Module 2 : Initiating Projects

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ILOC: Project Management (Autonomy)

Agenda : Initiating Projects

- How to get a project started ?
- Selecting projects strategically
- Project selection models
  - Numeric / Scoring Models and
  - Non-numeric models
- Project sponsor and creating charter
- Project Portfolio process
- Project proposal
- Effective project team
- Stages of team development & growth (forming, storming, norming & performing),
- Team dynamics.

Project Development Phases

- Conception Phase – A
- Definition Phase – B
- Execution Phase – C
- Operation Phase - D

System Users

- Top Management – Pays for and make decisions about project
- User Operators – Utilize the product / projects outcome.

System Development Organization (SDO)

- Group doing the project – (studying, designing, developing system etc)
  - Top Management
  - Project Leader
  - Contractor
  - Subcontractor etc

Phase A - Conception

- Examines users environment & objectives
- Identifies alternative solution
- Requisite resources, organization strategies
- Determines technical , economic and environmental feasibility of undertaking project
- Contractor presents user **formal proposal** that describes system concept, suggested solution and contractors capability to do it
- User makes choice among contractor

Constraints in System Development

- Labor
- Facilities
- Capital
- Schedule
- Knowledge
- Technology

Constraints in System Development

- Sufficient Labor – must be available at right time. Inappropriate Labor with slow development, cancellation of project
- Facilities- equipment, tools must be available.
- Sufficient Capital- must be available to produce facilities, materials, support labor.
- Time – tight schedule with sufficient labor, facilities & capital
- Knowledge – required for developing advance systems with repetitive experimentation with slow development. So requirements must be compromised.
- Technology – need to utilize knowledge

Project Initiation: How to Start Your Project Off Right

"Great projects often start with great hopes and expectations"

ILOC: Project Management (Autonomy)

What is Project Initiation?

- “Answer the questions:
  - What?
  - Why?
  - Who?
  - How?
  - When?”

Justifies your project: Why?

- **Business Case**
  - Benefits
  - Options
  - Cost and Timescale
  - Cost/Benefit Analysis
  - **Risk Analysis**
    - Risk Identification
    - Risk Prevention
    - Risk Management
    - Risk Monitoring

The processes of developing a Business case

- Select core team: credibility, alignment with organization value and access to real cost
- Define measurable organizational value: methodology, goal and measure of success
- Identify alternatives
- Define feasibility and assess risk
- Define total cost of ownership
- Define total benefits of ownership
- Analyze alternatives
- Propose and support recommendations

WHO? Defines the roles and responsibilities of project participants.

Project Organization Chart/Structure: Create a diagram that shows the lines of authority and reporting for each project team member.

- Project Sponsor
- Project Manager
- Project Team

How and When?(High level overview)

- How project is implemented
  - Timeline
  - Resources

Project Initiation Document

- Your Project Initiation Document does the following:
  - Defines your project and its scope.
  - Justifies your project.
  - Secures funding for the project, if necessary.
  - Defines the roles and responsibilities of project participants.
  - Gives people the information they need to be productive and effective right from the start.

Project Definition

- **Purpose:** Why are you doing this work? Describe the desired end result of this project.
- **Objectives:** What specific outcomes will be achieved, and how will you measure these outcomes? Remember to limit the number of objectives for your project – four or five goals are typically enough.
- **Scope:** What are the boundaries for this project (for example, type of work, type of client, type of problem, geographic area covered)? List any areas excluded that you believe stakeholders might assume are included, but are not. The more specific you are, the less opportunity there is for misunderstanding at a later stage in the project.

Project Definition

- **Deliverables:** What will the project deliver as outputs? Where you can, describe deliverables as tangible items like reports, products, or services. Remember to include a date that each deliverable is expected. You'll use this information to monitor milestones.
- **Constraints:** What things must you take into consideration that will influence your deliverables and schedule? These are external variables that you cannot control but need to manage.
- **Assumptions:** What assumptions are you making at the start of the project? If necessary, schedule work to confirm these assumptions.

Initial Project Plan

- **Assignments:** What major tasks (with milestones) will be completed during the project?
- **Schedule:** Provide a report of the estimated time involved for the project. PID simply summarizes the anticipated schedule. high level Gantt chart or similar schedule
- **Human Resources:** How many days activity will be needed to complete the project? How many support staff will be needed? Will you need to bring more people onto the project team?
- **Project Control:** How will progress be monitored and communicated?
- **Quality Control:** How will the quality of deliverables be evaluated and monitored?

Project Charter

- **Project Charter** is one of the major outputs of the project initiation phase. Project charter describes high-level information about the project.
  - It includes sponsor information, high-level scope, high-level risks, business need, project manager information, etc.
- The purpose of a project charter is to:
  - Provide an understanding of the project, the reason it is being conducted, and its justification
  - Establish early on in the project the general scope
  - Establish the project manager and his or her authority level. A note of who will review and approve the project charter must be included.

PID Item		Check When Complete
Section 1: What is the Project all About?		
Project Title		
Background		
Purpose		
Objectives (and how they will be measured)		
Project Scope		
Exclusions From Scope		
Deliverables (including dates of completion)		
Constraints		
Assumptions		
Section 2: Why Should This Project go Ahead?		
Business Case:	Project Benefits Options Cost and Timescale Cost/Benefit Analysis	
Risk Analysis:	Risk Identification Risk Prevention Risk Management Risk Monitoring	

PID Item		Check When Complete
Section 3: Who Will Work on the Project?		
Roles and Responsibilities		
Project Organization Chart/Structure Diagram		
Names of:	Project Sponsor Project Manager Project Team	
Section 4: How and When Will the Project be Delivered?		
Initial Project Plan		
Assignments/Milestones		
Schedule (Gantt Chart)		
Human Resource Requirements:	Project Team Support Staff Additional Staff	
Project Control:	Monitoring Mechanisms Communication Channels and Schedules	
Quality Control		

Identification Section

- List the project name, the date of the current version of the project charter, the sponsor's name and authority, and the project manager's name.

Example:

- **Project Name:** Rice University Computer Store Creation
- **Project Sponsor:** Jane Ungam, Facilities Manager
- **Date:** Jan 12, 2024
- **Revision:** 1
- **Project Manager:** Fred Rubens
- **Overview** of the Project
- Provide a simple but **precise statement** of the project.

Identification Section

Example: Rice University is planning to create a store to sell computer supplies.

Objective:

- *State the objectives of the project clearly and ensure they contain a measure of how to assess whether they have been achieved. The statement should be realistic and should follow the SMART protocol:*
- ***Specific** (get into the details)*
- ***Measurable** (use quantitative language so that you know when you are finished)*
- ***Acceptable** (to stakeholders)*
- ***Realistic** (given project constraints)*
- ***Time based** (deadlines, not durations)*

Identification Section

Example: The objective of this project is to implement a campus store that is ready to sell computer supplies such as memory sticks, mouse pads, and cables, when class starts in July 2024, with enough inventory to last through the first two weeks of classes.

Scope

Specify the scope of the project by identifying the domain or range of requirements.

Identification Section

Example: The scope of Rice's school supplies store project includes the activities listed below:

- Determine what supplies will be sold in the store.
- Establish competitive prices for the computer supplies.
- Source and secure supply vendors.
- Establish marketing, procurement, operations, and any other necessary departments, schools, centres, and institutes.
- It is equally important to include in the scope what is not included in the project.

Identification Section

Example: The scope of the project does not include:

- Development of any other school store departments
- Store design or construction

Major Milestones

- List all major milestones needed to ensure successful project completion.

Example:

- All vendors selected
- Contracts or orders completed with all vendors
- Supplies delivered to the store
- Pricing determined

Major Deliverables

- List and describe the major deliverables that will result from the project.

Example:

- Supplies procured
- Operations, procurement, marketing, and other teams established
- Store supplies stocked and displayed
- Store staffing completed, including work schedules
- Store operations policies, including hours of operation, established

Assumptions

- Outline the assumptions made in creating the project.
- An assumption is a fact you are unsure of but can either confirm at a later time or are simply stating so that the project can proceed as if the statement were true.

Example:

- **Only computer supplies** will be sold in the store.
- Customers will be the Rice University student body and faculty.
- Rice University students will manage the project and be responsible for ongoing operations.

Assumptions

Example:

- A store sponsor from the university faculty or staff will be assigned to mentor students and provide oversight.
- Store hours of operation will be approved by the Rice University students or store sponsor.
- Supplier deliveries will be arranged or the store sponsor will pick them up with students.
- Students will be empowered to contact vendors for order placement and inquiries via telephone.

Constraints & Business Need / Opportunity

Constraints

- Define any and all constraints on the project or those working on the project. This is an important part of the project charter.
- A constraint is anything that limits the range of solutions or approaches.

Constraints & Business Need / Opportunity

Example:

- Student availability to meet for project planning is limited to school hours.
- Software is not available for project planning and control.
- Business Need or Opportunity (Benefits)
- Provide a concise statement of the business need or opportunity that led to the creation of the project. Why was it created? What are the benefits? How does the project contribute to organizational objectives?

Constraints & Business Need / Opportunity

Example:

The goal of this project is to provide income for the Rice Student Centre while supplying necessary items to students and faculty at competitive prices. The school store will be a convenience to students since necessary supplies will be available on campus. This will help students learn to manage their personal supplies.

Preliminary cost and Risk

- Provide a statement indicating how the cost of the project will be defined and controlled.
- **Example:** The procurement team will assemble a proposal based on expected costs for review by the Dean of Undergraduate Studies.

Project Risks

- A risk is anything uncertain that may occur that will reduce or decrease the chances of project success.

Preliminary cost and Risk

Example:

- There is a state election coming and the new government **may change the taxation rules** for private university retail outlets.
- The cloud is changing student demand for media such as flash drives in somewhat **unpredictable ways**. If this happens faster than we forecast, we may be building a store that students don't need.
- Deliveries of store shelves, etc. will be **delayed if a major hurricane occurs.**

Project Charter Acceptance

- Provide the names, titles, and signature lines of the individuals who will sign off on the project charter.

Project Stakeholders

- Provide the key stakeholders and team members by function, name, and role.

Function	Name	Role
Project Manager	Mohini Sharma	Leads the project
Sponsor	Adrienne Watt	Project sponsor
etc.		

Phase A - Conception

Project Initiation

- Software Development Project begins when user perceives problem / need
- Need – Recognizes both problem & potential solutions for coping with problem
- Prove that need is significant and can be fulfilled at practical cost & ROI

Initial Investigation

Project Initiation

- **Initial Investigation –**
  - Starts with facts finding
  - Interview with upper level & functional manager, background research and existing documentation
  - Clear statement of problem is formulated
  - Solution Objectives are defined
  - List of alternative potential solution proposed.

Investigation Focuses on…

- The environment
- The needs
- Problem definition & objectives
- Preliminary alternative solutions
- Estimated cost
- Benefits
- Strengths & Weaknesses
- Affected individuals and Organization
- User must be convinced that – potential solution are consistent with goals & resources of organization.

Project Feasibility

- Preliminary feasibility – process of investigating problem & developing solution in sufficient detail.
  - User requesting proposals for solution (RFP)
  - Contractors doing feasibility studies & preparing proposals
  - User evaluating proposals

Phase A : Conception

- **Stage1:** Project Initiation – User performs **"Preliminary feasibility"** to investigate merit of pursuing idea in more detail
- **Stage 2**: Project Feasibility – User sends request for proposal (RFP) to SDOs
- Purpose of RFP is to determine if idea is feasible and to select SDO to do Phase B(Definition)
- SDO investigates feasibility of preparing winning proposal and performing profitable project
- SDO undertakes feasibility study as part of proposal process to do Phase B. If Wins SDO begins Phase B.

Request for Proposal (RFP)

- User describes his problems, objectives & requirements in RFP.
- It Contains following points:
  - Statement of work – specification of problem
  - Description of problem/need & type of solution
  - Scope of work to be performed by contractor
  - Request for solution (specifications + standards)
  - Description of how work will be measured.
  - Expected completion date & constraints .

J.Davidson Frame - Procedure for defining user needs

- Ask user to state the needs as clearly as possible – RFP contains vague/ incorrect statement , because user not clear with need
- Ask user a complete set of questions to further elicit the needs
- Are these real needs, or are there other, more fundamental ones?
- Are the needs important enough to pursue?
- If needs are fulfilled will they give rise to other needs?
- Will satisfying these needs also satisfy others?
- What effect do the unmet needs have on org and user?
- What other parties are affected by these needs and how will they react to our efforts?

J.Davidson Frame - Procedure for defining user needs

- Conduct Research to better understand needs – gather information to understand needs, define problem, propose a solution. Sources include interviews, org reports, observations , analysis of technical data etc
- Based on information from steps 2 and 3, restate and document the needs
- Give restated needs to the user- If user disagrees , repeat previous steps. Troublesome aspects:

J.Davidson Frame - Procedure for defining user needs

Troublesome aspects:

- Some needs are ever changing à Solution/ Plan should be flexible
- Some needs are only vaguely perceived- contractor need to convert vague feelings about needs into definite statement
- Solutions are confused with needs- In attempting to define need user. Contractor states solution à solution selected prematurely.
- Needs identified are for wrong user- don't be content with what one party tells you is need of another.
- There is more than one user and their needs differ – can all users needs be addressed? Do their need conflict? Must organize and classify needs.
- Users needs are distorted by experts- contractor reforms needs in terms of what he is best suited to do?
- Any of these à incorrect statement of needs

The Project Proposal

- Must be authorized by top management
- Project leader/manager is identified
- Project manager reviews requirements of RFP and then prepares detailed summary of project
- Project Team outlines work to be done for solution chosen in feasibility study – Statement of work [SOW].

The Project Proposal

- SOW reviews with user for clarity and correctness
- Project Proposal – Feasibility study + Plan for conducting system development
- Project Plan – Address time, cost and performance

The Project Proposal

- WBS – Work breakdown structure is used to determine work necessary to achieve performance specifications & subsequent work schedules & cost estimates.
- WBS – System engineering effort – convert system requirement to functional block, shows component, interfaces & quantitative design specification

Contents of a Project Proposal

- Executive Summary
- Technical Section
- Cost & Payment section
- Legal section
- Management Qualification Section

Contents of a Project Proposal

Executive summary

- Briefly state qualifications, experience & interests of contractor
- Unique outstanding features of proposal, price & contractors ability to do the project
- Contact person with contractor is identified

Contents of a Project Proposal

Technical section (Statement of work)

- Indicates scope of work
- Demonstrate method & appropriateness of approach
- Recognize and discuss any inherent problems in solution
- Describe realistic benefits in detail
- Contains schedule of when end items will be delivered based on WBS + Major project stages and key tasks, milestones and reviews.

Contents of a Project Proposal

Cost & Payment Section

- Labor Charges
- Material Expenses
- Price of project
- Preferred/ required contractual arrangement & method of payment.

Contents of a Project Proposal

Legal Section

- Contains anticipated / likely problems and provisions for contingencies.
- E.g. appropriate procedures for handling changes to scope of project & for project termination.

Contents of a Project Proposal

Management Qualification Section

- Background of contractor organization
- Related experience & achievements
- Financial responsibilities
- Organization management
- Resumes of project manager & key project personnel

Selection of Proposal

- Evaluated w.r.t. system performance, price & schedule
- Selection is based on :
  - Ability of solution to satisfy stated needs
  - ROI
  - Project Plan and management
  - Reputation of contractor
  - Likelihood of success/ failure risks
  - Fit to contractor resources and technological capabilities

Is Project approval Criteria?

- Financial
  - net present value/internal rate of return
  - payback
  - profitability index/budgetary constraint
- Management
  - support business objectives
  - respond to competition
  - better decision making
  - satisfy legal requirements
- Development
  - Project needed for effective operation
  - Introduction of new technology

Methods for **Selecting Best Proposal**

- Screening system
- Checklist / weighted checklist for rating proposal
- Weighted Rating
- Evaluation of project risk

Reference:
https://edisciplinas.usp.br/pluginfile.php/3741141/mod_resource/content/1/Cap%C3%ADtulo%20disponibilizado%20na%20Internet%20pela%20editora..pdf

Methods for **Selecting Best Proposal**

- **Screening system**
- Checklist / weighted checklist for rating proposal
- Weighted Rating
- Evaluation of project risk

Screening System

- Identifying the factors that are important
- Establishing a minimum of acceptable levels of requirements and eliminate projects that fail on any one of these standards.
- This is appropriate if the minimum standards reflect what management demands in return for its investment.
- A way to implement screening assure implementation of policy limits

Screening System

- Eliminate proposals not meeting minimum requirements, weeding out projects with unacceptable features.
- Project Profile is to display how the project proposal compares with standards, as well as how it compares with other proposals.

Project Selection

- Screening models help managers pick winners from a pool of projects.
- Screening models are numeric or nonnumeric and should have:

Realism

Capability

Flexibility

Ease of use

Cost effectiveness

Comparability

Numeric and Non-Numeric Selection Models

- **Numeric models** seek to use numbers as inputs for the decision process involved in selecting projects.
- Values can be derived either **objectively or subjectively**;
- Eg.: **objective, external values** - The bridge's construction will require 800 cubic yards of cement") or
- **subjective, internal values** - need to hire two code checkers to finish the software development within eight weeks. An expert's opinion on an issue may be subjective but very accurate.
- **Key to Remember :** Most selection processes for project screening involve a combination of subjective and objective data assessment and decision making.
- **Non-numeric models -** do not employ numbers at decision inputs, relying instead on other data

Screening & Selection Issues

- Risk – unpredictability to the firm
- Commercial – market potential
- Internal operating – changes in firm operations
- Additional – impact on company's image, patent protection, strategic fit, etc.

All models only partially reflect reality and have both objective and subjective factors imbedded

Table 3.1 : Issues in Project Screening & Selection

Risk - **Factors that reflect elements of unpredictability therafirm, including:**

- Technical Risk—risks due to the development of new or untested technologies
- Financial Risk—risks from the financial exposure caused by investing in the project
- Safetyrisk—risks to the well-being of users or developers of the project
- Quality Risk—risks to the firm's goodwill or reputation due to the quality of the completed project
- Legal exposure—potential for lawsuits or legal obligation

Table 3.1 : Issues in Project Screening & Selection

Commercial - Factors that reflect the market potential of the project, including:

- Expected Return On Investment
- Payback Period
- Potential Market Share
- Long-term market dominance
- Initial Cash Outlay
- Ability To Generate Future Business / newmarkets

Table 3.1 : Issues in Project Screening & Selection

Internal Operating Issues - Factors that refer to the impact of the project on internal operations of the firm, including:

- Change in workforce size or composition
- Need to develop / train employees
- Change in physical environment
- Change in manufacturing or service operations resulting from the project

Non-Numeric Project Selection Models

- The Sacred Cow
- The Operating Necessity
- The Competitive Necessity
- The Product Line Extension
- Comparative Benefit Model
- Q-Sort Model

The Sacred Cow

- The senior and powerful official in the company suggest the project in this case.
- Mostly the project is simply initiated from an apparent opportunity or chance which follows an un-established idea for a new product, for the designing & adoption of the latest information system with universal database, for establishment of new market or for some other category of project that demands the investment of the resources of the organization.
- Eg.: A firm's beholden duty **to maximize shareholder value, especially for publicly traded companies**

The Operating Necessity

- If a plant is threatened by the flood then It is not much complex and effortful to start a project for developing a protective desk. This is the best example of operating a necessity.
- **Eg:** Potential projects are evaluated by using this criterion of project selection by the XYZ steel corporation.
- Certain questions come in front of the project is needed in order to keep the system functioning like **is the estimated cost of the project is effective for the system?** If yes, then the project costs should be analyzed to ensure that these are maintained as the minimum and compatible with the success of the project. However, the project should be financed.

The Competitive Necessity

- In the late **1960s**, XYZ Steel considered an important plant rebuilding project by using this criterion in its steel bar producing facilities near **Chicago**. It was clear to the management of the company that certain modernization is required in its bar mill in order **to keep the current competitive position** in the market area of Chicago.
- Similarly, certain undergraduate and **Master in Business Administration** (MBA) programs are restructured in the offerings of many universities to keep their competitive position in the academic market. (Syllabus revision)
- **Precedence is taken by the operating necessity projects** over competitive necessity projects regarding investment. But both of these types of **project selection models are considered much useful & effective** as compared to other select models.

The Product Line Extension

- In case of the product line extension, a project considered for development & distribution of new products will be **evaluated on the basis of the extent to which it suits the company's current product lines, fortify a weak line, fills a gap**, or enhanced the line in a new & desirable direction. (New departments)
- In certain cases, careful **evaluations of profitability is not needed**. The decision-makers can perform actions on the basis of their belief about the **probable influence of the addition of the new product to the line over the entire performance of the system.**

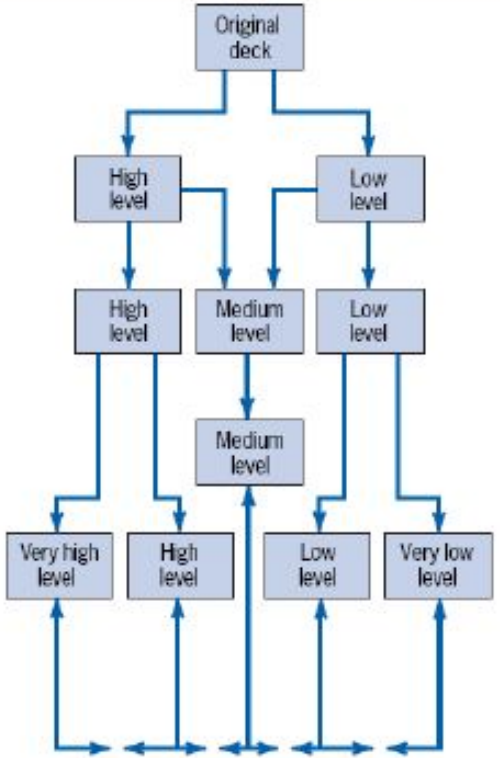
The Comparative Benefit Model

- There is no formal method of selection of projects in the organization but it is the perception of the selection committee members that **certain projects will benefit the company** more than the others even they lack the suitable way to specify or measure the proposed benefit.
- **United States Companies** considering various **social programs for providing funds** to them to use this concept to make the decisions.
- All the considered **projects with positive recommendations are examined by the senior management** of the funding organization in order to make an effort to develop a portfolio that can effectively suit the objectives & budgets of the organization.

Q-Sort Model

- The Q-Sort model is one of the most straightforward techniques for ordering projects. According to their relative merits, the projects are first divided into three groups which are **Good, Fair and Poor**.
- The projects within each type are ranked from best to worst when all types have eight or fewer members. Again relative merit provides the basis for determining the order. The specific criterion is used by the rater to rank each project or he may merely use general entire judgment.

Example : Q-Sort Model

Steps	Results at Each Step
1. For each participant in the exercise, assemble a deck of cards, with the name and description of one project on each card. 2. Instruct each participant to divide the deck into two piles, one representing a high priority, the other a low-priority level. (The piles need not be equal.) 3. Instruct each participant to select cards from each pile to form a third pile representing the medium-priority level. 4. Instruct each participant to select cards from the high-level pile to yield another pile representing the very high level of priority; select cards from the low-level pile representing the very low level of priority. 5. Finally, instruct each participant to survey the selections and shift any cards that seem out of place until the classifications are satisfactory.	

Q-Sort Model Example

Numeric Project Selection Models (Profit/Profitability)

- The **profitability is used as the only measure** of acceptability by the majority of organizations using different types of project selection models.
  - Payback Period
  - Average Rate of Return
  - Discounted Cash Flow
  - Internal Rate of Return (IRR)
  - Profitability Index
  - Other Profitability Models