State University of Telecommunications

Department of System Analysis

Information systems requirements analysis.

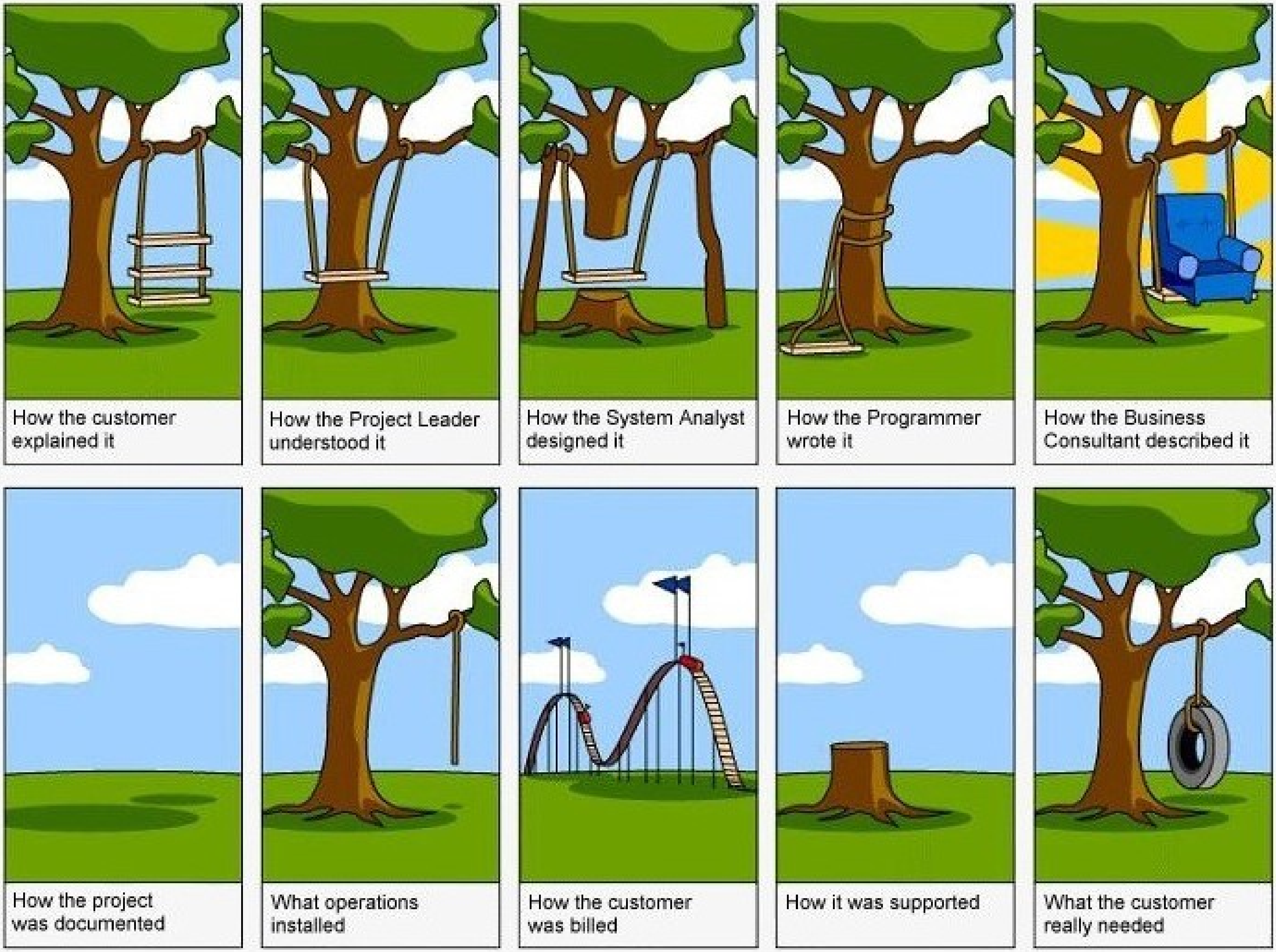
Part 1

Specialty: 124 "System Analysis"

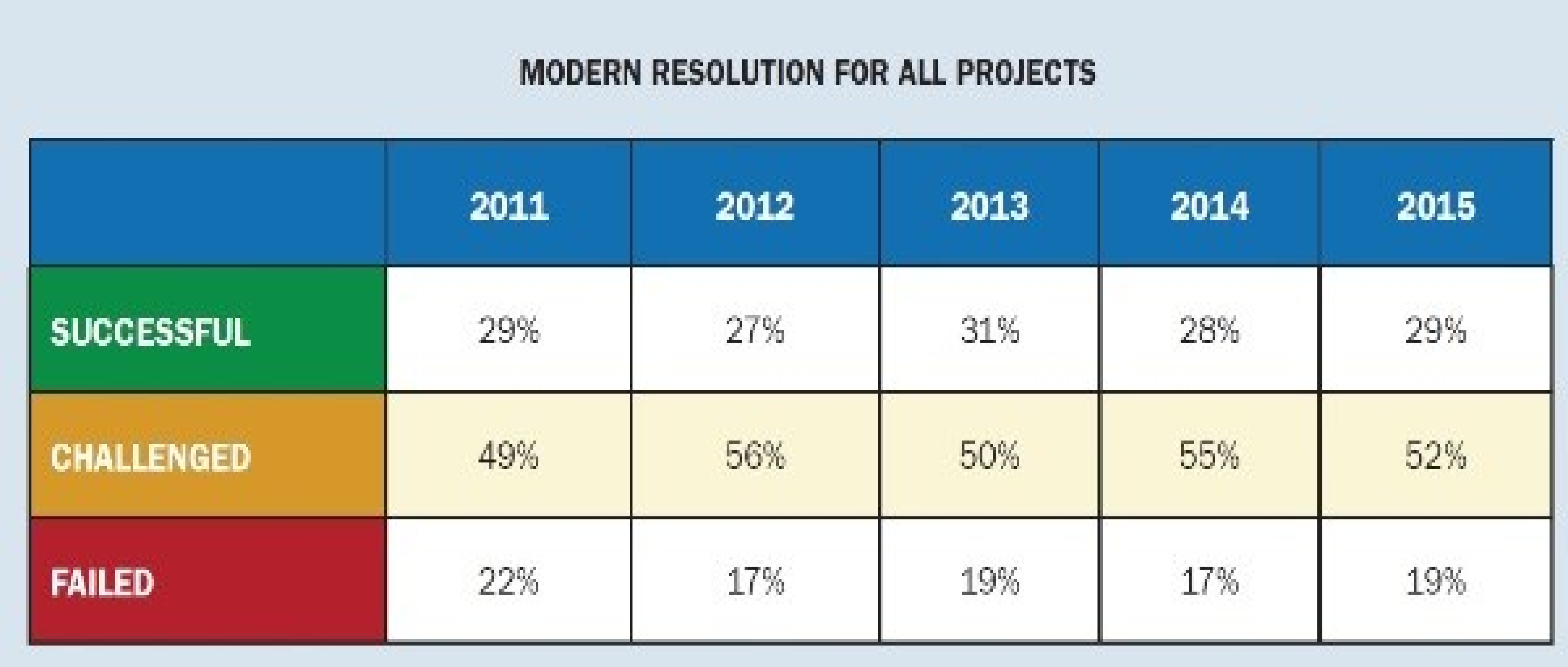
Lecturer: Zolotukhina O.A.

Contents

- Why IT-projects are impaired and ultimately cancelled?
- Requirement definitions
- Requirements Engineering: processes, tasks, activities
- Stakeholders: definition, categorization examples, identification
- Types of requirements


How the customer explained it
How the Project Leader understood it
How the System Analyst designed it
How the Programmer wrote it
How the Business Consultant described it
How the project was documented
What operations installed
How the customer was billed
How it was supported
What the customer really needed

Standish Group CHAOS Report 2016

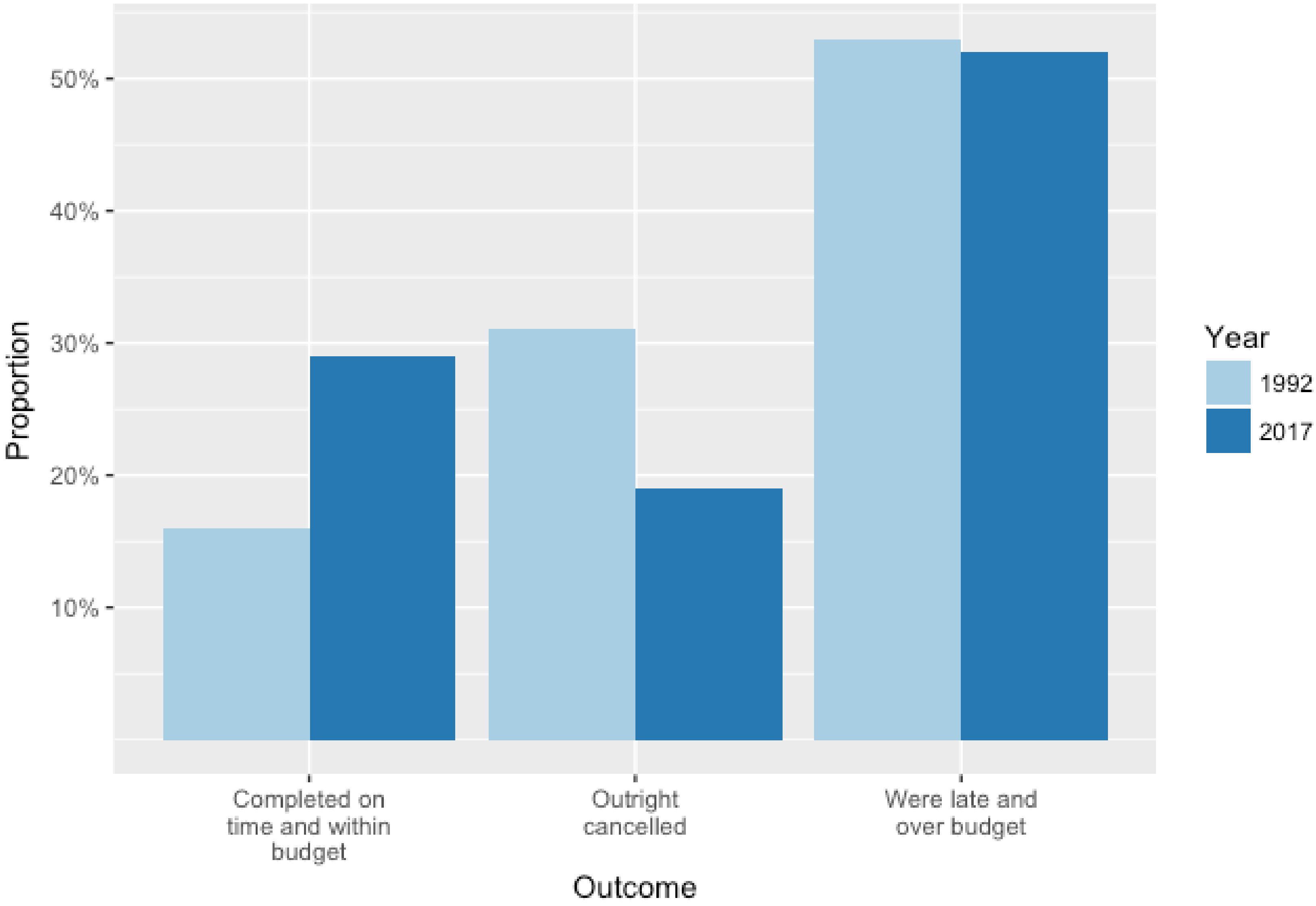


MODERN RESOLUTION FOR ALL PROJECTS

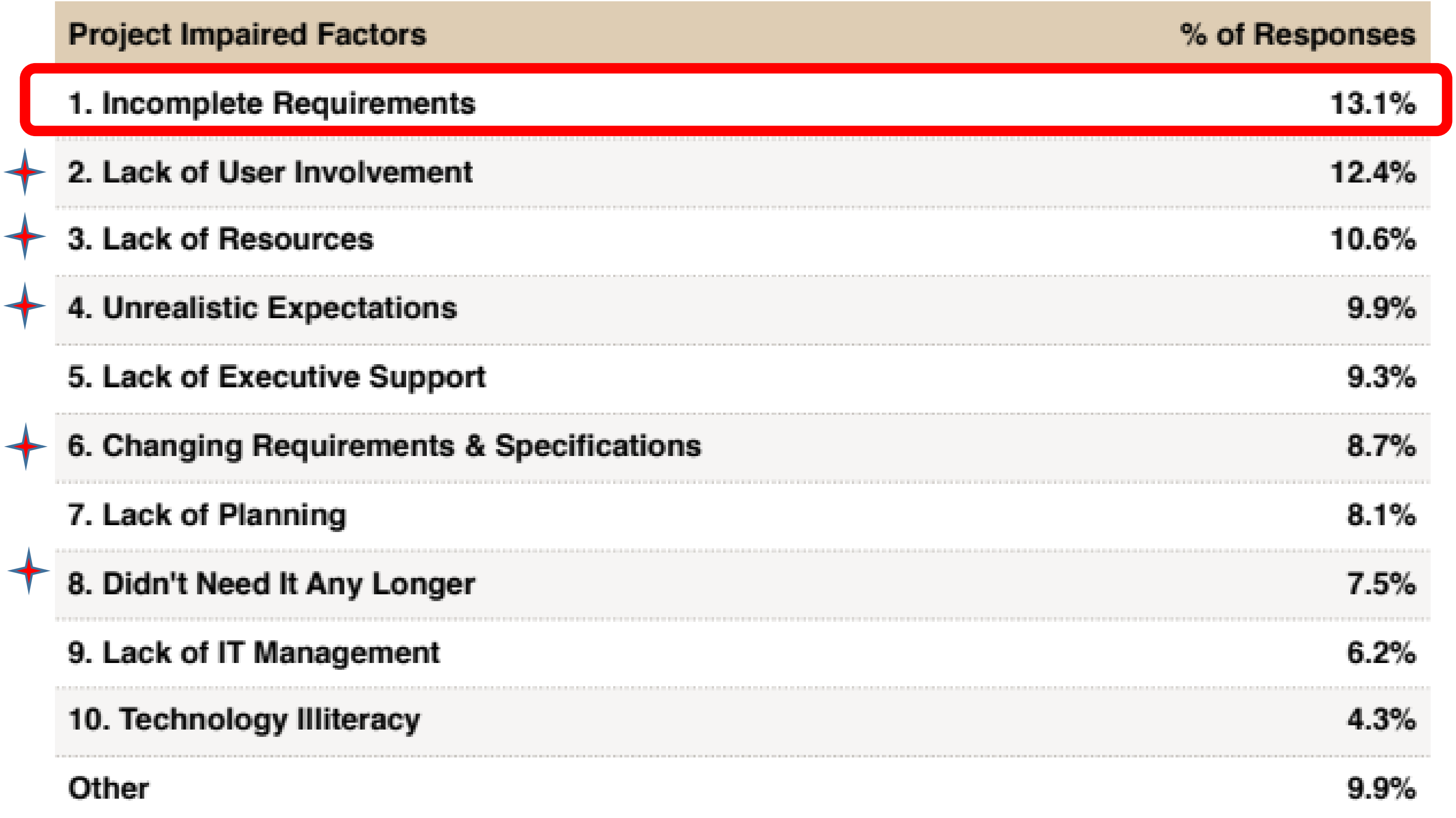
	2011	2012	2013	2014	2015
SUCCESSFUL	29%	27%	31%	28%	29%
CHALLENGED	49%	56%	50%	55%	52%
FAILED	22%	17%	19%	17%	19%

- 71% of IT-projects in 2015 failed or were challenged
- For every 100 projects that start, there are 94 restarts.

Outcomes of IT-projects



The reasons why IT-projects are impaired and ultimately cancelled



Project Impaired Factors	% of Responses
1. Incomplete Requirements	13.1%
✦ 2. Lack of User Involvement	12.4%
✦ 3. Lack of Resources	10.6%
✦ 4. Unrealistic Expectations	9.9%
5. Lack of Executive Support	9.3%
✦ 6. Changing Requirements & Specifications	8.7%
7. Lack of Planning	8.1%
✦ 8. Didn't Need It Any Longer	7.5%
9. Lack of IT Management	6.2%
10. Technology Illiteracy	4.3%
Other	9.9%

What is a requirement?

A requirement is a singular documented physical or functional need, that particular design, product or process to satisfy

Product requirements prescribe properties of a system or product

BABOK

SWEBOK

RUP

IEEE

A Guide to the Business Analysis Body of Knowledge (BABOK® Guide), Standard Glossary of Software Engineering Terminology(IEEE)

1. A condition or capability needed by a stakeholder to solve a problem or achieve an objective.
2. A condition or capability that must be met or possessed by a solution or solution component to satisfy a contract, standard, specification, or other formally imposed documents.
3. A documented representation of a condition or capability as in (1) or (2).

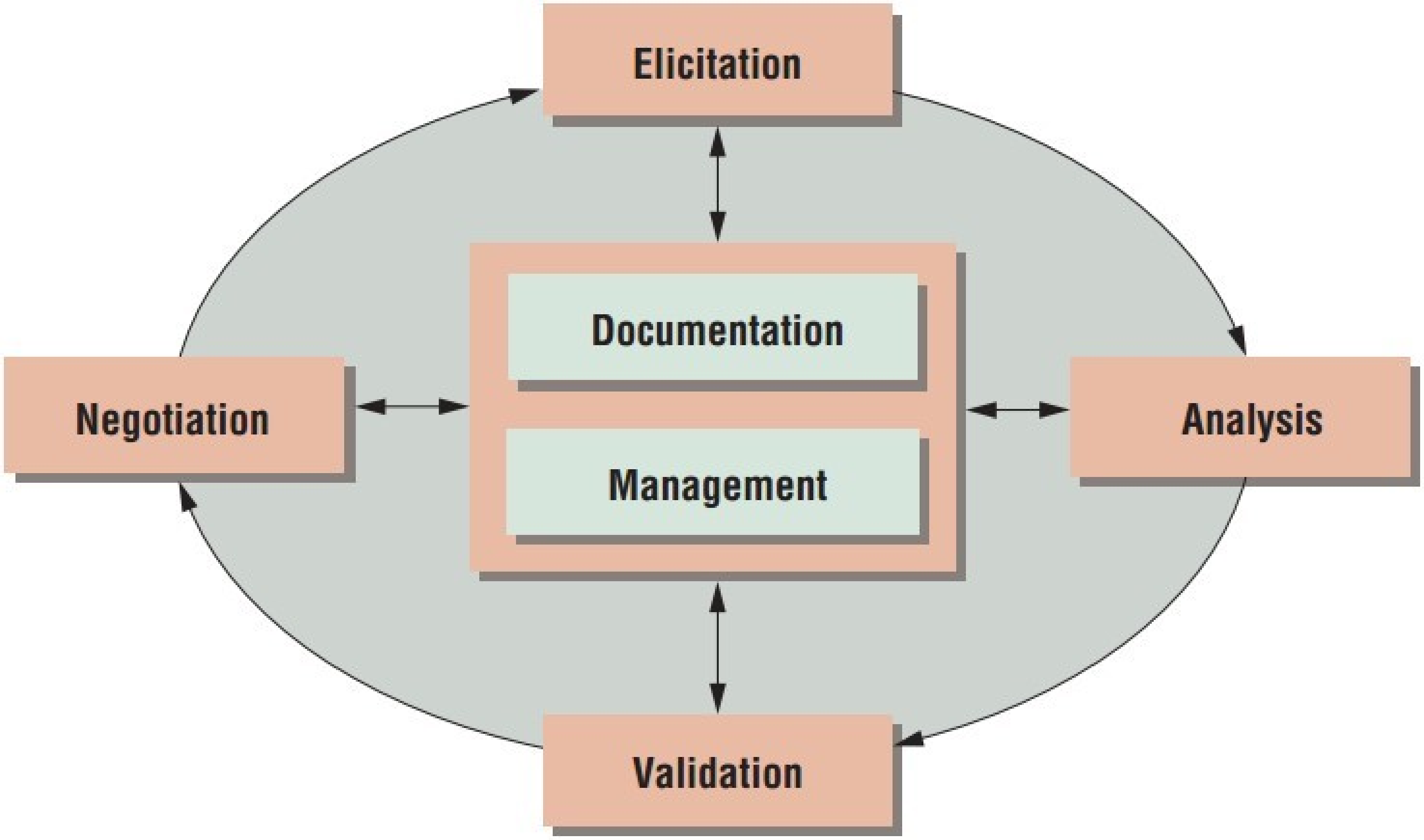
Software Engineering Body of Knowledge (SWEBOK)

- A software requirement is a property that must be exhibited by something in order to solve some problem in the real world
- It is verifiable as an individual feature as a functional requirement or at the system level as a nonfunctional requirement
- Software requirements, software testing, and quality personnel must ensure that the requirements can be verified within available resource constraints

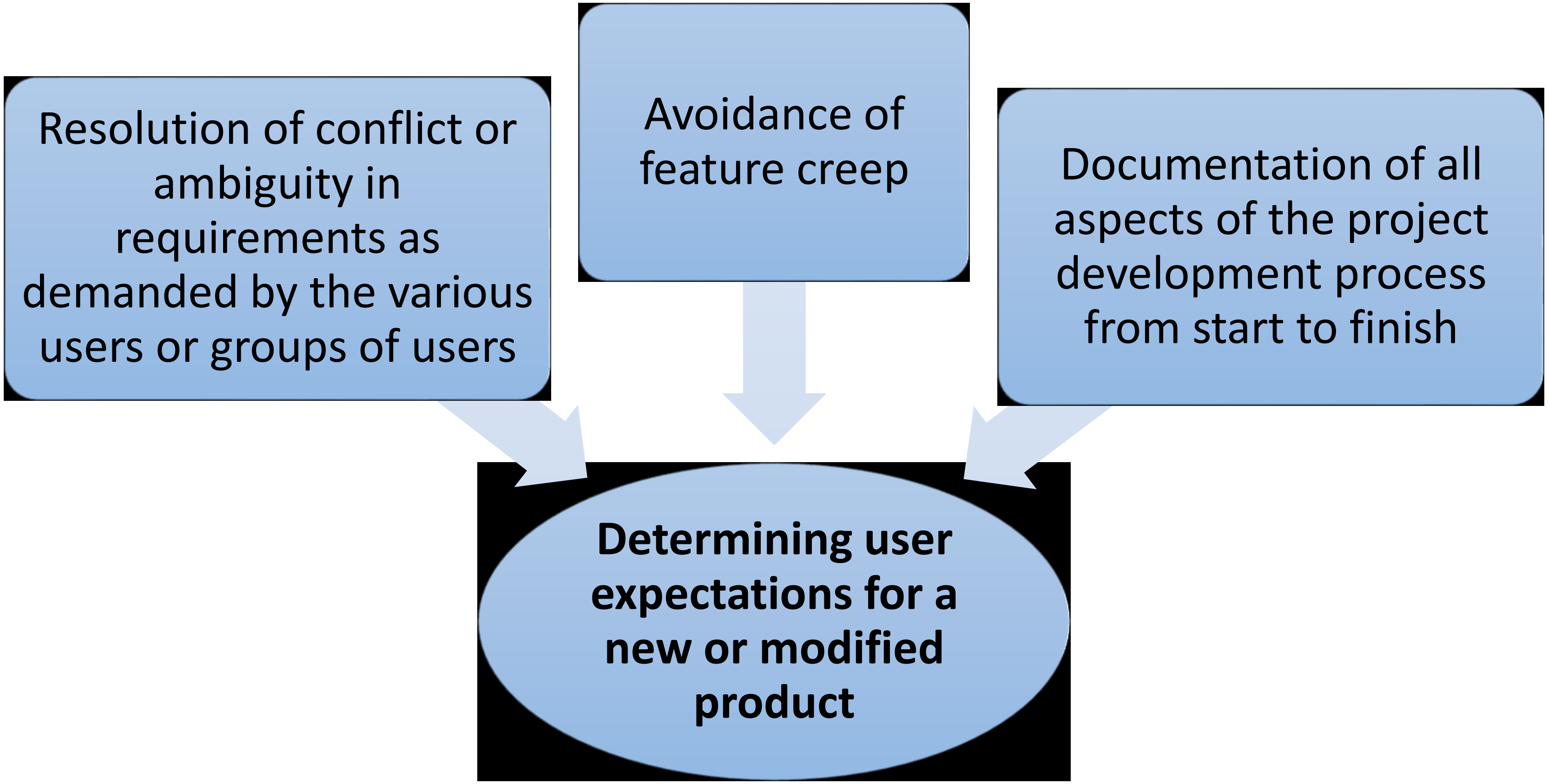
Rational Unified Process (RUP)

- A requirement describes a condition or capability to which a system must conform
- Either derived directly from user needs, or stated in a contract, standard, specification, or other formal agreement.

Requirements Engineering processes



Requirements Engineering tasks



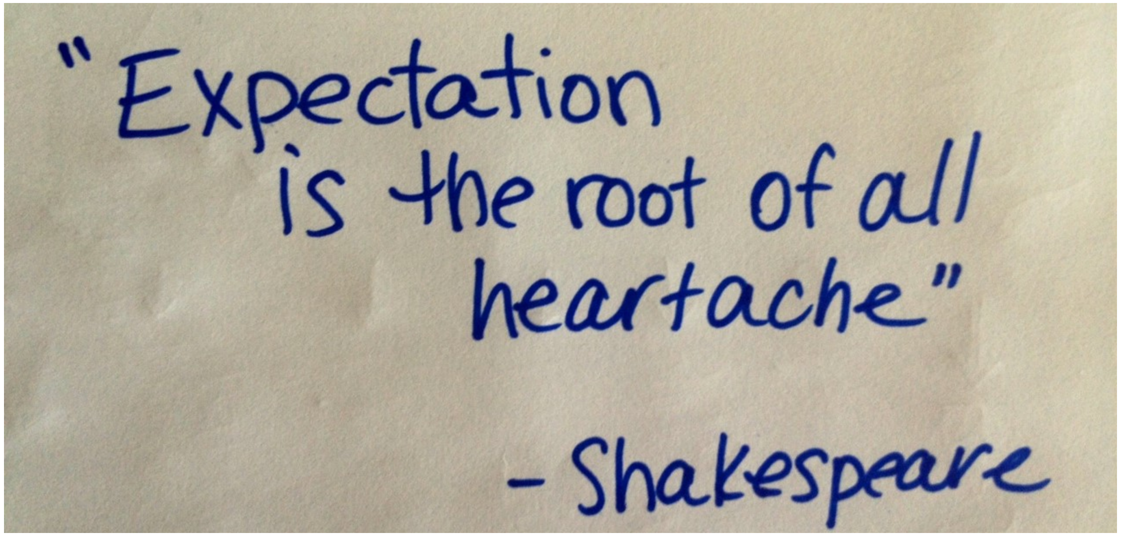
Resolution of conflict or ambiguity in requirements as demanded by the various users or groups of users

Avoidance of feature creep

Documentation of all aspects of the project development process from start to finish

Determining user expectations for a new or modified product

The final system or product must meet the needs of customers, rather than trying to generate user expectations in accordance with the requirements!!!



"Expectation
is the root of all
heartache"

- Shakespeare

Types of activities in the Requirements Engineering

1. Requirements Elicitation
2. Requirements Analysis
3. Documenting Requirements
4. Requirements Management

1. Requirements Elicitation (requirements gathering)

- Identify and gather sources of information about the software system
- Communicate with customers and users (stakeholders) to determine what their requirements are

2. Requirements Analysis

- Understand the requirements of the customers/stakeholders including overlaps and conflicts
- Determine whether the collected requirements are
  - unclear,
  - incomplete,
  - ambiguous,
  - or contradictory,
- and then solve these problems

3. Documenting Requirements

- Requirements can be documented in various forms, such as simple descriptions, usage scenarios, user stories, or process specifications
- The main points for business analyst:
    - Stakeholder Analysis
    - Business Analysis Plan
    - Current State Analysis
    - Scope Statement Specification
    - Functional Requirements Specification
    - Wireframes and Other Visual Documentation
    - Information or Data Model Documentation
    - Test Plans, Test Cases, or User Acceptance Test Plans
    - Change Management
    - Throughout the Project

4. Requirements Management

- The main processes:
  - documenting,
  - analyzing,
  - tracing,
  - prioritizing and agreeing on requirements and then controlling change and communicating to relevant stakeholders
- It is a continuous process throughout a project
- A requirement is a capability to which a project outcome (product or service) should conform

DID I REMEMBER TO TELL YOU BEFORE YOU FINISHED THE CODING THAT THE USER'S SPECIFICATIONS CHANGED?
Dilbert.com DilbertCartoonist@gmail.com
AAAIII-YIIII-YIIII-YIIII-YIIIIII!!!!!!
5-16-11 ©2011 Scott Adams, Inc. Dist. by Universal Uclick.
SO, NO-ISH?
BAM! BAM! BAM!

Stakeholders

A ***stakeholder*** in the architecture of a system is an individual, team, organization, or classes thereof, having an interest in the realization of the system

- **Primary stakeholders**: those ultimately most affected, either positively or negatively by an organization's actions
- **Secondary stakeholders:** the "intermediaries," that is, persons or organizations who are indirectly affected by an organization's actions
- **Tertiary stakeholders:** those who will be impacted the least
- **Key stakeholders:** those with significant influence upon or importance within an organization; can also belong to the other groups

Stakeholder Categorization (example 1)

Acquirers	Oversee the procurement of the system or product
Assessors	Oversee the system's conformance to standards and legal regulation
Communicators	Explain the system to other stakeholders via its documentation and training materials
Developers	Construct and deploy the system from specifications (or lead the teams that do this)
Maintainers	Manage the evolution of the system once it is operational
Production Engineers	Design, deploy, and manage the hardware and software environments in which the system will be built, tested, and run
Suppliers	Build and/or supply the hardware, software, or infrastructure on which the system will run
Support Staff	Provide support to users for the product or system when it is running
System Administrators	Run the system once it has been deployed
Testers	Test the system to ensure that it is suitable for use
Users	Define the system's functionality and ultimately make use of it

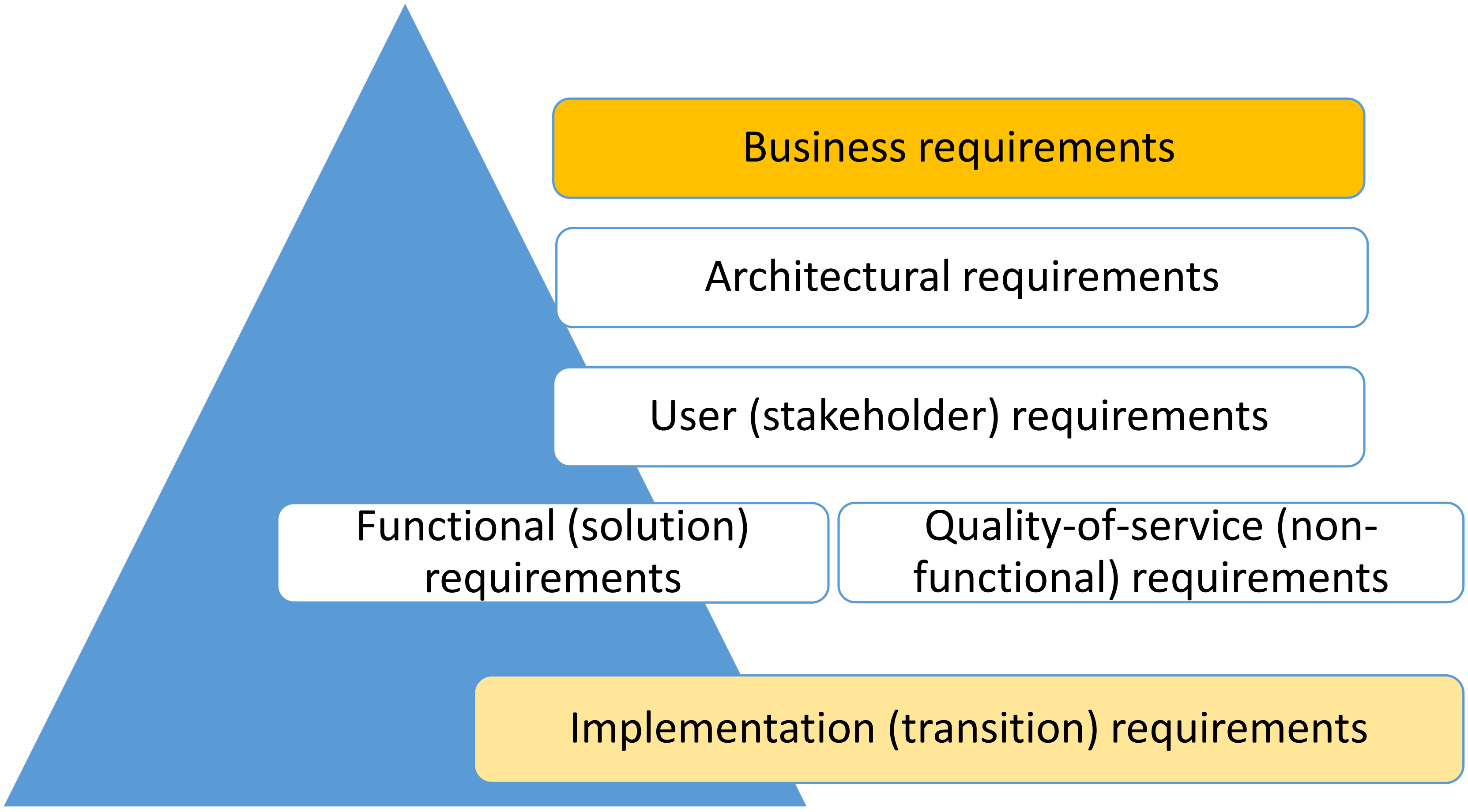
Stakeholder Categorization (example 2)

Customers	finance a project or purchase a product to solve some business problems
Users	interact directly or indirectly with the application (subclass of customers)
Analysts of requirements	write requirements and pass them on to developers
Developers	create, deploy and maintain the product
Testers	determine the correspondence of the behavior of the software to the desired
Technical writers	responsible for creating user manuals, training materials and help system.
Project manager	plans the process and manages the development team right up to the successful release of the product
Legal Department staff	ensure that the product does not conflict with applicable laws and regulations
Manufacturers	must build a product containing this software
Employees of the sales department, marketing, service support and others	will have to work with the product and its users

Stakeholder Identification

- Anyone who uses the system (users and staff)
- Anyone who benefits from the system (functional, political, financial and social)
- Anyone involved in the purchase or provision of a system
- Organizations that regulate aspects of the system (financial, security and others)
- People or organizations that are opposed to the system (negative stakeholders)
- Organizations responsible for systems that interact with the system according to the project
- Organizations that combine horizontally with the organization for which the analyst designs the system

Types of requirements (BABOK)



Business requirements

Architectural requirements

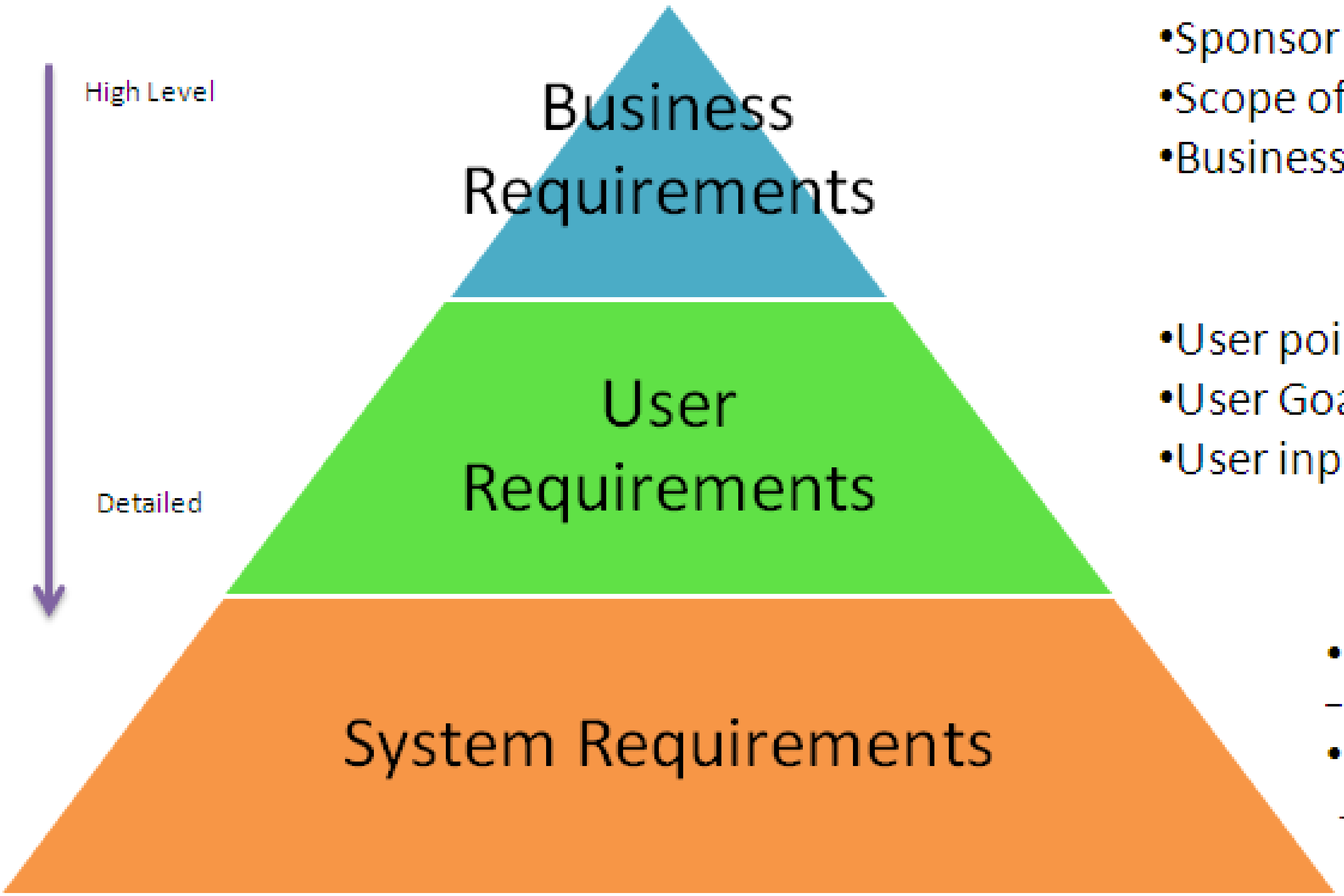
User (stakeholder) requirements

Functional (solution) requirements

Quality-of-service (non-functional) requirements

Implementation (transition) requirements

Types of requirements (SE)

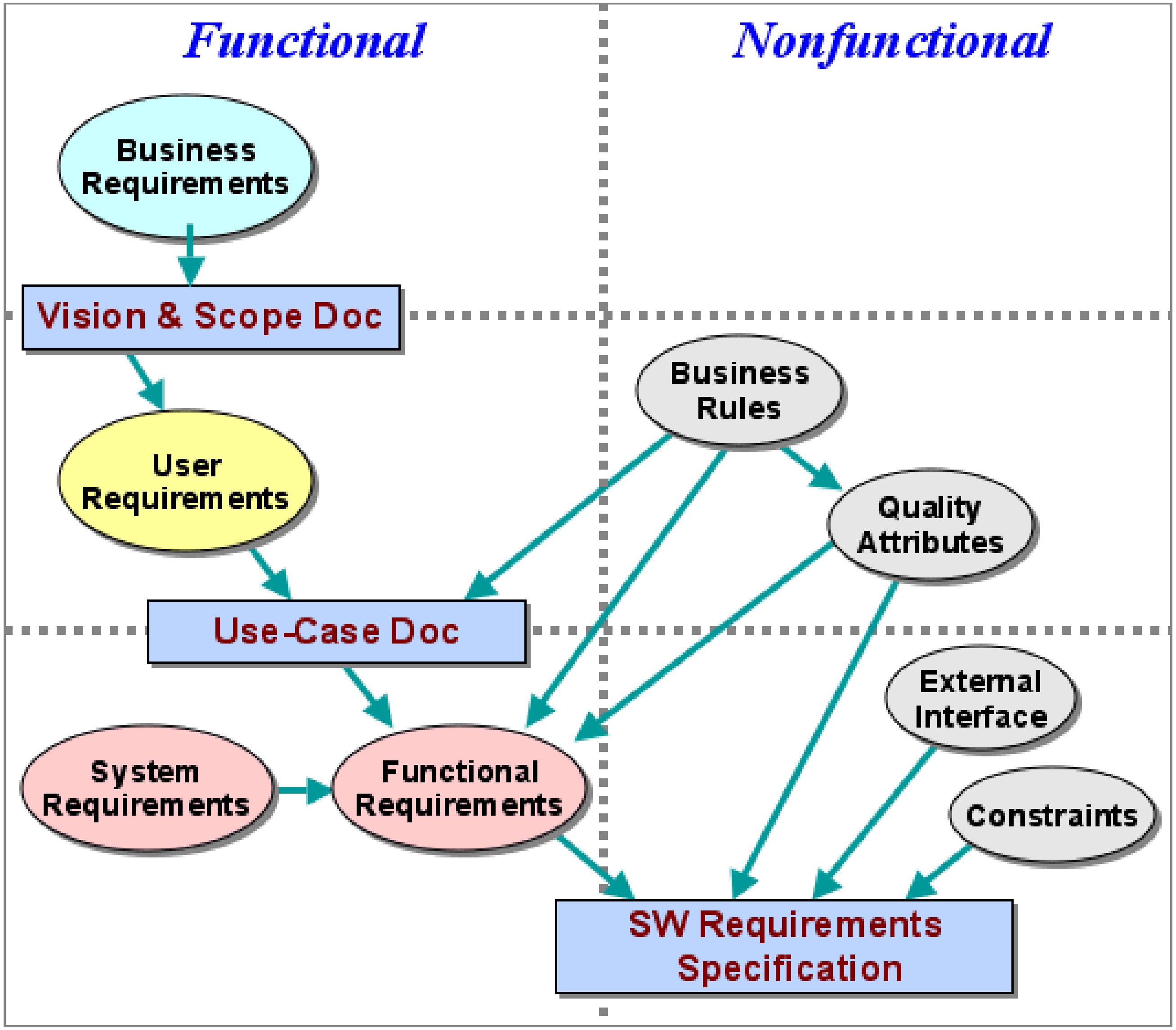


- Sponsor point of view
- Scope of the project
- Business Objectives

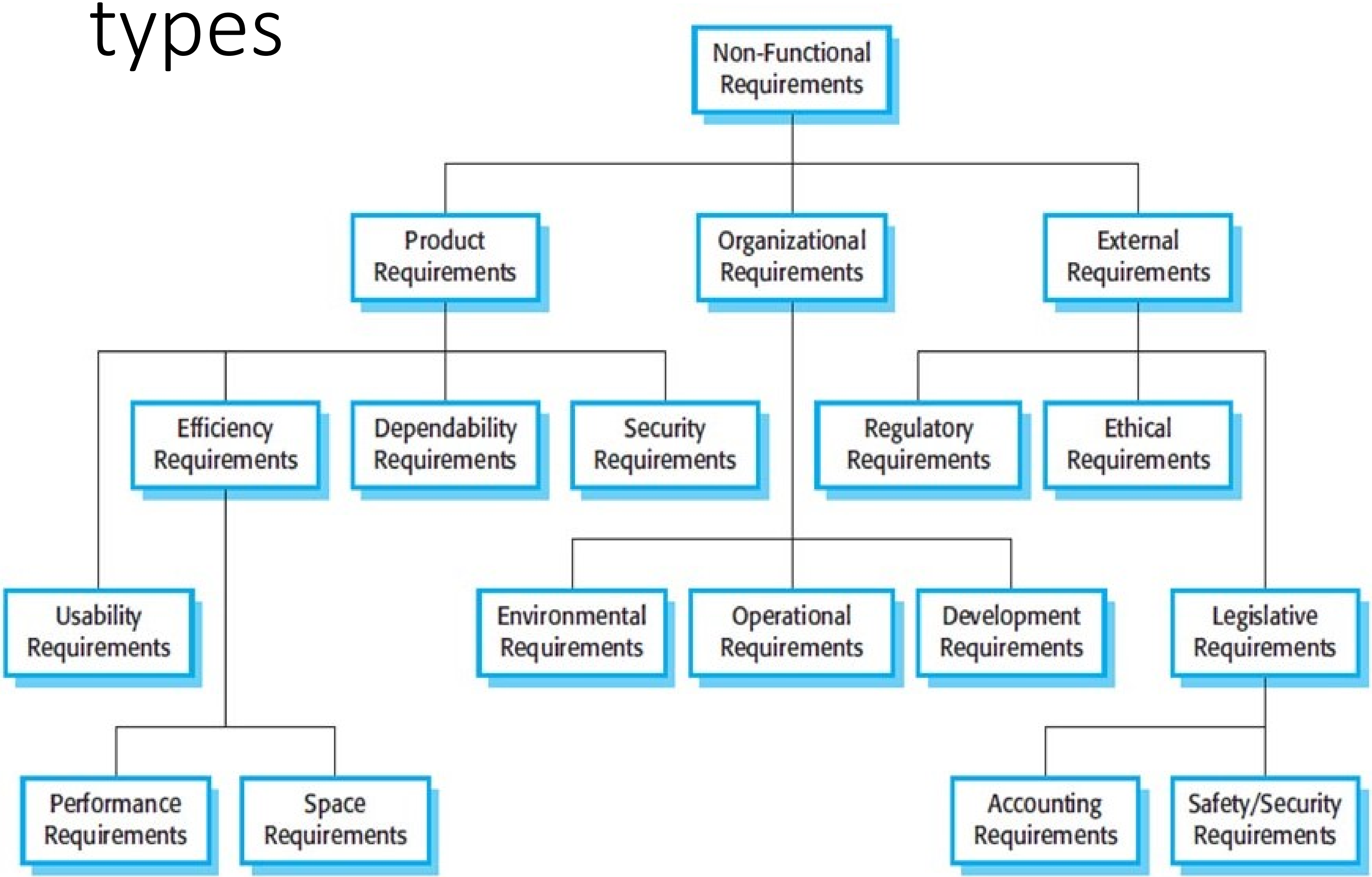
- User point of view
- User Goals
- User inputs & Outputs

- Functional
  - What the system does
- Non-Functional
  - How well the system does it

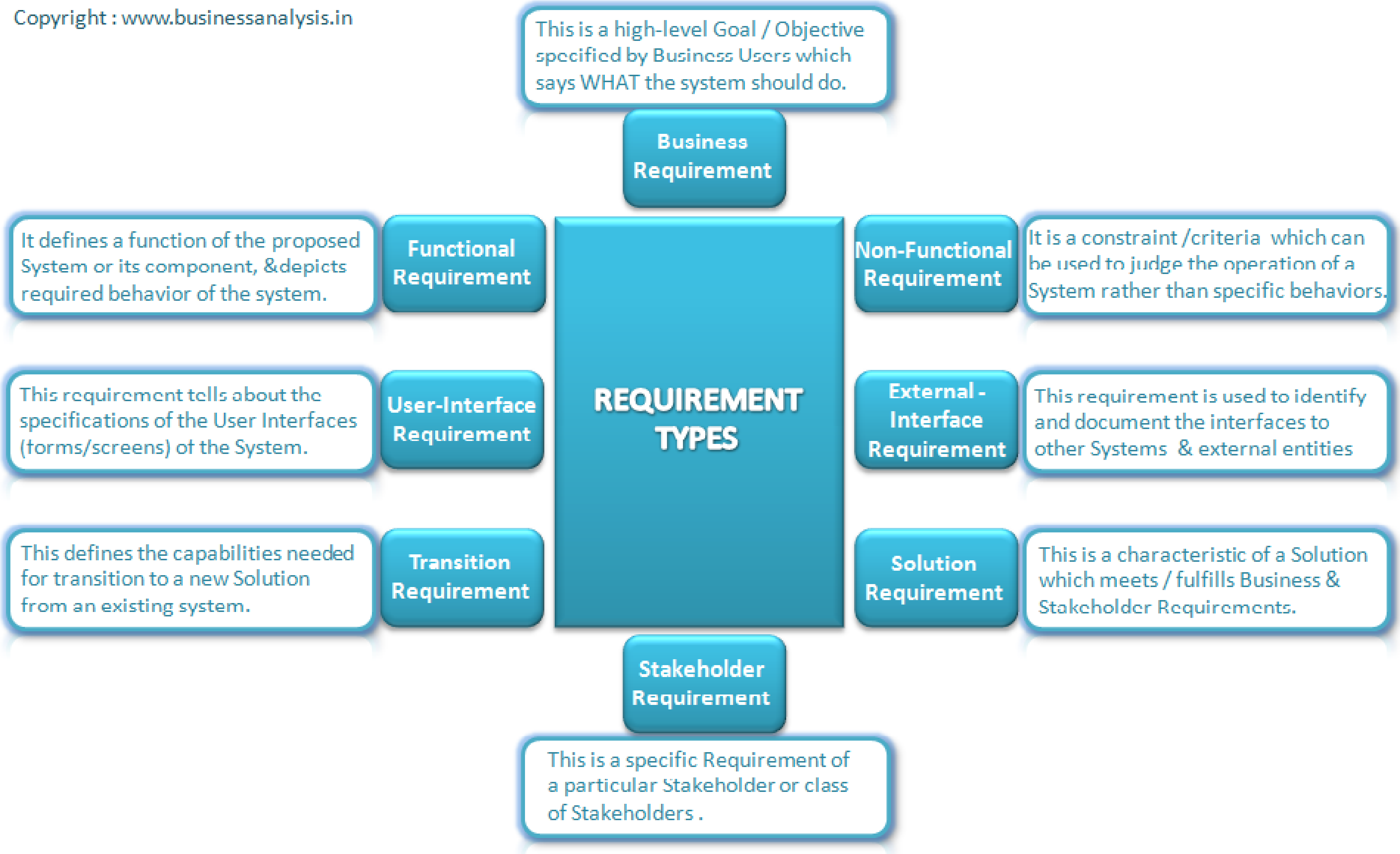
Software requirements types (Virers)



Non-functional Reqiurements types



Software requirements types



REQUIREMENT TYPES

Business Requirement

This is a high-level Goal / Objective specified by Business Users which says WHAT the system should do.

Functional Requirement

It defines a function of the proposed System or its component, &depicts required behavior of the system.

Non-Functional Requirement

It is a constraint /criteria which can be used to judge the operation of a System rather than specific behaviors.

User-Interface Requirement

This requirement tells about the specifications of the User Interfaces (forms/screens) of the System.

External - Interface Requirement

This requirement is used to identify and document the interfaces to other Systems & external entities

Transition Requirement

This defines the capabilities needed for transition to a new Solution from an existing system.

Solution Requirement

This is a characteristic of a Solution which meets / fulfills Business & Stakeholder Requirements.

Stakeholder Requirement

This is a specific Requirement of a particular Stakeholder or class of Stakeholders .

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Part 2

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Contents

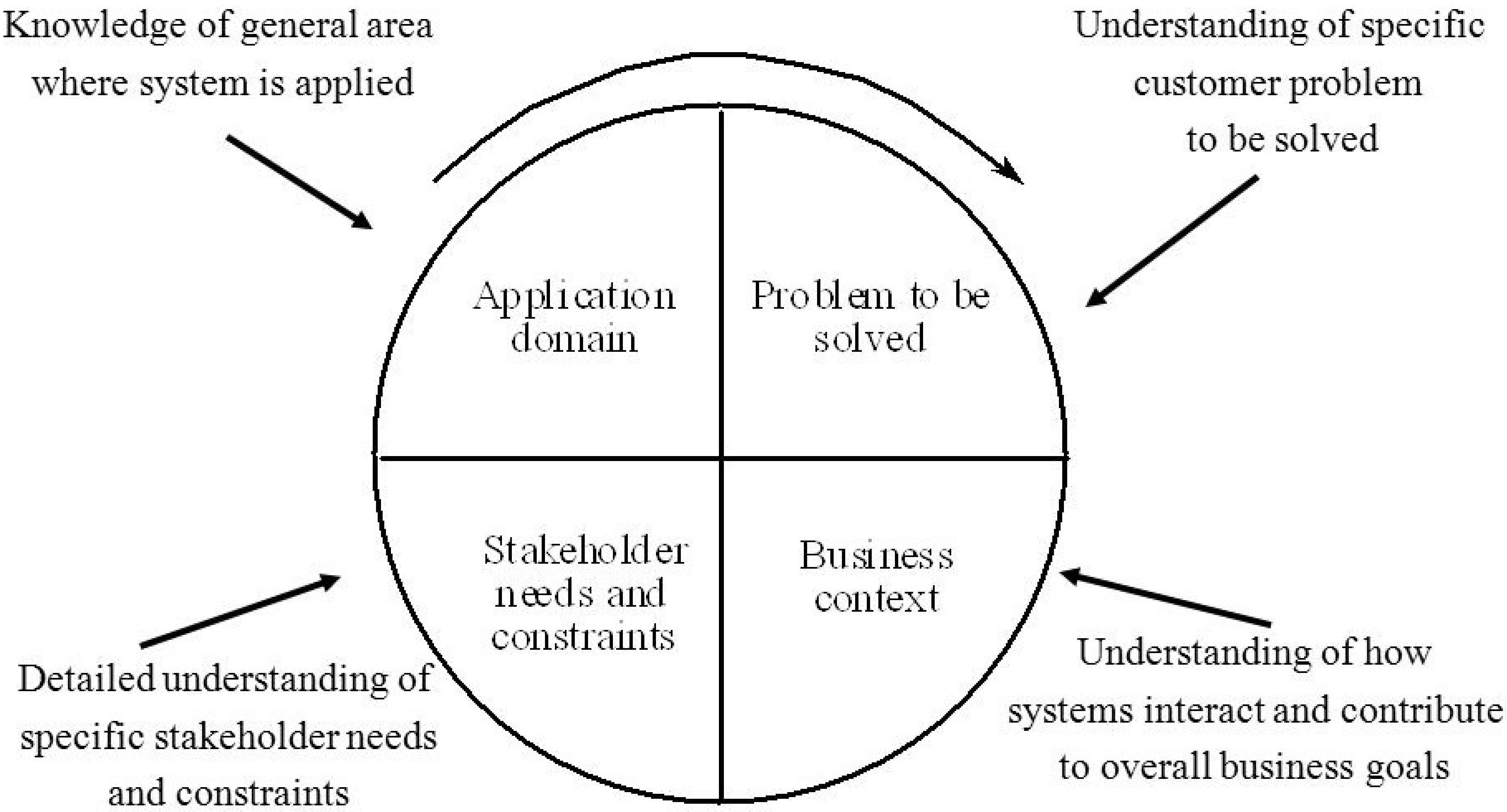
- Components of Requirements Elicitation
- Requirements Elicitation Process
- The problems of Requirements Elicitation
- Requirements Elicitation methods

Components of Requirements Elicitation

Requirements Elicitation (requirements gathering)

- Identify and gather sources of information about the software system
- Communicate with customers and users (stakeholders) to determine what their requirements are

Components of Requirements Elicitation



Knowledge of general area where system is applied

Understanding of specific customer problem to be solved

Application domain

Problem to be solved

Stakeholder needs and constraints

Business context

Detailed understanding of specific stakeholder needs and constraints

Understanding of how systems interact and contribute to overall business goals

Application domain

Application domain – a set of common requirements, terminology, and functionality for any software program constructed to solve a problem in the area

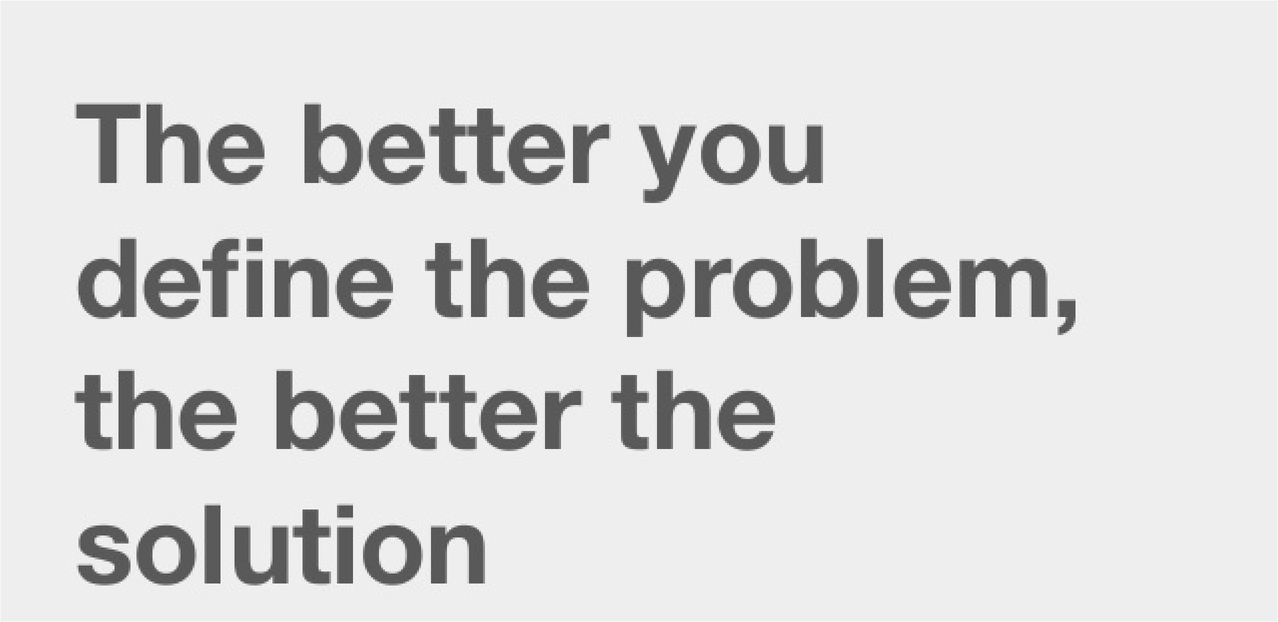
Domain requirements problems:

- Understandability
  - Requirements are expressed in the language of the application domain
  - This is often not understood by analysts who develop the system
- Implicitness
  - Domain specialists understand the area so well that they do not think of making the domain requirements explicit

How to understand and explicate the application domain?

- **Glossary**
  - Documents termes unique to the domain, in order to ensure that all stakeholders understood what is meant when certain words are used
  - A term relevant to the domain and a unique definition for each, as well as cross-referencing aliases
- **Data Dictionary**
  - Standart definitions of data elements, their meanings, and allowable values. Contains definitions of each primitive data element and indicates how those elements combine into composite data elements
  - ***Primitive Data Elements***
    - Name – unique, referenced by the composite data elements
    - Aliases – alternate names
    - Values/Meanings – list of acceptable values
    - Description – definition in the context of the solution
  - ***Composite Data Elements***
    - Sequences – primitive data in order
    - Repetitions – Multiple occurrences of the primitive element
    - Optional Elements – may or may not occur

Problem to be solved



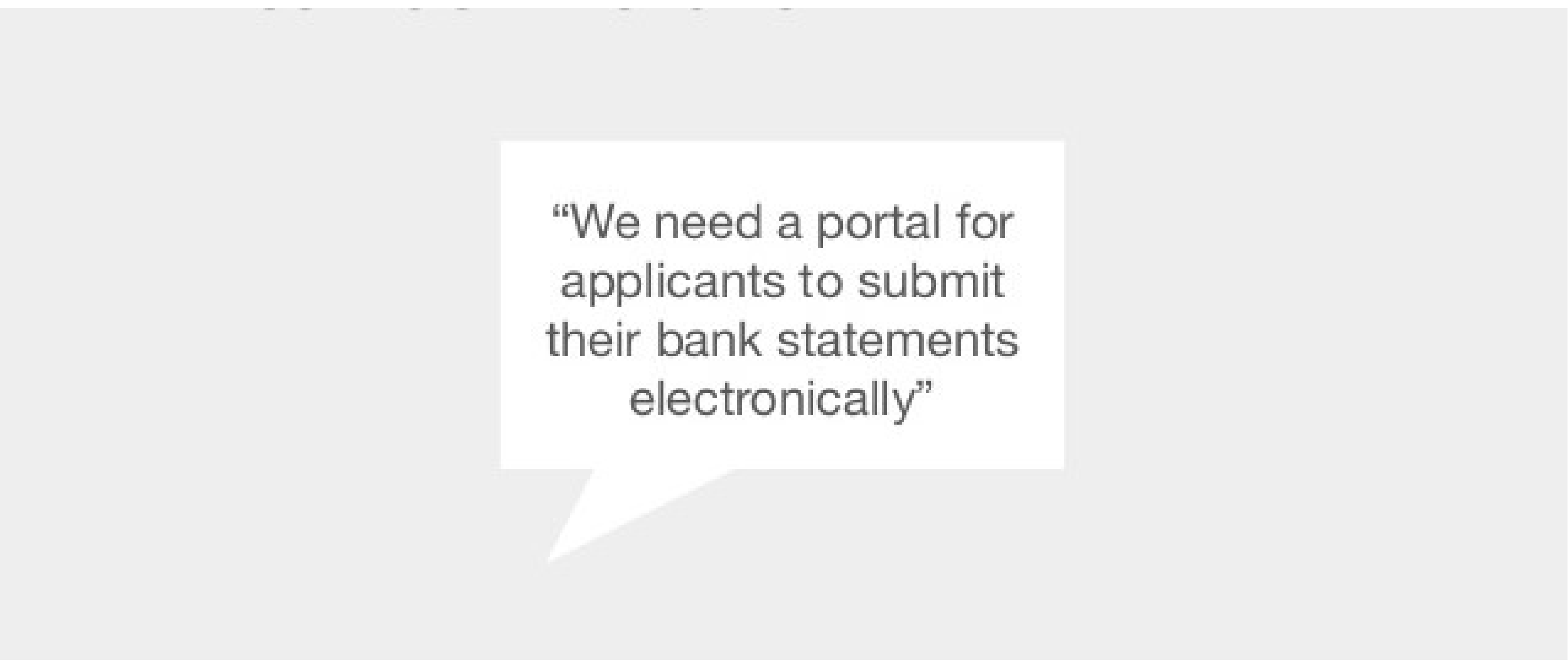
The better you define the problem, the better the solution

- Getting to the right problem
- The right kinds of solutions
- Building in the right kind of way

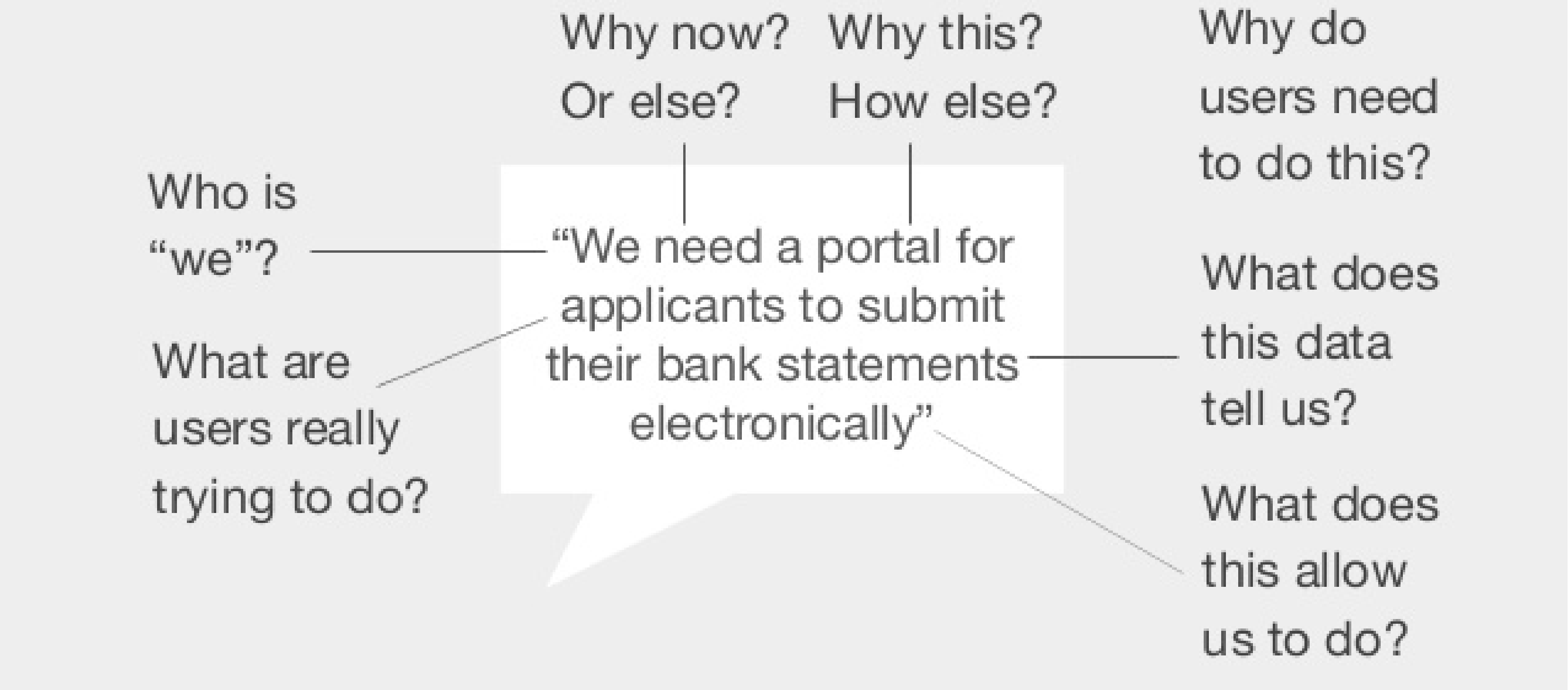
Problem or solution?

- “Let’s scan documents to cut down on paperwork”
- “An online portal will modernise our process”

Step 1. Break down the brief


"We need a portal for applicants to submit their bank statements electronically"

Step 1. Break down the brief



"We need a portal for applicants to submit their bank statements electronically"

Who is "we"?

What are users really trying to do?

Why now? Or else?

Why this? How else?

Why do users need to do this?

What does this data tell us?

What does this allow us to do?

Step 2. (Re)write the brief

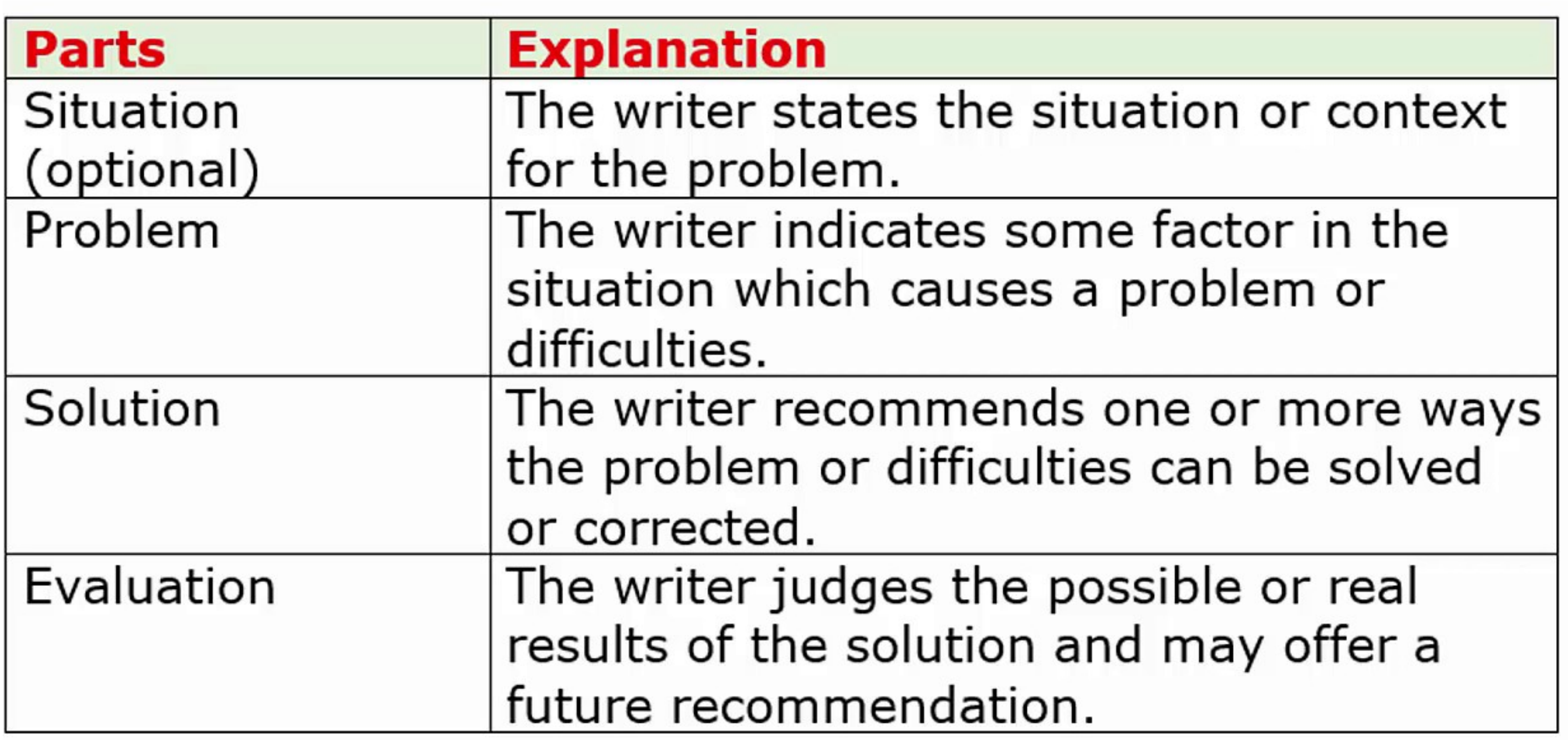
- What is it we couldn’t do before? Why do it?
- Who is it for, i.e. users and internal people?
- What outcomes are they looking for?
- What do we do now and why?
- What critical things are we assuming?
- Anything we need to be aware of?
- How would we know we’re successful?

Step 3. Frame the problem

- What are people ***actually*** doing or what's the end-to-end service as they would know it?
- What core need does the service meets?
- Where does the work fit in that?
- What does the work make better on a service level?

Services exist because someone wants to do something

Problem-solution text pattern



Parts	Explanation
Situation (optional)	The writer states the situation or context for the problem.
Problem	The writer indicates some factor in the situation which causes a problem or difficulties.
Solution	The writer recommends one or more ways the problem or difficulties can be solved or corrected.
Evaluation	The writer judges the possible or real results of the solution and may offer a future recommendation.

Business context

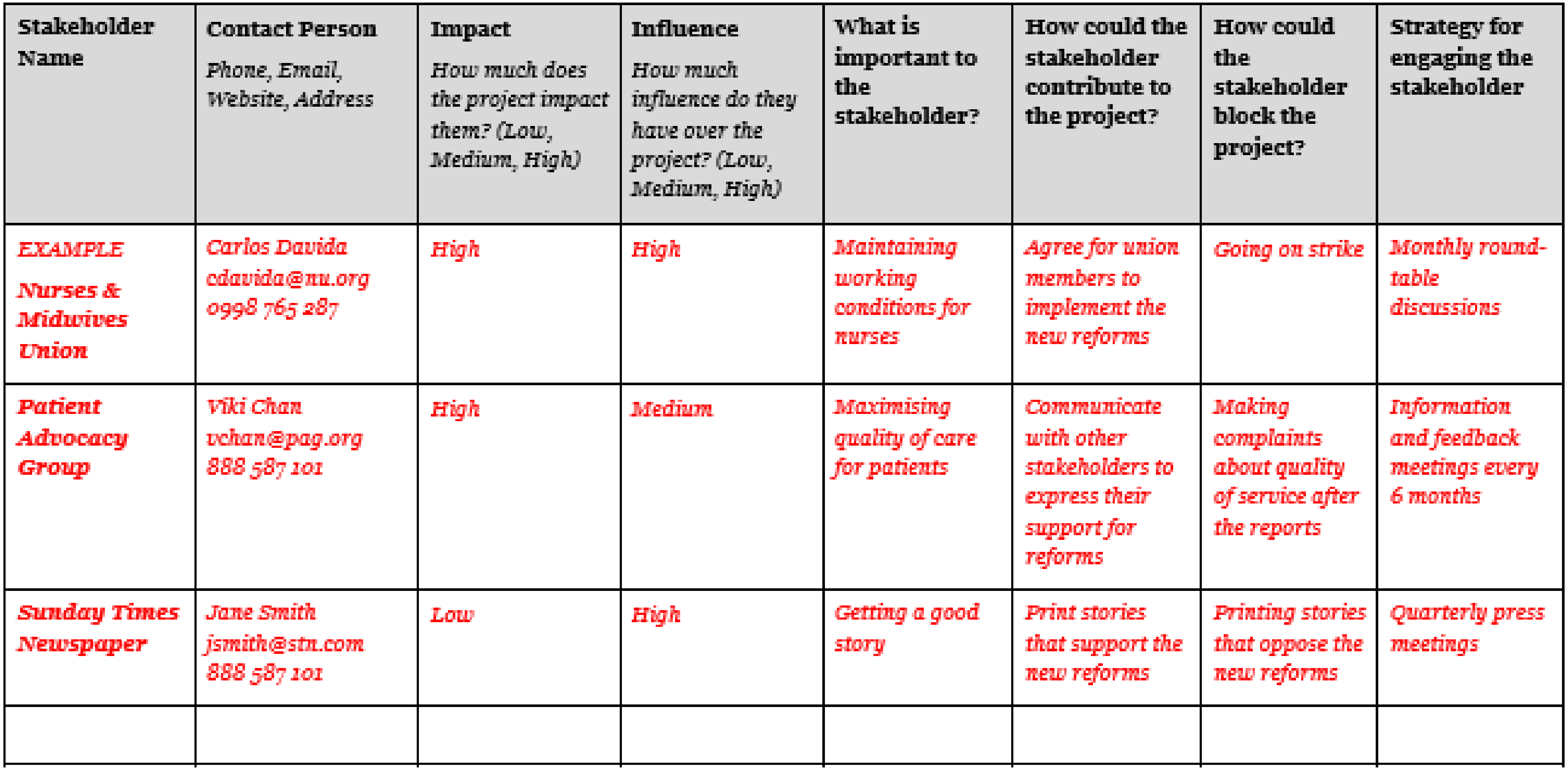
- **Why does business need this?**
    - market demand
    - production needs
    - customer needs
    - technical progress
    - legal restrictions or norms

- **Product goals and success criteria**
    - financial
        - To reach the sales volume of X units for Z months
        - Get X% of profit within Y months
        - Save X $ per year, which is currently spent on system maintenance
        - Reduce the cost of maintaining the system by X% for Z months
    - non-financial
        - Increase the performance of transaction processing by X%
        - Reduce the level of data errors to no more than Y%
        - Develop a reliable platform for family-related products

Stakeholders analysis

- List all the stakeholders in your project, no matter how little their power or interest in your project
- Categorize them based on their interest in the project and their decision-making power
- Place them in the appropriate quadrant
- Monitor them continuously and move them round the quadrant as their interest/power evolves

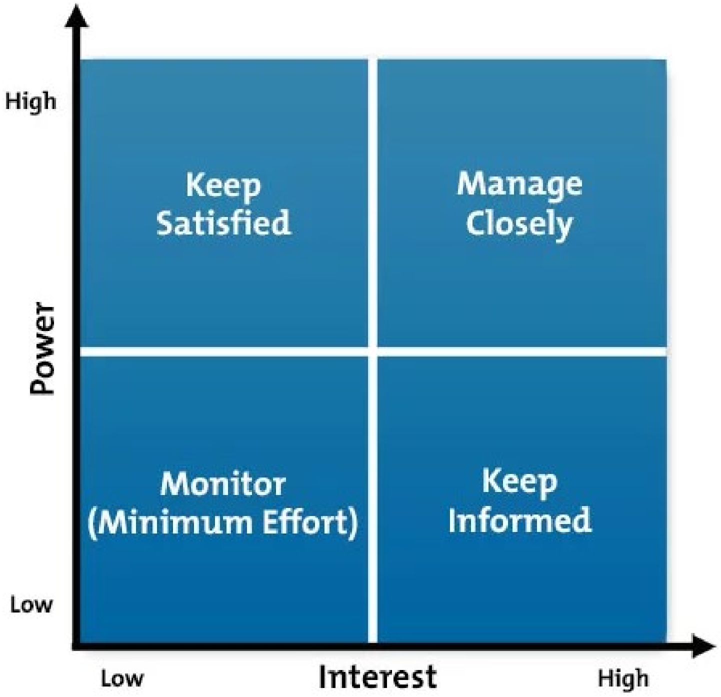
Stakeholders analysis matrix



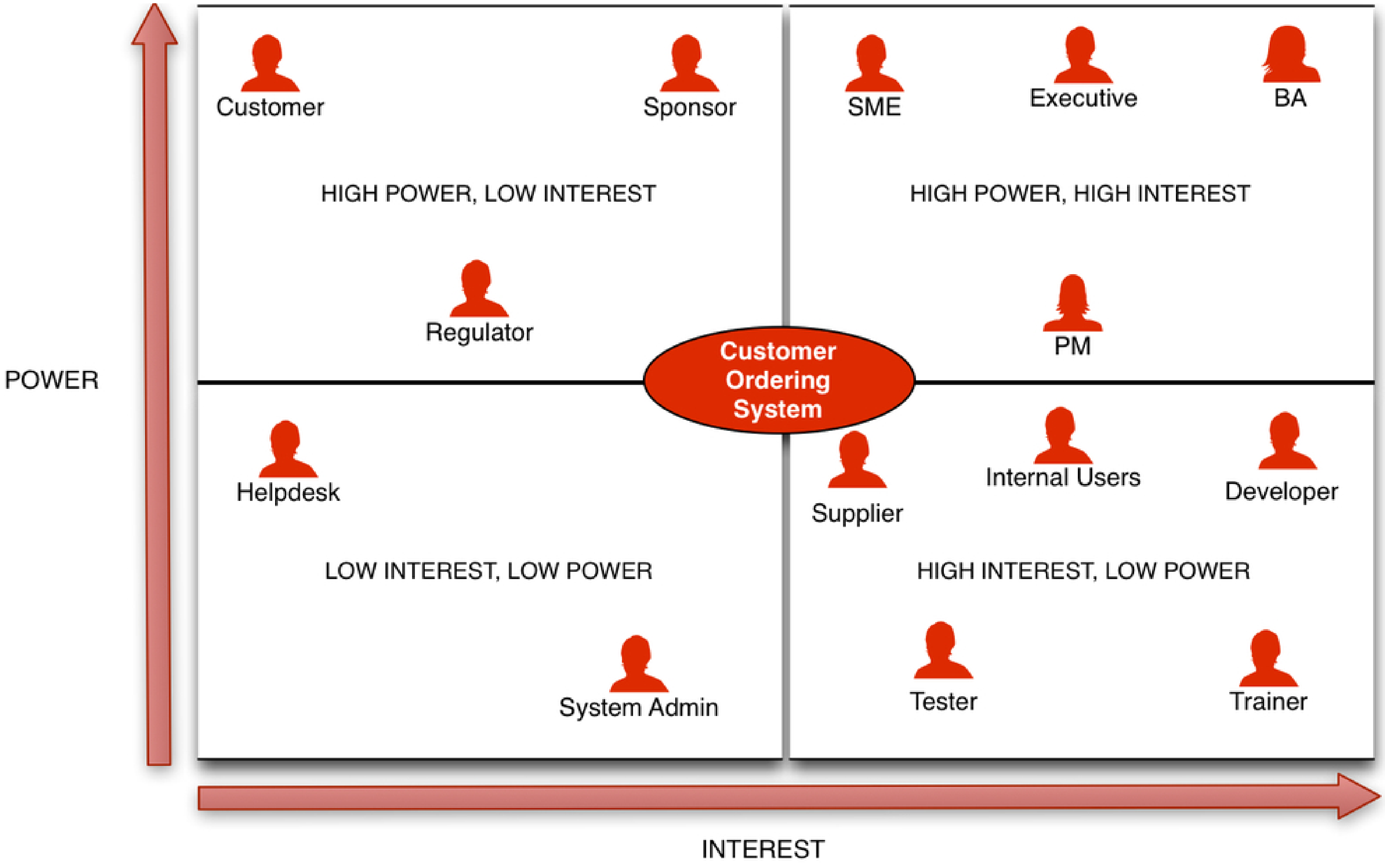
Stakeholder Name	**Contact Person** *Phone, Email, Website, Address*	**Impact** *How much does the project impact them? (Low, Medium, High)*	**Influence** *How much influence do they have over the project? (Low, Medium, High)*	**What is important to the stakeholder?**	**How could the stakeholder contribute to the project?**	**How could the stakeholder block the project?**	**Strategy for engaging the stakeholder**
EXAMPLE ***Nurses & Midwives Union***	*Carlos Davida* *cdavida@nu.org* *0998 765 287*	*High*	*High*	*Maintaining working conditions for nurses*	*Agree for union members to implement the new reforms*	*Going on strike*	*Monthly round-table discussions*
Patient Advocacy Group	*Viki Chan* *vchan@pag.org* *888 587 101*	*High*	*Medium*	*Maximising quality of care for patients*	*Communicate with other stakeholders to express their support for reforms*	*Making complaints about quality of service after the reports*	*Information and feedback meetings every 6 months*
Sunday Times Newspaper	*Jane Smith* *jsmith@stn.com* *888 587 101*	*Low*	*High*	*Getting a good story*	*Print stories that support the new reforms*	*Printing stories that oppose the new reforms*	*Quarterly press meetings*

Power/Interest stakeholders matrix

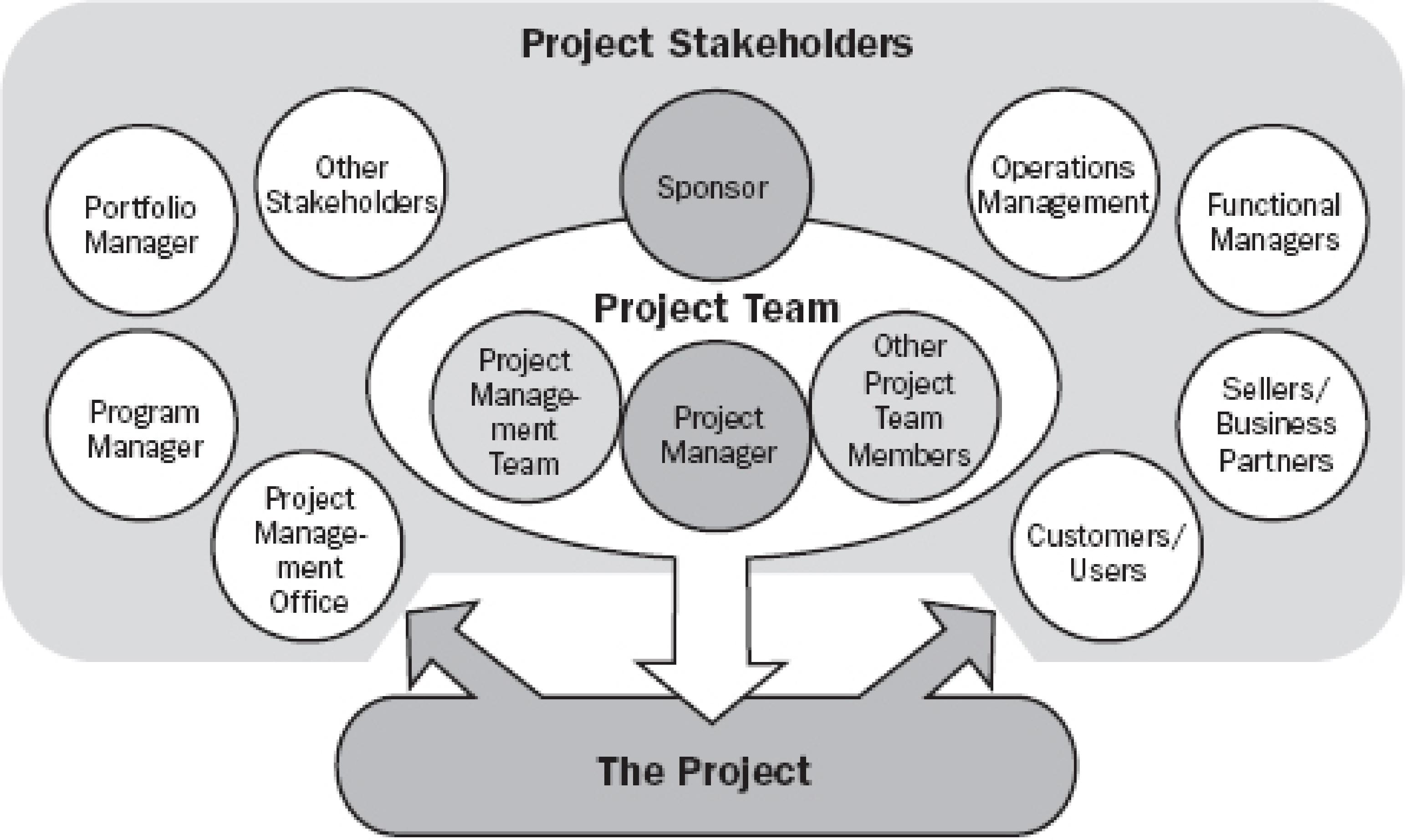
- **High power, highly interested people (Manage Closely)**: you must fully engage these people, and make the greatest efforts to satisfy them.
- **High power, less interested people (Keep Satisfied)**: put enough work in with these people to keep them satisfied, but not so much that they become bored with your message.
- **Low power, highly interested people (Keep Informed)**: adequately inform these people, and talk to them to ensure that no major issues are arising. People in this category can often be very helpful with the detail of your project.
- **Low power, less interested people (Monitor)**: again, monitor these people, but don’t bore them with excessive communication.



Example of Power/Interest stakeholders matrix

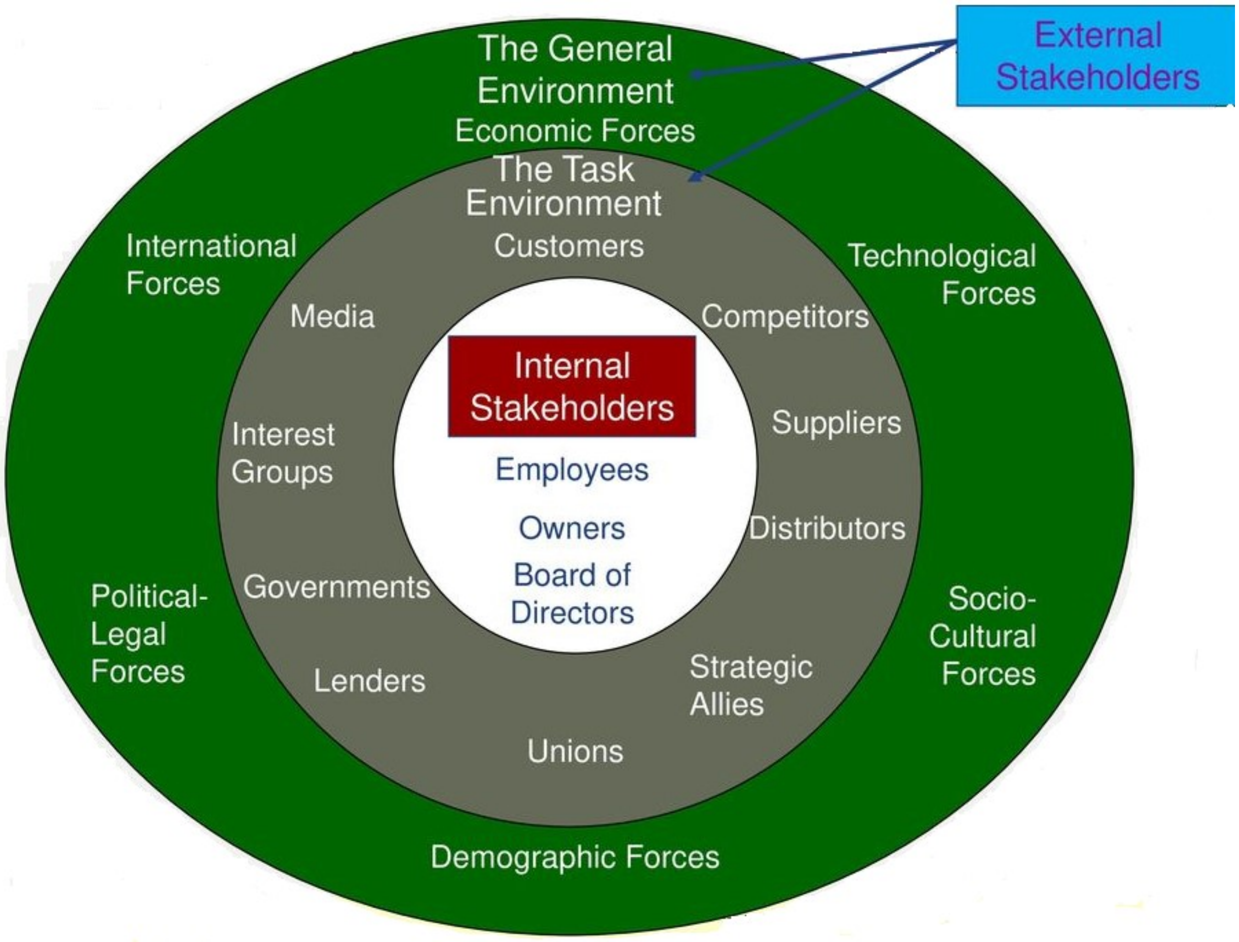


Project Stakeholders



Stakeholders needs & constraints

- Constraints are not related to the fulfilling the stakeholders' needs
- They are restrictions imposed on the project by ***external forces***



Constraints Include

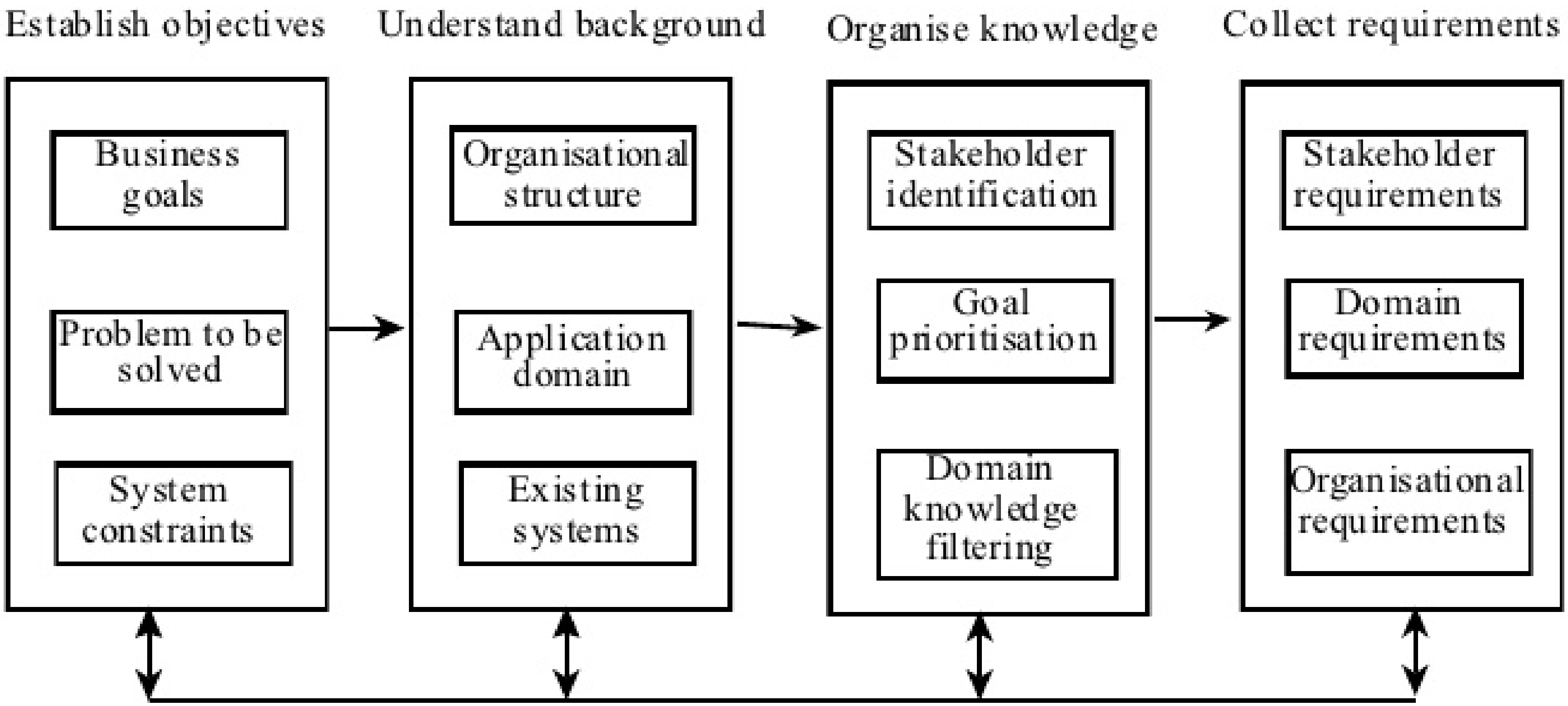
- **Business and Economic:**
  - Cost and pricing, availability, marketing and licensing issues
- **Environmental:**
  - External standards and regulations that are imposed on the development project
- **Technical:**
  - The technologies that the project is forced to adopt or the processes that the project has to follow
- **System:**
  - Compatibility with existing systems and operating environments
- **Schedule and Resources:**
  - Dates the project has been committed to or limitations on the resources that the project must use

Requirements Elicitation Process

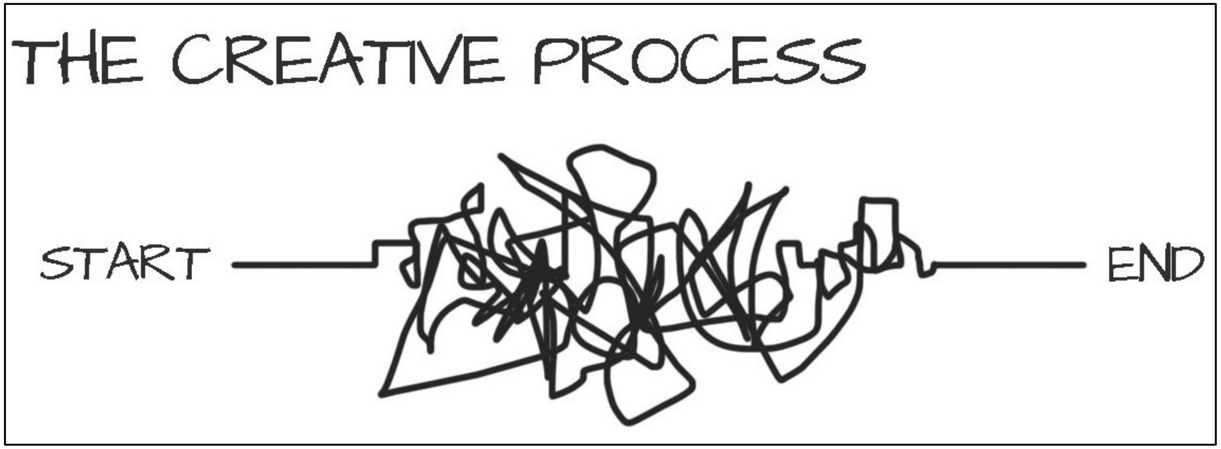
Requirements Elicitation Process

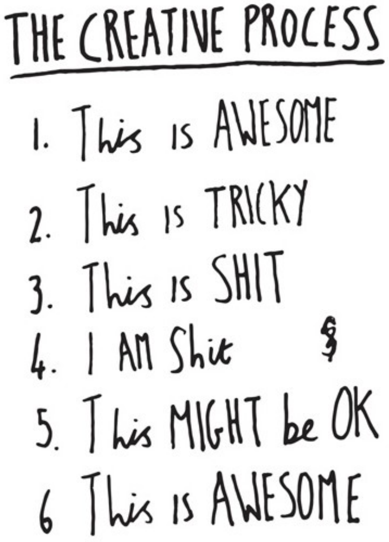
- the most difficult
- important
- prone to error
- requiring intensive communication

Requirements Elicitation Process



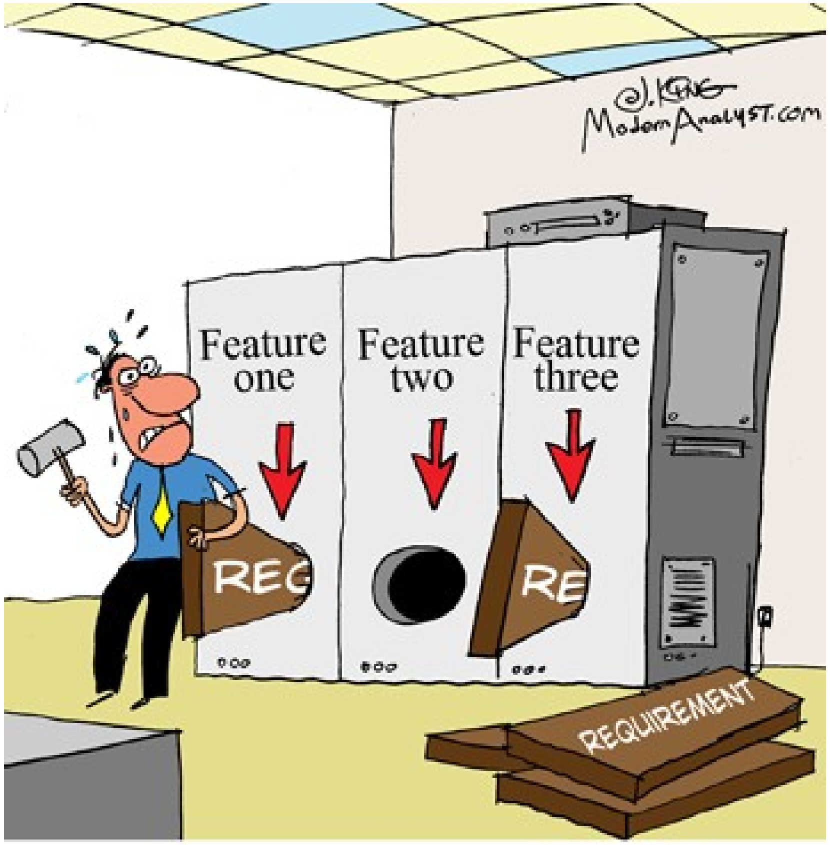
Requirements Elicitation - it is the creative process




THE CREATIVE PROCESS

1. This is AWESOME
2. This is TRICKY
3. This is SHIT
4. I AM Shit
5. This MIGHT be OK
6 This is AWESOME

Meet client's needs!



How some analysts decide to meet their client's needs.

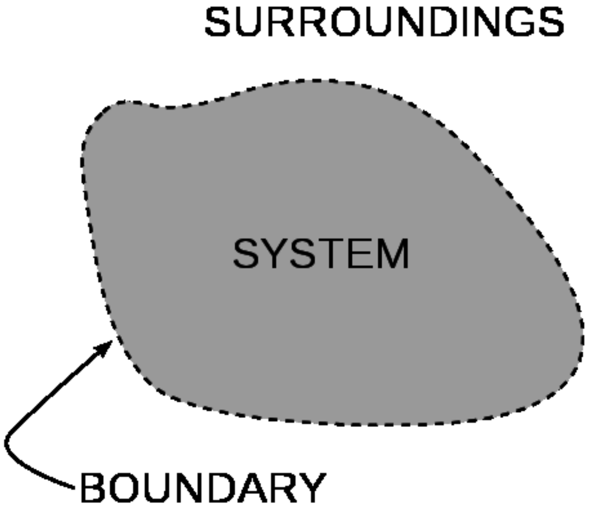
The problems of Requirements Elicitation

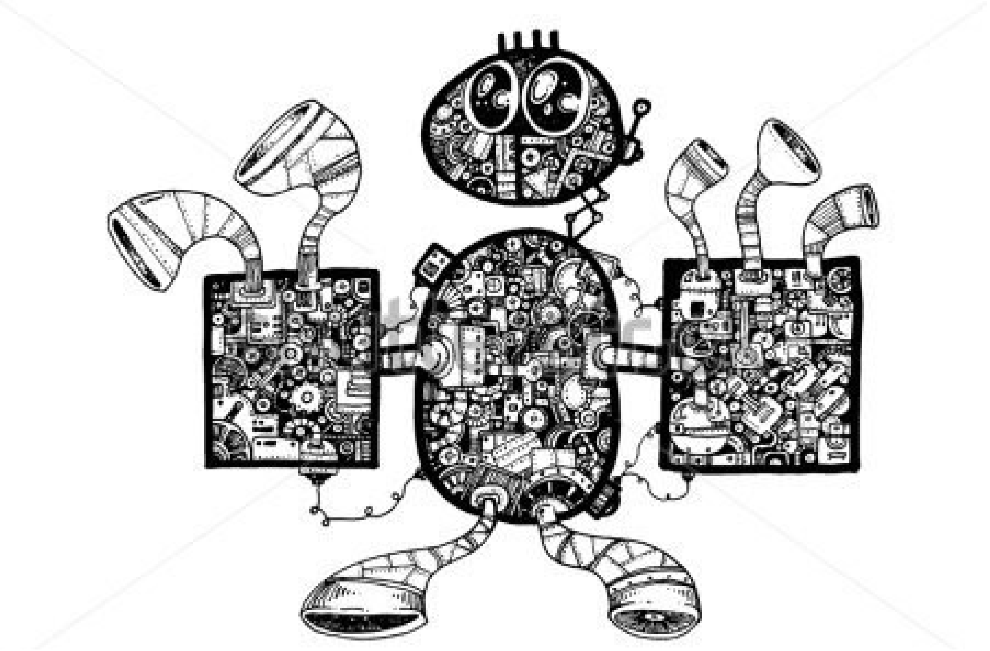
The problems of Requirements Elicitation

- Problems of scope
- Problems of understanding
- Problems of volatility (variability, inconstancy)

Problems of scope

- The boundary of the system is ill-defined or the customers/users specify unnecessary technical details that may confuse, rather than clarify, overall system objectives





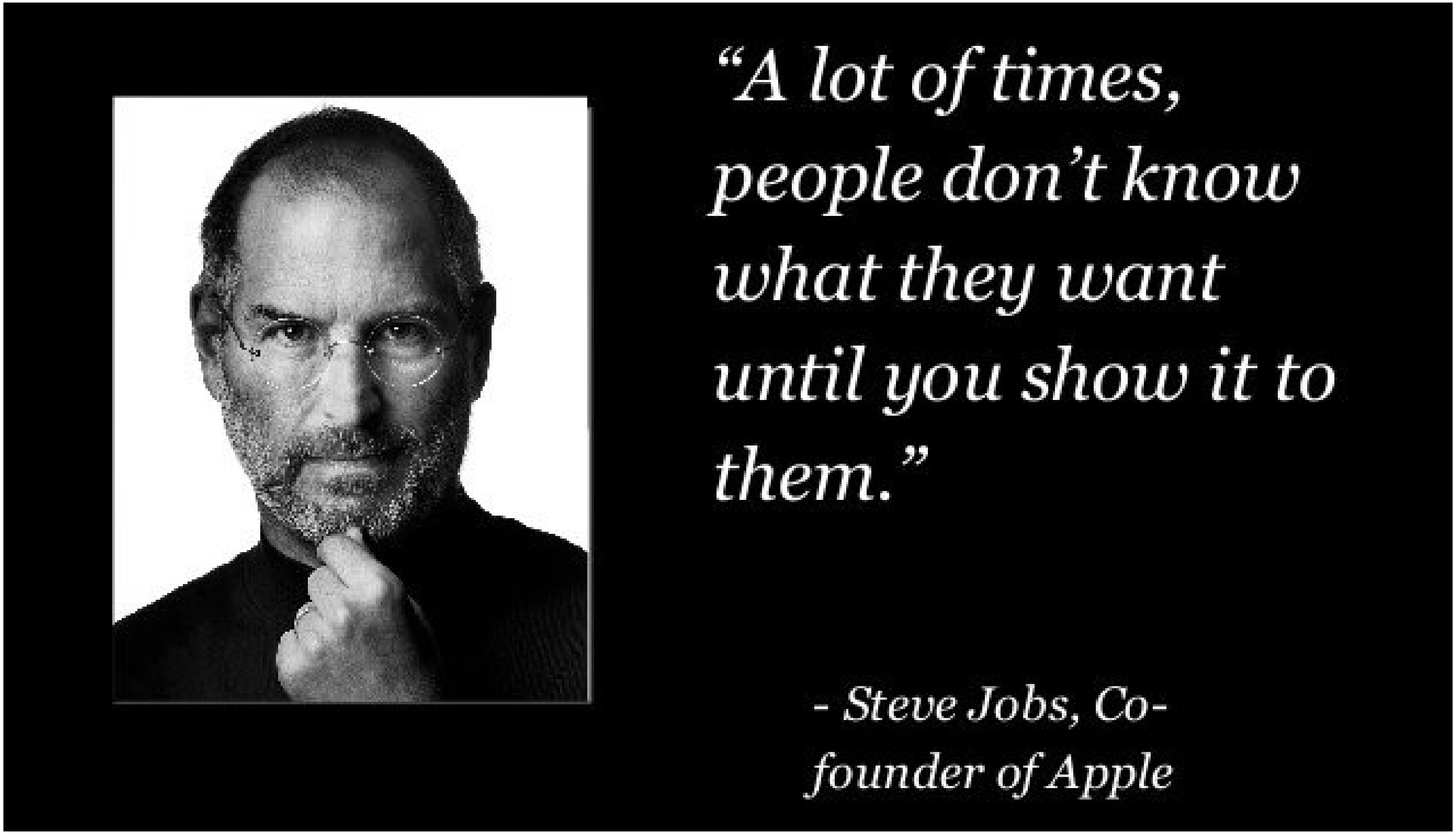
User's vision of the system technical implementation

Problems of understanding

The customers/users:

- are not completely sure of what is needed
- have a poor understanding of the capabilities and limitations of their computing environment
- don’t have a full understanding of the problem domain
- have trouble communicating needs to the system engineer
- omit information that is believed to be “**obvious**”
- specify requirements that conflict with the needs of other customers/users
- specify requirements that are ambiguous or untestable

Problems of understanding

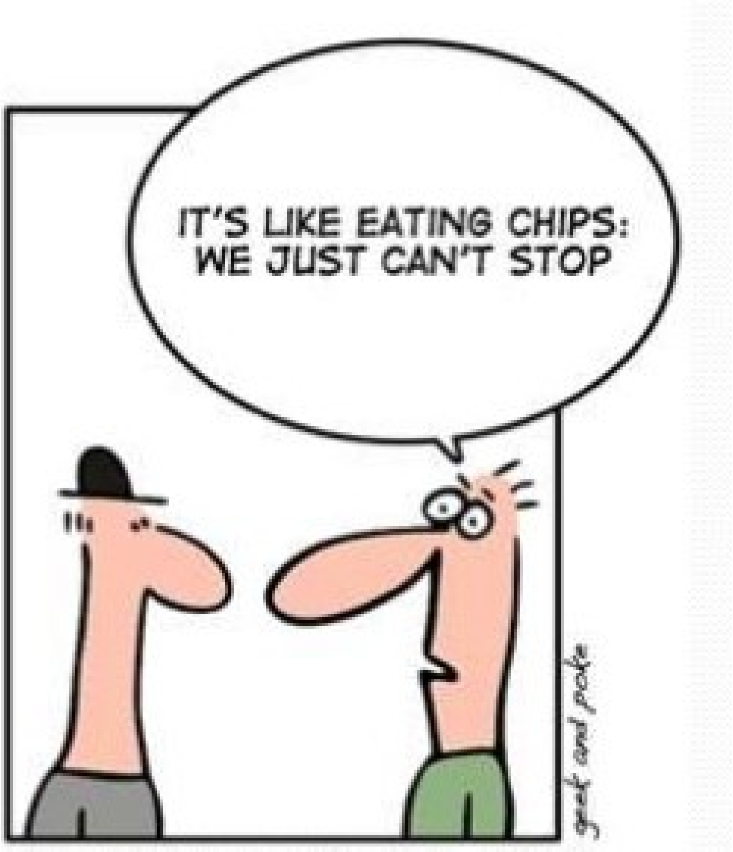


"A lot of times, people don't know what they want until you show it to them."

- Steve Jobs, Co-founder of Apple

Problems of volatility

- The ***requirements change over time***.
- The rate of change is sometimes referred to as the level of requirement volatility



Requirements elicitation methods

Is there an ideal method for requirements elicitation?

Requirements elicitation methods

BABOK:

- Brainstorming
- Document Analysis
- Focus Groups
- Interface Analysis
- Interviews
- Observation
- Prototyping
- Requirements Workshops
- Survey/Questionnaire

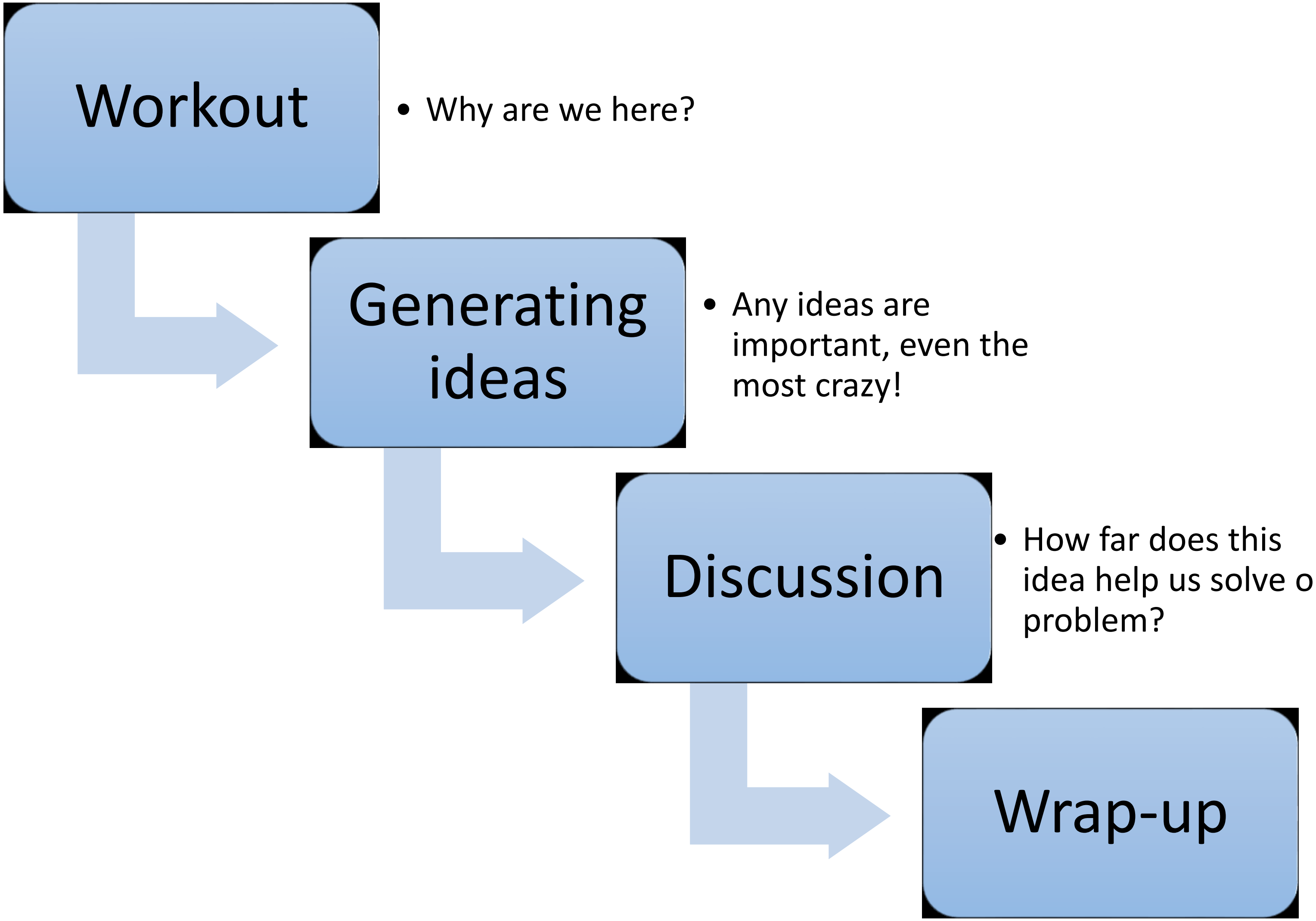
Other methods:

- Protocol analysis
- Job application design
- so on

Brainstorming

- Clear statement of purpose and/or objectives and constraints
- Ensuring maximum freedom for participants
- Careful formation of the participants
- Hierarchical conduct of discussions
- The huge role of the "leader" and the democratic leadership style

Brainstorming. The main stages



Workout

- Why are we here?

Generating ideas

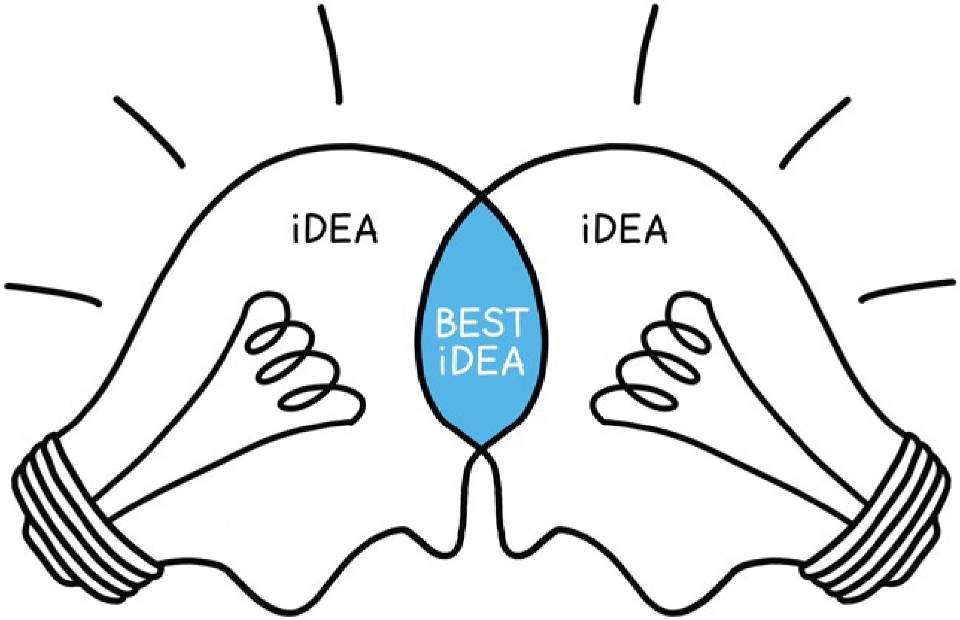
- Any ideas are important, even the most crazy!

Discussion

- How far does this idea help us solve our problem?

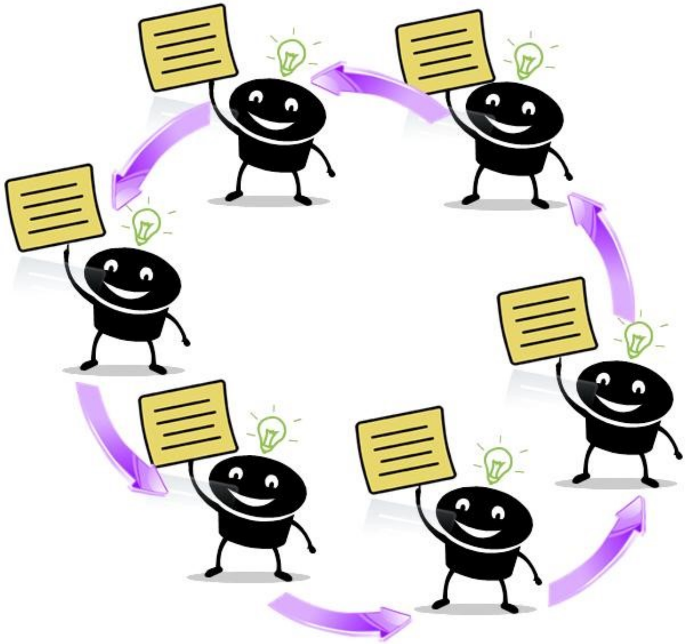
Wrap-up

It is important!



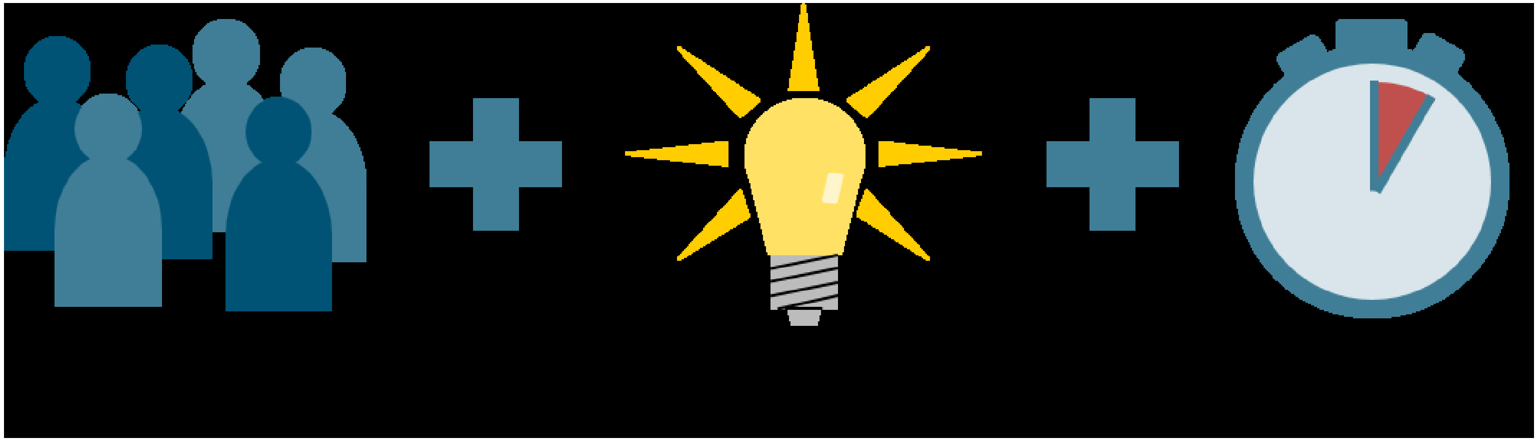
- **An activity done in a group, not individually**
- **Having a completely different purpose than the focus group technique**:
  - A brainstorming group is normally composed of organizational stakeholders who are generating ideas that will be refined later
  - A focus group is normally composed of customers who are giving their feedback about the already-refined ideas
- **Specifically defined for one stated purpose**
  - Brainstorming I BABOK aims to answer a specific question

Brainwriting



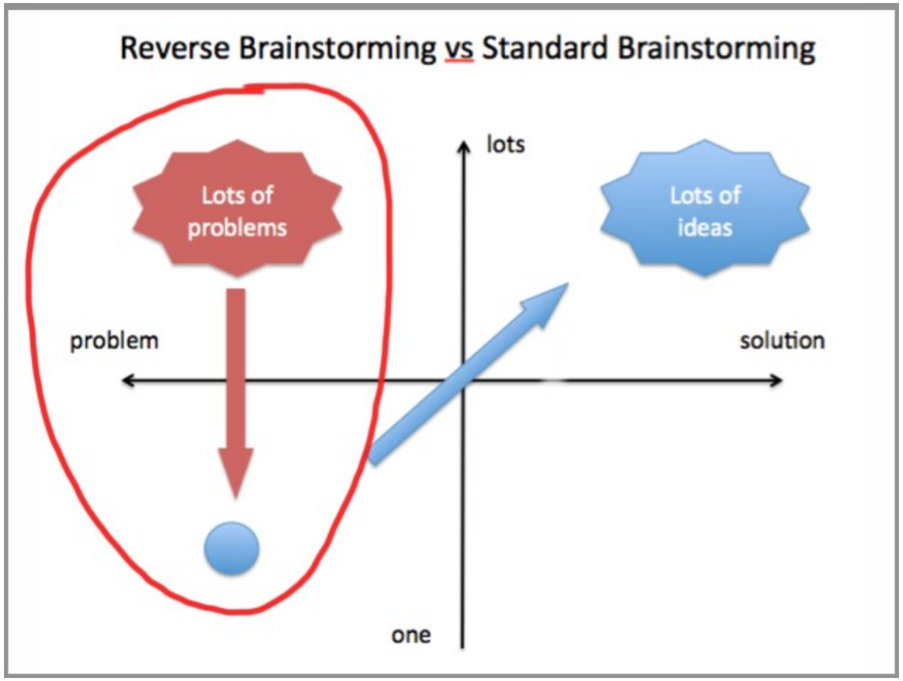
- The participants express their proposals not in a loud voice, but in writing
- They write their ideas on sheets of paper and then exchange them with each other
- The idea of a neighbor becomes an impetus for a new idea, which is introduced into the resulting sheet

6-3-5 Brainstorming



- 6 participants write 3 ideas on a given question in 5 minutes
- The sheets with their thoughts are passed in a circle
- In the next 5 minutes, each participant must must review all his neighbor's suggestions and detail them (or add 3 new ideas)
- After half an hour, as a maximum, 18 (108) of the elaborated proposals are done
- The next half an hour is given to discuss, supplement and select the best options

Reverse brainstorming



Using:

- when creating a new improved design, a new service, or developing a new idea

Tasks:

- identification of existing products, services, ideas of the maximum number of disadvantages
- Maximizing these disadvantages in a new product or service

Goal:

- drawing up the most complete list of disadvantages of the object or idea under consideration

Document Analysis

Elicit requirements through the study of the available documents of existing and comparable solutions, and identify relevant information

Document Analysis. The main stages

1. Preparation
   - Evaluate which existing documents about the business and system are relevant, available and appropriate
2. Document review
   - Study the material, identifying and documenting relevant details
3. Wrap-up
   - Review and confirm the details selected
   - Organize information in the form of requirements

Document Analysis. Types of DOC

- Benchmarking studies
- Business plans
- Business process and procedure documentation
- Company memos
- Competing product literature and reviews
- Customer contracts
- Customer suggestions
- Requests for proposals
- System defect reports
- System specifications (of existing systems)
- Training guides
- Vision documents for related projects

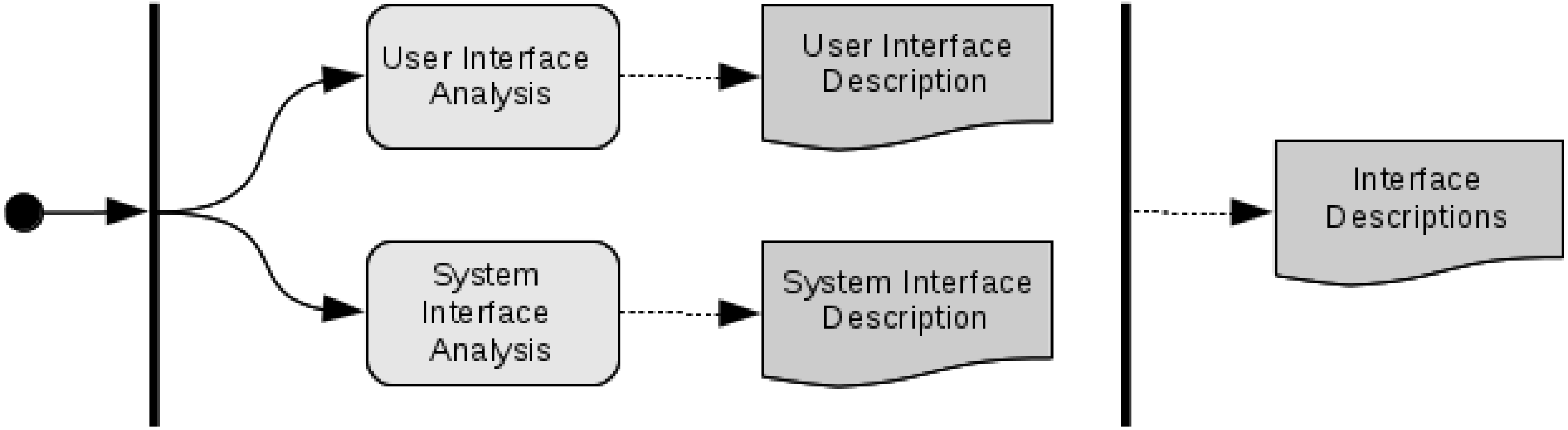
Focus Groups

- Similar to brainstorming, more structured, with less breadth, creativity and exaggerations
- Meeting in the same room or remotely
- Sharing and re-evaluation of prospects
- Moderator manages the work, facilitates the session, produces the report
- Observer records or monitors the group, without participation
- Results are analyzed and reported as themes
- Medium used during any stage of the cycle
  - Product Development – Update of the reqiurements
  - Product in production – Reviews for the next deliver

Focus Groups. The main stages

1. **Preparation**
    - Participants
        - 6 to 12 participants (can be extended), varies with the topic
        - Composition
            - Homogeneous – Similar features, different perspectives are not shared
            - Heterogeneous – Different historical and perspectives, self-censorship because of discomfort
    - Moderator and recorder
        - Promote discussion, open-ended questions, group interaction, keeping focus, neutral, adaptable and flexible
    - Discussion Guide
        - Goals/Objectives of the session (5, 6 open questions)
    - Local and Services
        - Local, support, equipments for the session
2. **Conduct focus group session**
    - Moderator guides the discussion 1-2 hours by a pre-planned scrip (transparent), to ensure reaching goals
    - Recorder captures the group's comments
3. **Produce the report**
    - Moderator analyzes and documents the areas of agreement or not between the participants and synthesizes on themes

Interface Analysis

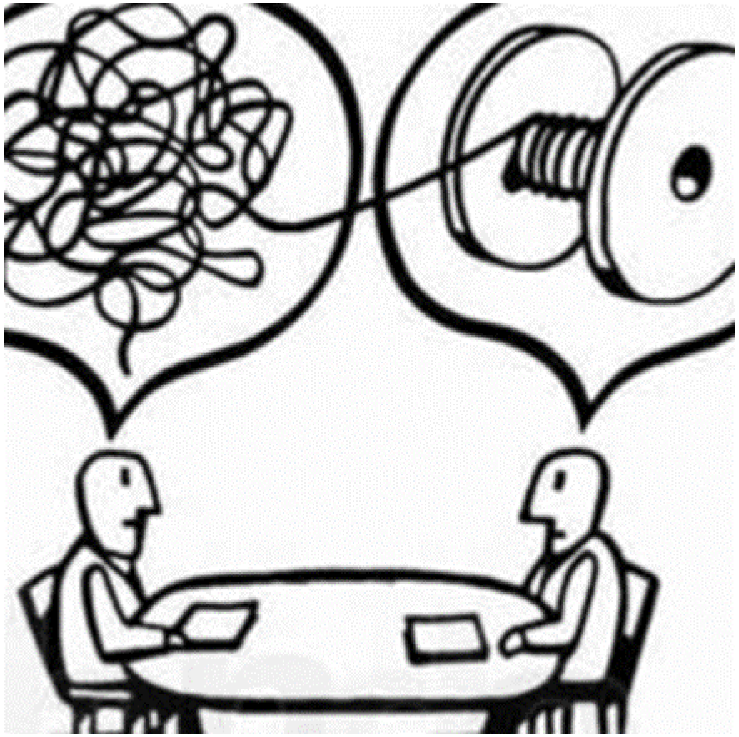

User Interface Analysis
User Interface Description
System Interface Analysis
System Interface Description
Interface Descriptions

Identify interfaces between solutions and/or components of the solution and define requirements that describe how they will interact

Interface Analysis

1. Preparate for interface identification
   - Review the actual documentation containing indications of reqiurements
2. Conduct Interface Identification
   - Identify what interfaces are needed for each stakeholder:
     - Describe the interface purpose
     - Evaluate which type of interface is appropriate
     - Elicit high level details, depending on its type
       - User-System – Use prototyping
       - System-System – Content and name of the events
3. Define interfaces
   - Reqiurements focused on describing the inputs and outpus of the interface
   - Validation rules and events that trigger interactions
   - Interactions specified individually

Interviews



Elicit informations from a person or group of people through a conversation with an interviewee, with questions and documented responses

Interview. The main stages

1. **Preparation for the interview**
   - Define the focus or the interview goal
   - Identify the interviewees in potencial
     - Who holds a confiable/authentic/current information
     - What's the stake in the initiative
   - Design the interview, adapted for each interviewee
   - Contact the interviewees in potencial. Justificate the interview goal
2. **Conduct of the interview**
   - Opening the interview
     - Purpose statement and notes to me made and shared at the end
   - During the interview
     - Focus on goals and pre-defined questions
     - Concerns of the interviewee attended during the interview or documented for future interview
     - Active listening to confirm the understanding of the information
   - Closing the interview
     - Check for neglected issues
     - Summarize the session
     - Remember the review process and thank the interviewee
3. **Follow-up interview and confirmation**
   - Organize information, send for review of the interviewee
   - View of all the related context, pointing out incorrect or missing items
   - Documenting information and not to evaluate the requirements

Observation

Evaluation of the work environment of the stakeholder, to document the details of the current processes to improve or change the current process

Observation. The main stages

1. **Prepare for the observation**
   - Determine sampling of users will be observed and what activities and questions to ask
2. **Observe**
   - Present to the observed
   - Ensure to the observed that there is no question about his work, only observation to study
   - Explain that there may be disruption to questions
   - Suggest “thinking aloud” while working
   - Observe the work, take notes necessary with or without questions
3. **Point Observation Wrap-Up – Documentation and Confirmation**
   - Get answers to the original or new
   - Summarize the notes for revision and clarification
   - Many users: compile notes (common points)

Included observation

An observer is a direct participant in the process (playing user roles)

Not included observation

The observer only registers the processes, facts and phenomena without being a participant

Prototyping

Prototyping is a quick "black" implementation of the basic functionality for the analysis of the system as a whole

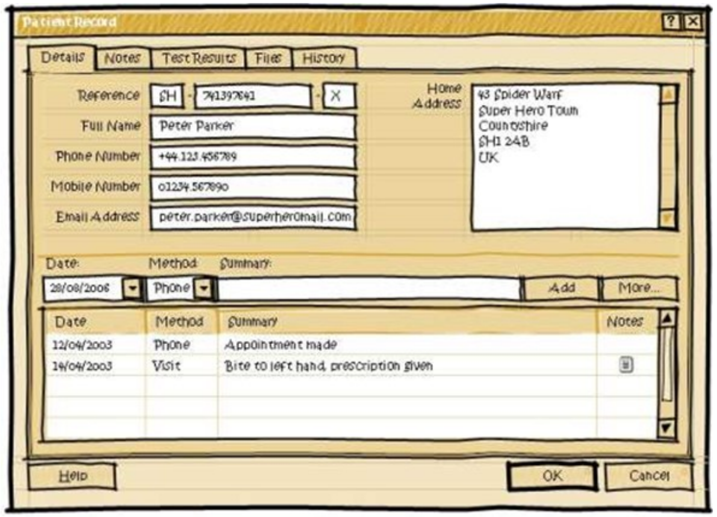
The following steps:

- view architecture of the system
- development
- implementation
- testing of the final product

Primary goals that require prototyping:

- clarify the unclear requirements to the system
- choose one of the different conceptual solutions
- to analyze feasibility

The purpose of prototyping. Detection of unclear requirements



Reference: SH - 741397641 - X

Full Name: Peter Parker

Phone Number: +44.123.456789

Mobile Number: 01234.567890

Email Address: peter.parker@superheromail.com

Home Address:
43 Spider Warf
Super Hero Town
Countyshire
SH1 24B
UK

Date: 28/08/2006 Method: Phone Summary:

Date	Method	Summary	Notes
12/04/2003	Phone	Appointment made	
14/04/2003	Visit	Bite to left hand, prescription given	▤

- It is difficult for the customer to formulate the requirements for what he expects from the system
- The User Interface (UI) prototype, created promptly by the results of the interview, gives him the opportunity to see a schematic implementation of how the executor saw the relevant part of the system
- Any prototyping result is useful

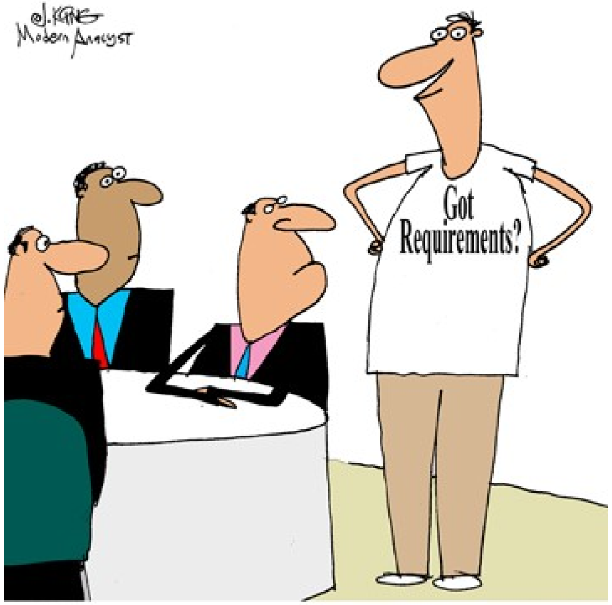
The purpose of prototyping. Identifying alternative solutions

- Any technical problem can be solved in different ways
- Various decisions can be expressed in different requirements formulations
- Different solutions can be expressed in different UI implementations

The purpose of prototyping. Feasibility analysis

- The combination of functional and non-functional requirements and constraints can be such that there is a risk of being unable to implement them
- The main risks are the incompatibility of the requirements for the system's performance at known limitations of the environment implementation
- The solution is to create prototypes (not necessarily related to the UI) that implement the relevant part of the system, to simulate input data streams and their processing

Requirements Workshops



Joe did his best to prepare for his first Requirements Workshop.

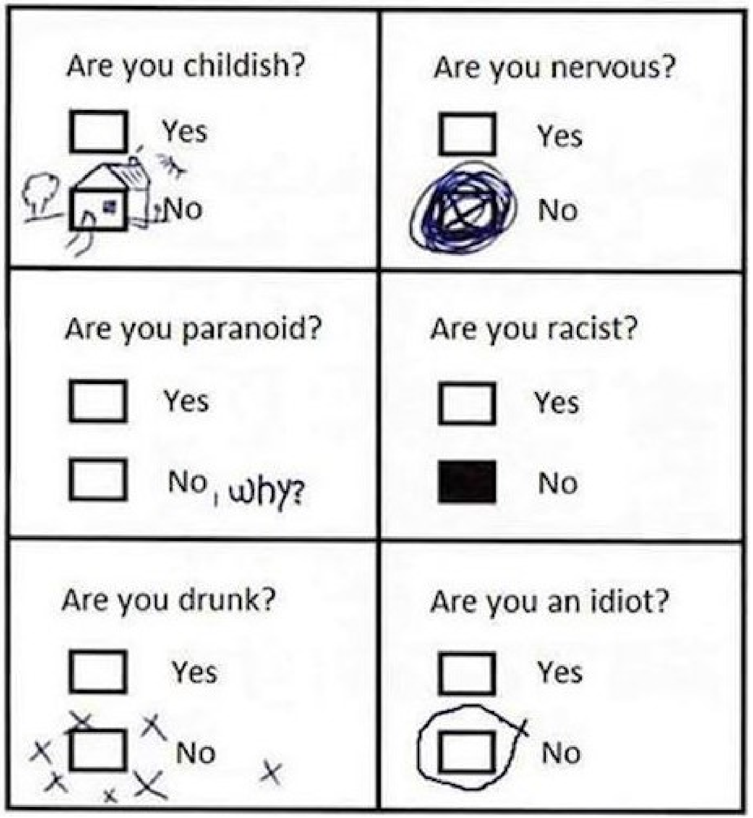
- Structured way of capturing requirements, used to investigate, discover, define, prioritize and achieve the closure of the requirements.
- Effective way to deliver promptly high quality requirements, promoting trust, mutual understanding and strong communication among stakeholders, producing deliverables that structure and guide future analysis

Requirements Workshops

Requirements Workshops. The main stages

1. **Prepare for the workshop of requirements**
   - Clarify stakeholder needs and purpose of the workshop
   - Identify critical stakeholders to participate
   - Set agenda and determine the means of documentation
   - Schedule sessions and organize logistics of the room, seating and equipment
   - Send materials in advance
   - Conduct pre-workshop interviews to ensure understanding of the purpose of the workshop
   - Determine the number of participants
2. **Conduct the workshop of requirements**
   - Elicit, analyze and document requirements
   - Obtain consensus on conflicting views, maintaining focus
   - Facilitator
     - Establish objective and professional tone for the meeting
     - Present goals and agenda of the meeting
     - Imposing discipline, basic rules and manage the meeting
     - Facilitate decision making and building consensus, ensuring that all views were heard
3. **Closing post-workshop of requirements**
   - Track open items of recorded actions in the meeting
   - Complete and distribute documentation to stakeholders

Survey/Questionnaire



Are you childish?

□ Yes

□ No

Are you nervous?

□ Yes

[✓ No]

Are you paranoid?

□ Yes

□ No, why?

Are you racist?

□ Yes

■ No

Are you drunk?

□ Yes

□ No

Are you an idiot?

□ Yes

[✓ No]

Elicit information from many people (anonymous or not) in a short period of time, collecting information about customers, products, work practices and attitudes

Self-filling!

Prerequisites:

- the distance between the respondent and the interviewer
- anonymity of the received data

Format:

- the questionnaire is transmitted personally in hands and removed after filling
- the technical means of communication are used: postal mailings, e-mail distribution

Survey/Questionnaire. The main stages

1. **Prepare**
   - Define the purpose of research and target group
   - Identify goals and group to be searched
   - Choose the type of search: Semi-structured interview (open questions) x structured (closed questions)
   - Select the sample group: Small interview of all/ Grand subset of users
   - Geographical distribution, regulatory differences, lack of standardization in office or business processes
   - Select distribution methods
   - Projecting desired level of response (% acceptable return)
   - Communicate the purpose, goals and reason of the search
   - Be aware of group characteristics, historical, environment and terminology
   - Focus on requirements, the questions must be directed towards the stated objectives
   - Easy search, quick to be answered, limited and ordered
   - Clear and concise questions, addressing a specific theme
   - Avoid negative, complex and uncomfortable questions
   - Test the search for possible adjustments

Survey/Questionnaire. The main stages

1. **To send the survey based on:**
   - Organizational policies
   - Urgency in obtaining results
   - Security level required
   - Geographical distribution of participants
2. **To document search results:**
   - Collect the responses, evaluate details and emerging themes of open questions
   - Analyze and summarize the results
   - Report findings to the sponsor