

Requirement Analysis and Gathering – a Primer

Presented by
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Presenter Profile

Ravi Ayyalaraju – Co-Founder & Chief Customer Advocate

SOAIS, (www.soais.com)

- 14+ Years of ERP Experience – started as PeopleSoft Technical Consultant in 1995.
- Worked in PeopleSoft / Oracle for 12 Years.
- Managed Oracle / PeopleSoft Consulting Practice.
- Ravi has a
 - MBA from Northwestern University,
 - MS in Computer Science from Western Michigan University
 - Undergraduate degree from Bangalore University in India

Agenda

- ❖ Introduction
- ❖ Requirements Basics
- ❖ Requirements Gathering
- ❖ Requirements Analysis
- ❖ Requirements Documentation
- ❖ Requirements gathering during ERP Upgrades
- ❖ Q&A

Introduction

- ❖ Requirements Analysis & Gathering is the first step in a project lifecycle.
- ❖ Considered the most complex aspect of the project.
- ❖ Output of this phase form critical inputs to determine project schedules, budgets, resourcing, implementation / upgrade / development methodologies and testing strategies.
- ❖ Errors introduced in this stage are costly to fix in later stages of the project lifecycle.

Market research shows ...

- **"Flawed Requirements Trigger 70% of Project Failures"**, *Infotech Research, 2005*
- **"Gaps in the Technical Requirements accounted for more than 70% of program problems"**, *United States Government Accountability Office, 2008*
- **"Requirements Errors account for 70% to 85% of rework"**, *Liffingwell, 1997*
- **"Between 40 and 60 per cent of all software defects can be attributed to bad requirements"**, *Abbott, 2001*
- **"Poor requirements account for 71% of project failures"**, *Grady 1999*

Challenges

- It is difficult to articulate and envision what is needed
- Users do not clearly understand what they want or need
- Multiple stakeholders take time to freeze on business requirements
- Bridging the gap between requirements understood between domain experts and product specialists or technical personnel
- Focusing and influencing solutions to the business need rather than defining the need
- Changes in requirements after scope and budgets are fixed
- Analysis Paralysis

What happens if you don't get requirements right?

Consequences of not beginning right

- ❖ Expensive rework and cost overruns
- ❖ A poor quality product
- ❖ Late delivery
- ❖ Dissatisfied customers
- ❖ Exhausted and demoralized team members

Begin right to finish right !!

Cost of fixing defects escalates as the project progresses !

Phase	Relative cost of defect fix
Requirements	x
Design	3 – 6x
Coding	10x
Testing	15 – 40x
After go-live	40 – 1000x

Requirements Basics

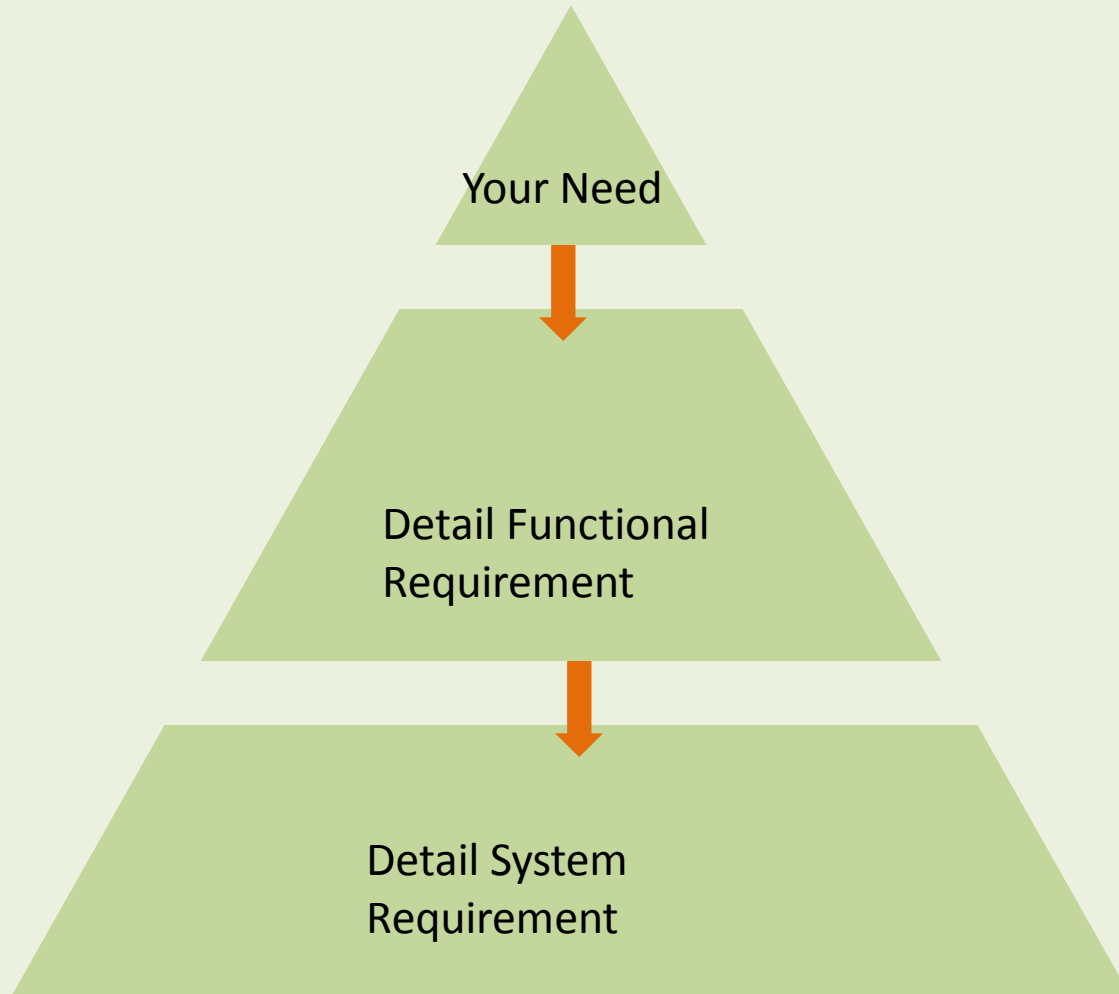
Requirement Definition

- ❖ A well-formed requirement as a statement that
 - ❖ States a customer's business problem – achieves stated objectives
 - ❖ States system functionality – must be met or possessed by the system
 - ❖ Can be validated
 - ❖ Is qualified by measurable conditions and bounded by constraints

❖ Characteristics of a good requirement

- Must be achievable within realistic or definable budgets
- Must be verifiable, avoid defining by words such as excessive, sufficient, reasonable
- Must be unambiguous – have one possible meaning
- Must be expressed in terms of need, not solution
- Must be consistent with other requirements and conflicts resolved
- Must be documented and expressed in a language understandable to every one Slide 11

Example: Housing Project



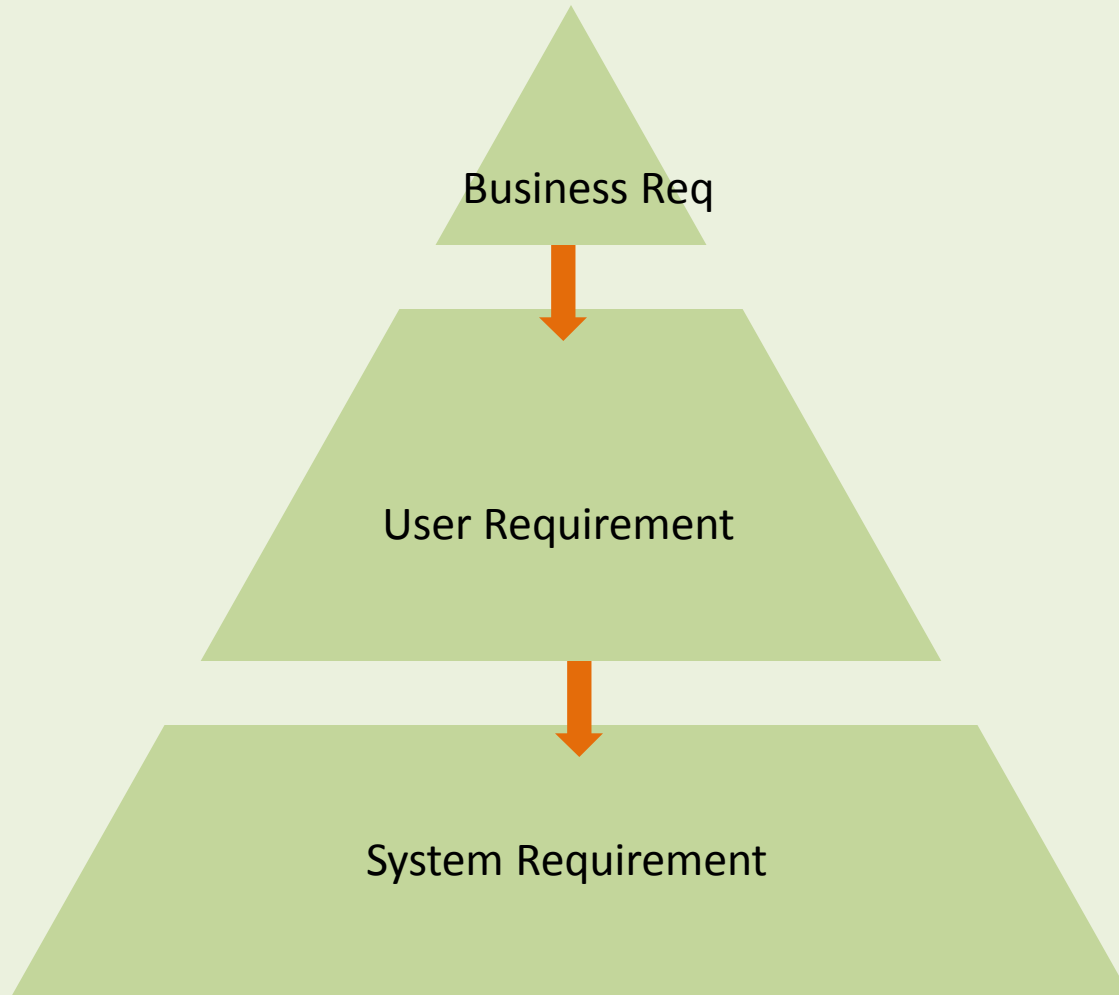
Level1: Need a Place to Stay.

Level2:

- (1) Build or Rent.
- (2) Number of Bed Rooms.
- (3) Car garage
- (4) Kitchen.
- (5) Flooring.
- (6) Basement
- (7) Kids Room
- (8) Location
- (9) Square Feet
- (10) Pricing

Level3: What builders need to do to build?

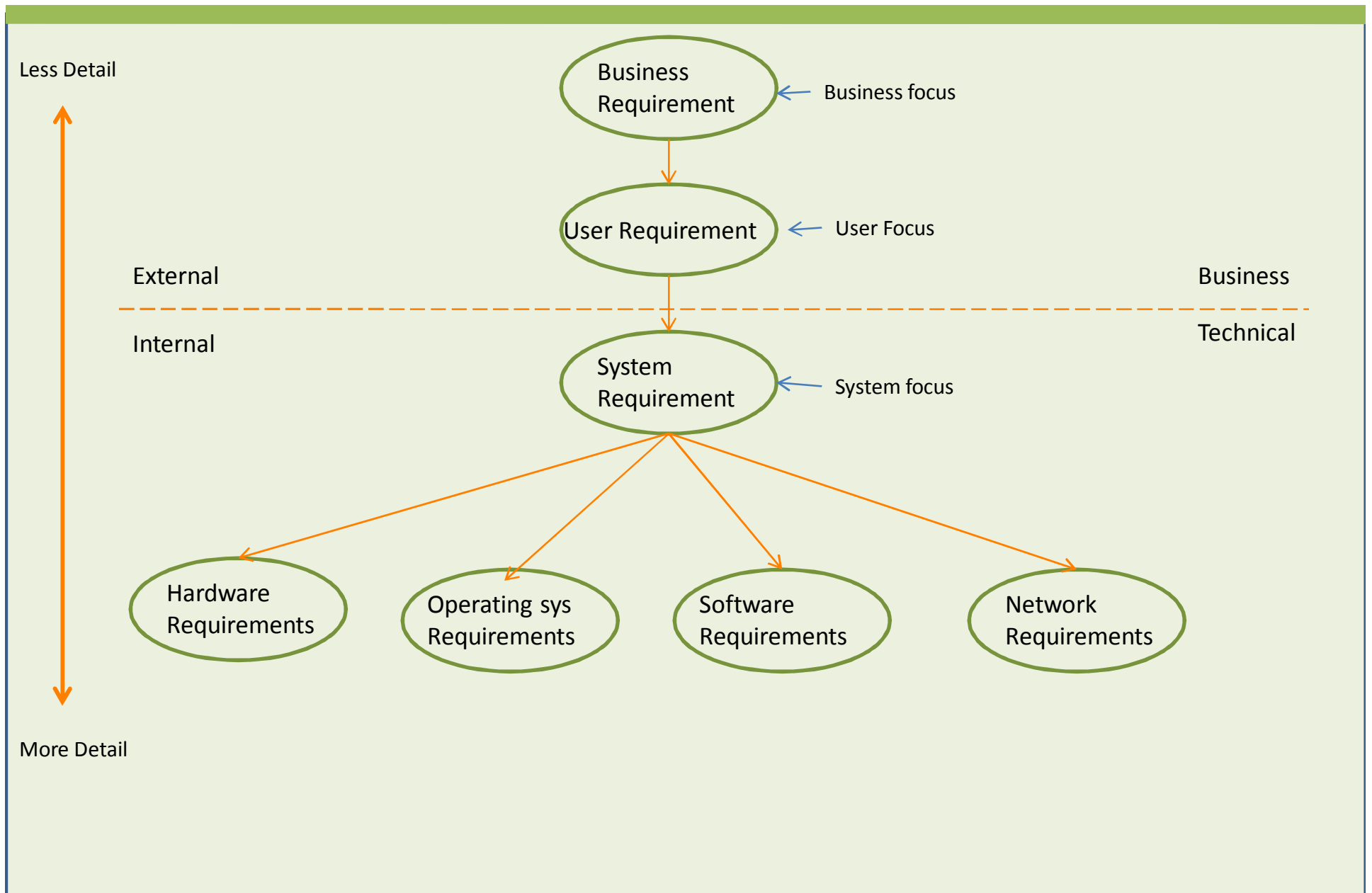
Key requirement categories



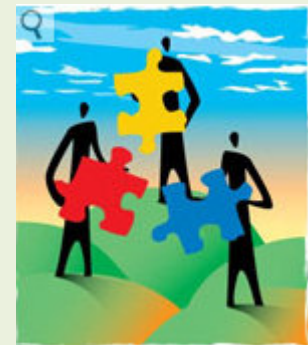
Level1: Why the project is being undertaken?

Level2: What the users will be able to do with the product?

Level3: What developers need to build?



Requirement Gathering

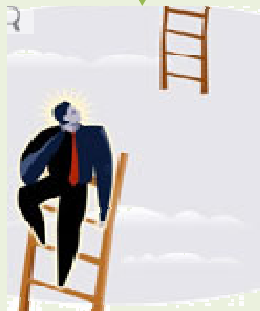


Requirement gathering steps



Solicit requirements from sources.
Raw requirements

Elicitation



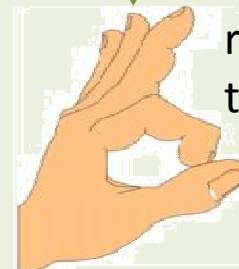
Analysis

Well formed requirements.
Identified functions



Specification

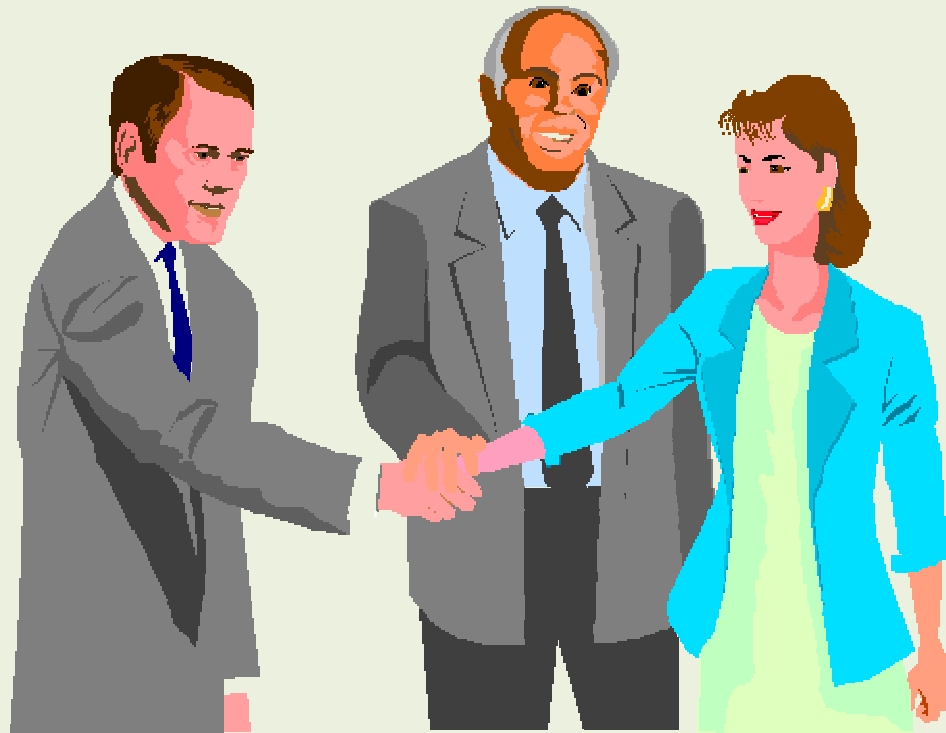
Requirements are documented
unambiguously and completely



V alidation

Vali dation examines the
requirements to ensure that
they satisfy user's needs

Next
Phase



**Defining and capturing good requirements is a
joint effort**

Criteria for who needs to be involved

- Who uses the system?
- Who trains people to use the system?
- Who develops, fixes and maintains the system?
- Who starts up the system, who shuts it down?
- Who creates, updates, deletes information in the system?
- What other systems interface with the system?
- Who gets information from this system?
- Who provides information to the system?

Requirement gathering methods



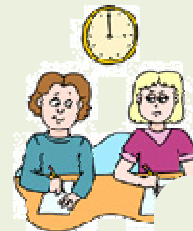
interviews



Workshops



Focus Groups



Survey



brainstorming

Product
Demos



questionnaire

Techniques to trigger thoughts:

- **List of Questions**: Prepare a list of questions ahead of time to use as a general guide for the session.
- **Use cases** describe the system from the point of view of the user using the system. They are an easy format for all people to quickly grasp the system's functionality.
- **Existing System** - When working with an existing system, use it to trigger ideas quickly. Have the user walk through how they do the task now in the system.
- **Whiteboard** - Always use a whiteboard to sketch out ideas. Capture use cases, sketch out user interfaces or draw process flows on the whiteboard.
- **Screen Mockups** - For applications with user interfaces, start with mockups of the UI. Wire frames are simple black and white boxes and text, Use paper, PowerPoint, or a whiteboard to draw the UIs.

Requirements Gathering tips

- ❖ Choose the right requirements gathering technique depending on the context
- ❖ Identify business sponsors, approvers and get buy-in on plans
- ❖ Ensure stakeholders are identified for the each set of requirements
- ❖ Publish schedules and plans for requirements sessions early
- ❖ Identify each requirement with a unique id – traceability to functional designs, technical designs, test scenarios is important
- ❖ Ensure business analysts and end users speak and document requirements in the same language

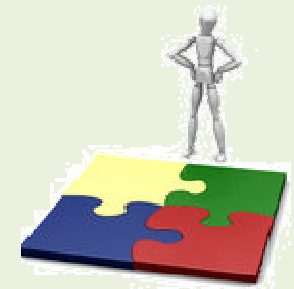
Key players in ERP requirement gathering

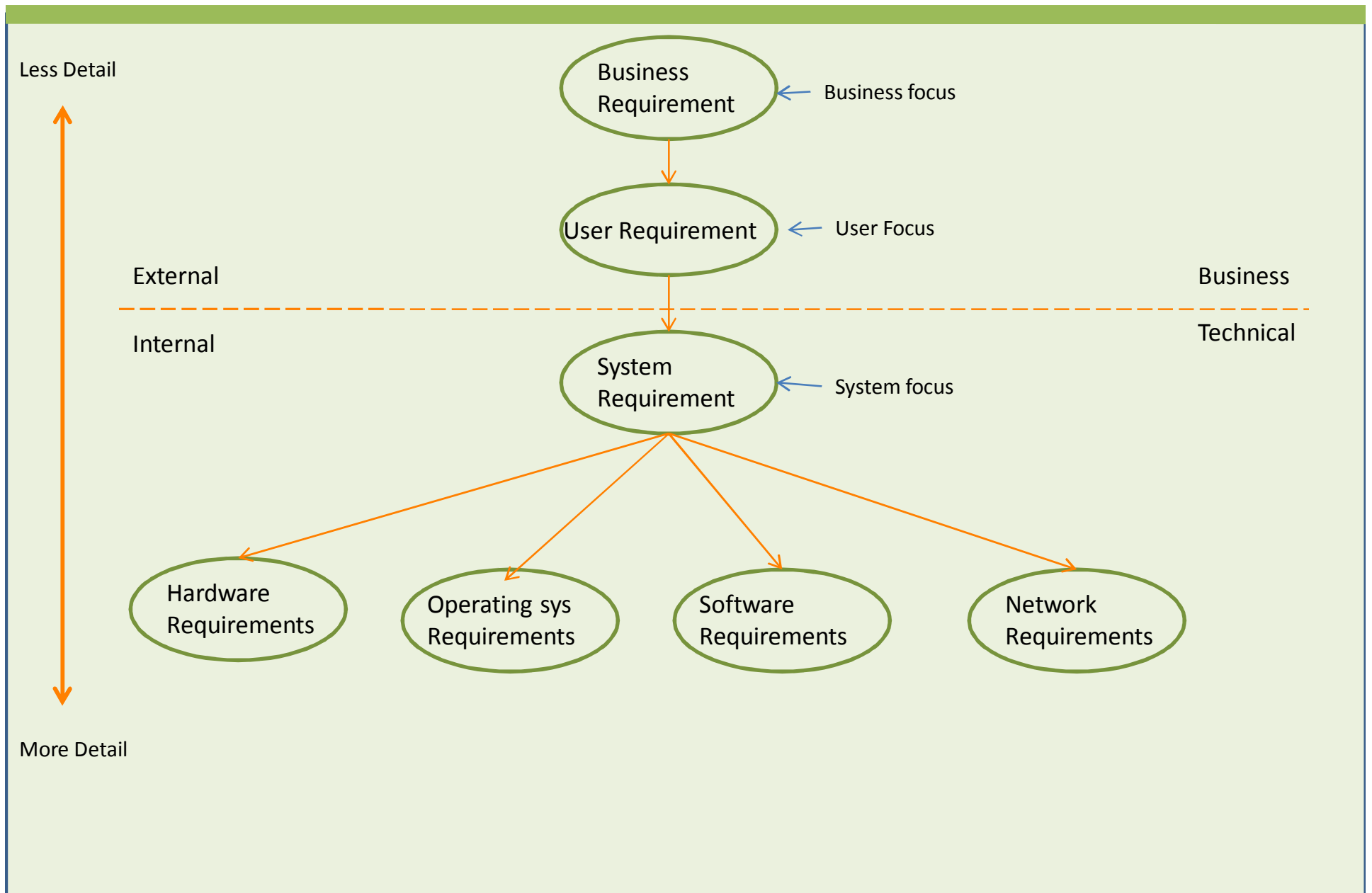
- ❖ Business Owners
- ❖ PeopleSoft Business users
- ❖ PeopleSoft Business Analyst
- ❖ PeopleSoft Technical / Development Team
- ❖ PeopleSoft Technical / Systems Team
- ❖ PeopleSoft Project Manager
- ❖ PeopleSoft Technical Writers

Requirements Analysis



Requirement analysis takes elicited information and tries to make sense of it







Key to the requirement analysis

- ❖ Organize.
- ❖ Prioritize.
- ❖ Compartmentalize.
- ❖ Correlate.

Requirements Documentation

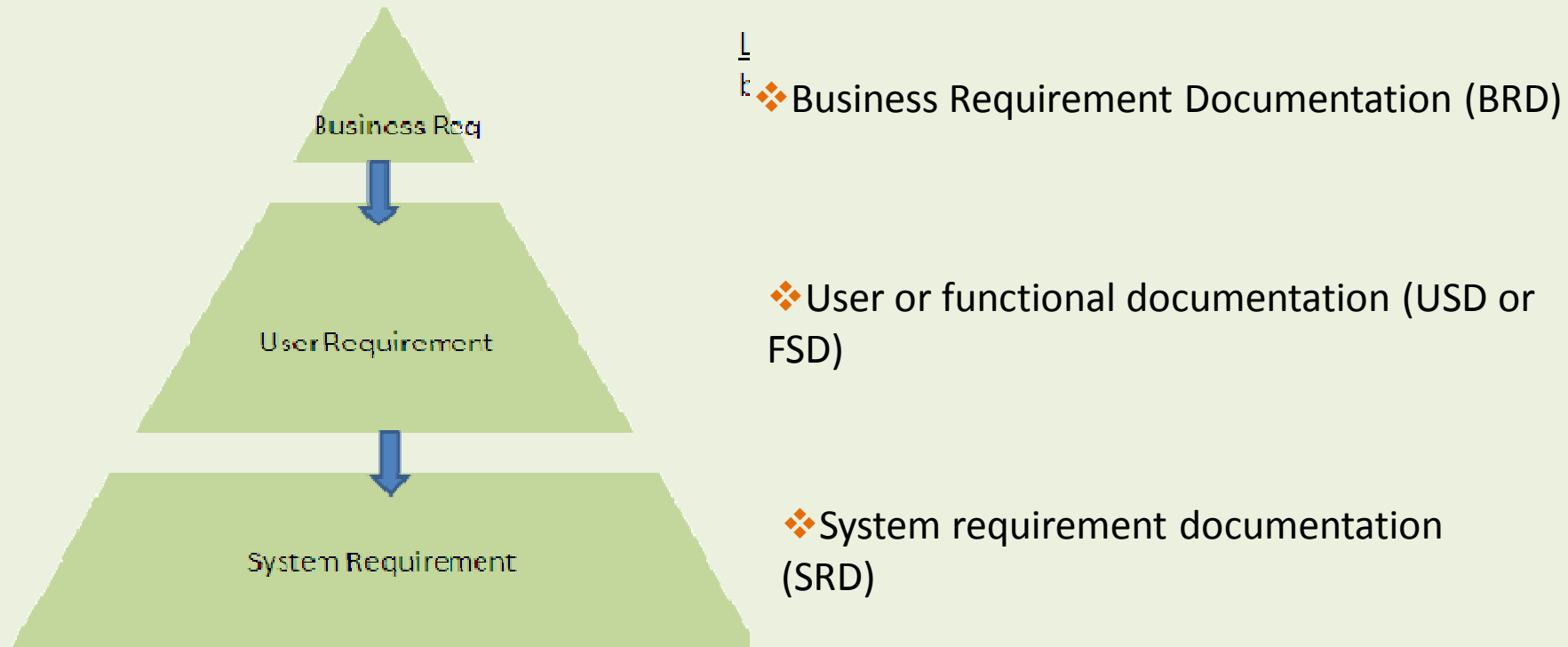


A well documented requirement specifications are very critical to the project. They ensure that all gaps in the design do not exist and test coverage is significantly improved.

Language of requirements

- It is the same language everyone can understand –
- an Eighth Grader should be able to understand
- Avoid terminology interpretation issues by including a glossary of terms and definitions in the requirements document
- If the language is consistent, it greatly lowers the risk of misinterpretation of the requirements.

Writing requirement document for multiple audience



- These documents have different purpose and are used by different parties on the software project.
- Depending on the project there may even be different sets of documents required within the company

Document Should Have

- Business Justification
- Assumptions
- Constraints
- Impact Analysis
- Solution Options
- Cost and Time Estimates
- Functions Accomplished
- Use Scenarios
- Test Cases

By keeping the document you encourage participation, invoke thoughts and thus increase the chances of effective collaboration and a complete requirement.


Requirements Gathering for a PeopleSoft ERP upgrade

Requirements Gathering For PeopleSoft ERP upgrades.

- ❖ Compile all the documentation prior to project start. Understand current customization levels.
- ❖ Assign a requirement leader for each module. Prepare questionnaires and responses for each Topic / Module.
- ❖ Use a combination of Workshop, Questionnaire methods for requirement gathering phase.
- ❖ Review New Functionality through prototyping.
- ❖ Analyze and Prioritize the customizations by complexity (high, medium, low) and criticality (need to have, must have, nice to have)

Requirements Gathering during ERP upgrades

- ❖ Conduct walkthroughs of new release processes delivered by Oracle.
- ❖ “Keep - Drop” decisions taken during the workshop.
- ❖ Finalize ‘to-be’ processes for the businesses.
- ❖ Update current documentation or add new documentation.
- ❖ Conversion needs are determined and overall conversion strategy is developed.
- ❖ Testing needs are determined and testing strategy is developed.

 **Q&A**

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