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NPTEL ONLINE CERTIFICATION COURSE

INTRODUCTION TO INTERACTION DESIGN

Lecture 13

Discovering Requirements

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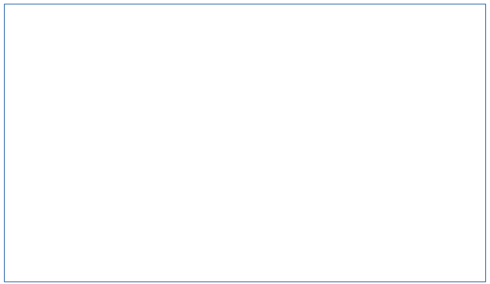
DEPARTMENT OF DESIGN

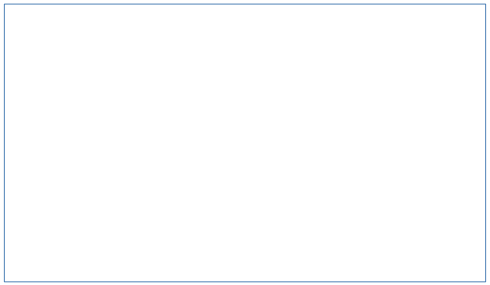
Discovering Requirement



Discovering requirements focus on exploring the problem space and defining what will be developed.

In the case of interaction design, this includes:

- understanding the target users and their capabilities
- how a new product might support users in their daily lives
- users' current tasks, goals, and contexts
- constraints on the product's performance etc

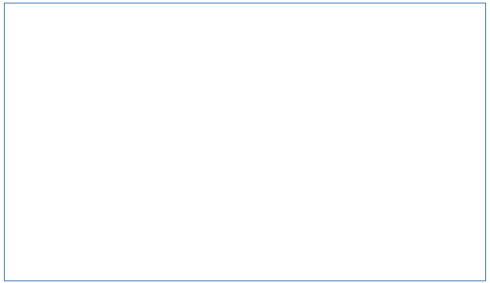


What, How, and Why?

What Is the Purpose of the Requirements Activity?

How to Capture Requirements Once They Are Discovered?

Why Bother? Avoiding Miscommunication



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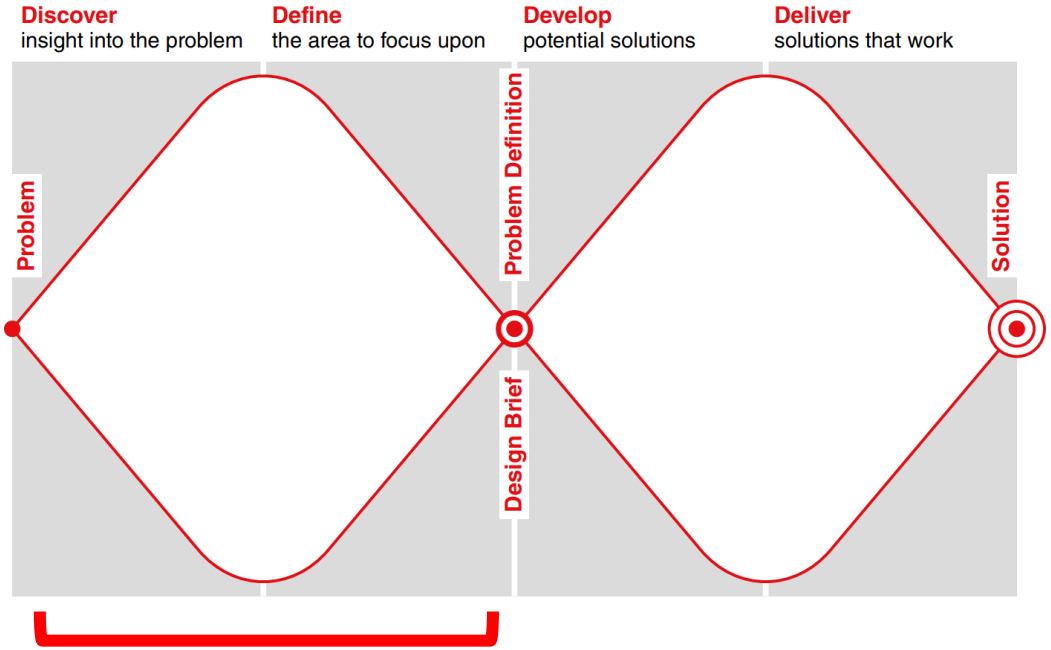
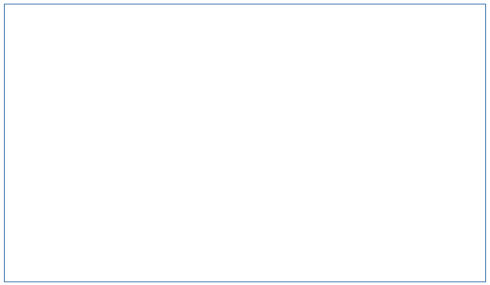
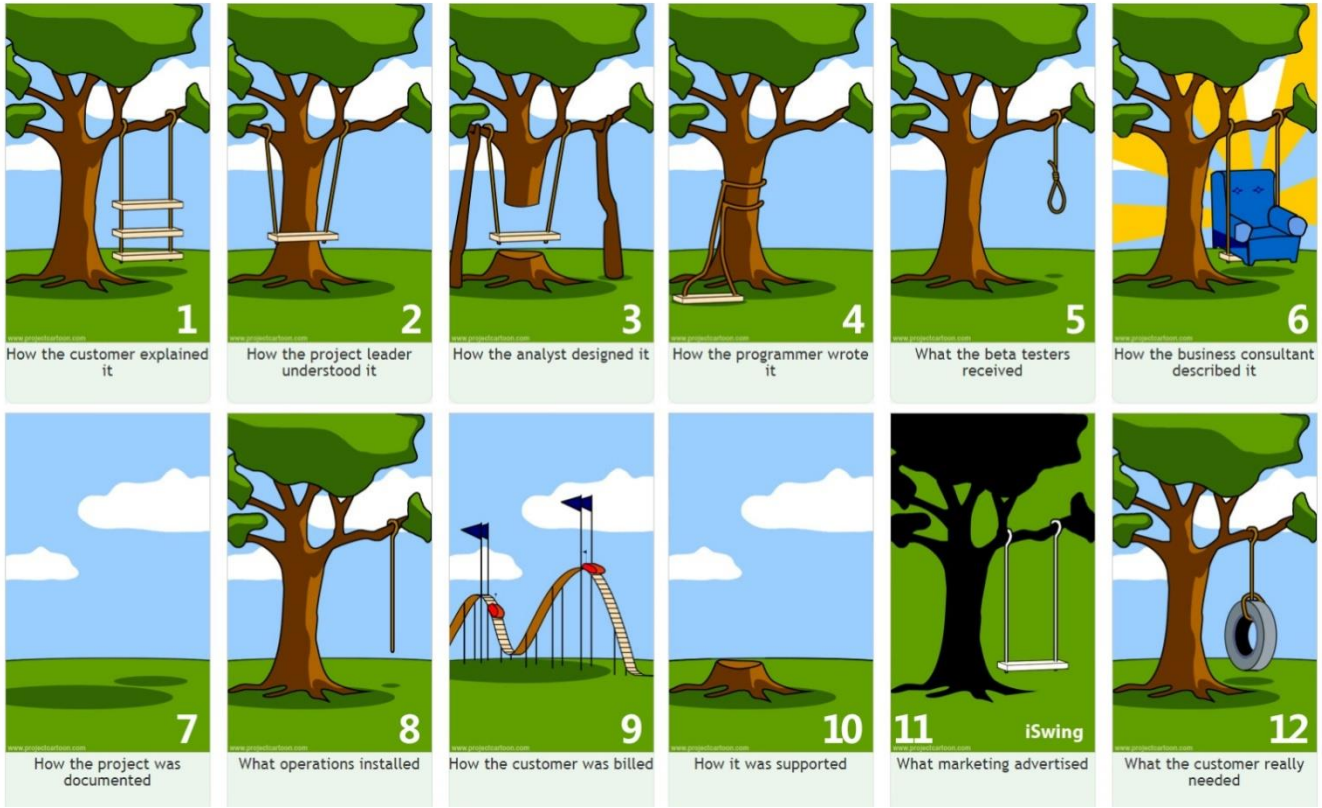


Capturing Requirements

Requirements may be captured in several different forms. For some products, such as an diet monitoring app, it may be appropriate to capture requirements implicitly through a prototype or operational product.



Issues due to Miscommunication

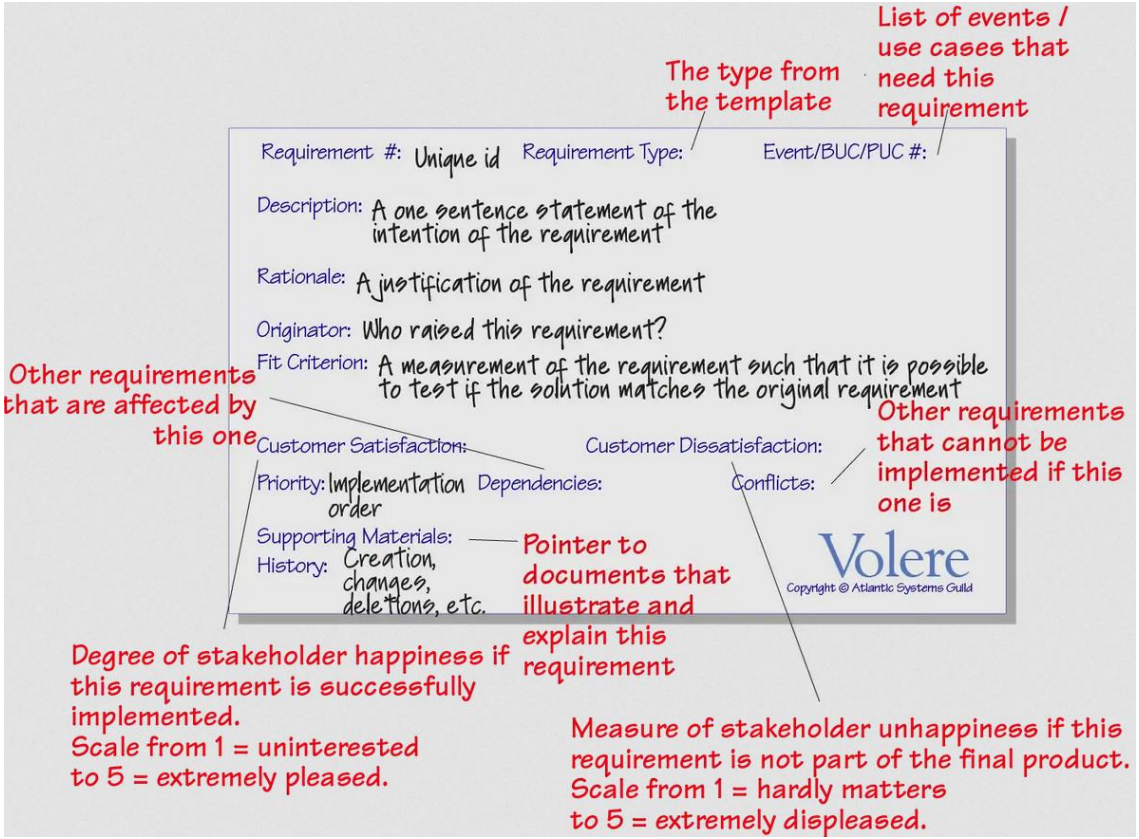


https://pmac-agpc.ca/project-management-tree-swing-story

What Are Requirements?

A *requirement* is a statement about an intended product that specifies what it is expected to do or how it will perform. For example, a requirement for a smartwatch step counter feature is to be accurate. Another less precise requirement might be for teenagers to find the smartwatch attractive.

Requirements come in different forms and at different levels of abstraction.


List of events / use cases that need this requirement
The type from the template
Requirement #: Unique id
Requirement Type:
Event/BUC/PUC #:
Description: A one sentence statement of the intention of the requirement
Rationale: A justification of the requirement
Originator: Who raised this requirement?
Fit Criterion: A measurement of the requirement such that it is possible to test if the solution matches the original requirement
Other requirements that are affected by this one
Customer Satisfaction:
Customer Dissatisfaction:
Other requirements that cannot be implemented if this one is
Priority: Implementation order
Dependencies:
Conflicts:
Supporting Materials:
History: Creation, changes, deletions, etc.
Pointer to documents that illustrate and explain this requirement
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Degree of stakeholder happiness if this requirement is successfully implemented.
Scale from 1 = uninterested to 5 = extremely pleased.
Measure of stakeholder unhappiness if this requirement is not part of the final product.
Scale from 1 = hardly matters to 5 = extremely displeased.

Requirement #: 75 Requirement Type: 9 Event/Use Case #: 7, 9

Description: **The product shall record all the roads that have been treated.**

Rationale: **To be able to schedule untreated roads and highlight potential danger.**

Originator: **Arnold Snow, Chief Engineer**

Fit Criterion: **The recorded treated and untreated roads shall agree with the drivers' road treatment logs.**

Customer Satisfaction: **3** Customer Dissatisfaction: **5**

Priority: Conflicts:

Supporting Materials:

History: **Created February 29, 2006**

Volere

Source: Atlantic Systems Guild

Alternative way to capture what a product is intended to do: **user stories**

Simple structure for user stories is as follows:

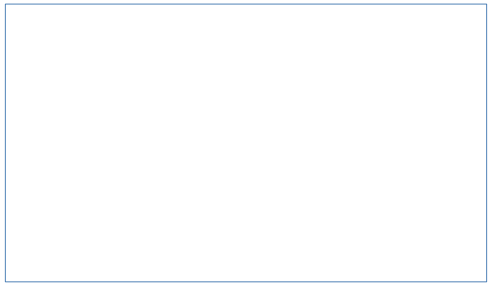
- As a <*role*>, I want <*behaviour*> so that <*benefit* >.

Example user stories for a healthy person might be:

- As a <**fitness enthusiast**>, I want <**to maintain my calorie intake**> so that <**I am able to maintain my weight**>.

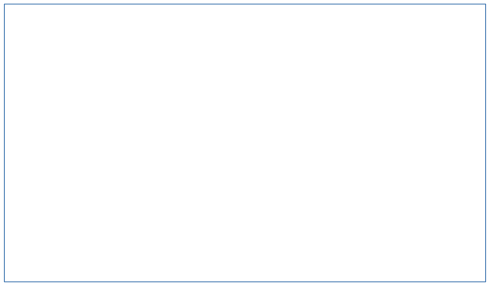
Example user stories for a app provider might be:

- As a <***Health care app provider***>, I want <***calorie values for new food items***> so that <***I can provide my clients various options***>.



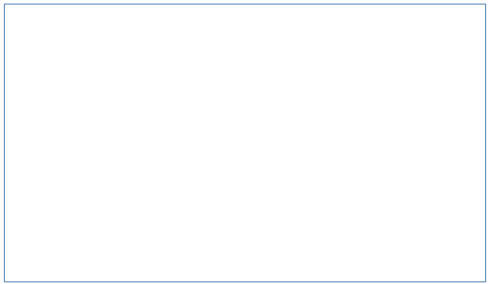
Two different kinds of requirements have traditionally been identified:

- Functional requirements
- Non-functional requirements

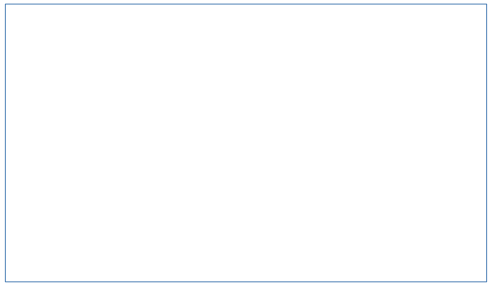


Six of the most common types of requirements are:

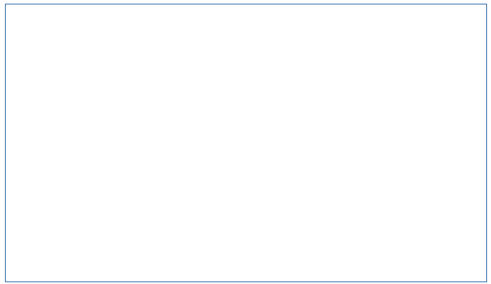
1. Functional
2. Data
3. Environment
4. User
5. Usability
6. User experience



1. Functional requirements capture what the product will do. For example, a functional requirement for a robot working in a personal computer assembly plant might be that it is able to place and seal the components accurately. Understanding the functional requirements for an interactive product is fundamental.

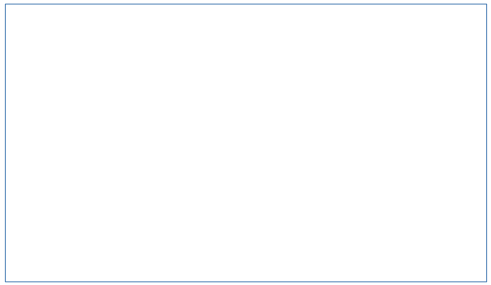


2. Data requirements capture the type, volatility, size/amount, persistence, accuracy, and value of the required data. All interactive products have to handle some data. For example, if an application for buying and selling foreign currency is being developed, then the data must be up-to-date and accurate, and it is likely to change many times a day. In the personal banking domain, data must be accurate and persist over many months and probably years.

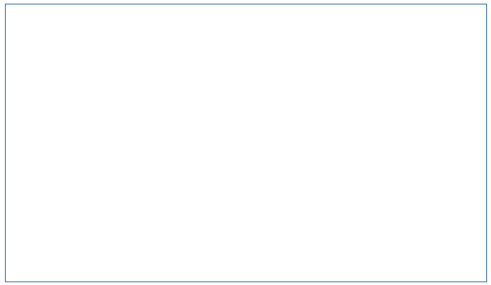


3. Environmental requirements, or context of use, refer to the circumstances in which the interactive product will operate. Four aspects of the environment lead to different types of requirements.

- Physical Environment
- Social Environment
- Organizational Environment
- Technical Environment



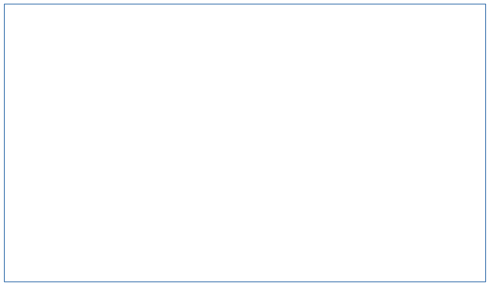
4. User characteristics capture the key attributes of the intended user group, such as the users' abilities and skills, and depending on the product, also their educational background, preferences, personal circumstances, physical or mental disabilities, and so on. In addition, a user may be a beginner, an expert, a casual user, or a frequent user. This affects the ways in which interaction is designed.



5. Usability goals

6. User experience goals

These are another kind of requirement, and they should be captured together with appropriate measures.



Thank You