Business Analysis

Good Requirements
Requirements in all steps

Plan → Context → Current State → Future State → Risk → Change → Design → ...

August 24, 2017
Definition

A requirement is a **usable representation** of a **need**. Requirements focus on understanding what kind of value could be delivered if a requirement is fulfilled.

Babok v3 page 15
“The system enables the sales manager to run a report of all insurances sold over a given time period.”
A Requirement

“The system enables the sales manager to run a report of all insurances sold over a given time period.”

What columns should be included?
What format should it be in?
How long is a time period?
Summary or line by line?
Example of a Requirement

What makes a good requirement?
Attributes of a Good Requirement

Understandable
Atomic
Feasible
Complete
Concise
Testable
Attributes of a Good Requirement

- Understandable
- Atomic
- Feasible
- Complete
- Concise
- Testable
Understandable - Clear

The requirement should convey the meaning, not the interpretation of the reader.

- ... they will not know what it means
- ... they think they know what it means

Understandability also concerns

- Audience: who is reading the requirements
- Notation: modeling language for executives, users, experts ...

Reduce risk by

- Peer-review – did they understand what you wanted to understand?
- Walk-through
Attributes of a Good Requirement

Understandable
Atomic
Feasible
Complete
Concise
Testable
Complete

… contains all the necessary information for further work …

Reduce risk of incompleteness by

- Peer-review – did they understand what you wanted to understand?
- Walk-through
Attributes of a Good Requirement

- Atomic
- Testable
- Concise
- Complete
- Understandable
- Feasible
Atomic

... self-contained so no need to refer to other requirements to understand ... 

... cover only one functionality...
Attributes of a Good Requirement

- Understandable
- Atomic
- Feasible
- Concise
- Complete
- Testable
Concise

... only include the information needed, not more ...
Attributes of a Good Requirement

Understandable
Atomic
Feasible
Complete
Concise
Testable
Feasible

... can be tangibly done (code, process etc.)...
Attributes of a Good Requirement

- Understandable
- Atomic
- Complete
- Feasible
- Concise
- Testable
Testable

... can be tested / turned into a test case...

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Business Analysis

Types of Requirements
Trace Requirements

Business Needs

Business Requirements

Stakeholder Requirement

Solution Requirements

Functional

Non-functional

Transitional Requirements
From Need to Solution

Business Need

Business Requirement

Solution Requirements
- Design
- Code
- Test
- Deployment
Business Needs vs. Business Requirements

- Business Need answers the “why” questions
- Business Requirements answer the “how” questions at a high-level

<table>
<thead>
<tr>
<th>We need to ...</th>
<th>Business Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>... reduce our IT costs</td>
<td>Merging IT systems</td>
</tr>
<tr>
<td>... improve customer feedback</td>
<td>Improve our customer support processes</td>
</tr>
<tr>
<td>... increase automation</td>
<td>Replace manual activities</td>
</tr>
<tr>
<td>... make our product more competitive</td>
<td>Introduce cloud based services</td>
</tr>
</tbody>
</table>

The line between these two concepts is fuzzy and these concepts are often used interchangeably
Business Requirements

- Decrease wrongly processed orders with 60% before the end of 2018
- Increase repeat orders from all customer segments by 15% before end of 2018
- Improve efficiency of digital ads by 30% by the end of 2018
Stakeholder Requirement

- ... captures the needs of the stakeholders (users) that must be fulfilled to achieve the business requirement

- ... also called "user requirements"

- ... requirements for and by users

- ... if applicable, include end users of the product/service
Summary report of incorrect orders per week

For each incorrect order, display product, order date, order amount, customer segment, and reason for error
Solution Requirements

Solution Requirement
describing “how” it will be done

- Functional Requirements
- Non-Functional Requirements
- Transitional Requirements
Functional Requirements

- ... describe "how" the solution/system will behave
- ... describe the functionality of the product/service
- ... commonly derived from business and/or stakeholder requirements

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The summary report is to be produced automatically every Monday 09:00

The summary report is to be produced on-demand

The summary report will allow for sorting by all columns
Non-Functional Requirements

... describes conditions in which the system must work

... qualities the system must have

- Usability
- Reliability
- Availability
- Data Privacy
- Performance
- Recovery
- Legislative
- Compliance/Regulative

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Non-Functional Requirements

- The system will produce the reports within 3 seconds
- The system will only grant access to entitled internal users
- The system will be available 24/7
- The system will comply with “customer data protection act”
Transitional Requirement

... temporary requirements

... serve to ensure facilitate the transition from current to future state

... conditions and activities that are required to move a solution from development to the real-world environment

... address needs such as training, data conversion, data migration, platform inoperatbility
Business Analysis

Requirement Life Cycle Management
Requirement Life Cycle Management

Elicit → Capture

Analyse, iterate & Refine

Change → Assess

In Collaboration with Stakeholders

Prioritize → Approve

Work packages, releases etc.

Maintain

Traceability
Elicit Requirements

People
- Interview
- Workshops
- Observations
- ...

Sources

Documents
- Previous projects
- Instructions
- Legal/Policy
- Regulatory
- ...

In Collaboration with Stakeholders
- Elicit
- Capture
- Prioritize
- Approve
- Work packages, releases etc.
- Change
- Assess
- Maintain
Capture Requirements

“... describes the tasks ...”

- to structure and organize requirements discovered during elicitation activities,
- specify and model requirements and designs,
- validate and verify information,
- identify solution options that meet business needs,
- and estimate the potential value that could be realized for each solution option”

Babok v3 page 133
Trace Requirements
Trace Requirements

- Business Needs
- Business Requirements
- Stakeholder Requirement
- Solution Requirements

Functional
Non-functional
Transitional Requirements

In Collaboration with Stakeholders
Work packages, releases etc.

Elicit → Analyze, iterate & refine
Capture
Prioritize
Approve
Change → Assess
Maintain
## Traceability in Documentation

<table>
<thead>
<tr>
<th>Req ID</th>
<th>Requirement</th>
<th>Reason</th>
<th>Source</th>
<th>Trace</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR-1</td>
<td>The report is to list all digital and traditional insurances available for sale</td>
<td>List of insurances is needed to understand the report</td>
<td>Jane Doe, Head of Sales</td>
<td>BR-2</td>
</tr>
<tr>
<td>SR-2</td>
<td>…</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Relationships between Requirements

- **Derive**
  - requirement derived from another

- **Depend**
  - Necessity: only meaningful if another requirement is implemented
  - Effort: easier to implement if another is also implemented

- **Validate**
  - requirement and another element that validates the requirement (determines if it is successful or not)
Trade-off

- Trace all
- Trace none
Maintain Requirements

- ... keep the requirements valid (accurate and consistent)
- throughout and after the initiative
- support re-use
Re-use

- In the current project
- In similar projects
- In projects using the system(s)
- In projects involving same processes or functions

Source of Requirements → Requirements → Maintained → Re-use → Document Analysis
... ”to rank requirements in the order of relative importance ...
Criteria for Prioritization

- Benefit
- Penalty
- Cost
- Risk
- Dependencies
- Time Sensitivity
- Stability
Need versus want

Prioritization based on necessity of the requirement

➢ Is this requirement needed for the management of the product?

➢ How often does this occur or is this needed?

➢ 80 – 20 rule
MoSCoW Method

Mark them according to priority using for example the MoSCoW Method:

- **M** - MUST: Must have
- **S** - SHOULD: High priority
- **C** - COULD: Desirable but not necessary.
- **W** - WON'T: Will not include now but maybe in the future
Approve Requirements

Determined by the Business Analysis Governance

- Stakeholder Roles
- Conflicting Agendas
- Agreement
- Track and Communicate

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... evaluate and assess the consequences of changes in requirements ...
Change & Assess Requirements

- Benefit
- Urgency
- Cost
- Schedule
- Impact

In Collaboration with Stakeholders
- Elicit
- Capture
- Prioritize
- Approve

Work packages, releases etc.
Transferability

Change ➔ Assess

Maintain

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Requirement Life Cycle Management

In Collaboration with Stakeholders

Elicit → Capture → Prioritize → Approve

Change → Assess

Work packages, releases etc.

Analyse, iterate & Refine

Traceability

Maintain
Business Analysis

Design Solution
Requirement Life Cycle Management

In Collaboration with Stakeholders

Elicit → Capture → Prioritize → Approve

Change → Assess

Analyse, iterate & Refine

Traceability

Work packages, releases etc.

Maintain
Capture Requirements

“... describes the tasks ...

- specify and model requirements and designs,
- validate and verify information,
- identify solution options that meet business needs,
- and estimate the potential value that could be realized for each solution option”

Babok v3 page 133
"to analyze, synthesize, and refine elicitation results into requirements and designs" ...
Types of Models

Peoples & Roles
- Roles & Permission Matrix
- Stakeholder Maps
- Personas

Rationale
- Canvas
- Root Cause Analysis
- Decision Modelling
- Business Rule Analysis

Capability
- Capability Analysis
- Prototyping
- Functional Decomposition
Types of Models

Activity Flow
- Process Models
- Use Cases
- Scenarios
- User Stories

Data and Information
- Data Dictionary
- Data Models
- Data Flow Diagrams
- Interface Analysis
Analyze

... anything that must change or stay the same to meet the business need?

... any missing component?

... any irrelevant or unnecessary component?

... any constraints or assumptions to consider?
Level of Abstraction

Outlines

Descriptions

Specifications
Verify and Validate Requirements

**Verify**
- Quality assurance of the requirements
- Criteria for good requirements

**Validate**
- Ensure alignment of design and the requirements
- Ensure that designs fulfills the requirements
... ensure that the structure of all requirements work as a cohesive whole that can satisfy the business needs and objectives ...
What does that mean?

- Viewpoints of the models are appropriate for their purpose
- How requirements interact with each other and how they together, as a whole, are meaningful
- Ensuring that all the requirements work together to fulfill the objectives
- Ensure that the requirements are aligned with already implemented solutions (if they are not to be changed)
- Consider and decide on trade-offs about requirements
Design Options

Change Strategy is Strategic

Design Options is more Tactical
Example

➔ Change Strategy: Implement an end-to-end supply chain tracking system

➔ Design Options: Build it ourselves, buy software, subscribe, or combination?
Design Options

- Option 1
- Option 2
- Option 3

Business Requirement

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Design Options

- Build
- Buy
- Subscribe
- Combine

- Increase Efficiencies
- Improve Access to Data
- Identify Additional Capabilities

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Requirement Life Cycle Management

In Collaboration with Stakeholders

- **Elicit**
  - Analyze, iterate & Refine
- **Capture**
- **Prioritize**
- **Approve**
  - Work packages, releases etc.
- **Change** ➔ **Assess**
  - Traceability

Maintain
An analysis and evaluation of a proposed project to determine if it

1. is technically feasible
2. is feasible within the estimated cost, and
3. will be profitable.

(Business Dictionary)
Example of Table of Contents

1. Executive summary
2. Recommendation
3. Background, scope and delimitations
4. Current State
   - Stakeholder analysis
   - Business process models
   - Information system map (data flows, interfaces and functionalities)
5. Business needs and problem analysis

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Example of Table of Contents

6. Target State

7. Alternative solutions

8. Costs and benefits
   - Cost estimation
   - Benefit analysis
   - Financial analysis
   - Risk analysis
   - Readiness analysis

9. Selected alternative (including motivation)

10. Results from validation of requirements
Project Inputs

- Dependencies
- Stakeholders affected (and how)
- Critical factors
- Gained approvals
- Delivery (such as in how many increments)
- Roles (project) and reserved resources
- Priority
Thank You

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