

Lecture 3

→ (Week 3 - Jan 22, 2024)

Week 3: Agenda:

- Requirements Inception
 - Primary investigation procedure
- Requirements Elicitation
 - Requirement Resources
 - Stakeholder Analysis
 - Elicitation Techniques

RE Lifecycle (Requirements Engineering Lifecycle):

- The RE Lifecycle is the process of managing requirements from inception to delivery and maintenance.
- It involves stages such as inception, elaboration, construction, and transition.
- These stages include gathering, documenting, analyzing, and validating requirements.

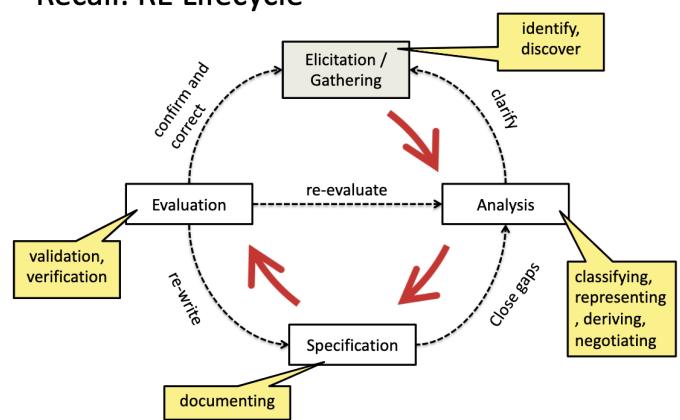
Requirements Inception:

- Inception is the initial step in the RE Lifecycle to establish a common vision for the product (product vision) and project scope (project scope).
- It includes:
 - Analyzing a portion of the use cases (about 10%).
 - Examining critical non-functional requirements.
 - Creating a business case.
 - Setting up the development environment for the upcoming elaboration phase.
- Inception aims to answer questions like:
 - What is the project's vision and business case?
 - Is the project feasible?
 - Should we buy or build the system?
 - What is the rough cost estimate (e.g., \$10K, \$100K, millions)?
 - Should we proceed or stop?
- The focus is not on defining all requirements or generating a detailed estimate or project plan.
- The inception phase is relatively short, typically lasting one or a few weeks.
- Its purpose is to decide if the project merits further investigation during the elaboration phase.

Activities and Artifacts in the Inception Phase:

- Short requirements workshop.
- Identification of most actors, goals, and use case names.
- Writing of most use cases in a brief format.
- Detailing 10-20% of the use cases for better scope and complexity understanding.
- Identifying influential and risky quality requirements.
- Creation of the Initial Vision and Supplementary Specification document.
- Compilation of a risk list.
- Technical proof-of-concept prototypes and investigations to assess technical feasibility.
- User interface-oriented prototype to clarify functional requirements.

Recall: RE Lifecycle



- Recommendations on component buy/build/reuse.
- High-level candidate architecture and component proposals.
- First iteration planning.
- Candidate tools list.

What is Inception?

- Inception is the initial phase in the Requirements Engineering Lifecycle.
- It aims to establish a shared vision for the project, assess feasibility, and prepare for further investigation.

How Long is Inception?

- Inception should be relatively short, typically one to a few weeks.
- If it extends beyond a week, it might indicate a failure to decide whether the project warrants further investigation.
- It may involve the first requirements workshop and planning for the elaboration phase.

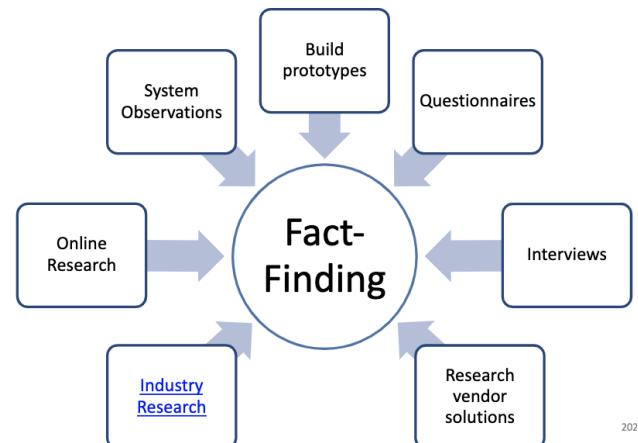
Sample Inception Artifacts

Artifact	Comment
Vision and Business Case	Describes the high-level goals and constraints, the business case, and provides an executive summary.
Use-Case Model	Describes the functional requirements. During inception, the names of most use cases will be identified, and perhaps 10% of the use cases will be analyzed in detail.
Supplementary Specification	Describes other requirements, mostly non-functional. During inception, it is useful to have some idea of the key non-functional requirements that have will have a major impact on the architecture.
Glossary	Key domain terminology, and data dictionary.
Risk List & Risk Management Plan	Describes the risks (business, technical, resource, schedule) and ideas for their mitigation or response.
Prototypes and proof-of-concepts	To clarify the vision, and validate technical ideas.
Iteration Plan	Describes what to do in the first elaboration iteration.
Phase Plan & Software Development Plan	Low-precision guess for elaboration phase duration and effort. Tools, people, education, and other resources.
Development Case	A description of the customized UP steps and artifacts for this project. In the UP, one always customizes it for the project.

8

These artifacts are only partially completed in this phase. They will be iteratively refined in subsequent iterations

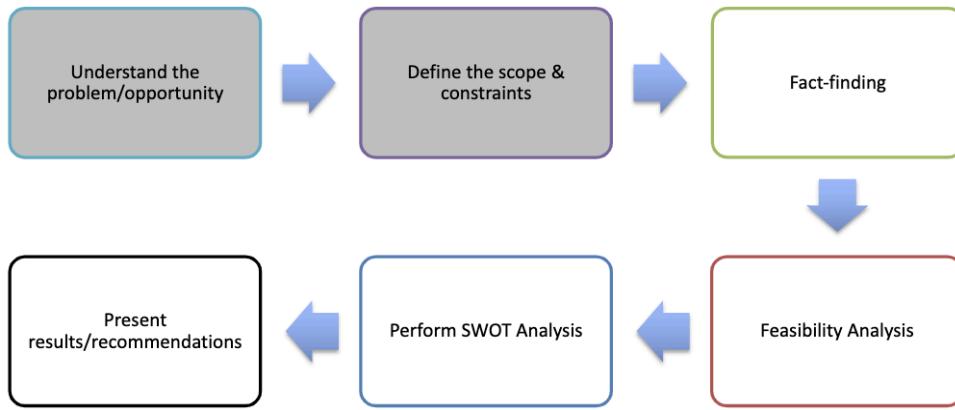
Fact Finding Techniques



202

Preliminary Investigation

- A preliminary investigation evaluates the business opportunity or problem



1. Questionnaires:

- A questionnaire is a pre-prepared form used to ask the same set of questions.
- It is suitable for cases with many interviewees or when distance is a factor.
- Questionnaires can be used with or without an interview.
- Multiple questionnaire designs cater to different audiences.
- Wording is crucial as there is no opportunity for clarification.
- Beware of buzzwords, which may have different meanings to different people.
 - Buzzwords are fashionable terms in specific professions, fields of study, or popular culture (e.g., "4G").
- Advantages:**
 - Economical for large populations.
 - Respondents don't need to write lengthy responses.
 - Provides preliminary insight into business.
 - Closed-ended questions direct responses.
 - Open-ended questions encourage discussion and elaboration.
- Disadvantages:**
 - Some questions may not apply to everyone.
 - Lacks direct contact with respondents.
 - Not suitable for gathering detailed information.

Types of Questions

	Closed-ended questions - Require short answer (Y, N, #)	e.g. How long have you been working for this department?
	Open-ended questions - Require long answer	e.g. what kind of problem do you have with the current system?
	Compound questions - 2 or more questions in one	e.g. How often do you get Error Report and what do you do with them?
	Leading questions - Influence interviewee's answer	e.g. Do you agree with many of your colleagues that the current system must be replaced?
	Probing questions - Don't cross examine, but ask for examples	e.g. what constitutes an "error in output"? Please give an example.

Ex. RMO: Ridgeline Mountain Outfitters

2. Interviews:

- An interview is a conversation between two or more people where the interviewer asks questions to elicit facts or statements from the interviewee.
- Appropriate for open-ended questions.
- Can be one-on-one or one-to-many.

Advantages of Interviews:

- Direct face-to-face contact.
- Helps avoid distractions and sidetracks.

Disadvantages of Interviews:

- Time-consuming.

RMO Questionnaire

This questionnaire is being sent to all telephone-order sales personnel. As you know, RMO is developing a new customer support system for order taking and customer service.

The purpose of this questionnaire is to obtain preliminary information to assist in defining the requirements for the new system. Follow-up discussions will be held to permit everybody to elaborate on the system requirements.

Part I. Answer these questions based on a typical four-hour shift.

1. How many phone calls do you receive? _____
 2. How many phone calls are necessary to place an order for a product? _____
 3. How many phone calls are for information about RMO products, that is, questions only? _____
 4. Estimate how many times during a shift customers request items that are out of stock. _____
 5. Of those out-of-stock requests, what percentage of the time does the customer desire to put the item on back order? _____ %
 6. How many times does a customer try to order from an expired catalog? _____
 7. How many times does a customer cancel an order in the middle of the conversation? _____
 8. How many times does an order get denied due to bad credit? _____

Part II. Circle the appropriate number on the scale from 1 to 7 based on how strongly you agree or disagree with the statement.

Question	Strongly Agree	Strongly Disagree
It would help me do my job better to have longer descriptions of products available while talking to a customer.	1 2 3 4 5 6 7	
It would help me do my job better if I had the past purchase history of the customer available.	1 2 3 4 5 6 7	
I could provide better service to the customer if I had information about accessories that were appropriate for the items ordered.	1 2 3 4 5 6 7	
The computer response time is slow and causes difficulties in responding to customer requests.	1 2 3 4 5 6 7	

Part III. Please enter your opinions and comments.

Please briefly identify the problems with the current system that you would like to see resolved in a new system.

- Costly, especially for numerous interviewees or those located in different locations.

Types of Interviews:

- Structured Interviews: The same questions are asked of each participant in the same order.
- Unstructured Interviews: Conversational questions are generated based on interviewees' responses.
- Semi-structured Interviews: Combination of structured and unstructured with an interview guide.

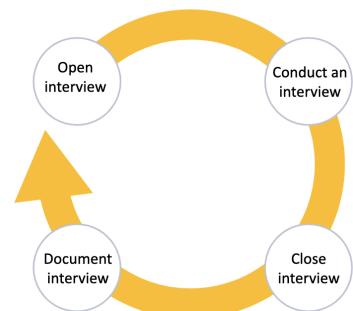
Interview Guide:

- An orderly list of questions to be asked during the interview.
- Different structures include:
 - Pyramid: Starts with closed-ended questions and then moves to open-ended questions.
 - Funnel: Begins with open-ended questions and ends with closed-ended questions.
 - Diamond: Combines closed-ended, open-ended, and closed-ended questions.

Preparing for an Interview:

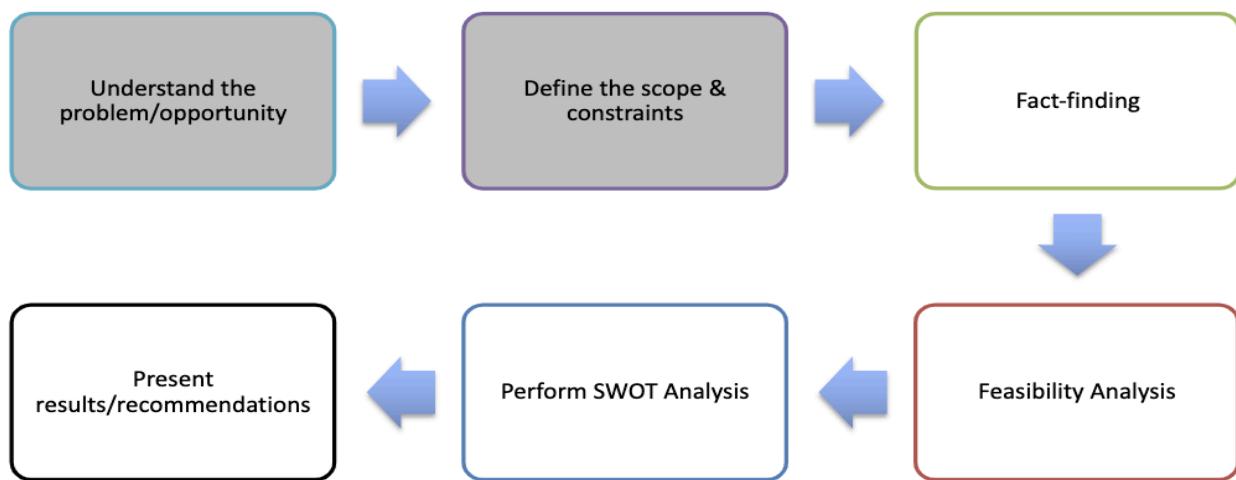
- Steps:
 - Read background information.
 - Schedule and inform interviewees.
 - Decide who to interview and what questions to ask.
 - Consider differences in viewpoints.
 - Avoid bias; interviewee feelings about the subject can influence their answers.
 - Keep the interview concise.
 - Ask about routine operations and exceptions.

Interview Procedure



Preliminary Investigation:

- A preliminary investigation is the initial step to assess a business opportunity or problem.
- It involves gathering initial data to understand the situation.



Evaluating Project Feasibility

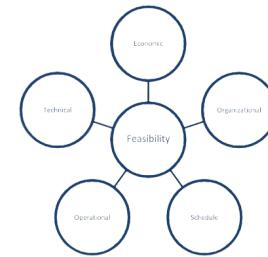
Feasibility Evaluation:

- Once a problem is defined, an analyst must decide whether to proceed or not.
- Project feasibility involves thoroughly evaluating and analyzing the proposed project's potential.
- It is based on extensive research and investigation to support decision-making.

- Various areas are assessed in a feasibility study to determine the project's viability.

Operational Feasibility:

- Operational feasibility assessment focuses on how well the proposed project fits into the existing business environment.
- Key considerations include:
 - Is there a workable solution to the problem?
 - Is the proposed system useful?
 - Will the system be used effectively after development?
 - Will the new system place additional demands on users?



Technical Feasibility:

- The technical feasibility assessment aims to understand the organization's current technical resources and their suitability for the proposed system.
- It evaluates hardware and software capabilities in meeting the system's needs.
- The central question is: "Can we build it?"

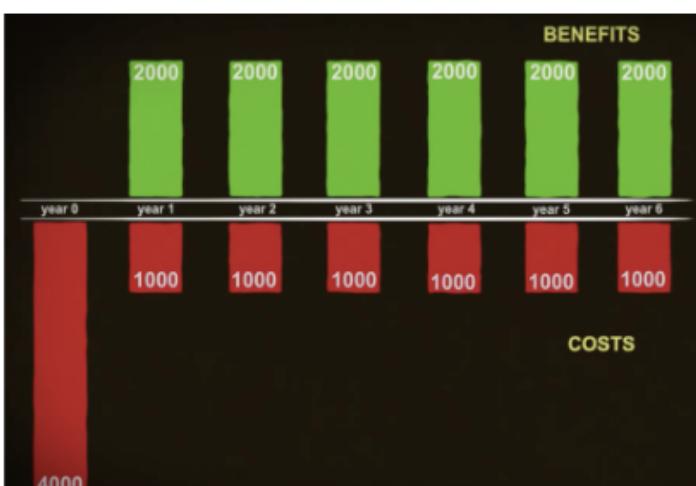
for the

Economic Feasibility:

- Economic feasibility analysis assesses the positive economic benefits the proposed system will provide to the organization.
- It is often referred to as a cost-benefit analysis, which identifies the costs and benefits associated with the system.
- The key question addressed is: "Should we build the system?"

Benefit-Cost Analysis:

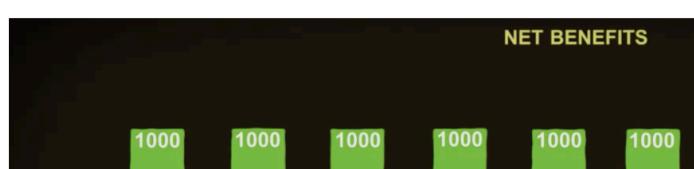
- Benefit-Cost Analysis (BCA) helps decide which financially sensible solution.
- Formula for calculating Benefit-Cost Ratio (BCR):
 - $BCR = (\text{Discounted value of incremental benefits}) / (\text{Discounted value of incremental costs})$.
- BCR helps determine whether the benefits outweigh the costs and whether the project is economically viable.



Costs	Benefits
Actual price of software	More efficient business processes
Cost of installation	More efficient staff
User training	Better customer information
Annual maintenance	Better data management

	Solution A	Solution B	Solution C
Costs	\$10000	\$15000	\$20000
Benefits	\$12000	\$19000	\$23000
BCR	1.2	1.27	1.15

Example with inflation



Example : No inflation

Net Present Value (NPV)

The Formula for NPV

$$NPV = \frac{\text{Cash flow}}{(1 + i)^t} - \text{initial investment}$$

where:

i = Required return or discount rate

t = Number of time periods

If analyzing a longer-term project with multiple cash flows, the formula for the net present value of a project is:

$$NPV = \sum_{t=0}^n \frac{R_t}{(1 + i)^t}$$

where: R_t =net cash inflow-outflows during a single period

i =discount rate or return that could be earned in alternative investments

t =number of time periods

Present Value (PV)

- The basic formula to convert a future cash flow to its present value is:

$$PV = \frac{\text{Cash flow amount}}{(1 + \text{rate of return})^n} \quad \text{where } n \text{ is the year in which the cash flow occurs.}$$

	Year 0	Year 1	Year 2	Year 3	Total
Total Benefits		45,000	50,000	55,000	
PV of Total Benefits		40,909	41,322	42,825	125,056
Total Costs		100,000	10,000	12,000	16,000
PV of Total Costs		100,000	9,091	9,917	12,021
					131,029

Source: Analysis and Design of Information Systems, 3rd ed. by Arthur M. Langer, Springer-Verlag, 2008.

Discounted value of incremental benefits

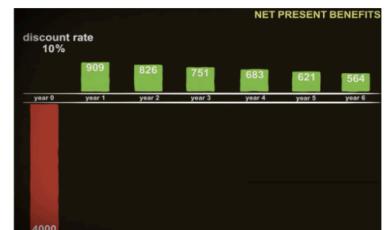
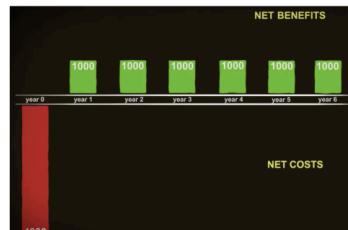
Discounted value of incremental costs

NPV : Example 1

- Imagine a project that costs \$1,000 and will provide three cash flows of \$500, \$300, and \$800 over the next three years. Assume there is no salvage value at the end of the project and the required rate of return is 8%. The NPV of the project is calculated as follows:

$$NPV = \frac{\$500}{(1 + 0.08)^1} + \frac{\$300}{(1 + 0.08)^2} + \frac{\$800}{(1 + 0.08)^3} - \$1000 \\ = \$355.23$$

NPV : Example 2



Return on Investment (ROI):

- ROI is a calculation that measures the average rate of return earned on the money invested in a project.

	Year 0	Year 1	Year 2	Year 3	Total
Total Benefits		45,000	50,000	55,000	
PV of Total Benefits		40,909	41,322	42,825	125,056
Total Costs		100,000	10,000	12,000	16,000
PV of Total Costs		100,000	9,091	9,917	12,021
					131,029

$$ROI = \frac{\text{Total Benefits} - \text{Total Costs}}{\text{Total Costs}}$$

$$ROI = \frac{152,000 - 138,000}{138,000} = \frac{14,000}{138,000} = 10.14\%$$

Organizational Feasibility:

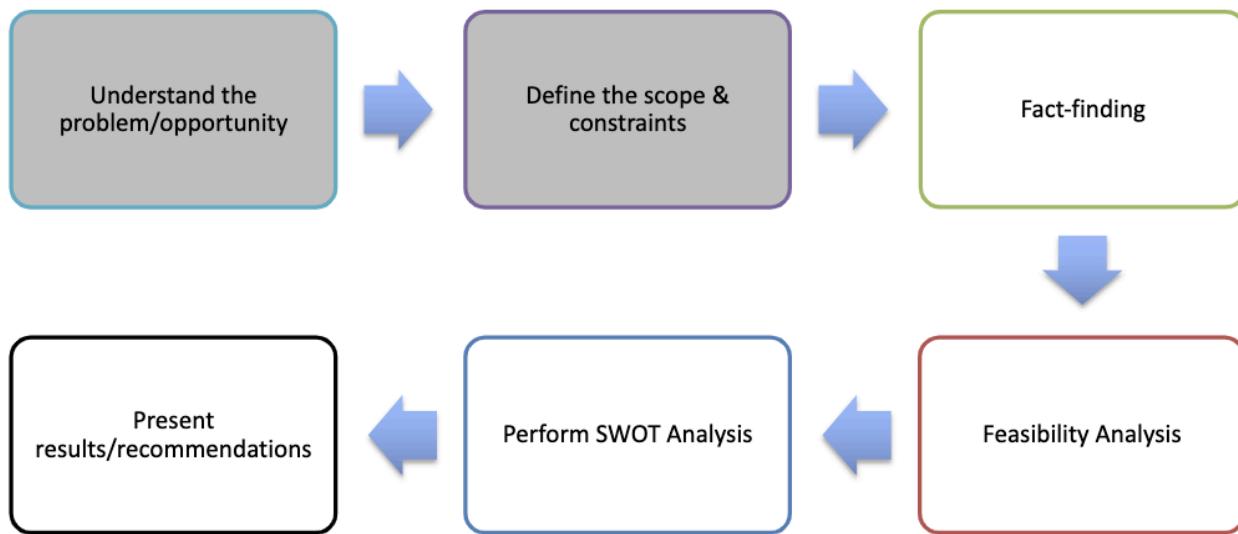
- Organizational feasibility assessment evaluates how well the system will be accepted by users and integrated into ongoing operations.
- It answers the question: "If we build it, will they come?"

Schedule Feasibility:

- Schedule feasibility assesses the reasonableness of the project timetable.
- Projects often have specific deadlines, and failure to meet them can lead to project failure.
- Deadlines may be determined by clients, developers, or other factors.

Preliminary Investigation:

- A preliminary investigation is the initial step in evaluating a business opportunity or problem.



SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats):

- SWOT analysis is a framework for identifying and analyzing internal and external factors that impact a project's viability.
- It assesses:
 - Strengths: Internal attributes and resources supporting success.
 - Weaknesses: Internal attributes and resources working against success.
 - Opportunities: External factors the project can capitalize on.
 - Threats: External factors that could jeopardize the project.

SWOT Analysis: Facebook

Strengths:

- Growing mobile phone use and the introduction of the Facebook app have significantly increased overall usage.
- Facebook had approximately 169 million daily account users in FY2015, demonstrating substantial user engagement.
- Successfully captured major markets in the United States, Brazil, and India.

Weaknesses:

- Facebook generates its revenues primarily through advertisements, making it heavily reliant on advertising revenue.

- Advertisers often allocate small budgets for Facebook advertising, and their commitments may be short-lived.

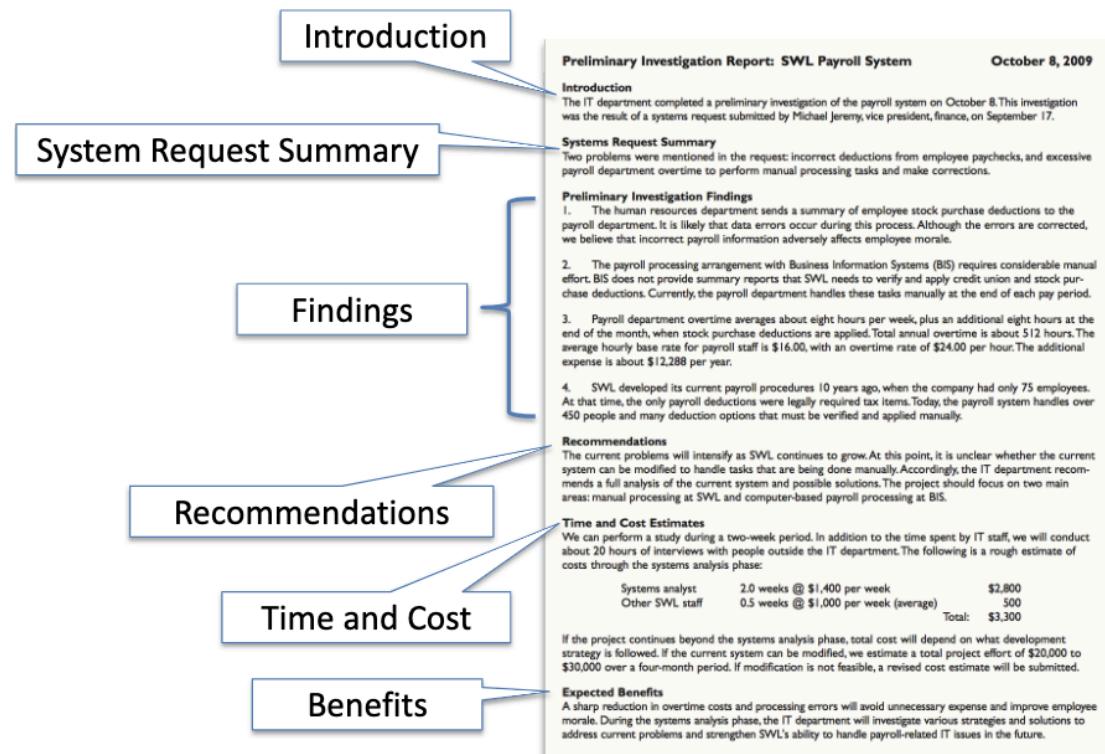
Opportunities:

- Digital marketing is a growing industry, and Facebook is well-positioned to capitalize on it.
- The industry anticipates a significant increase in the share of the U.S. digital display ad market, with Facebook expected to generate substantial revenues from it.

Threats:

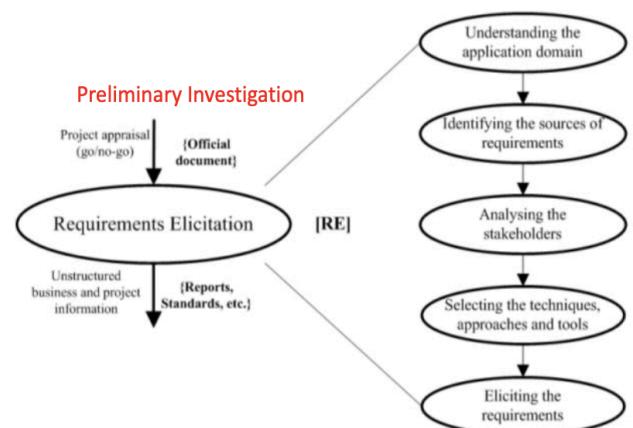
- Competition from numerous social media platforms with innovative tools to engage consumers poses a significant threat to Facebook.
- The emergence of mobile businesses that can provide audience information similar to Facebook's capabilities attracts advertisers away from the platform.
- Potential threats from regulatory agencies regarding user privacy and data protection.

Preliminary Investigation Report



Requirements Elicitation:

- Requirements elicitation is a multi-dimensional process that goes beyond merely collecting requirements.
- It involves understanding the business, application domain, specific problems, stakeholder needs, acquisition and project management, requirements engineering, and relevant technologies.



Requirements Elicitation - Objectives

1. **Understanding the Processes, People, and Resources Involved:** The objective is to gain a comprehensive understanding of the current processes, the individuals or groups involved, and the resources used within the context of the project. This helps in identifying how the system will fit into the existing environment.
2. **Determining the Coverage and Boundary of the Future System (Scope):** It is crucial to define the scope of the project accurately. This involves deciding what the system will and will not include. A clear scope ensures that the project stays on track and prevents unnecessary additions or omissions.
3. **Separating Requirements According to Level of Priority:** Requirements often have varying levels of importance. Prioritizing them helps in focusing on the most critical aspects of the system. This prioritization ensures that the most essential features are developed first and that resources are allocated effectively.

Requirement's Elicitation: Dimensions

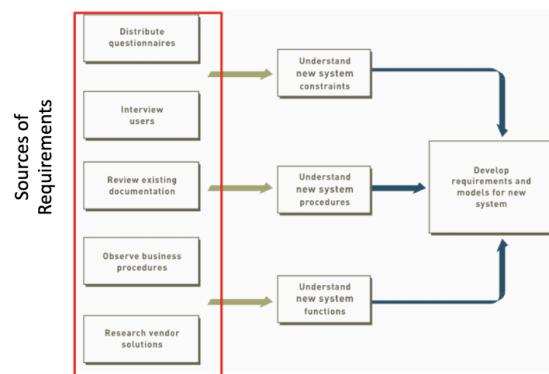
Requirement's elicitation involves several dimensions to ensure comprehensive and effective gathering of requirements:

1. **Understanding the Business:** This dimension focuses on grasping the overall business context, objectives, and strategies. It helps align the project with the organization's goals.
2. **Understanding the Application Domain:** Gaining knowledge about the specific industry or domain in which the system will operate. This includes industry-specific terminology, regulations, and practices.
3. **Understanding the Specific Problem:** Detailed understanding of the particular problem or challenge the system aims to address. This clarifies the root causes and context of the project.
4. **Understanding the Needs and Constraints of System Stakeholders:** Identifying the requirements and limitations imposed by various stakeholders involved in the project, such as end-users, clients, and technical staff.
5. **Understanding Acquisition and Project Management:** Recognizing the processes and methodologies used in acquiring, developing, and managing the project. This ensures alignment with organizational practices.
6. **Understanding Requirements Engineering and Systems Engineering:** Familiarity with the methodologies and best practices in requirements engineering and systems engineering. This helps in effectively capturing and documenting requirements.
7. **Understanding the Technologies and Engineering Involved:** Comprehending the technical aspects and engineering principles that will be applied in the project. This ensures that the requirements are technically feasible.

Source of Requirements

Various sources are considered during requirements elicitation:

1. **Discussions with Stakeholders:** Engaging in conversations with stakeholders from different roles to gather their perspectives and requirements.
2. **Competitive Analysis:** Analyzing competing systems or solutions in the marketplace to understand industry standards and customer expectations.
3. **Policy and Procedure Manuals:** Reviewing existing policy and procedure manuals within the organization to identify system interactions, regulatory constraints, and compliance requirements.
4. **Marketing and Customer Care Data:** Utilizing data from marketing initiatives and customer care departments, including customer surveys and questionnaires, to gain insights into user preferences and needs.
5. **Legacy Systems Documentation:** For projects involving the enhancement or replacement of existing systems, reviewing system manuals, specifications, issue logs, and enhancement requests related to the legacy systems.



Rationale for Stakeholder Analysis:

- Stakeholder analysis helps identify individuals or groups with an interest in the project and assess their potential influence.

3. Rationale for Stakeholder Analysis

Steps in Stakeholder Analysis

					Steps in Stakeholder Analysis	Possible Questions & Tools
					<p>1. Identify stakeholders</p> <p>2. Investigate characteristics of stakeholder</p> <p>3. Identify power and influence of stakeholders</p>	<ul style="list-style-type: none"> -Who are primary, secondary, and has interest in the issue? -<i>Tool: Stakeholder rings</i> <ul style="list-style-type: none"> -What are the interest, 4 RS (Rights, Responsibilities, Returns, and Relationship) -<i>Tools: Stakeholder power and interests grid, and 4R matrix, Venn-Diagram, and Matrix of conflict & trade-off</i> <ul style="list-style-type: none"> -What are the power and influence of each stakeholder -<i>Tools: Graph of stakeholders importance and influence</i>
Identify who needs to participate (primary & secondary)	Assess how stakeholders be affected or might affect (+ve/-ve)	Identify the multiple interests and objectives of stakeholders in relation to the particular project management	Understand the actual resources, influence, authority or power that stakeholders can have on particular project initiatives	Assess the most appropriate means for them to participate		

Identifying Stakeholders

The identification of stakeholders is a critical step in requirements elicitation. It involves categorizing individuals or groups based on their interest and involvement in the successful implementation of the system. Stakeholders can be broadly categorized into three primary groups:

- Users:** These stakeholders directly interact with and use the system. Their input is crucial for defining user requirements.
- Clients:** Clients are the entities that fund and own the system. They have a vested interest in ensuring that the system aligns with their business objectives.
- Technical Staff:** Technical staff members are responsible for ensuring the operational integrity of the system. They play a vital role in defining technical requirements and constraints.

Stakeholders Ring

- Primary Stakeholders:** These are stakeholders with a direct interest in a business or organization and its operations. They often invest their financial capital directly into the business. Examples of primary stakeholders include employees, customers, suppliers, vendors, and business partners.
- Secondary Stakeholders:** Secondary stakeholders may not have a direct financial interest in the business, but they can influence its operations and outcomes. The organization does not depend directly on these stakeholders for its immediate survival. Examples of secondary stakeholders include business competitors, trade unions, media groups, pressure groups, and state or local government organizations.



Identifying Stakeholders

When identifying stakeholders for a job or project, it is essential to consider a wide range of individuals or groups who may have an interest in or be affected by the project. The table below outlines some of the people who might be stakeholders in your job or projects:

Your boss	Shareholders	Government
Senior executives	Alliance partners	Trades associations
Your co-workers	Suppliers	The press
Your team	Lenders	Interest groups
Customers	Analysts	The public
Prospective customers	Future recruits	The community
Your family	Key contributors	Key advisors

Stakeholder Register

A stakeholder register is a document that serves as a repository of information about the stakeholders involved in a project. It is a tool used to manage and document key information about each stakeholder. The stakeholder register typically includes:

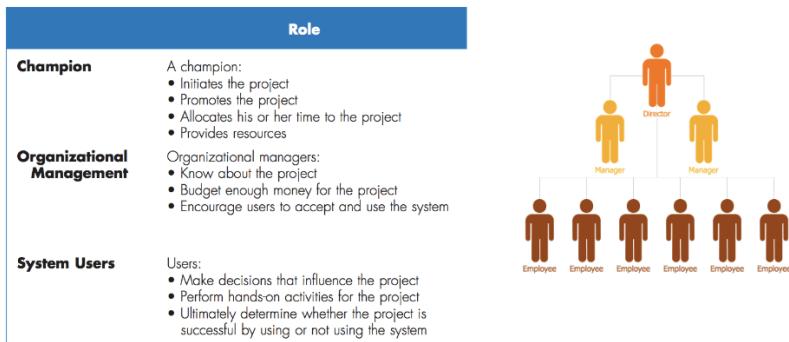
- **Identification Information:** This includes the stakeholders' names, positions, locations, roles in the project, and contact information.
- **Assessment Information:** This section captures the stakeholders' major requirements and expectations, their potential influence on the project, and the phases of the project in which stakeholders have the most interest.

Name	Position	Internal/External	Project Role	Contact Information
Stephen	VP of Operations	Internal	Project sponsor	stephen@globaloil.com
Betsy	CFO	Internal	Senior manager, approves funds	betsy@globaloil.com
Chien	CIO	Internal	Senior manager, PM's boss	chien@globaloil.com
Ryan	IT analyst	Internal	Team member	ryan@globaloil.com
Lori	Director, Accounting	Internal	Senior manager	lori@globaloil.com
Sanjay	Director, Refineries	Internal	Senior manager of largest refinery	sanjay@globaloil.com
Debra	Consultant	External	Project manager	debra@gmail.com
Suppliers	Suppliers	External	Supply software	suppliers@gmail.com

Stakeholders Classification

Stakeholder classification helps in categorizing stakeholders based on their relationship with the organization and their stance toward the project. Two critical dimensions for classification are:

- **Internal or External:** Is the stakeholder part of the organization (internal) or outside of it (external)?
- **Support or Resistance:** Is the stakeholder supportive of the project's goals and objectives, or do they oppose it?

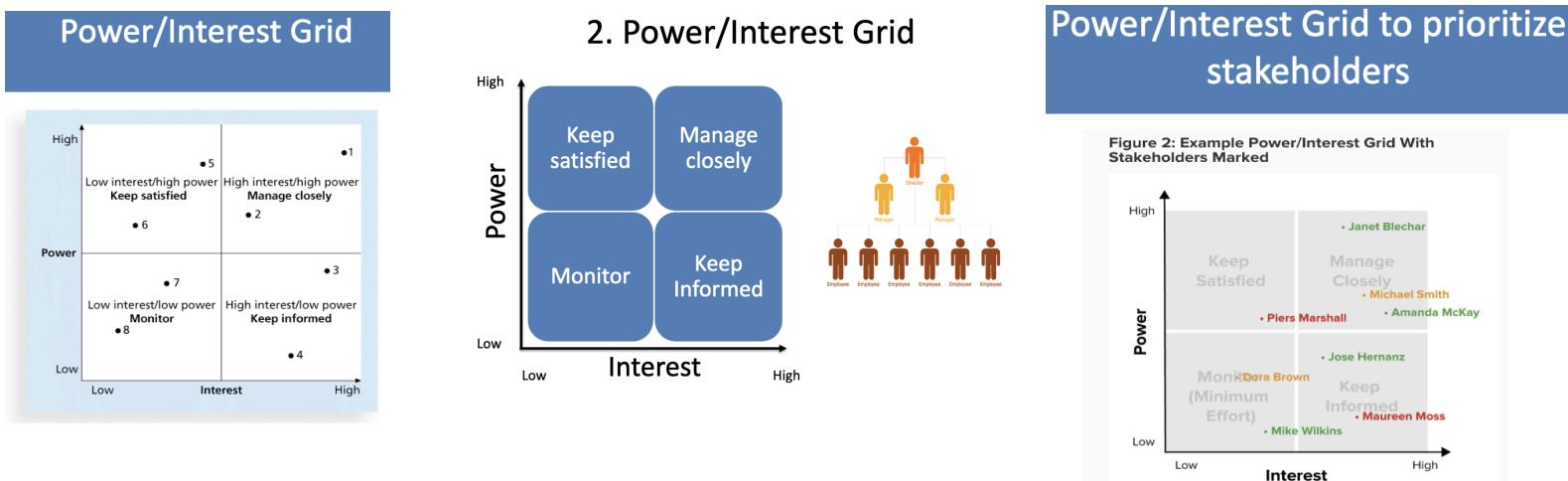


Prioritize Your Stakeholders

Once you have identified key project stakeholders, prioritizing them is essential for effective stakeholder management. Different classification models can be used to determine the approach for managing stakeholder relationships. One commonly used model is the power/interest grid, which categorizes stakeholders based on two dimensions: their level of authority (power) and their level of concern or interest in project outcomes.

- **Power/Interest Grid:** This grid categorizes stakeholders into four quadrants:
 - High Power, High Interest: Stakeholders in this category have a high level of authority and a high level of concern or interest in the project. They are key players and should be closely managed and engaged with.

- High Power, Low Interest: These stakeholders have a high level of authority but a low level of interest in the project. They may need to be kept informed but are not heavily involved in decision-making.
- Low Power, High Interest: Stakeholders in this category have a low level of authority but a high level of interest. They may require more communication and engagement to keep them informed and satisfied.
- Low Power, Low Interest: Stakeholders with low authority and low interest may only need minimal communication and engagement.



Stakeholder Engagement Levels

Stakeholder engagement levels refer to the degree of involvement or interest that stakeholders have in the project. Stakeholders can fall into different engagement levels, including:

- **Unaware:** Stakeholders are unaware of the project and its potential impacts on them.
- **Resistant:** Stakeholders are aware of the project but are resistant to change.
- **Neutral:** Stakeholders are aware of the project but neither supportive nor resistant.
- **Supportive:** Stakeholders are aware of the project and supportive of the changes it brings.
- **Leading:** Stakeholders are aware of the project and actively lead or champion it.

Planning Stakeholder Management

Once stakeholders have been identified and analyzed, project teams should develop a stakeholder management plan. This plan outlines how stakeholders will be managed, engaged, and communicated with throughout the project's lifecycle. The stakeholder management plan can include the following elements:

- **Current and Desired Engagement Levels:** Define the current engagement levels of stakeholders and the desired levels you aim to achieve.
- **Interrelationships between Stakeholders:** Understand how different stakeholders may interact or influence each other.
- **Communication Requirements:** Specify the communication needs of each stakeholder group, including frequency, channels, and content.

Name	Power/Interest	Current Engagement	Potential Management Strategies
Stephen	High/high	Leading	Stephen can seem intimidating due to his physical stature and deep voice, but he has a great personality and sense of humor. He previously led a similar refinery upgrade program at another company and knows what he wants. Manage closely and ask for his advice as needed. He likes short, frequent updates in person.
Chien	High/medium	Resistant	Chien is a very organized yet hardheaded man. He has been pushing corporate IT standards, and the system PM and sponsor (Debra and Stephen) like best goes against those standards, even though it's the best solution for this project and the company as a whole. Need to convince him that this is okay and that people still respect his work and position.
Ryan	Medium/high	Supportive	Ryan has been with the company for several years and is well respected, but he feels threatened by Debra. He also resents her getting paid more than he does. He wants to please his boss, Chien, first and foremost. Need to convince him that the suggested solution is in everyone's best interest.
Betsy	High/low	Neutral	Very professional, logical person. Gets along well with Chien. She has supported Debra in approving past projects with strong business cases. Provide detailed financial justification for the suggested solution to keep her satisfied. Also ask her to talk to Chien on Debra's behalf.

- **Potential Management Strategies for Each Stakeholder:** Determine how each stakeholder will be managed, whether through active engagement, information sharing, or other strategies.
- **Methods for Updating the Stakeholder Management Plan:** Establish processes for monitoring and updating the stakeholder management plan as the project progresses and stakeholder dynamics change.

Techniques for Requirement Elicitation

Requirement elicitation is a crucial step in gathering information and needs from stakeholders. Various techniques can be employed for effective requirement elicitation, including:

- **Observation:** Observe users at work to gain insights and subtle information not explicitly provided by customers. This can include job protocol analysis and social analysis.
- **Interviewing:** Conduct interviews with stakeholders, which require skill, preparation, and active listening. Ask specific questions about boundaries, exceptions, anticipated changes, vision of the future, alternatives, minimally acceptable solutions, and other relevant information.
- **Brainstorming:** Organize moderated brainstorming sessions with trigger questions to stimulate creative ideas and gather requirements.
- **Prototyping:** Develop prototypes to stimulate user reactions and gather feedback.
- **Questionnaires:** Use questionnaires to gather responses to a full list of questions.
- **Scenarios:** Collect and document various scenarios to understand user interactions and requirements.
- **Use-Cases:** Create use-cases to further analyze and document requirements.

Elicitation Problems:

- Challenges in requirement elicitation include inadequate time, preparation, user representation, vocabulary differences, and unrealistic requirements.