



# Interakcija čovek-računar

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## Passenger(s)

All passenger names must match those in the passport/accepted travel document

Duplicate names must not be entered for passengers [?](#)

### Passenger 1

Title	First name	Last name
<input type="text" value="Title"/>	<input type="text" value="Harry"/>	<input type="text" value="Brignull"/>

## Travel Insurance

	INSURANCE	INSURANCE PLUS
<b>Medical Expenses up to £2,500,000</b> <small>(excess of £75, double excess for aged 65+)</small>	✓	✓
<b>Personal Belongings up to £1,500</b> <small>(excess of £75)*</small>	✓	✓
<b>Cancellation circumstances</b> <small>(excess of £15)</small>	✓	✓
<b>Ticket Refund</b> <small>in case of Ryanair cancellation</small>		✓

[VIEW POLICY](#)

☒ Please select a country of residence

- ☐ United Kingdom
- ☐ Ireland
- ☐ Germany
- ☐ Spain
- ☐ France
- ☐ Italy
- ☐ Sweden

Brignull  
Harry

Already insured? [Click here to skip this step](#) or use the drop down box.

- ☐ Denmark
- ☒ Don't Insure Me
- ☐ Finland
- ☐ Hungary
- ☐ Latvia
- ☐ Lithuania
- ☐ Malta

## BOOKING SUMMARY

### ► Passenger(s)

**London (Stansted) → Faro**  
Sun, 31 Aug 2014 20:55 - 23:45

### ▼ 1 Adult, 29.99 GBP

1 x Adult Fare 29.99 GBP

☒ Discount Pay by debit card: 29.99 GBP

☐ Pay by credit card: 30.59 GBP

**TOTAL 29.99 GBP**



Secure | [https://webmail.networksolutionsemail.com/interfaces/sso/pwd\\_reset/prview.php](https://webmail.networksolutionsemail.com/interfaces/sso/pwd_reset/prview.php)

(Getting Started) — Brackets

```
1 FuckNetwork!+123
2 FuckNetworksolutions!+123
```

## Reset Your Password


### Create a new password

Your password must meet the following requirements:

- Must be at least 12 characters
- Must contain at least three of the following
  - an uppercase character
  - a lowercase character
  - a number (0-9)
  - a special character (!@#\$%^&\*)
- Must not be the same as your current or previous 5 passwords.
- Must not include any portion of your email address - including your domain name.
- Should not contain any personal information

New Password:

Re-enter new password:

 Please check the password validation requirements.

Ok

## Reset Your Password


### Create a new password

Your password must meet the following requirements:

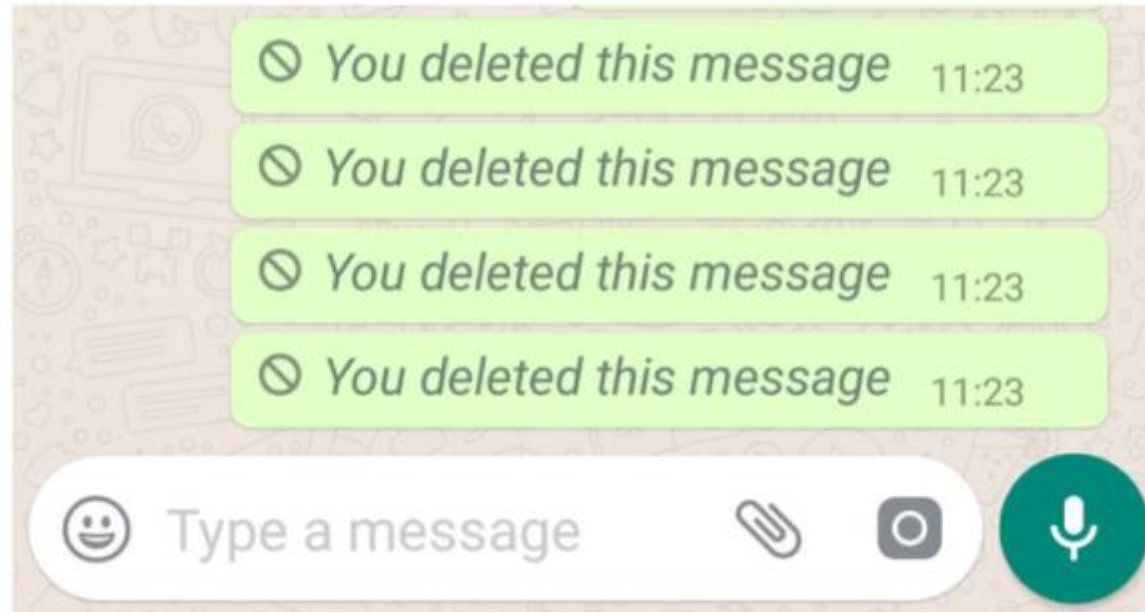
- ✓ Must be at least 12 characters
- ✓ Must contain at least three of the following
  - ✓ an uppercase character
  - ✓ a lowercase character
  - ✓ a number (0-9)
  - ✓ a special character (!@#\$%^&\*)
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New Password:

Re-enter new password:

 Please check the password validation requirements.

Ok

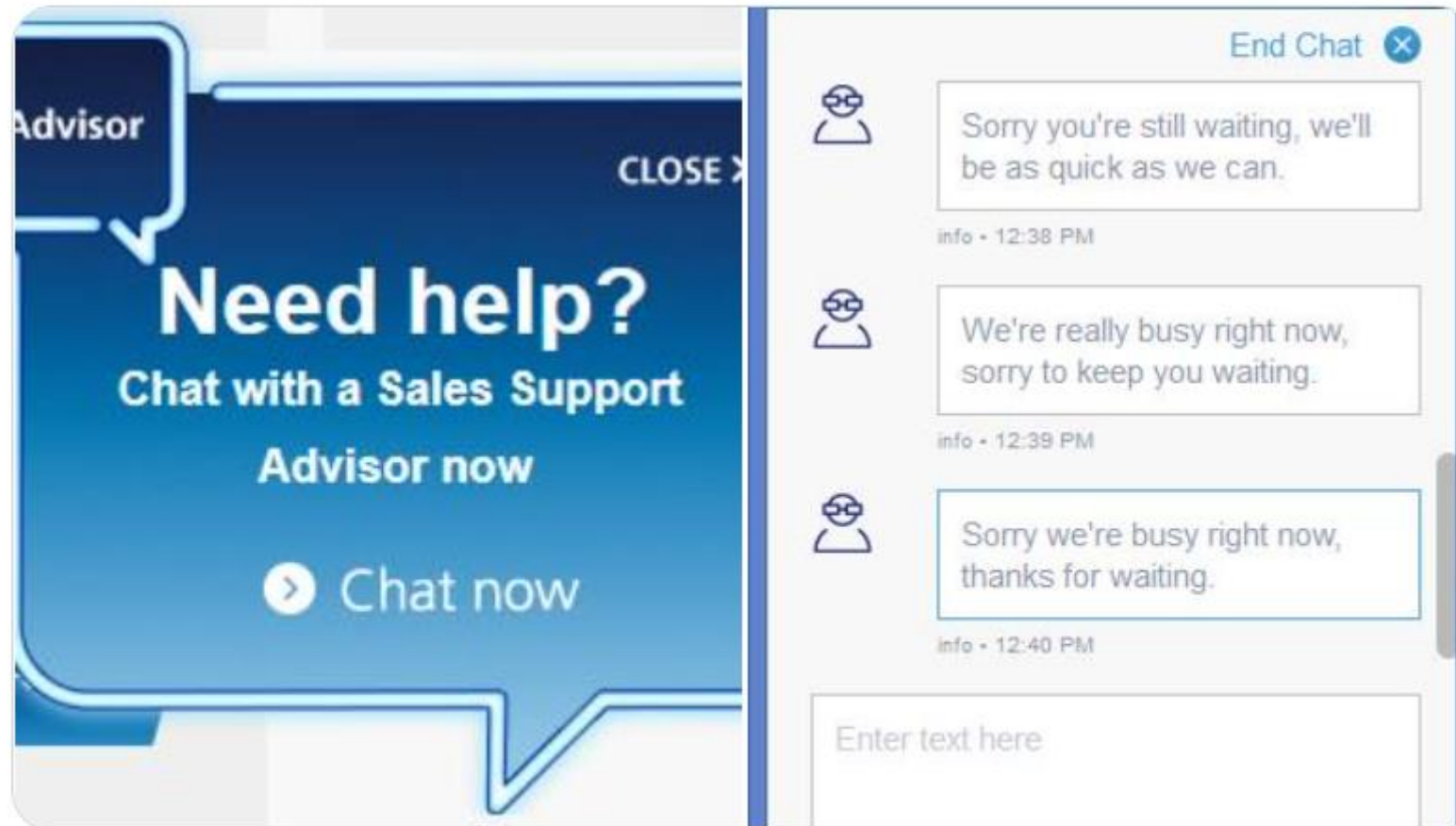




**Alex Colbeck**  
@AColbeck



Great work @O2 Why encourage me to start a live chat session then immediately stick me in a queue? #ux  
@uxepicfails

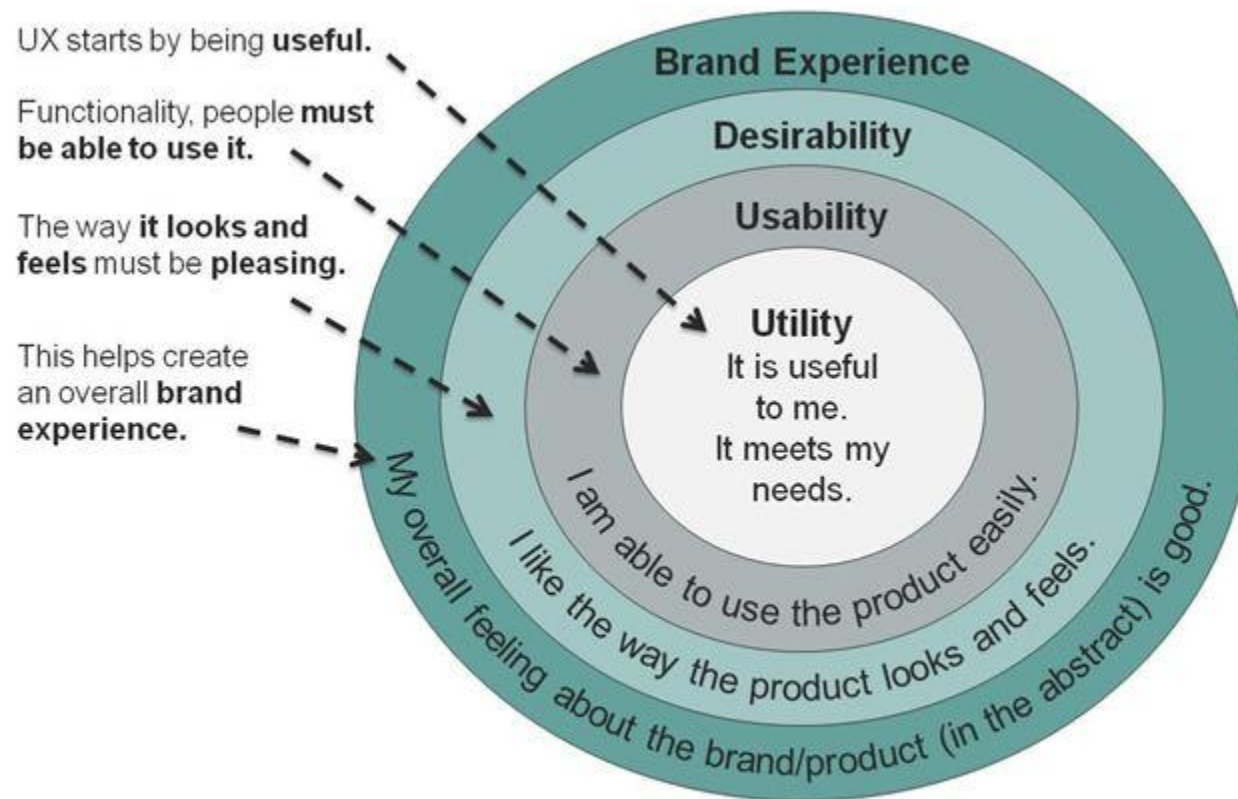


# Korisnički doživljaj

- Korisnički doživljaj ili korisničko iskustvo?
- Korisnički doživljaj obuhvata sve aspekte interakcije krajnjeg korisnika sa kompanijom, njenim uslugama i proizvodima.

Don Norman and Jakob Nielsen

- **Svrsishodnost (Utility)** - Koristan je. Zadovoljava moje potrebe.
- **Doživljaj brenda (Brand experience)** - Moj opšti utisak o brendu/proizvodu je dobar.
- **Poželjnost (Desirability)** - Sviđa mi se kako izgleda i kakav osećaj pruža.
- **Upotrebljivost (Usability)** - Upotreba proizvoda je jednostavna.



Source: User Experience 2008, nnGroup Conference Amsterdam

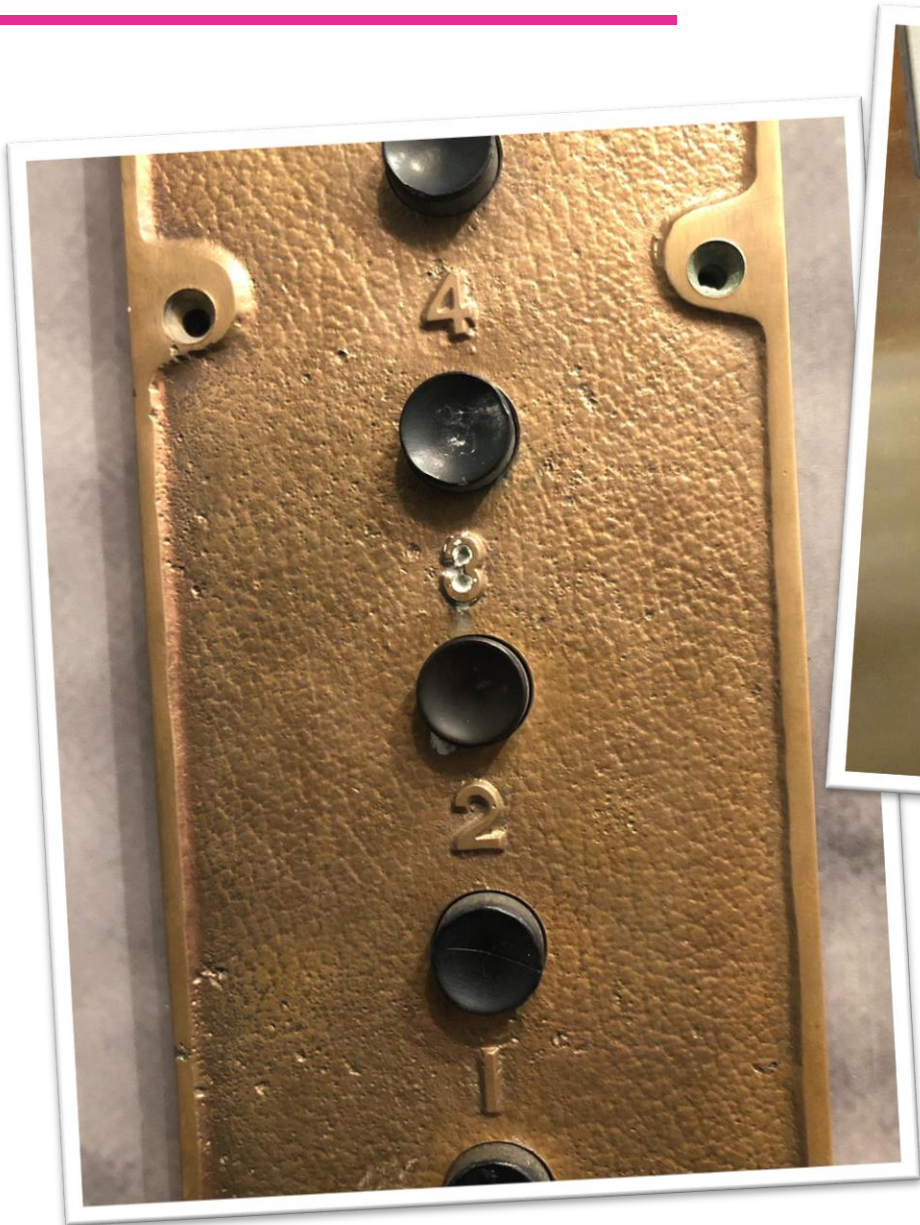
# Korisničko iskustvo

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# Korisničko iskustvo

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# Korisničko iskustvo



# Dizajn korisničkog iskustva

## User Experience: Planing and Implementation



# UX vs UI



UX is not UI

# UI

What is this interface?

# UX

Why is this interface?

## How UX been considered

FIELD RESEARCH  
USER RESEARCH  
USER INTERVIEW  
USABILITY PLAN  
DATA GATHERING  
USER PROFILE CREATION  
PERSONA CREATION  
CONCEPT DESIGN  
TASK ANALYSIS  
TASK GROUPING  
INFORMATION ARCHITECTURE  
WIREFRAMING  
PROTOTYPING  
USER EVALUATION  
GRAPHICS  
ICONOGRAPHY  
INTERFACE DESIGN  
VISUAL DESIGN  
TEXONOMY CREATION  
TERMINOLOGY  
PRESENT & CONVIENCE  
WORK CLOSELY WITH DEVELOPMENT TEAM  
REVIEWS  
BRAINSTORMS & TRAININGS

## How UX should be considered

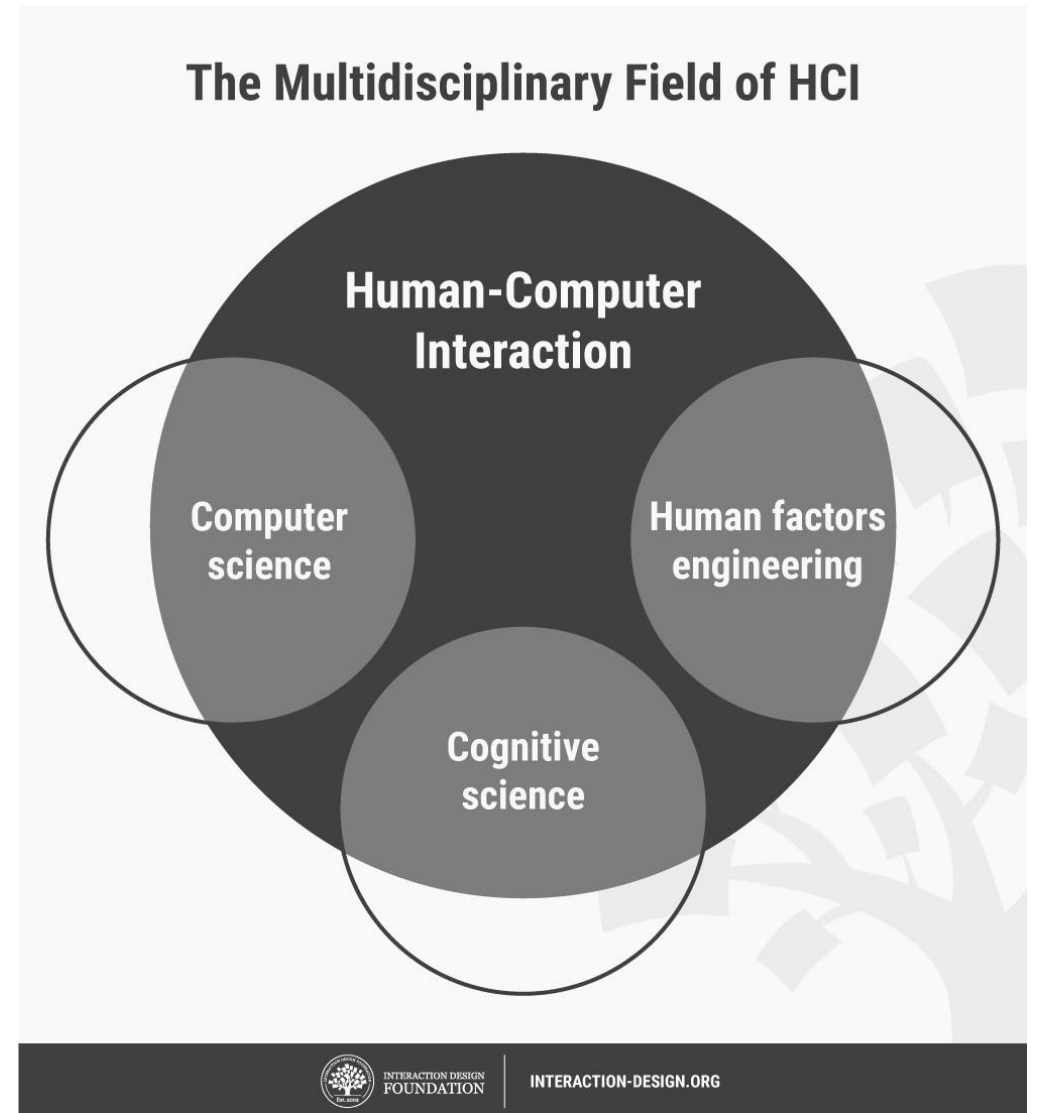
FIELD RESEARCH  
USER RESEARCH  
USER INTERVIEW  
USABILITY PLAN  
DATA GATHERING  
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WORK CLOSELY WITH DEVELOPMENT TEAM  
REVIEWS  
BRAINSTORMS & TRAININGS

# Interakcija čovek-računar

- Multidisciplinarna oblast
- Bavi se
  - dizajnom,
  - evaluacijom i
  - implementacijom

interaktivnih računarskih sistema za i svih fenomena vezanih za njihovo korišćenje od strane ljudi.

ACM SIGCHI curricula for human-computer interaction



# Dizajn korisničkog iskustva

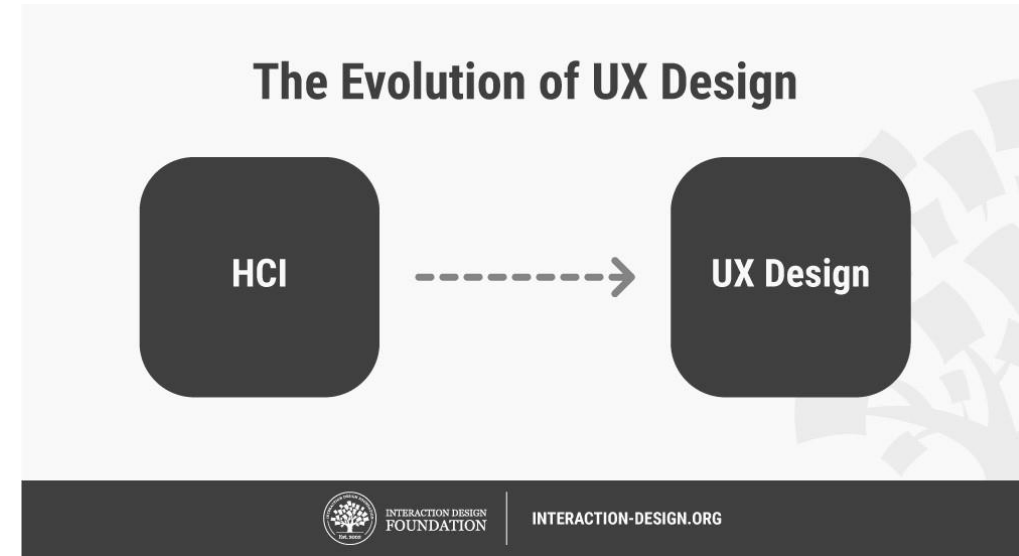
- User experience design focuses on the **overall experience between a user and a product**. It is not just concerned with the interactive elements but also the way that certain elements look, feel or contrive to deliver certain outputs.

ACM SIGCHI curricula for human-computer interaction

Practitioners of HCI tend to be more academically focused - involved in scientific research and developing empirical understandings of users.

UX designers are almost invariably industry-focused and involved in building products or services—e.g., smartphone apps and websites.

Regardless of this divide, the practical considerations for products that UX professionals concern with have direct links to the findings of HCI specialists about users' mindsets.



# Interaction design

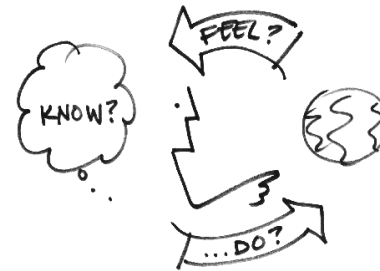
“Interaction Design is the creation of a dialogue between a person and a product, system, or service. This dialogue is both physical and emotional in nature and is manifested in the interplay between form, function, and technology as experienced over time.”

*John Kolko, Author of Thoughts on Interaction Design*

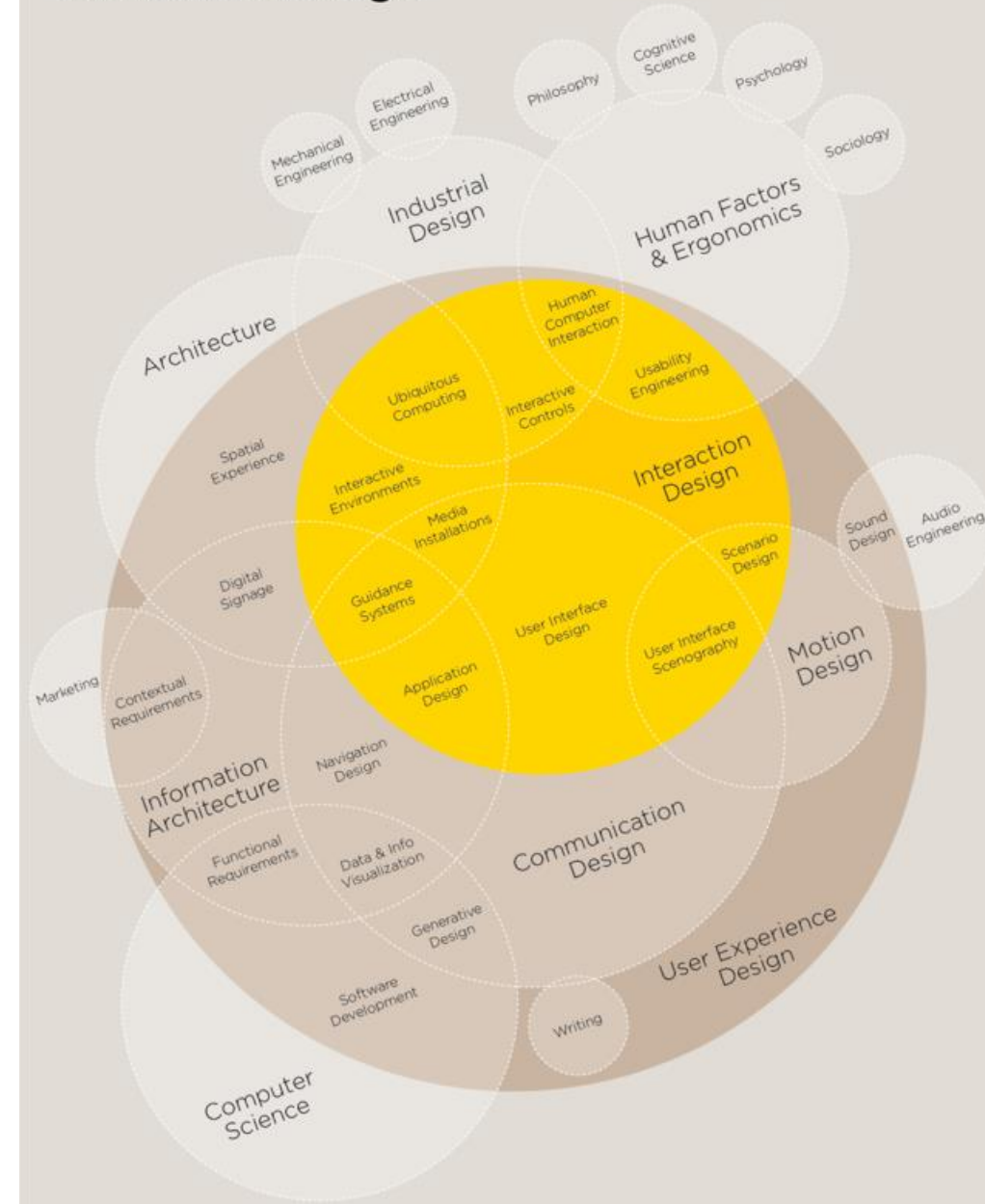
Goals of interaction design:

- **Develop usable products**  
Usability means **easy to learn**, **effective to use** and **provide an enjoyable experience**
- **Involve users in the design process**

## INTERACTION DESIGN



## The Disciplines of Interaction Design

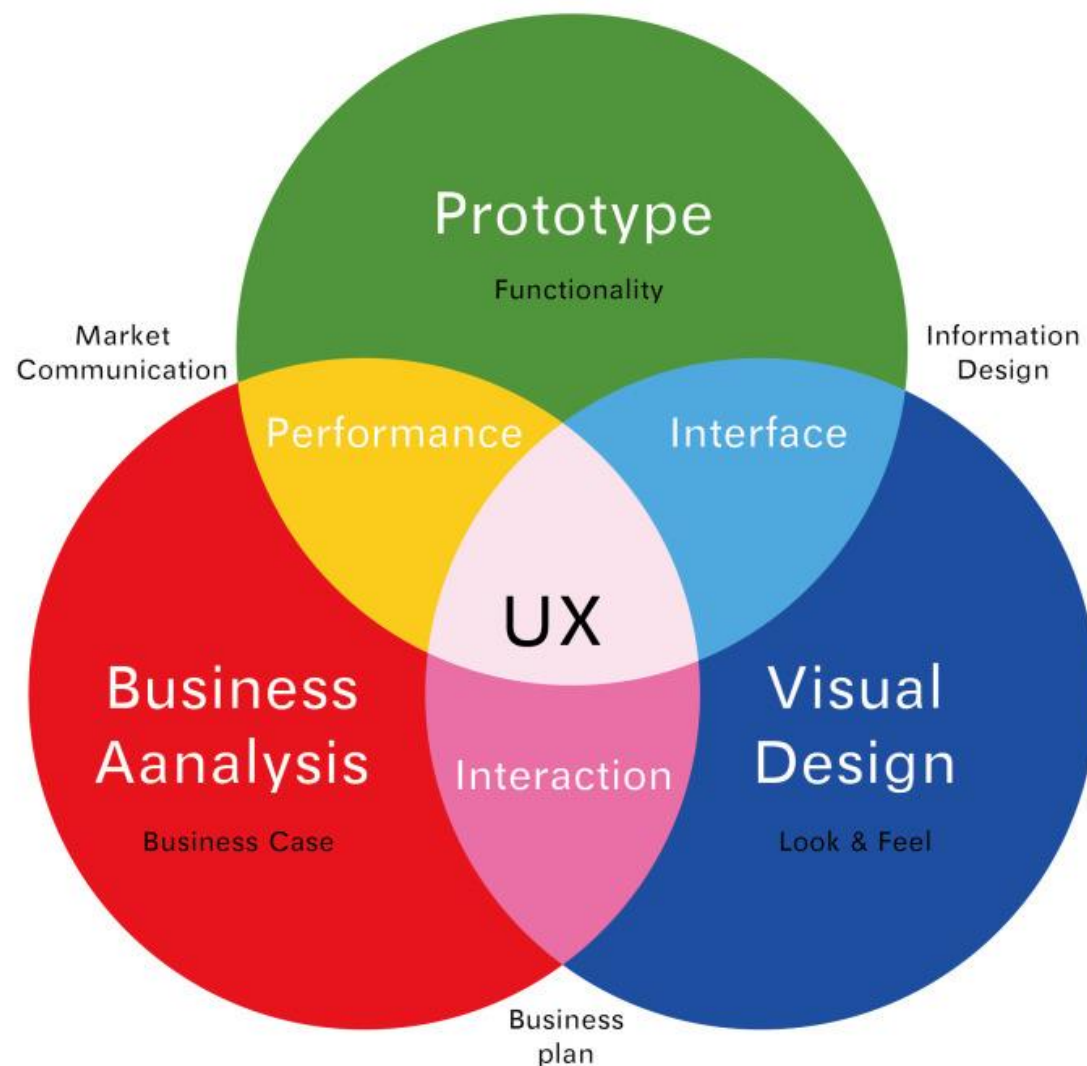


# UX ciljevi i aspekti

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# UxD ciljevi

1. Podsticanje motivacije kupaca stvaranjem emocionalnog odnosa prema proizvodu.
2. Obezbediti stalnom korisniku mogućnost da obavi svoj posao/zadatak na što efikasniji način.
3. Izdvajanje kompanije na tržištu bazirano na dobro projektovanom korisničkom iskustvu.
4. Doprinos kompaniji:
  - Kompetitivna prednost
  - Ostvarivanje profita\*,
  - Vrednost za brend,
  - Vrednost kompanije na tržištu.



# UX aspekti

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## Koristan

It has to **serve some purpose in user's life**. Some studies suggest that usefulness is 1.5 times as important as usability. Customers buy products for two reasons:

- First, customers readily spend money **to combat pain**.
- Second, customers spend money **to pursue pleasure**.



User Experience Honeycomb

# UX facets

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## Usable

ISO 9241-11 definition of usability is: “the extent to which a product can be used by specified users to achieve specified goals with **effectiveness**, **efficiency** and **satisfaction** in a specified context of use.”

A design is not usable or unusable per se; its **features**, together with the **context** of the user (what the user wants to do with it and the user’s environment), **determine its level of usability**.

Usability is necessary but not sufficient.



User Experience Honeycomb

# UX facets

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## Desirable

The more desirable a product is – the more likely it is that the user who has it will brag about it and create desire in other users.

Desirability is conveyed in design through **branding, image, identity, aesthetics** and **emotional design**.



User Experience Honeycomb

# UX facets

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## Findable

Findable refers to the idea that the product must be **easy to find** and in the instance of digital and information products; the **content within them must be easy to find too**.

Content needs to be navigable and locatable onsite and offsite.

If you cannot find a product, you're not going to buy it and that is true for all potential users of that product.

We must strive to design navigable applications and locatable objects, so users can easily find what they need.



User Experience Honeycomb

# UX facets

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## Accessible

Just as our buildings have elevators and ramps, our web sites should be accessible to **people with disabilities** (more than 10% of the population).

Accessibility is about **providing an experience which can be accessed by users of a full range of abilities** – this includes those who are disabled in some respect such as hearing loss, impaired vision, motion impaired or learning impaired.

When you design for accessibility, you will often find that you create products that are **easier for everyone** to use not just those with disabilities.

Accessible design is now a **legal obligation** in many jurisdictions including the EU and failure to deliver it may result in fines.



User Experience Honeycomb

# UX facets

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## Credible

Users need to believe before they can trust.

Credibility is the quality of being trusted and believed in, or of being convincing or believable.

The extent to which users will trust your design is a dynamic relationship that builds over time; however, the aesthetics of your design are vital to their making that first impression.

If users don't find you credible, they won't trust you; if they don't trust you, they won't believe anything else you tell them; they won't stick around to think about what your design can offer them.

[Web Credibility Project](#) - design elements that influence whether users trust and believe what we tell them.



User Experience Honeycomb

# UX facets

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## Valuable

The product must **deliver value to the business** which creates it and **to the user** who buys or uses it.

People are looking for value in the following five areas:

EMOTIONAL

FUNCTIONAL

SOCIAL

LEARNING

CONTEXTUAL

Our sites must deliver value to our sponsors. For non-profits, the user experience must advance the mission.



User Experience Honeycomb

# Usability & Utility

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# Usability

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Usable or unusable?

**A teapot**



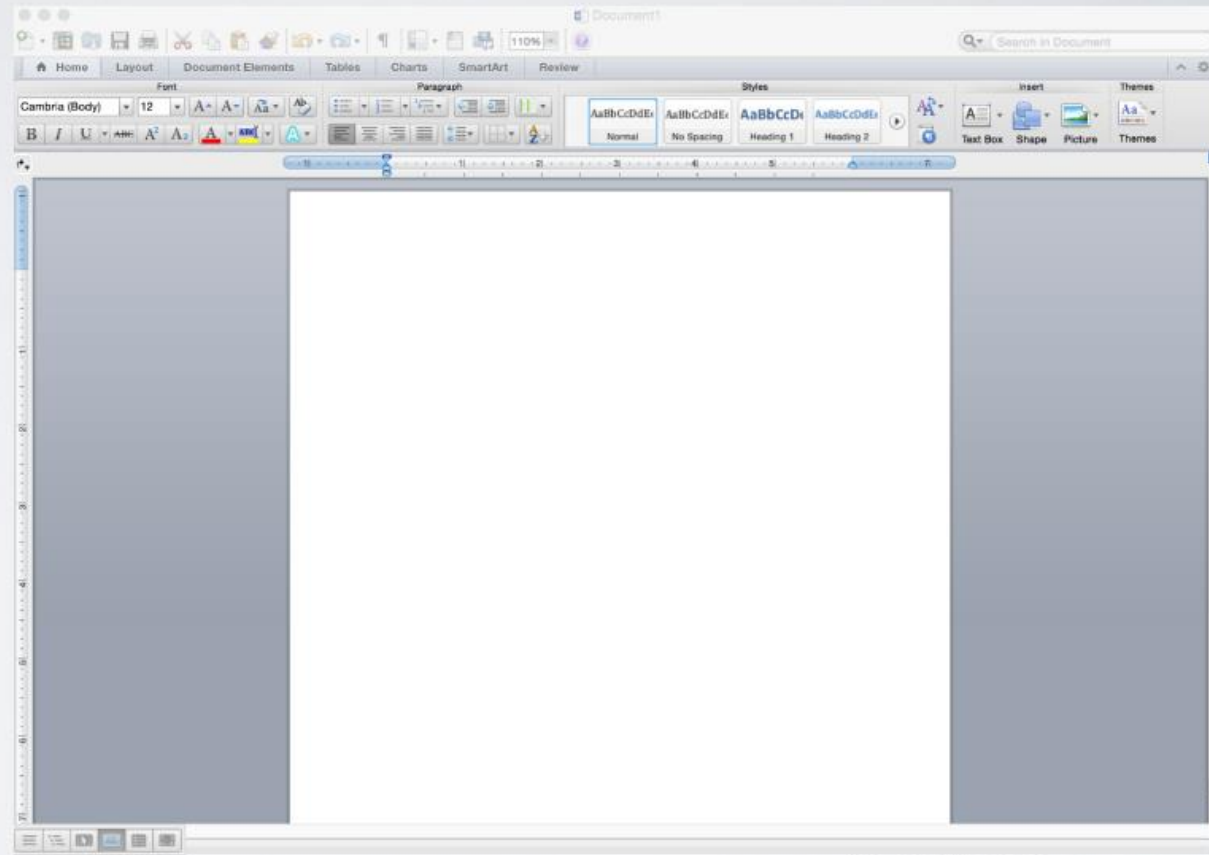
From Don Norman, Emotional Design

# Usability

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Usable or unusable?

**A word  
processor**



# Usability

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- A property of the relationship between
  - humans with goal-driven tasks
  - an artifact
- The speed and success with which the goals can be accomplished (**task performance**)

# Why study usability?

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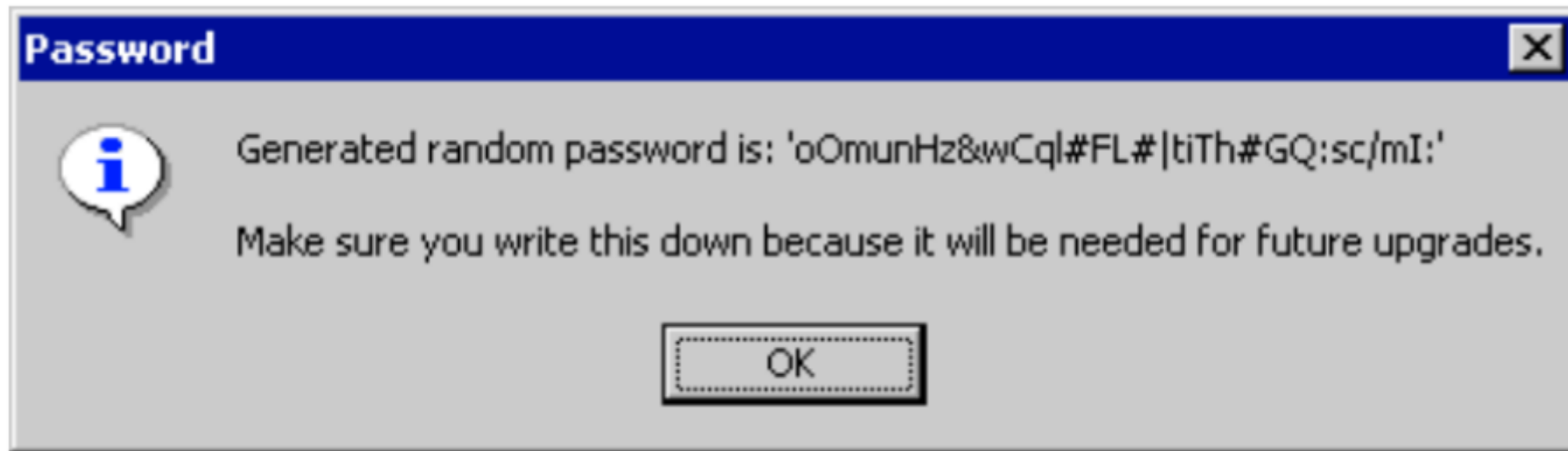
“The results show that in today's applications, an average of 48% of the code is devoted to the user interface portion.

The average time spent on the user interface portion is 45% during the design phase, 50% during the implementation phase, and 37% during the maintenance phase.”

– Myers & Rosson, CHI'92

# Why study usability?

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# Why study usability?

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## Life-Threatening Errors

- 1995 American Airlines jet crashed into canyon wall, killing all aboard
- On approach to Rozo airport in Colombia pilot skipped some of the approach procedures
- Pilot typed in “R” and system completed full name of airport to Romeo
- Guidance system executed turn at low altitude to head for Romeo airport
- 9 seconds later plane struck canyon wall
- Is the pilot to blame?

[http://en.wikipedia.org/wiki/American\\_Airlines\\_Flight\\_96](http://en.wikipedia.org/wiki/American_Airlines_Flight_96)

# Usability characteristics

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Characteristics that makes something **usable**?

# Some usability characteristics

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- ease of use
  - efficiency
- effectiveness
  - learnability
  - retainability
- user satisfaction

# Usability & Utility

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- **Usability** is a **quality attribute** that assesses how easy user interfaces are to use.
- Defined by **5 quality components**:
  - **Learnability**: How easy is it for users to accomplish basic tasks the first time they encounter the design?
  - **Efficiency**: Once users have learned the design, how quickly can they perform tasks?
  - **Memorability**: When users return to the design after a period of not using it, how easily can they reestablish proficiency?
  - **Errors**: How many errors do users make, how severe are these errors, and how easily can they recover from the errors?
  - **Satisfaction**: How pleasant is it to use the design?
- There are many other important quality attributes. A key one is **utility**, which refers to the design's functionality: **Does it do what users need?**
- It matters little that something is easy if it's not what you want.
- It's also no good if the system can hypothetically do what you want, but you can't make it happen because the user interface is too difficult.

# User-centered design

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# User-centered design

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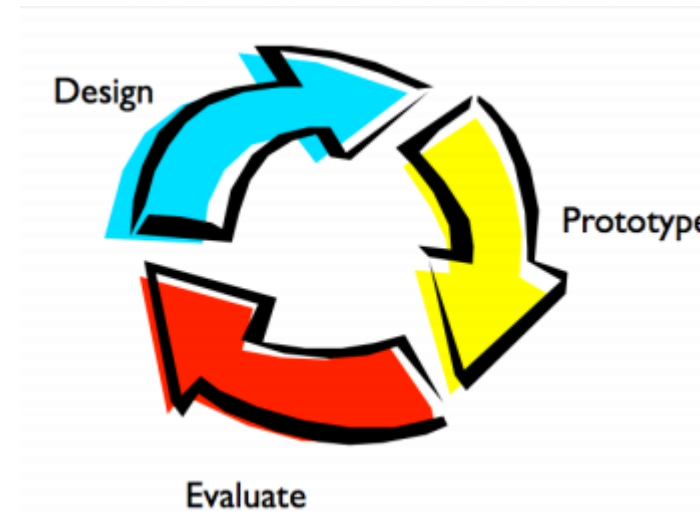
- The user is NOT like me!
- Understanding user needs, tasks, goal
- Involve users in the design process

# User-centered design

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- Given **humans** with **goals** and **tasks**, design an **artifact** that helps to accomplish these tasks!
- **Iterative** user-centered design

Given humans with goals and tasks, **redesign** an existing artifact that helps to accomplish these tasks **faster** and **more successfully**.



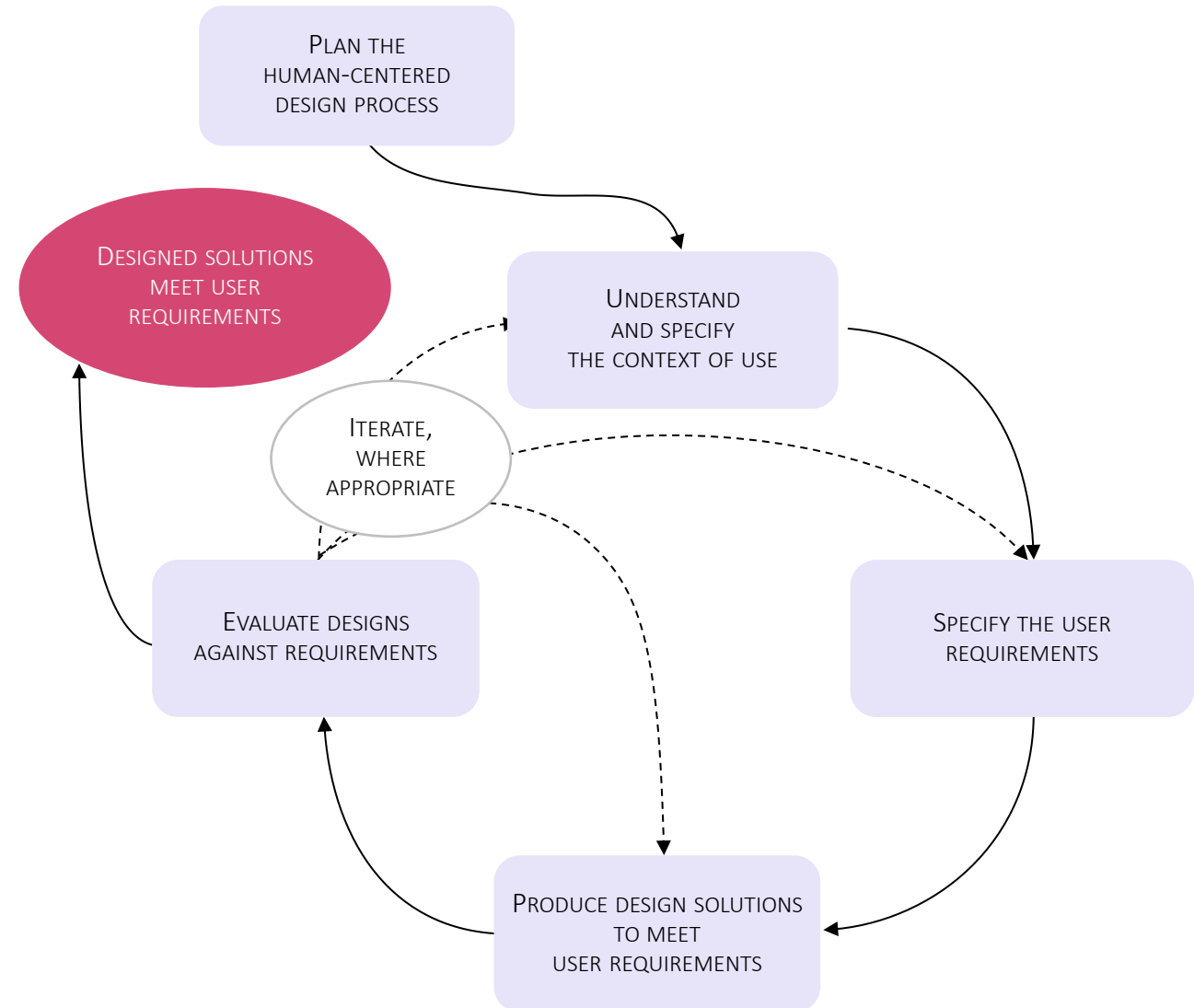
# Involving user in the design process

## User-centred approach to design

- The user knows best what he needs and he is the designer's source of knowledge
- The role of the designer – translate user needs and goals to the design decisions

based on:

- **Early focus on users and tasks:** directly studying cognitive, behavioral, anthropomorphic, and attitudinal characteristics
- **Empirical measurement:** users' reactions and performance to scenarios, manuals, simulations, and prototypes are observed, recorded, and analyzed
- **Iterative design:** when problems are found in user testing, fix them and carry out more tests



# Usability evaluation

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Reading...

# User-centered design

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- Given humans with goals and tasks and a new artifact, identify **usability issues** that decrease task performance.
- **Empirical** usability evaluation study  
Observe humans to identify usability issues that decrease task performance. (ground truth)
- **Analytical** usability principles  
Given humans with goals and tasks and an artifact, assess for conformance to UI principles to identify usability issues that decrease task performance. (approximation of ground truth)

# User-centered design

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- “Discount usability engineering methods”... Jakob Nielsen
- Involves a small team of evaluators to evaluate an interface based on recognized usability principles
- Heuristics—“rules of thumb”

# Heuristics

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1. Visibility of system status – progress bar
2. Match between system and the real world - follow real world conventions, recycle bin, red/green buttons
3. User control and freedom - undo/redo, skip some steps
4. Consistency and standards - same things look the same, be located in the same place
5. Error prevention - date picker
6. Recognition vs. recall - recently used document
7. Flexibility and efficiency of use - copy/paster, kb shortcuts, macros
8. Aesthetic and minimalist design - interfaces should not contain irrelevant or rarely needed information
9. Help users recognize, diagnose, and recover from errors - error messages in language user will understand, solution suggestion
10. Help and documentation - always available, easy to search

# Heuristics pro and cons

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## Advantages

- “Discount usability engineering”
- Don’t need to identify tasks, activities
- Can identify some fairly obvious fixes
- Can expose problems user testing doesn’t expose
- Provides a language for justifying usability recommendations

## Disadvantages

- Un-validated
- Do not employ real users
- Can be error prone
- Better to use usability experts
- Problems unconnected with tasks
- Heuristics may be hard to apply to new technology

# Readings

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- <https://www.nngroup.com/articles/ten-usability-heuristics/>
- G. Krishna, The Best Interface Is No Interface: The simple path to brilliant technology  
ch 3