about the objectives.

- After the objectives are stated, the relative importance of the issues or objectives must be determined.

- If there are not enough funds to develop the complete system, the most critical objectives must be completed first.

- The identification of the most critical objectives is best done by users (with the support of analysts), because

  - users are domain experts in their business area and

  - in how they work best with technologies in the organization.

- if a number of users all assign weights and they are averaged together, the result might reflect the bigger picture.

- After the weights have been determined, the problem definition issues and objectives are re-sequenced in order of decreasing importance, the most important issues listed first.

- Example: Expert Choice (www.expertchoice.com)

Catherine's Catering

Problem Definition

Catherine's Catering is experiencing problems with handling the number of routine calls with customers, as well as coordinating with external partners such as suppliers and meeting facilities. The growth in the number of part-time staff is leading to scheduling conflicts and understaffed events.

Issues

	Weight
1. Customer contact takes an inordinate amount of time for routine questions.	10
2. Managing part-time employees is time-consuming and leads to scheduling errors.	9
3. It is difficult to accommodate last-minute changes for events.	7
4. Supplies are ordered for each event. Often shipments are received several times a day.	6
5. There are often problems communicating changes to event facilities.	5
6. There is little historical information about customers and meals.	3

Objectives

1. Provide a Web system for customers to obtain pricing information and place orders.
2. Create or purchase a human resources system with a scheduling component.
3. After customers have signed an event contract, provide them with Web access to their account and a means for them to update the number of guests. Notify management of changes.
4. Provide a means to determine overall quantities of supplies for events occurring within a concurrent time frame.
5. Provide a system for communicating changes to key personnel at event facilities.
6. Store all event data and make summary information available in a variety of formats.

Requirements

1. The system must be secure.
2. Feedback must be entered by event managers at the close of each event.
3. There must be a means for event facilities to change their contact person.
4. The system must be easy to use by nontechnical people.

Constraints

1. Development costs must not exceed $50,000.
2. The initial Web site for customer orders must be ready by March 1 to accommodate requests for graduation parties and weddings.

C. SELECTION OF PROJECTS

Project Selection Methods

- Projects come from many different sources and for many reasons.

- Not all should be selected for further study.

- Only those are selected that address a problem or could bring about improvement.

- Five specific criteria for project selection:

- **1.** Backing from management.

- **2.** Appropriate timing of project commitment.

- **3.** Possibility of improving attainment of organizational goals.

- **4.** Practical in terms of resources for the systems analyst and organization.

- **5.** Worthwhile project compared with other ways the organization could invest resources.

- possibility of improving attainment of organizational goals such as

- (1) improving corporate profits,

- (2) supporting the competitive strategy of the organization,

- (3) improving cooperation with vendors and partners,

- (4) improving internal operations support so that goods and services are produced efficiently and effectively,

- (5) improving internal decision support so that decisions are more effective,

- (6) improving customer service, and

- (7) increasing employee morale.

- The project should put the organization on target, not deter it from its ultimate goals.

PROJECT WORTH

Speed UP!
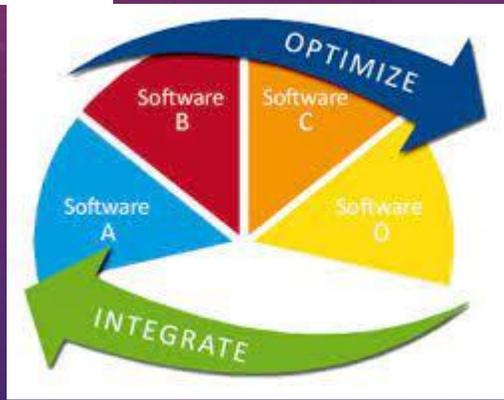
- When a business commits to one project, it is committing resources that thereby become unavailable for other projects.

- It is useful to view all possible projects as competing for the business resources of time, money, and people.

- Worthiness of the systems project include

- (1) speeding up a process,

- (2) streamlining a process through the elimination of unnecessary or duplicated steps,

- (3) combining processes,

- (4) reducing errors in input through changes of forms and display screens,

- (5) reducing redundant storage,

- (6) reducing redundant output, and

- (7) improving integration of systems and subsystems

DETERMINING FEASIBILITY OR FEASIBILITY ANALYSIS

- Once the number of projects has been narrowed according to the criteria discussed previously, it is still necessary to determine if the selected projects are feasible.

- the feasibility study is used to gather broad data for the members of management that in turn enables them to make a decision on whether to proceed with a systems study.

- systems projects feasibility is assessed in three principal ways:

  - operationally,

  - technically, and

  - economically.

- Data for the feasibility study can be gathered through interviews

- The systems analyst typically interviews those requesting help and those directly concerned with the decision-making process, typically management.

- The feasibility study must be highly time compressed, encompassing several activities in a short span of time.

The Three Key Elements of Feasibility

Technical Feasibility
      Add on to present system
      Technology available to meet users' needs

Economic Feasibility
      Systems analysts' time
      Cost of systems study
      Cost of employees' time for study
      Estimated cost of hardware
      Cost of packaged software or software development

Operational Feasibility
      Whether the system will operate when installed
      Whether the system will be used

A. DETERMINING WHETHER IT IS POSSIBLE

- **TECHNICAL FEASIBILITY.**

- The analyst must find out whether it is possible to develop the new system given the current technical resources.

- If not, can the system be upgraded or added to in a manner that fulfills the request under consideration?

- If existing systems cannot be added onto or upgraded, the next question becomes whether there is technology in existence that meets the specifications.

- the analyst can ask whether the organization has the staff who are technically proficient enough to accomplish the objectives.

- If not, the question becomes whether they can hire additional programmers, testers, experts, or others who may have different programming skills from theirs, or maybe outsource the project completely.

- Still another question is whether there are software packages available that can accomplish their objectives, or does the software need to be customized for the organization?
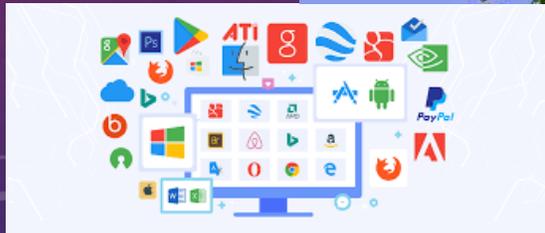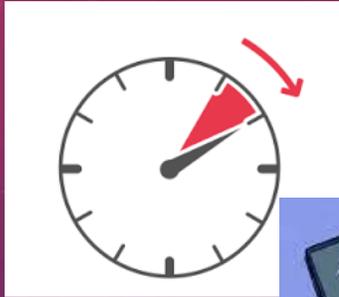
- **ECONOMIC FEASIBILITY.**

- Economic feasibility is the second part of resource determination.

- The basic resources to consider are your time and that of the systems analysis team,

  - the cost of doing a full systems study (including the time of employees you will be working with),

  - the cost of the business employee time,

  - the estimated cost of hardware, and

  - the estimated cost of software or software development.

- The concerned business must be able to see the value of the investment it is pondering before committing to an entire systems study.

- If short-term costs are not overshadowed by long-term gains or produce no immediate reduction in operating costs, the system is not economically feasible and the project should not proceed any further.

- **OPERATIONAL FEASIBILITY.**

- Suppose for a moment that technical and economic resources are both judged adequate.

- The systems analyst must still consider the operational feasibility of the requested project.

- Operational feasibility is dependent on the human resources available for the project and involves projecting whether the system will operate and be used once it is installed.

- If users are virtually wed to the present system, see no problems with it, and generally are not involved in requesting a new system, resistance to implementing the new system will be strong.

- Chances for it ever becoming operational are low.

- Alternatively, if users themselves have expressed a need for a system that is operational more of the time, in a more efficient and accessible manner, chances are better that the requested system will eventually be used.

- Much of the art of determining operational feasibility rests with the user interfaces that are chosen