

# 5COSC025W

## Human Computer Interaction & User Experience

### Lecture 1:

Introduction to core concepts – Human centred Design Approach –  
Good and Poor Design

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# Welcome!



# Overview

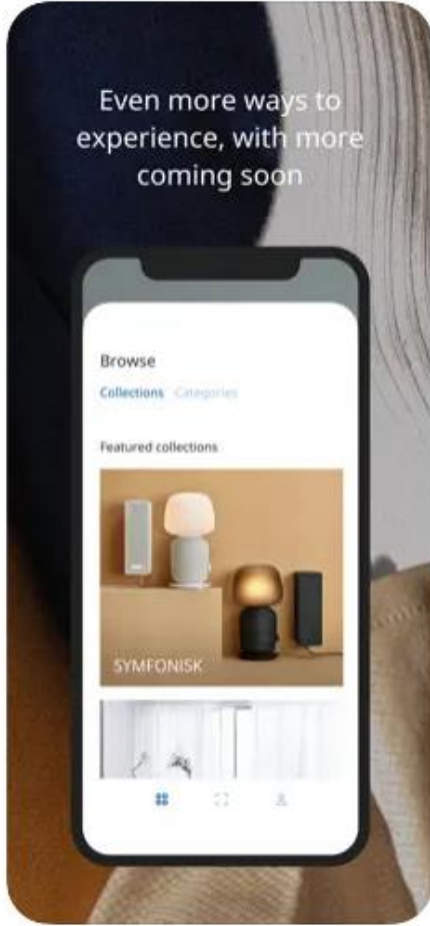
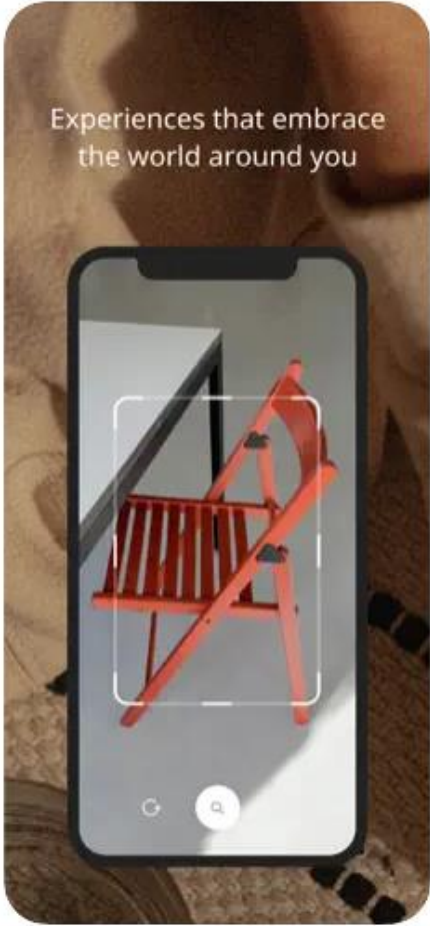
Introduction

Core concepts

Good and poor design

Human-centred design process

Context of use



# Think for a moment...

- How many interactive products/systems (apps, websites, IoT, smart TV, etc) do you use every day?
- How many you keep using and how many do you find difficult to use?



- or when you thought of developing a website or an app how would you organise the user interface, the navigation, the elements on the screen etc?
- Who would be your user and how would your website/app or system would fulfil their needs?
- How many apps/websites or other systems you have used that were badly designed or they were difficult to understand how to use?



# This module will provide you with an understanding

- How we develop products and systems that provide a successful User Experience (UX), that are easy, effective, accessible, inclusive and pleasurable to use from the users' perspective.
- How we create and test/ evaluate low and high-fidelity prototypes?
- What are the current guidelines, principles and techniques that you can use/apply?
- How do you know if a product has good usability?

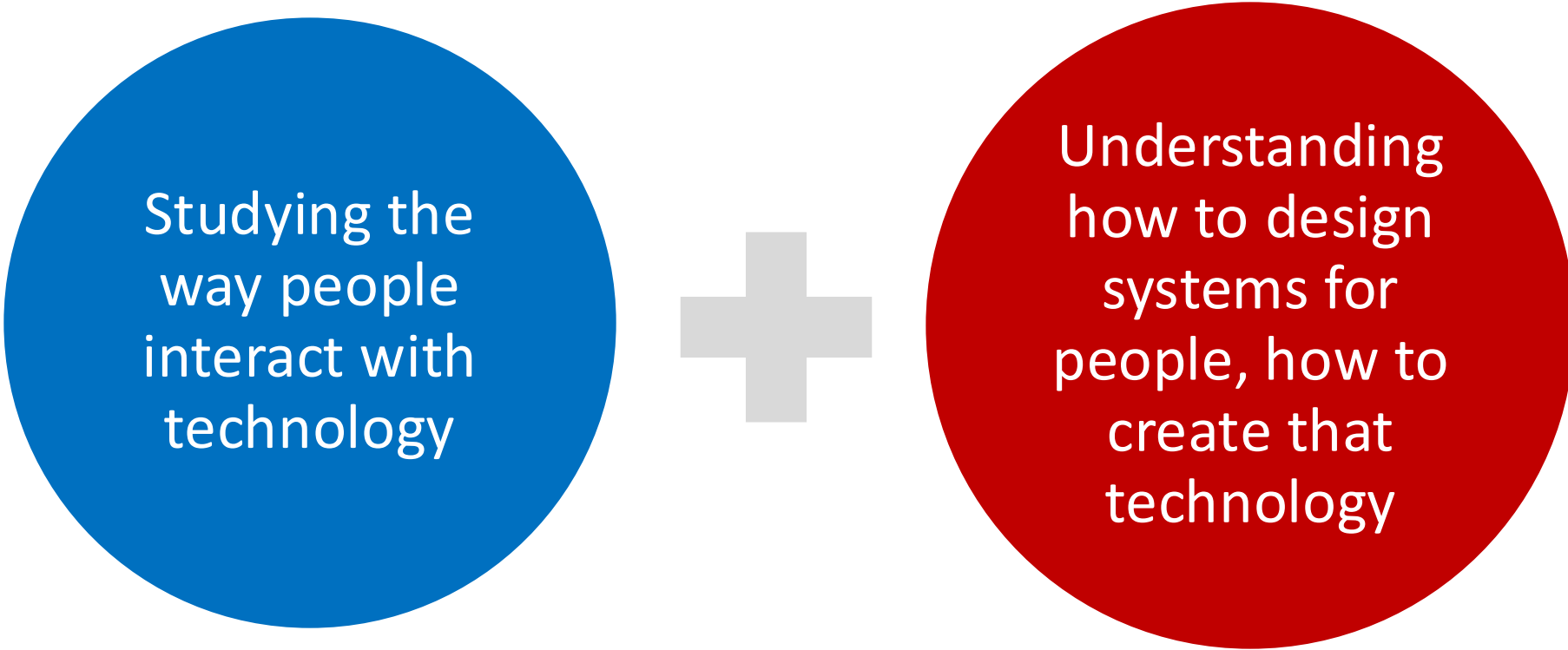
An Introduction to fundamental methods and principles for designing, implementing, and evaluating user interfaces.

# Assessment

- The Coursework (1 & 2) will take you through the complete development lifecycle of an interactive system and the process of Interaction Design.
- The overall purpose of the Coursework is that you will design (or extend) and assess an interactive system following a human-centred design approach.
- More information will follow.



# Human Computer Interaction (HCI) is about



The diagram consists of two large circles, one blue on the left and one red on the right, separated by a large grey plus sign. The blue circle contains the text 'Studying the way people interact with technology' and the red circle contains the text 'Understanding how to design systems for people, how to create that technology'.

Studying the  
way people  
interact with  
technology

Understanding  
how to design  
systems for  
people, how to  
create that  
technology

*“HCI has expanded rapidly and steadily for three decades, attracting professionals from many other disciplines and incorporating diverse concepts and approaches”.*



## HUMAN-COMPUTER INTERACTION (HCI): THE EARLY STAGES

The screenshot shows the Windows 3.11 desktop environment. The taskbar at the top includes a clock displaying 9:27:24 on 10-29-88, and buttons for 'NHL', 'Local', 'Kevin J.', 'Outbaske', 'Mail Merge', 'Mail from Ken', 'Calendar', 'Calc', 'Loader', 'Blank User Dictionary', 'Empty Dictionary', 'Blank Record File', 'Blank Document', '20', 'TTY', 'Beechnut', 'Monthly Profile', 'Blank Folder', 'C Tools', 'Blank Illustrator', 'Blank Canvas', 'PC Emulator', 'Converter', 'Blank Shared Book', 'Blank Book', 'Emulated Hard Disk', 'Virtual Floppy', 'Example ViewPo', 'Remote Files', 'Swaps', 'DOS 3 Lotus', '4427 Blank Reference', 'Tape Drive', 'Floppy Drive', 'Wastebasket', and 'Directory'.



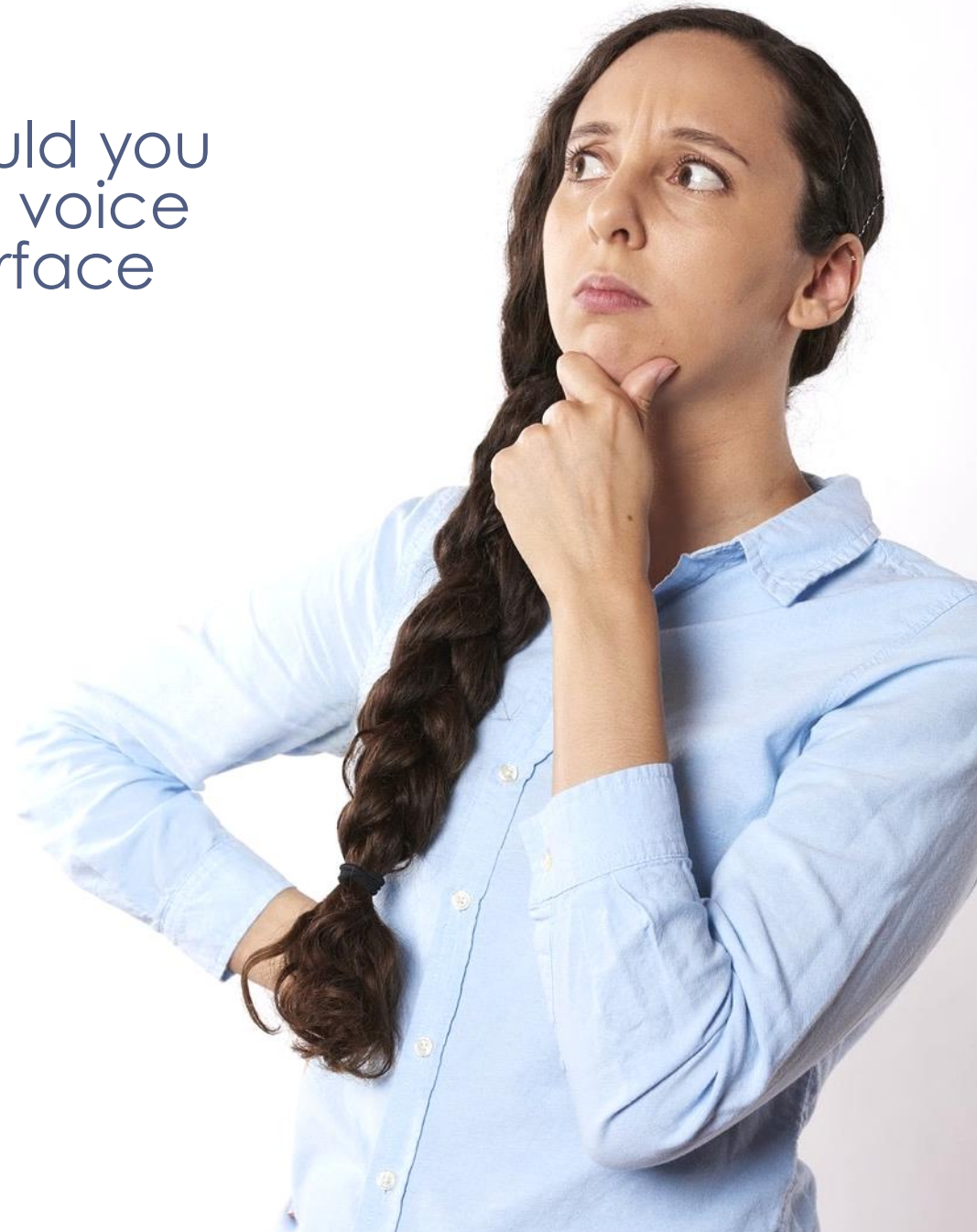
- HCI arose during the early 1980s, evolving into a subject  
*‘concerned with the design, evaluation, and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them’.*

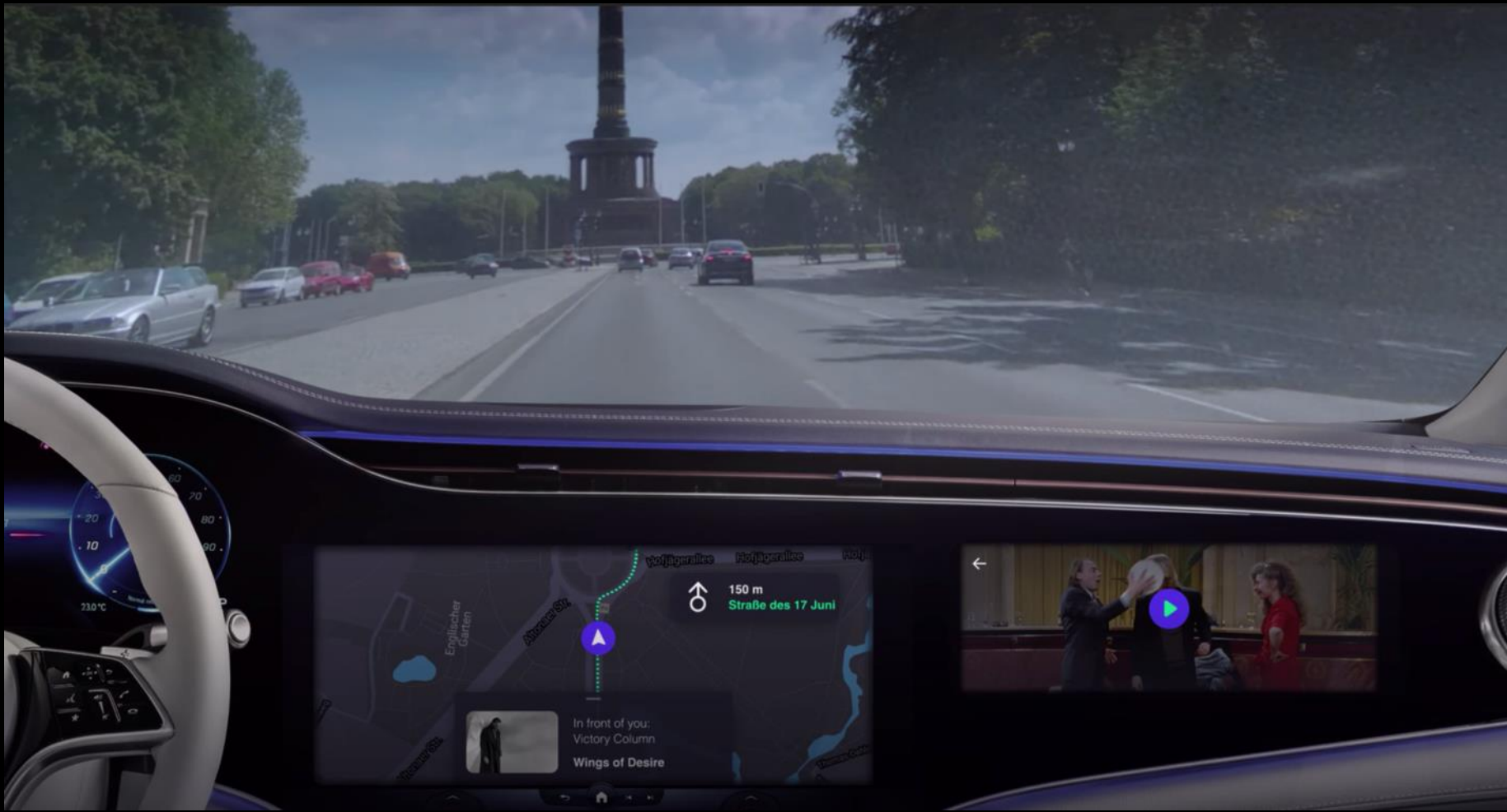
[Xerox Star User Interface \(1982\) 1 of 2](#)

[Xerox Star User Interface \(1982\) 2 of 2](#)

[How Steve Jobs got the ideas of GUI from XEROX](#)

How would you  
design a voice  
user interface  
(VUI)?





Mappo

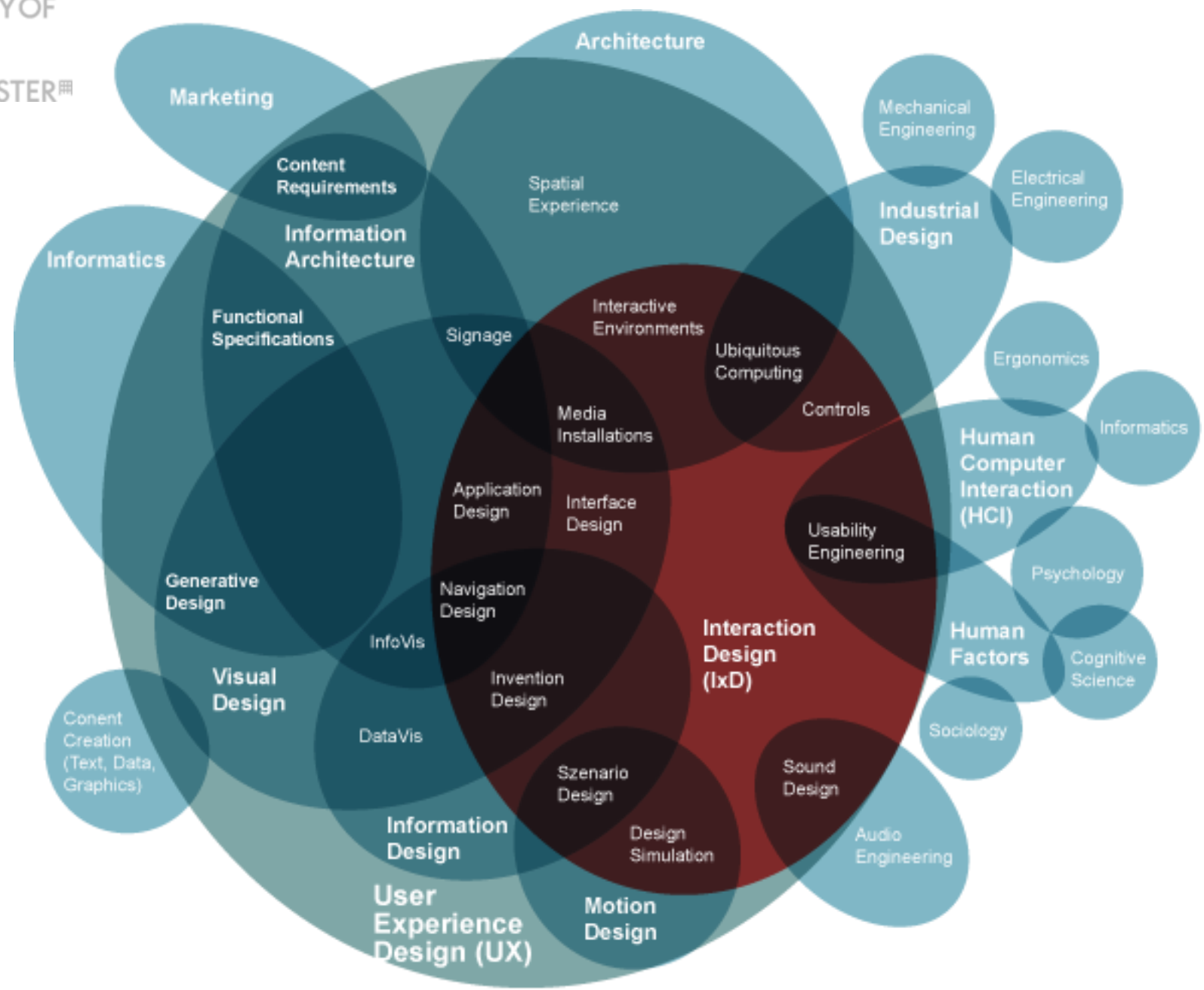
# HCI at IBM

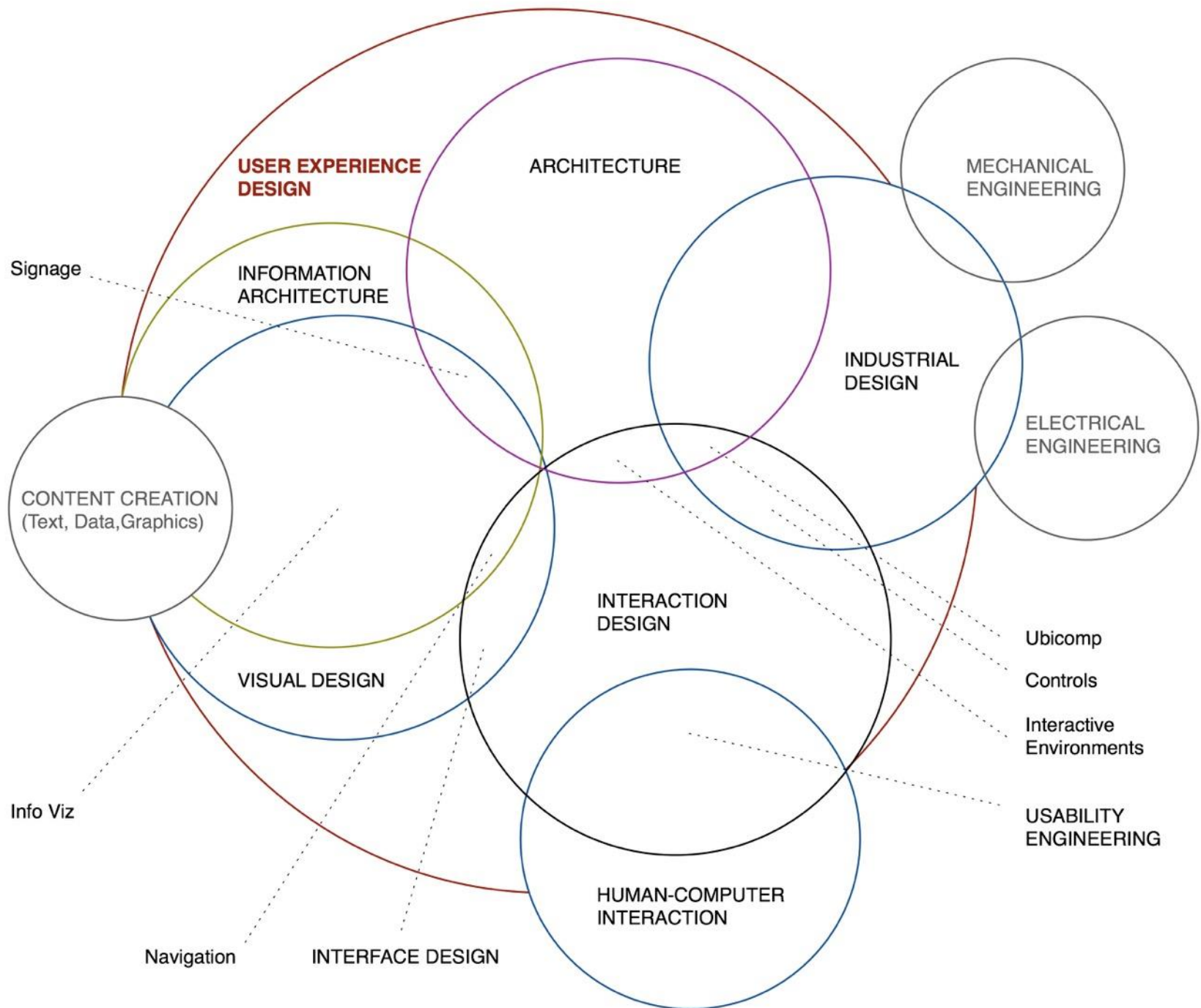
- Study the way people think and feel when they are using digital technologies.
- Design systems that are easier and more delightful for people to use.
- Approach: to treat products and services as parts of complex systems that consist of both social and technological components.
- Human-computer interfaces are an integral part of the functioning of these systems.
  - Aim to understand how to design, implement, and evaluate these interfaces

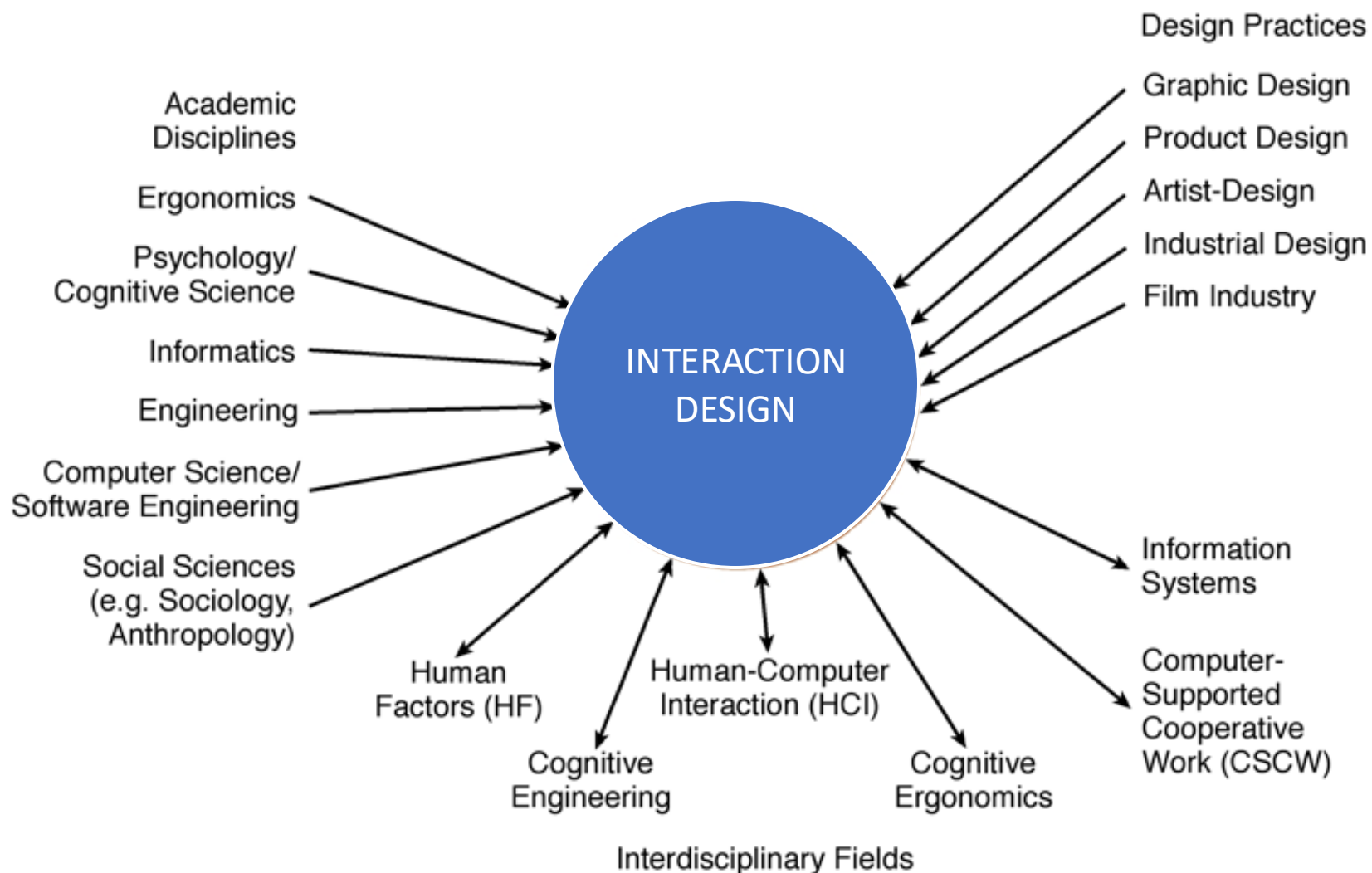


# UX and AI

- Research scientists develop the models that power AI-enabled systems.
- They often lack the UX knowledge needed to integrate AI and machine learning into consumer-facing products.
- UX = people-centered approach to developing ML models and products.







“ **User Experience:** person's perceptions and responses resulting from the use and/or anticipated use of a product, system or service. ”

“ **User Interface:** all components of an interactive system (software or hardware) that provide information and controls for the user to accomplish specific tasks with the interactive system. ”

“ **Usability:** extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use. ”

# What is interaction design?

“

Designing interactive products to support the way people communicate and interact in their everyday and working lives.

”

Sharp, Rogers, and Preece

What is good  
design?





# Good Design is **Intuitive**

Holmes  
Stereoscope



# Holmes Stereoscope

- The stereoscope, from the 1850s, consisted of two prismatic lenses and a **handle** to hold the stereo card.
- You can **insert** stereo cards in a card holder slot.
- You can **view** the cards through a pair of lenses.



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a month from month 1.

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- BT Life blog
- My BT
- Track your order
- Make an online payment
- Moving home
- Credit Card
- Report a fault
- Help

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We use cookies to make our website easier for you to use. You can remove any cookies already stored on your computer, but these may prevent you from using parts of our website.

Use the slider below to see the different types of cookies you can choose to allow.

Drag the slider across to change your cookie settings

CLICK & DRAG

This website will:

This website will not:

- ✓ Remember what is in your shopping basket
- ✓ Remember how far you are through an order
- ✓ Remember your log-in details
- ✓ Make sure your logged in areas are secure
- ✓ Offer live chat support
- ✓ Make sure the website looks consistent
- ✓ Allow you to share pages with social networks like Facebook
- ✓ Allow you to comment on blogs
- ✓ Send information to other websites so that advertising is more relevant to you

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Strictly necessary & Performance

Functional

CLICK & DRAG

Targeting

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- ✓ Remember your log-in details
- ✓ Make sure you're secure when logged in to the website
- ✓ Make sure the website looks consistent
- ✓ Offer live chat support

This website will not:

- ✗ Allow you to share pages with social networks like Facebook
- ✗ Allow you to comment on blogs
- ✗ Send information to other websites so that advertising is more relevant to you

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Cookie

Cookie

Strictly necessary & Performance

CLICK & DRAG

Cookie

Aa

Functional

Cookie

Targeting

This website will:

This website will not:

✓ Remember what is in your shopping basket

✓ Remember how far you are through an order

✗ Allow you to share pages with social networks like Facebook

✗ Allow you to comment on blogs

✗ Send information to other websites so that advertising is more relevant to you

✗ Remember your log-in details

✗ Improve overall performance of the website

✗ Provide you with live, online chat support

Find out more about Cookies >

Cancel

Save and close

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Save and close cookie control

About this tool 



Cancel

Save

## Edit activity

Title

How would you encourage people to take the stairs?

### Response settings

Allow changing answers

ON

Allow participants to undo their response and respond again.

Show title only on live chart

OFF

Encourage students to be in class by only showing the activity title on the live chart. Students will have the title hidden on their own devices.

Limit responses per person

OFF

Each activity has a limit on the number of responses it can receive. Letting people respond more than once may trigger this limit sooner.

Custom reply message

OFF

Display a custom message on the participants device after they respond.



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About Cookies | **Cookie Settings**

How can I change my BBC cookie settings?

How can I stop my internet browser tracking my info?

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Page updated: 1 December 2016

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### Strictly Necessary Cookies

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On

These cookies are essential in order to enable you to move around the website and use its features. Without these cookies services you have asked for cannot be provided.

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These cookies allow the website to remember choices you make and provide enhanced functionality and personal features. For example, you can set your location on the BBC weather website.

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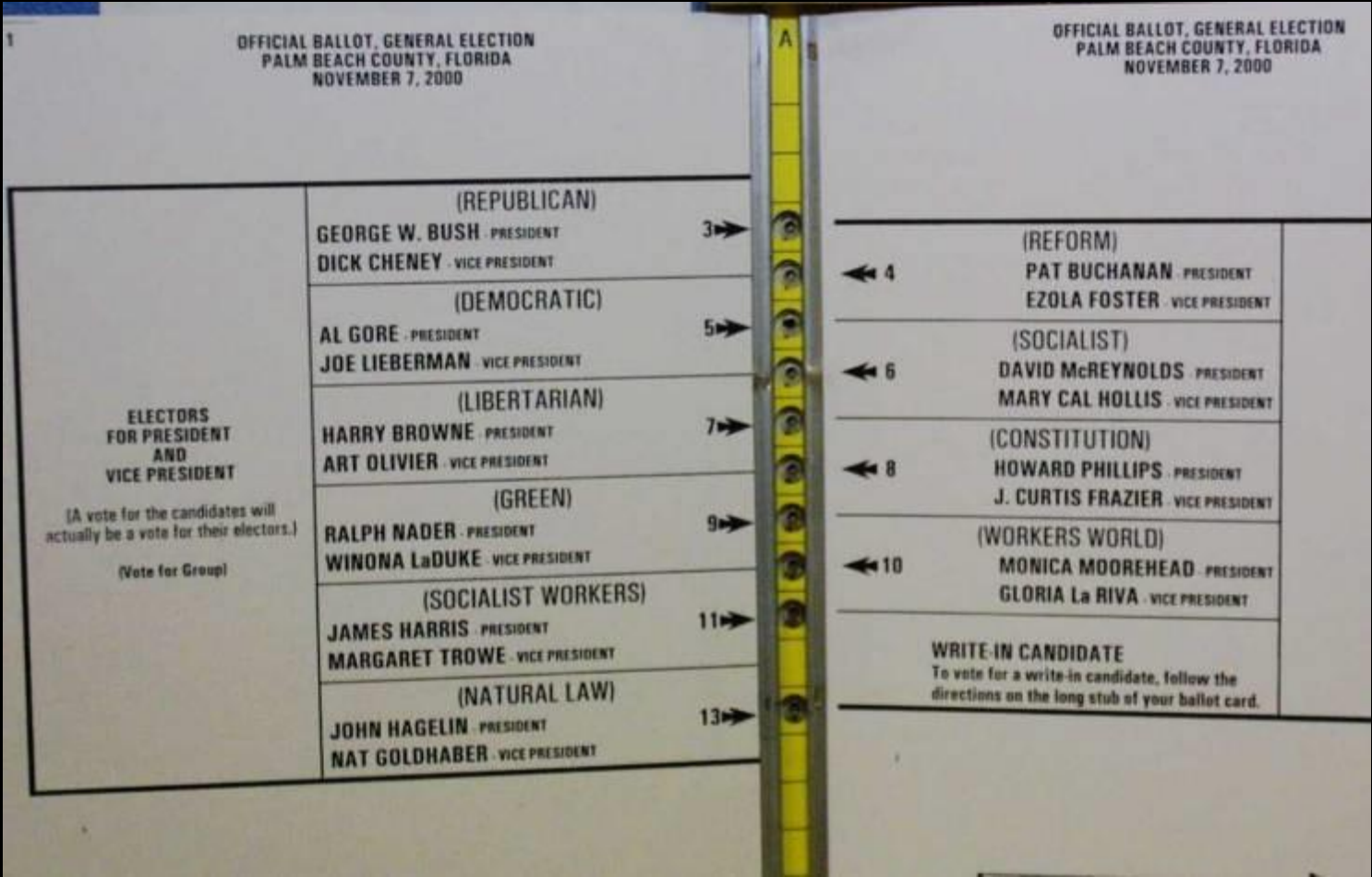
On

These cookies help to improve the performance of BBC Online. For example, they collect information about which pages visitors go to most often and help us to provide a better user experience.

[More about performance cookies](#)

# Poor Design:

The design of the butterfly ballot used in Palm Beach, Florida, during the 2000 US presidential election. Thousands of voters were confused by the design of the ballot and voted for the wrong candidate.



BACK TO RESULTS LIST



BOOK

### Crossing the chasm

Moore, Geoffrey A., 1946-; McKenna, Regis.; 1999  
Oxford : New York ; : Capstone Pub.; 2nd ed.  
Library Catalogue

Available at Harrow Books (658.8 MOO) and other locations >

TOP

SEND TO

DETAILS

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FIND IN LIB...

LINKS

## Find in Library

Request

### LOCATIONS

Harrow

Available , Books ; 658.8 MOO



Marylebone

Available , Books ; 658.8 MOO



Cavendish

Out of library , Books ; 658.8 MOO



## Details

Title Crossing the chasm

BACK TO RESULTS LIST

TOP

SEND TO

DETAILS

VIRTUAL BR...

FIND IN LIB...

LINKS

## Find in Library

Request

BACK TO LOCATIONS

### Request

Pickup Location  
Regent

Material Type  
Book

SEND REQUEST

## Details

Title	Crossing the chasm
Author	Moore, Geoffrey A., 1946- > McKenna, Regis. >
Subject	Moore, Geoffrey A., 1946- >
Publisher	Oxford : New York ; : Capstone Pub.
Creation Date	1999
Format	xxi, 211 p. : ill. ; 24 cm.
Language	English
Edition	2nd ed.

*You are the owner of an office building, and your tenants are complaining about the elevator. It's old and slow, and they have to wait for a long time. Many tenants are threatening to leave if you don't fix the problem.*



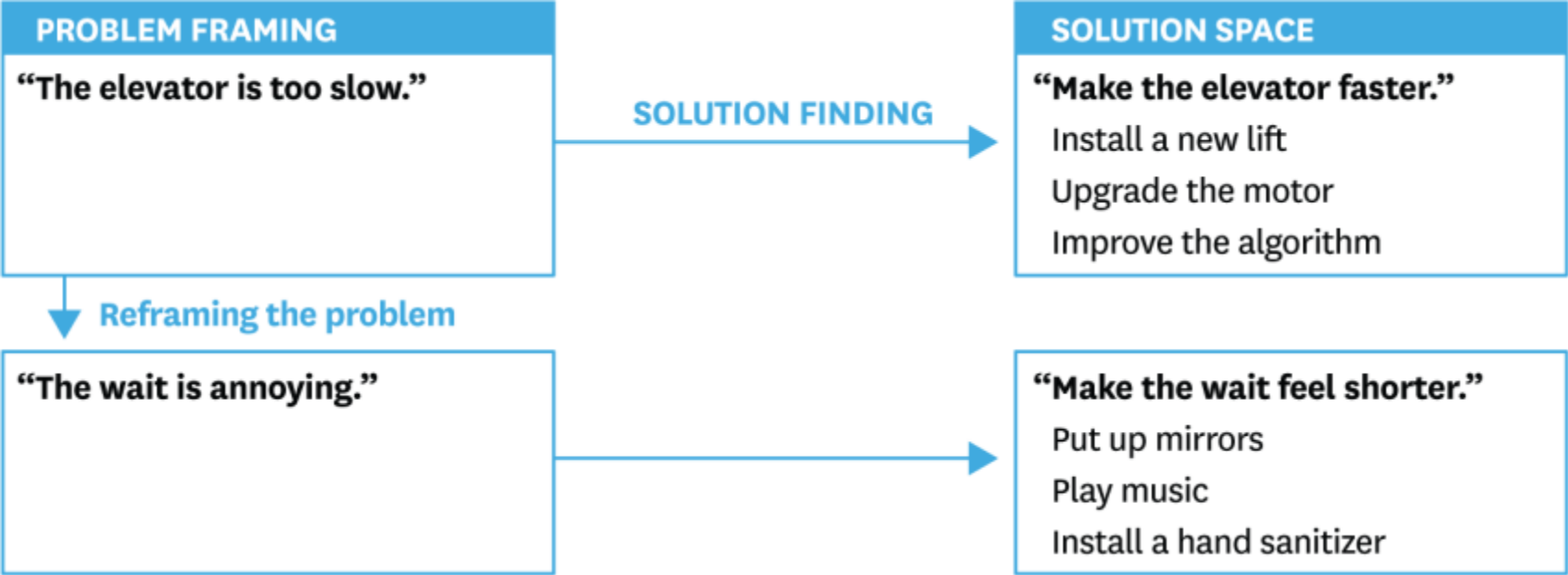
What would you do?









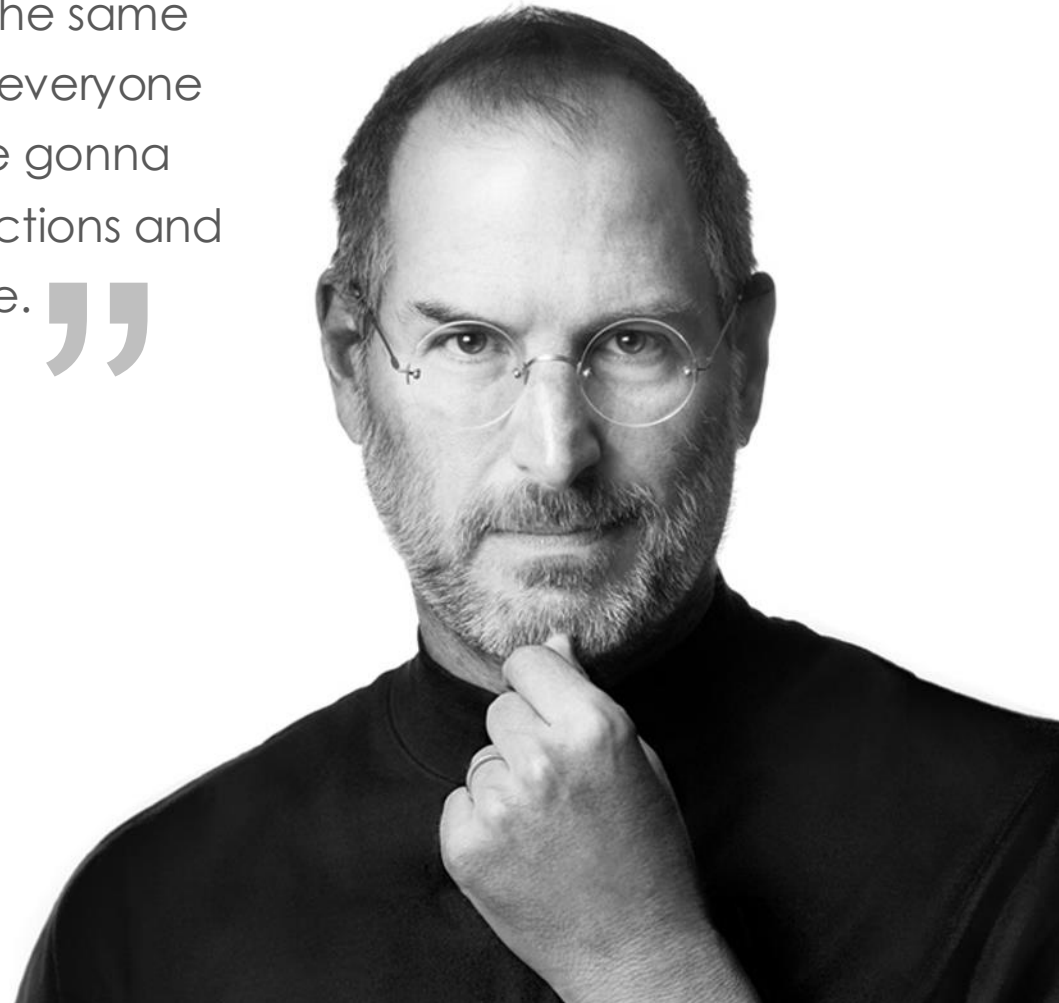




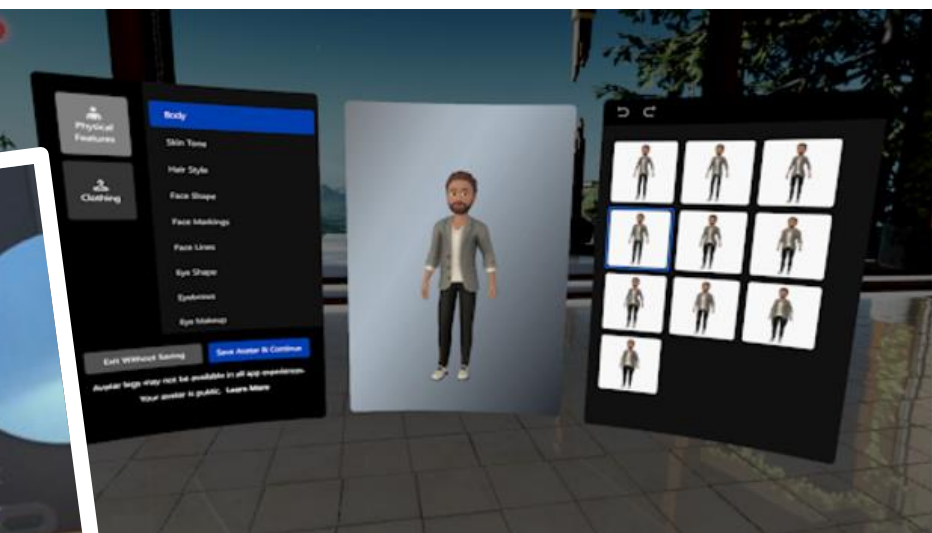
“

You have to not have the same bag of experiences as everyone else does, or else you're gonna make the same connections and you won't be innovative.

”







This meeting could have been an email...





# Companion



# Transforming healthcare for children and their families

[David Kelley clip - Doug Dietz story](#) (video)

From this experience...





To this experience...



This?



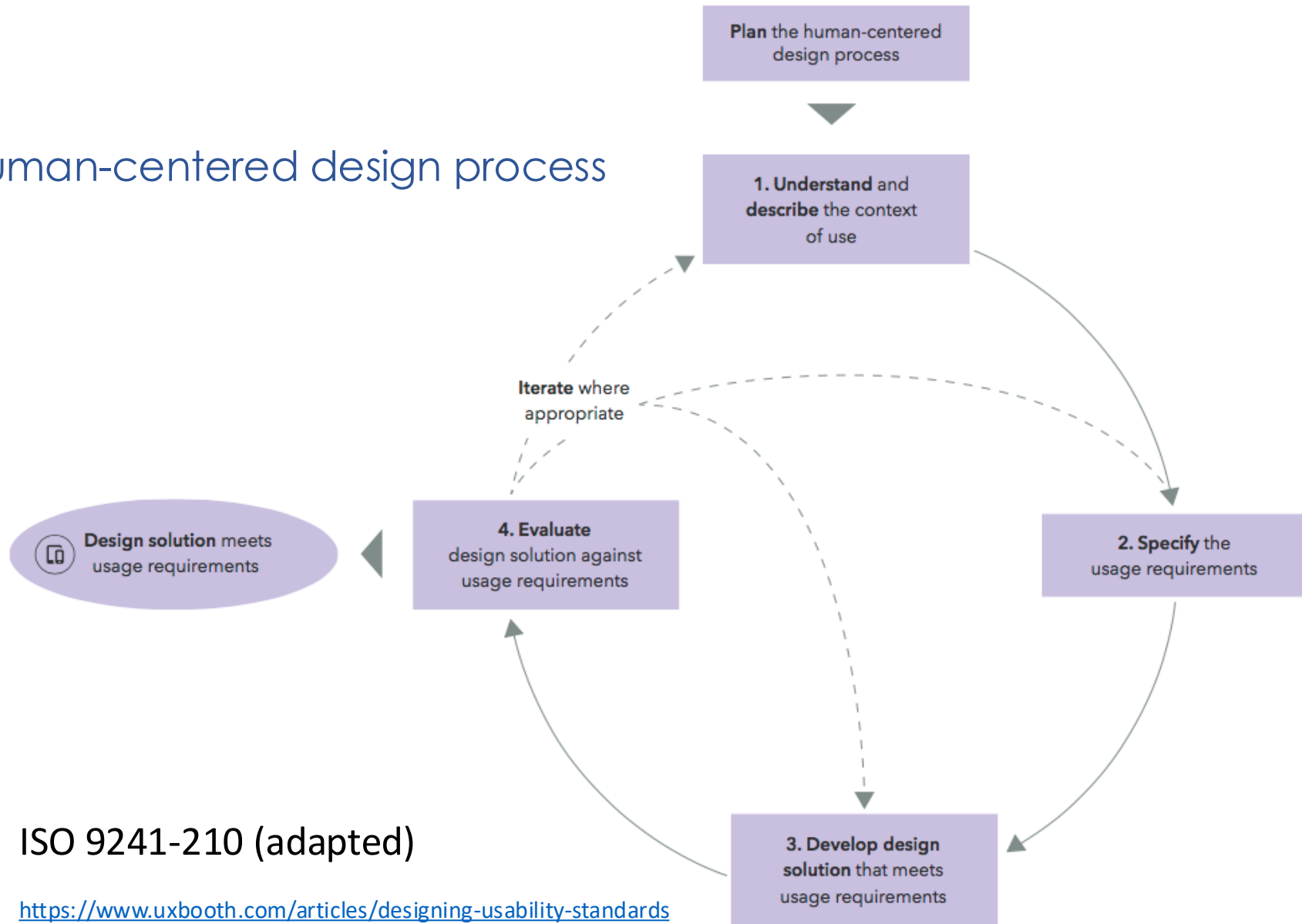


Or this?



<https://nest.com/uk/#meet-nest-thermostat-e>

## Human-centered design process



ISO 9241-210 (adapted)

<https://www.uxbooth.com/articles/designing-usability-standards>

“

*User experience encompasses all aspects of the end-user's interaction with the company, its services, and its products.*

”

DONALD NORMAN



[video](#)



[video](#)

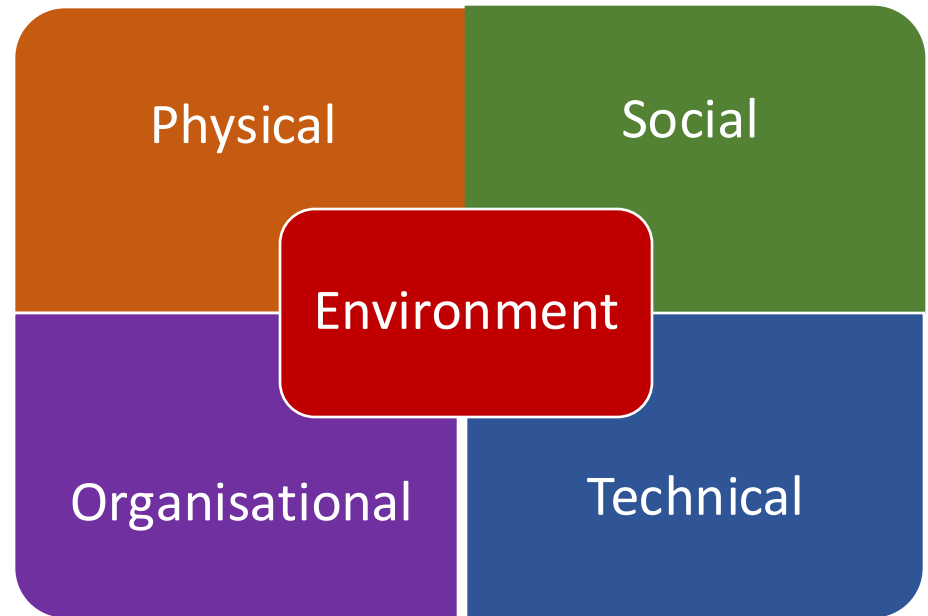


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“ **Usability:** the extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use. ”

# Context of Use

- The circumstances in which the product is (or will be) used.
- Users, tasks, equipment (hardware, software and materials), and the physical and social environments in which a product is used.



(ISO 9241-11)

# Further Reading

- Preece, J., Rogers, Y., & Sharp, H. (2023). *Interaction design: beyond human-computer interaction*. 6<sup>th</sup> Ed. John Wiley & Sons.
  - Or previous edition:
- Preece, J., Rogers, Y., & Sharp, H. (2019). *Interaction design: beyond human-computer interaction*. 5<sup>th</sup> Ed. John Wiley & Sons.
- Benyon, D. (2019). *Designing User Experience: a guide to HCI. UX and interaction design*.
- If you want to learn more about HCI history:  
[A Brief History of Human Computer Interaction Technology](#)

