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Gefördert durch:



Bundesministerium  
für Wirtschaft  
und Energie

aufgrund eines Beschlusses  
des Deutschen Bundestages



# Workshop 01.08.2019 Human-Centered Design Process Pxio



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# What is Usability?



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# UXQB

# What is the UXQB?

- International Usability and User Experience Qualification Board (UXQB)
- Constortium of international experts in usability and user experience
- Founded in October 2013 by the German UPA (working group for quality standards)
- **Goal:** further development, maintenance and administration of the certification program „CPUX - Certified Professional for Usability and User Experience“
- International standard for the qualification of industry professionals



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# 1. Definition of Usability according to UXQB - Basics concepts-



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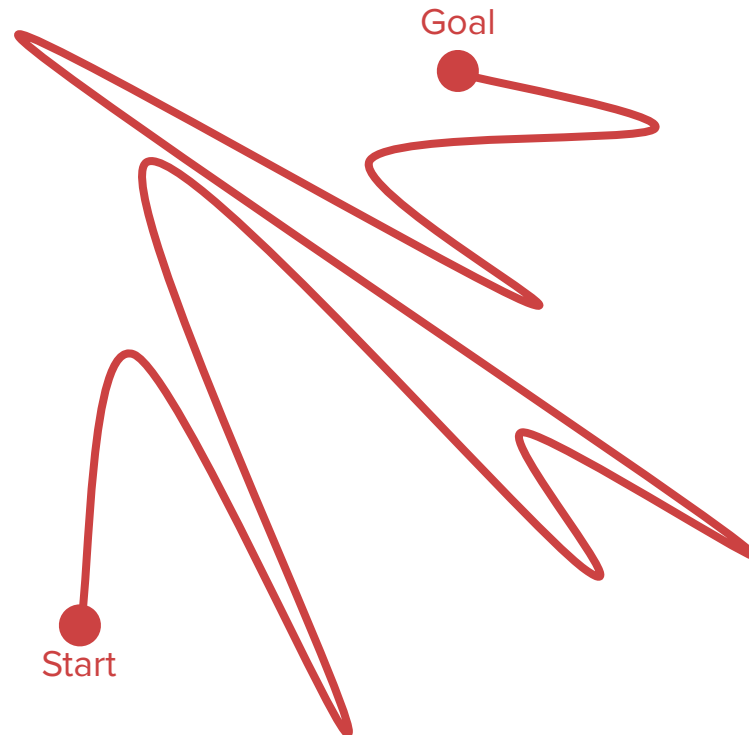
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“The extent to which an **interactive system** can be used by specified **users** to achieve specified **goals** with **effectiveness, efficiency** and **satisfaction** in a specified **context of use.**”

# Usability

1. Effectiveness
2. Efficiency
3. Satisfaction

# Effectiveness



Is the user able to reach  
his goal?

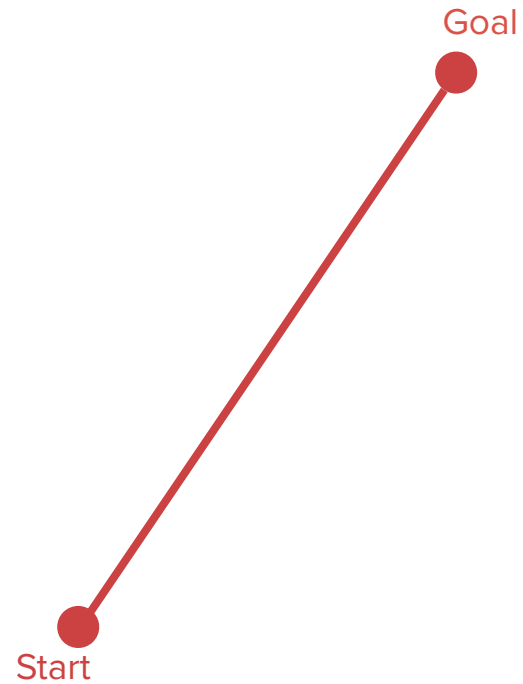
# Example: Effectiveness



You booked a hotel room for vacation but now you have to work at this date.

There is no opportunity at the website to cancel your reservation.

You can't reach your goal to cancel the reservation for the hotel room.



Which resources do you  
need to achieve your goal?

# Example: Efficiency



You booked a hotel room for vacation but now you have to work at this date.

“It took a long time to cancel the reservation”

“The extent to which the **user’s** physical, cognitive and emotional responses that result from the use of an **interactive system** meet the user’s needs and expectations.”

“I like the website”

! High prices or unacceptable terms of service in a web shop are not part of satisfaction, but they may influence the user experience.

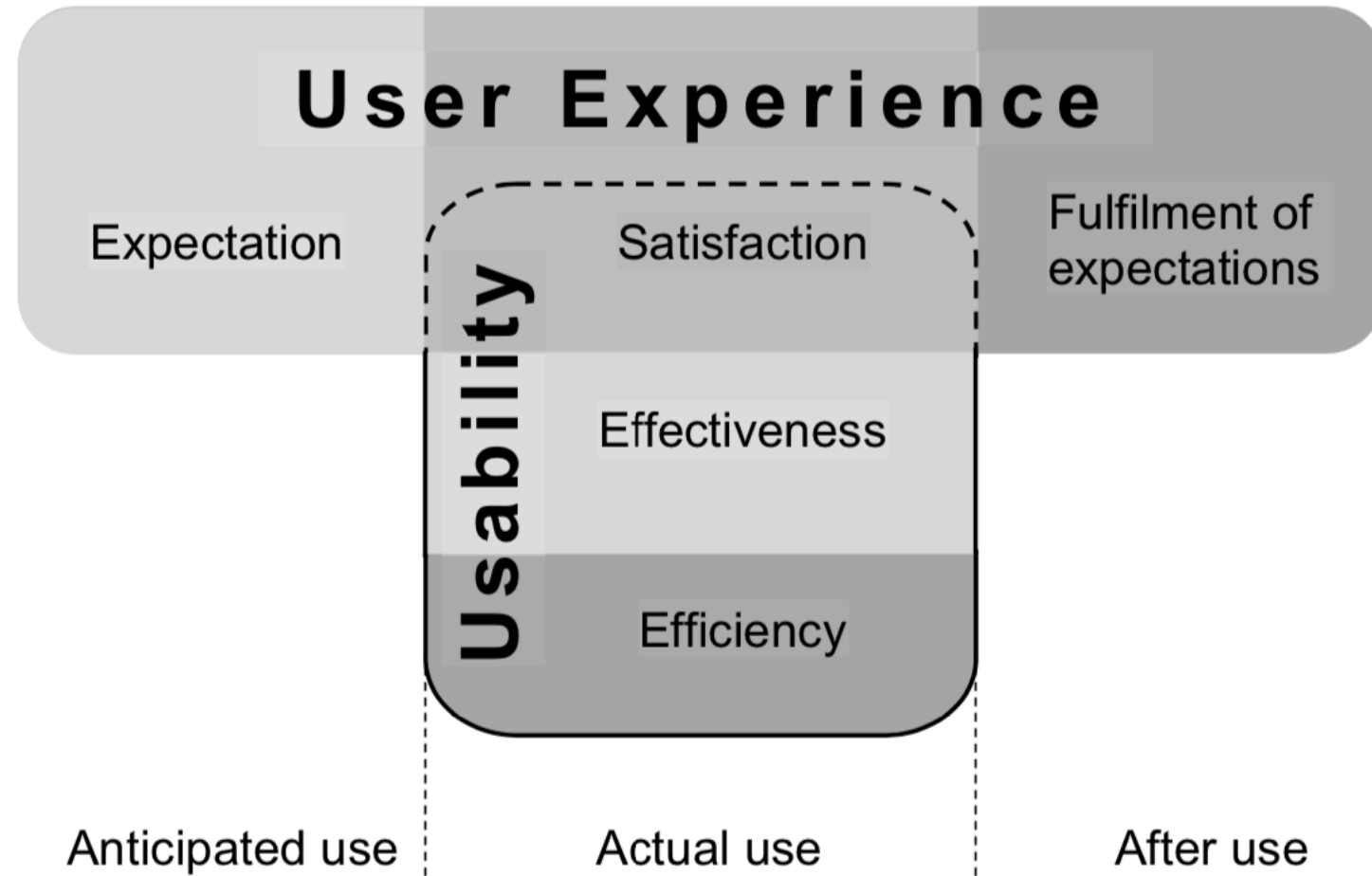
# User Experience (UX)

User's perceptions and responses:

- Anticipated use
- Actual use
- After use

Users' perceptions and responses include the users' emotions, beliefs, preferences, comfort, behaviours and accomplishments

# Difference of User Experience and Usability

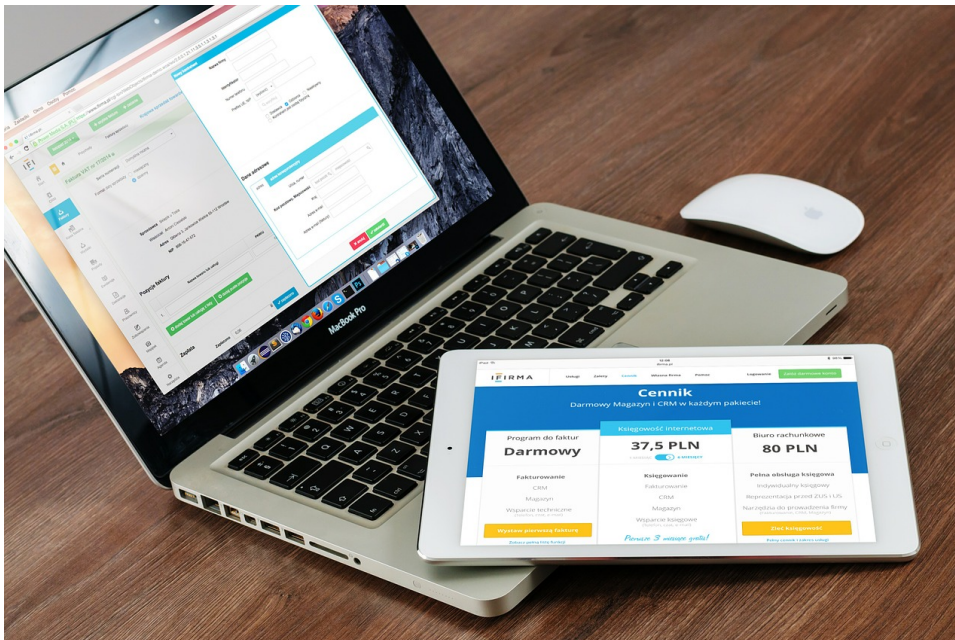




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Combination of hardware, software and services that users interact with in order to achieve specific goals

Includes packaging, user documentation, online help, support and training



All components of an interactive system (software or hardware) that provide information and controls for the user, to allow them to accomplish specific tasks



<https://pixabay.com/de/mann-lesung-touchscreen-blog-791049/>

Interaction between a user and  
an interactive system (input and  
output)



<https://pixabay.com/de/brille-tastatur-arbeitsplatz-e-book-2211445/>

The extent to which an interactive system enables users to interact with it, regardless of their level of vision, hearing, dexterity, cognition, physical mobility, etc.

e.g.: Screenreader, Alt-Tags or voice control



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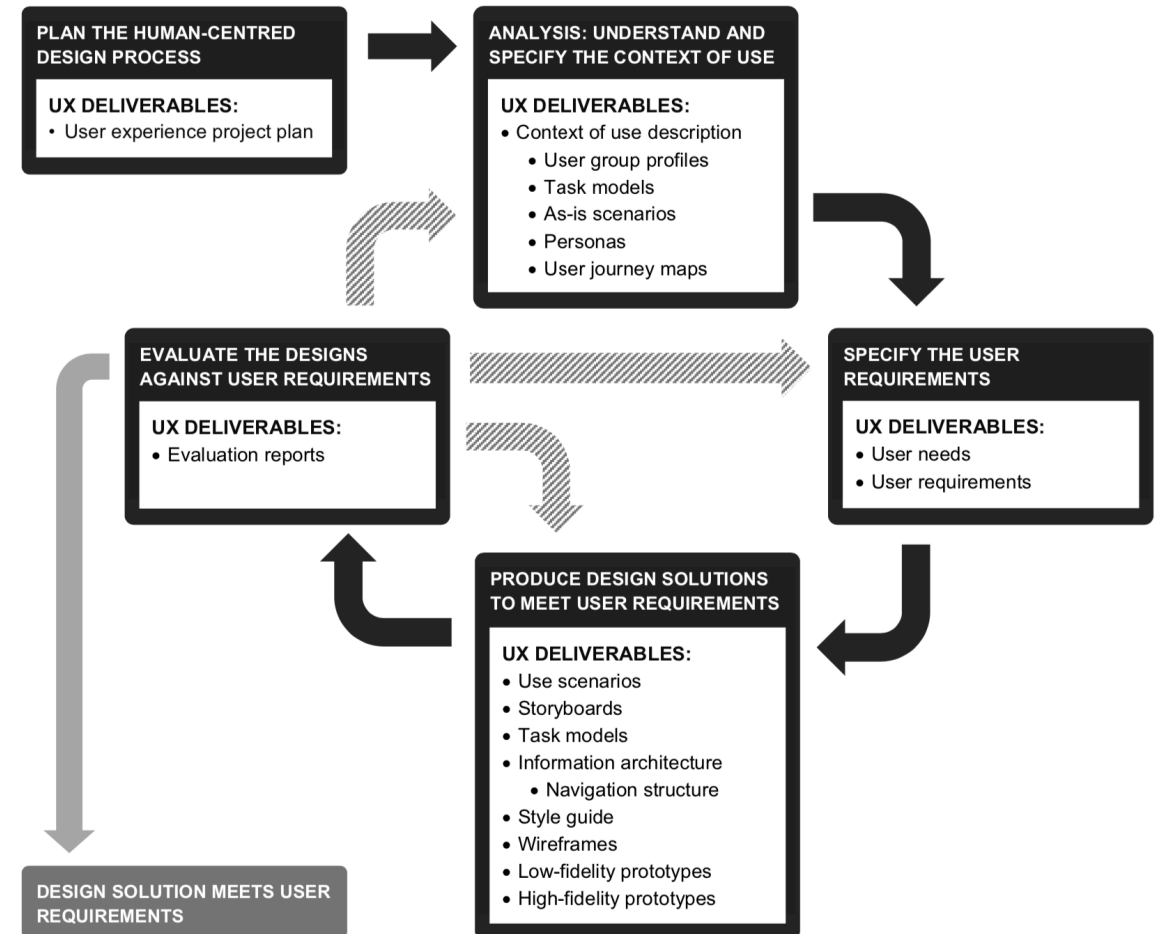
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## 2. Human-Centered Design Process

# Human-Centered Design Process

- Iterative
- Agile development
- Lean UX



## Approach to human-centered design that integrates principles and methods for usability and user experience into agile development

- ▶ Agile development processes are the basis for lean UX
  - ▶ *Iterative approach in teams and realisation of small, well defined packages enables fast usability tests*
  - ▶ Results from usability tests are then directly used in the next iteration
- ▶ Lean UX assumes that at first everything is a hypothesis and consequently needs to be validated
  - ▶ The team learns through experiments with users in the context of use
  - ▶ Failure is part of the learning process - not every hypothesis is validated, not every experiment provides the desired results



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# 3. Plan the Human-Centered Design Process

# User Experience Project Plan

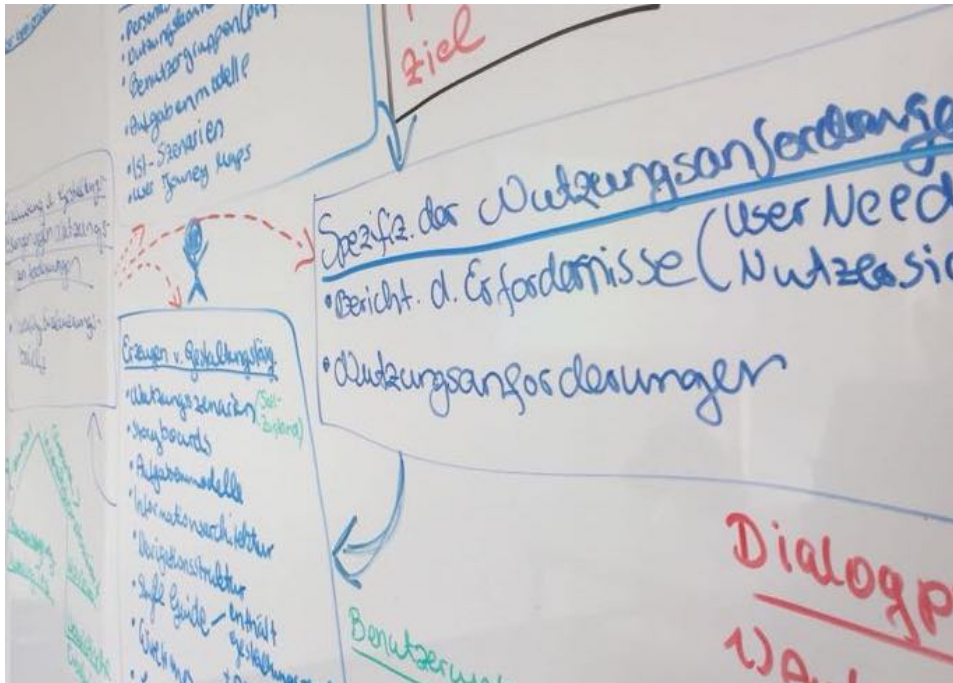


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Independent document or a part of the overall project plan

1. Human-Centered quality objectives
2. Planned human-centered deliverables and the activities needed to produce those
3. Time plan
4. Cost estimate

# Human-Centered Quality Objectives



“The goals that are to be achieved for the user of an interactive system when developing the interactive system.”

- Usability
- Accessibility
- User Experience
- Avoidance of harm from use
  - e.g. Pharmacy-field



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## 4. Understand and Specify the Context of Use

# Context of Use

- a. Users**
- b. Goal**
- c. Task**
- d. Social environment**
- e. Resource**



<https://pixabay.com/de/geldautomaten-cupcake-cookies-1567136/>

Physical, social and technical conditions



All means required to use an interactive system:

- a. Reusable:** equipment, informationen, ...
- b. Exhaustible:** time, financial resources, human effort, ...

# Context of use description

## Goal

- As-is scenario

## Task

- Task model, As-is scenario, User journey map

## Environment

- As-is scenario

## User

- User group profile, Persona

## Ressourcen

- As-is scenario

## Methods:

1. Observation
2. Focus group
3. Contextual interview



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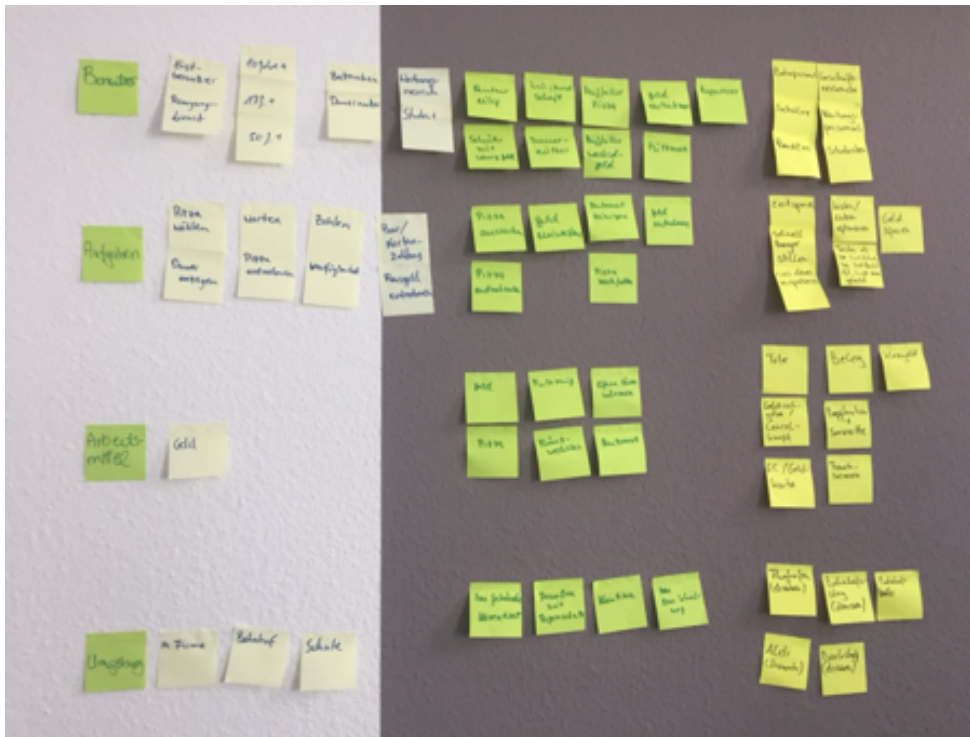
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# Exercise

## Understand and Specify the Context of Use

# Context of Use Description



**a. Users**

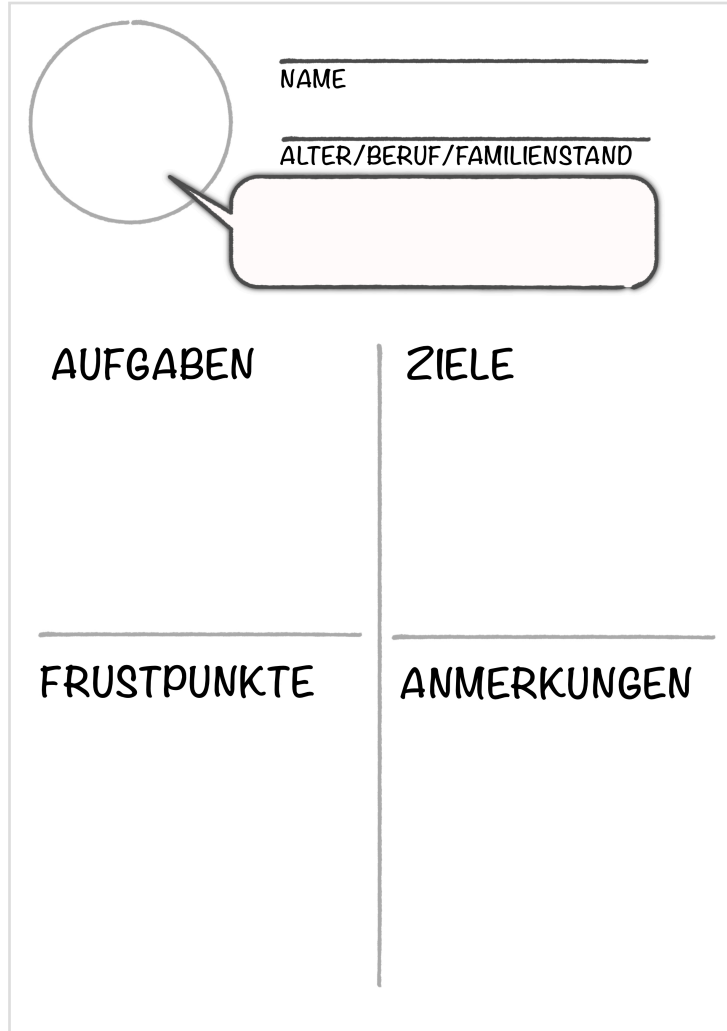
**b. Goal**

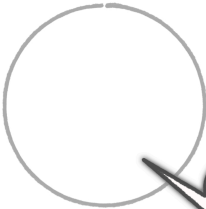

**c. Task**

**d. Social environment**

**e. Resource**

# Exercise 2: Persona



	
NAME _____	
ALTER/BERUF/FAMILIENSTAND _____	
	
AUFGABEN	ZIELE
FRUSTPUNKTE	ANMERKUNGEN

Description of a fictional but realistic user and what they intend to do when using an interactive system

Representative

Name

Age

Background

Goals

Wishes

Pictures

...

# Core aspects of the problem-to-be-solved

We believe *[TYPE OF USER]* has a problem *[DOING THING]*. We can help them with *[OUR SOLUTION]*. We'll know we're right if *[CHANGE IN METRIC]*.

We believe *designer* have a problem *tracking their time regularly*. We can help them with an *easy to use and more automated app*. We'll know we're right if *entries are done at least once a day*.

- ▶ **What problem** are we facing?
- ▶ **Who** is involved?
- ▶ **Which constraints** need to be considered?
- ▶ **Which risks** might a solution have?
- ▶ **How** can we rate the quality of a solution?



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# User and Stakeholder

## User

A person who interacts with an interactive system, or who uses the output of the system.

## Stakeholder

An individual or organisation with an active interest in an interactive system.

# Not all Stakeholders are Users



<https://pixabay.com/de/hand-geschäftsplan-geschäft-3190204/>

All users are stakeholders, but not all stakeholders are users.

Stakeholders who may not be users might include:

- Designers
- Developers
- Manager of development teams
- Shareholders
- Board Members
- Marketing Professionals



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# 4. Specify the User Requirements

# User need vs Requirement

## User need

A prerequisite identified as necessary for a user group, to achieve a goal, implied or stated within a specific context of use.

- Independent of any proposed solution for that need
- User needs are transformed into user requirements
- During a presentation with a fixed time limit (context of use), a presenter (user) needs to know how much time is left (prerequisite) in order to complete the presentation in time (goal).

## Requirement

A condition or capability that must be met or possessed by an interactive system to satisfy an agreement, standard, specification or other formally imposed documents.

1. Determinable condition -> **possible to validate it**

This curriculum defines following types:

1. Market requirement
2. Organisational requirement
3. User requirement
  - a. Qualitative
  - b. Quantitative



<https://pixabay.com/de/dokument-papier-geschäft-diagramm-3268750/>

Based on marketing policy

“The website must be at least as usable as that of the two top competitors”

“The colors used on the website must conform to the style guide”

# Organisational Requirement

An organisational rule that users have to follow when conducting their tasks.

*“A salesperson must have a written approval from the director for offers that exceed 100.000 Euros”*

*“Users must confirm that they have read the terms and conditions before continuing”*

# User Requirement

A requirement for use that provides the basis for design and evaluation of an interactive system to meet identified user needs

- Are derived from user needs
- Can be verified by evaluating the interactive system

## Qualitativ

- Provide the basis for features
- Not too general
- Not too detailed (no design solution)

*“The user must be able to..*

*...to see the opening hours of a specific car rental location”*

*...to select a car with automatic transmission on the car rental website”*

## Quantitativ

Required level of usability to meet identified user need expressed in terms of measures.

*Measure of effectiveness:* “95% of 25 users who have used the car rental website at least twice within the past 6 months must be able to ...”

*Measure of efficiency:* “80% of 25 users who have used the car rental website at least twice within the past 6 months must be able to rent an economy size car at Frankfurt Airport (Germany) for two days starting tomorrow at 09.00, within 5 minutes ”



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**Thank you for your attention :)**