### **Project Value and Risks**

#### **Project Value**

1. **Direct and Indirect Value:**
   * Measures the positive and negative outcomes of a project and its outputs.
   * Metrics to Consider:
     + Revenues (both direct and indirect)
     + Social and environmental impact
     + Image and publicity
     + Know-how acquired
   * Related to the business model and sustainability of the project outputs.
2. **Sustainability:**
   * Refers to the ability to sustain the project and its outputs after the project ends.
   * Consider operational costs and the longevity of project outputs.
   * Important for determining if a project is worth starting.
   * Often overlooked if the project generates revenue during execution.
3. **Alignment with Strategic Objectives:**
   * Measures how crucial and relevant a project is for the organization.
   * Affects:
     + Priority assigned to the project
     + Resource allocation
     + Internal support
     + Opportunities for the project team post-project

#### **Project Risks**

1. **Resource Availability:**
   * Projects need human, financial, and technical resources at specific times.
   * Challenges in preempting resources can be mitigated by checking project needs.
   * Aspects to Consider:
     + Required resources
     + Current load and availability
     + Future load and availability projections
     + Project priority and importance
2. **Timing:**
   * Projects often have specific time-windows for delivering outputs.
   * Delivering too early or too late can render outputs useless.
   * Consider competition and timing for similar products.
3. **Technical Difficulty and Uncertainty:**
   * Success depends on solving technical challenges as they arise.
   * Identifying these challenges is crucial for assessing project risks.

### **Score Matrices**

1. **Purpose and Overview:**
   * Score matrices provide a structured way to evaluate projects beyond financial metrics (like Payback, ROI, NPV).
   * They consider a standardized set of criteria and weights to assess various aspects of a project.
   * This qualitative evaluation helps in comparing projects based on how well they meet different criteria.
2. **Example of a Score Matrix:**
   * Criteria are evaluated on a scale or binary (e.g., YES/NO).
   * Each criterion has a weight indicating its importance.
   * The total score is the sum of the weighted values based on the project’s performance against each criterion.
3. **Example Matrix:**

| **Factor** | **Value** | **Weight** | **SUM** | **Comment** |
| --- | --- | --- | --- | --- |
| The project aligns with strategic objectives | YES | 2 | 2 |  |
| The project has a profit > 20% | NO | 4 | 0 |  |
| Payback period < 2 years | YES | 5 | 5 |  |
| Enlarges the customer base | YES | 2 | 2 |  |
| The project requires a standard technology | NO | 3 | 0 |  |
| The quality constraints are simple to meet | YES | 1 | 1 |  |
| The timing is not too tight | NO | 4 | 0 |  |
| We have skilled personnel to do the work | YES | 5 | 5 |  |
| **Total Score** |  |  | 15 |  |

* + **Value:** Measures how well the project meets each criterion.
  + **Weight:** Indicates the importance of each criterion.
  + **SUM:** Total score based on the weighted values.

1. **Discussion:**
   * **Advantages:**
     + Simple and encourages objectivity.
     + Helps in discussing and evaluating project characteristics.
     + Broadens the range of evaluation and is not biased towards short-term projects.
   * **Disadvantages:**
     + May result in lengthy and less useful lists if not properly managed.
     + Without weight matrices, all factors might seem equally important.
2. **Caveat:**
   * Ensure that all factors either positively or negatively influence the decision or use scores with different signs to avoid biases.
3. **Example of a Bad Matrix:**

| **Factor** | **Value** | **Weight** | **SUM** | **Comment** |
| --- | --- | --- | --- | --- |
| The project has a profit > 20% | YES | 3 | 3 |  |
| The project is highly risky | NO | 3 | 0 |  |
| **Total Score** |  |  | 3 | Risky project is preferred |

* + Here, a positive and negative factor affect the matrix similarly, which may lead to misleading evaluations.

### **SWOT Analysis**

1. **Overview:**
   * SWOT Analysis is a systematic technique developed by Albert Humphrey to assess the feasibility of a project or develop achievable goals.
   * It involves evaluating four elements:
     + **Strengths**
     + **Weaknesses**
     + **Opportunities**
     + **Threats**
   * Typically presented in a 2x2 matrix.
2. **Factors to Consider:**
   * **Strengths:**
     + Competencies
     + Selling points
     + Resources and capabilities
   * **Weaknesses:**
     + Disadvantages
     + Methodological issues
     + Timing constraints
     + Capability gaps
   * **Opportunities:**
     + Market and industry trends
     + Weaknesses of competitors
     + Emerging technologies
   * **Threats:**
     + Market and industry trends
     + Competing technologies
     + Sustainability challenges
   * **Objective:**
     + Identify internal strengths and weaknesses and external opportunities and threats to make informed project decisions.

### **Stakeholder Analysis**

1. **Goal:**
   * To understand who the project stakeholders are and their influence on the project.
2. **Techniques:**
   * One common technique uses a **2x2 matrix**:
     + **Power Dimension:** Measures the level of power a stakeholder can exert (Low or High).
     + **Interest Dimension:** Measures the level of interest a stakeholder has in the project (Negative or Positive).
   * This matrix helps in defining specific management strategies for different stakeholders based on their power and interest levels.

### **Assessing Sustainability**

1. **Objective:**
   * To understand the operational costs and long-term viability of a project’s outputs.
2. **Considerations:**
   * **Business Model:** How the project fits into the business model.
   * **Break-even Point:** The point at which the project's revenues cover its costs.
   * A preliminary sustainability analysis can assist in selecting among different project implementations.

### **Feasibility Study**

1. **Purpose:**
   * To formally authorize a project and align it with organizational goals.
   * Serves as a basis for project selection and decision-making by management.
2. **Outputs:**
   * Ranges from a few to hundreds of pages, depending on complexity and formality.
3. **Goals:**
   * **Identify:**
     + Project goals
     + Project constraints
   * **Assess:**
     + Value and risks using various techniques
   * **Alignment:**
     + Ensure the project aligns with customer and organizational objectives
   * **Demonstrate:**
     + Achievability of project goals within quality, cost, and time constraints
4. **Feasibility Document Structure:**
   * **Statement of Work:** Describes what the project will accomplish.
   * **Business Objectives:** Includes the value of the project and relevant business model information.
   * **Project Budget:** Forecasts expenses and incomes.
   * **Project Milestones:** Rough schedule identifying key events.
   * **Stakeholder Analysis:** Overview of stakeholders involved.
   * **Project Risks:** Identifies potential risks associated with the project.
   * **Alternatives:** Evaluates possible alternatives, like make or buy decisions.
   * **Evaluation:** Uses techniques to evaluate the project and alternatives.
5. **Additional Considerations:**
   * **For the Client:** Helps understand short and long-term perspectives.
   * **For the Performing Organization:** Assists in deciding whether to proceed with the project.
   * **For the Project Manager:** Provides insight into whether the project is within their comfort zone and worth pursuing.

### **The Project Approval Process**

1. **Steps:**
   * **Initial Request:** Identify a preliminary project manager.
   * **Feasibility Study Preparation:** The project manager prepares a feasibility study, which is agreed upon with the customer and key stakeholders.
   * **Submission for Authorization:** The feasibility study document is submitted for authorization.
   * **Formal Decision:** The document is analyzed, and a formal decision is made regarding the project.
   * **Appointment and Planning:** Upon approval, the project manager is officially appointed, and the project moves to the planning phase.