



Human Computer Interaction

Chapter 1: Introduction to HCI Part 1

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03 Motivating Human Computer Interaction

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05 User Experience



Machine Learning and Data Analytics Lab (MaD) in Erlangen



Subjects and Themes



Introduce yourself to the course



From a job announcement in HCI: Applications should include [...] a picture of you acting as superhero (mails missing items will not be read)

What is your current experience of HCI?

• • •

Maybe this is your first time studying it,
or maybe you are a seasoned UX
designer...

What are you expecting to learn from this course?

• • •

See what others think, and maybe use it to open up conversations!!



CPM Me Techniques

The **aim** of the lecture is to teach basic knowledge of **concepts, principles, models, methods and techniques** for developing highly user-friendly Human Computer Interfaces.

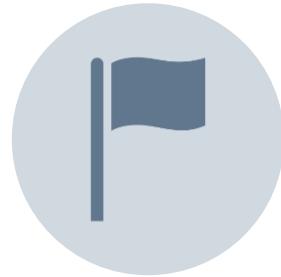
CPMMT



- 01 **Introduction** to the basics of Human Computer Interaction
- 02 **Design Principles** and models for modern user interfaces and interactive systems
- 03 **Information processing** of humans, perception, motor skills, properties and skills of the users
- 04 **In- and output devices**, design space for interactive systems
- 05 **Interaction concepts**, metaphors, standards, norms and style guides
- 06 **Analysis**, design, and development methodologies and tools for easy-to-use user interfaces
- 07 **Prototypic implementation** of interactive systems
- 08 **Architecture** for interactive systems, User Interface Toolkits and components
- 09 **Acceptance**, evaluation methods and quality assurance

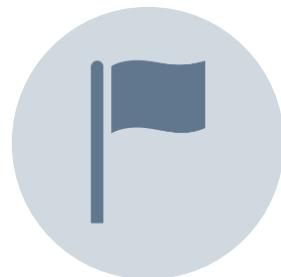


Develop understanding.



Students should develop an **understanding** for **models, methods, and concepts** in Human Computer Interaction

Design ; Implement ; validate .



They will further learn various **approaches** for **designing, implementing and validating** modern **User Interfaces** and with it understand the **advantages and drawbacks** of such interfaces

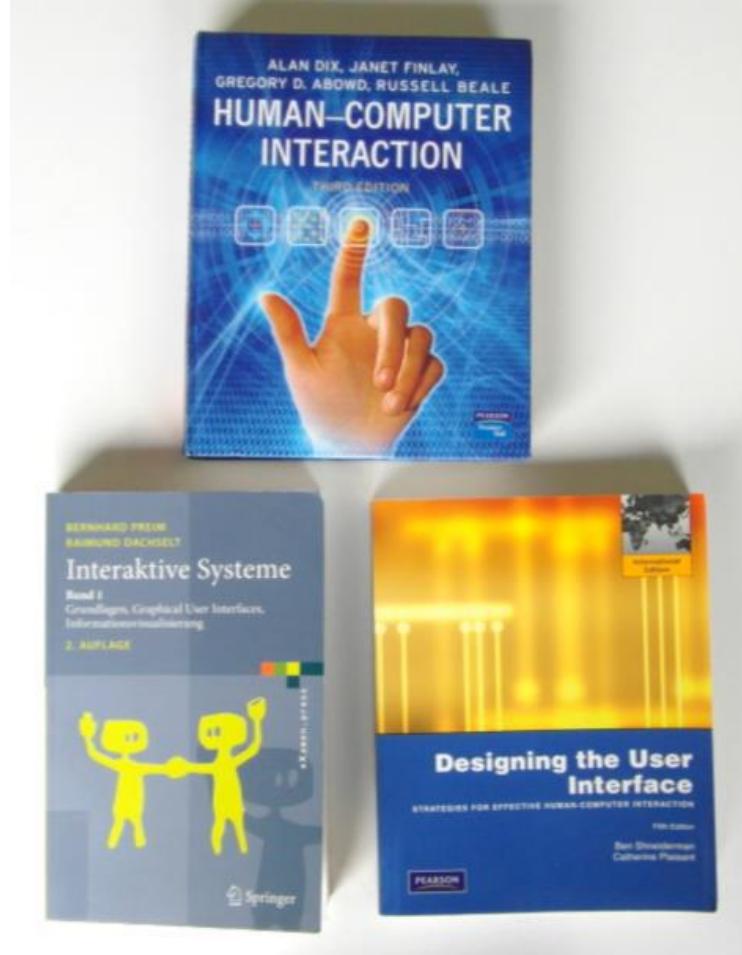
Literature (Selection)

Also on StudOn



Machine Learning
Data Analytics

FAU



- Bernhard Preim, Raimund Dachselt. Interaktive Systeme 1: Grundlagen, Graphical User Interfaces, Informationsvisualisierung. Springer, Berlin; 2. Auflage. 2010
- Alan Dix, Janet Finley, Gregory Abowd, Russell Beale, Human-Computer Interaction, 2004
- Ben Shneiderman, Catherine Plaisant, Designing the User Interfaces, 2005
- Additional reading materials in the documents



Conferences and Student Ideation Camps



What is SIGCHI?



A Family of Conferences

SIGCHI sponsors/co-sponsors 24 Human-Computer Interaction conferences annually, including our flagship CHI (Human Factors in Computing Systems) conference organized every year since 1983.

[Learn More ➔](#)

CHI ; human factors in computing systems .

A Thriving Community

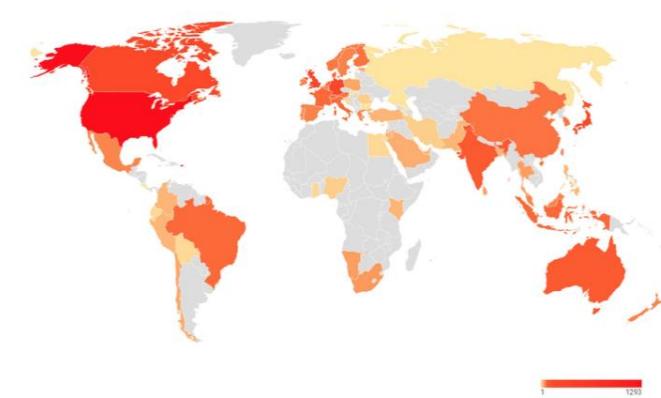
The SIGCHI community includes 9,000+ individuals who attend our events and 2,800+ paid members. Become a member, join us as a volunteer, and participate in year-round activities!

[Learn More ➔](#)

A Global and Local Presence

SIGCHI is committed to growing its global and local presence in coming years, through our chapters, regional committees, and various community support mechanisms.

[Learn More ➔](#)





Motivating Human Computer Interaction



Here, group of students from Washington University presents
their own, highly creative, answer to the question

How people interact with computer interfaces.

What is HCI?

https://www.youtube.com/watch?v=KtvwustmEDI&ab_channel=AlexLeone

Simple ; Accessible & Useful .



Problems and challenges in HCI

- Often not seen as problem before there is a solution
- If problems are identified, they are typically easy to understand by non-experts

Even non-experts
can also understand.

Once
of
solution;
the problem is
in lime light.

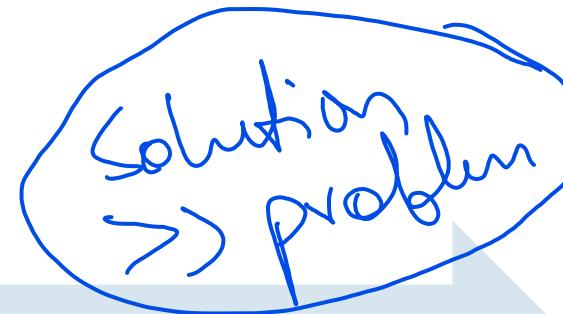
Once
solution;
problem forgotten



Solutions in HCI

- Once a solution is there, people will generally not remember that there was a problem
- Good and great solutions (if found) often appear obvious

Simple solutions;
"obvious" ones.



The step from problem to solution is, however, not trivial (but this is often forgotten, once there is a solution)

Menu for Fonts

Focus on Details

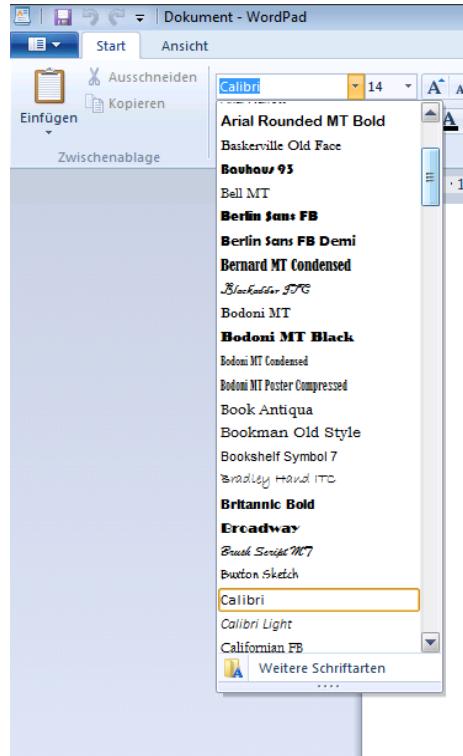


The image displays three screenshots of the "Theme Font & Size Changer" extension for Mozilla Firefox. The first screenshot shows the main configuration window with tabs for "Schrift" (Font), "Größe" (Size), "Stil" (Style), "Gewicht" (Weight), "Farbe" (Color), "Background Color", and "Context Menu". The second screenshot shows the "Font" selection dropdown expanded, listing various font names: Normal, David, Diavlo Black, Diavlo Bold, Diavlo Book (which is selected), Diavlo Light, Diavlo Medium, DokChampa, Dotum, DotumChe, Earwig Factory, Eccentric Std, Edwardian Script ITC, Eras Demi ITC, and Frac Light ITC. The third screenshot shows the "Size" selection dropdown expanded, listing sizes from 6 to 12, with "Standard" selected. The fourth screenshot shows the "Color" selection dropdown expanded, listing "#000000" and "Farbpicker öffnen" (Open color picker), with "#000000" selected.

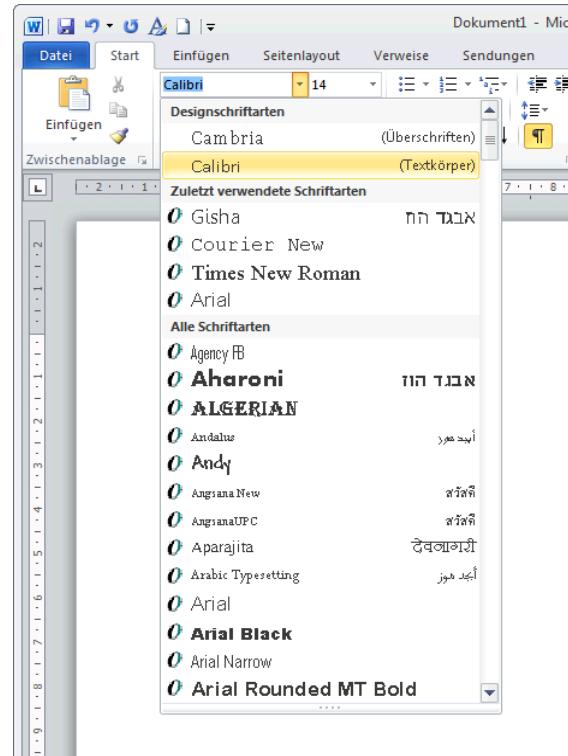
Source: <https://addons.mozilla.org/en-US/firefox/addon/theme-font-size-changer/>

Menu for Fonts

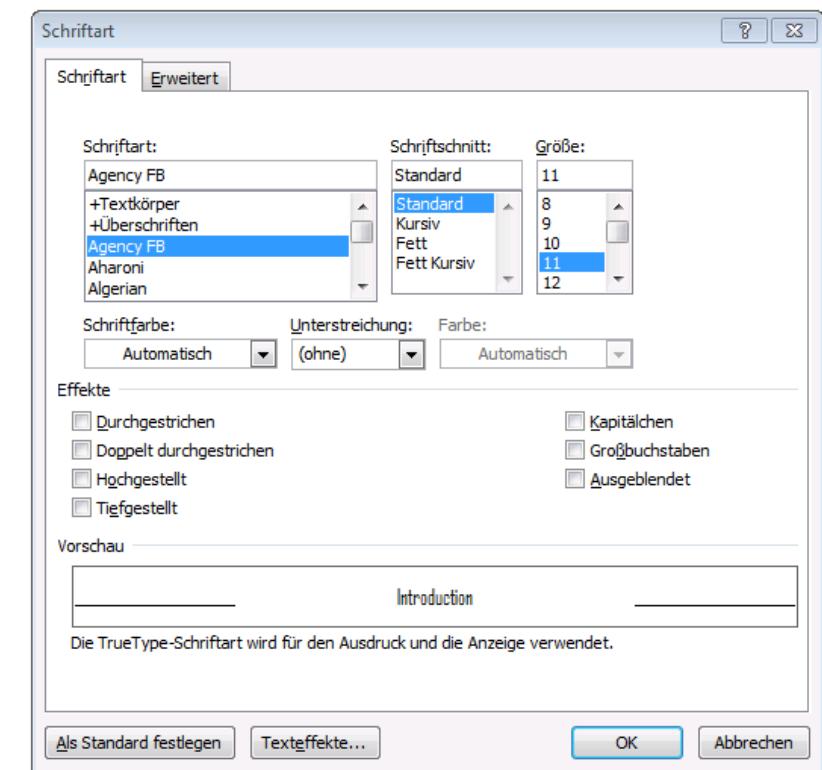
Focus on Details



WordPad/Win7



Microsoft Office
Professional Plus 2010



Microsoft Office Professional Plus 2010

Example

Amazon – HCI in Context



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The screenshot shows the German version of the Amazon website. At the top, the navigation bar includes the Amazon logo, a greeting 'Hallo', a delivery address selection button, a search bar, language settings (German), account access ('Konto und Listen'), returns and orders, and a shopping cart icon with 0 items.

The main banner features a large image of two Echo devices (one small, one large) and a Fire TV Stick displaying the Amazon Music interface. The text in the banner reads: 'Hör deine Lieblingsmusik' and '„Alexa, spiel Musik zum Tanzen.“'.

Below the banner are four promotional boxes:

- Oster Angebote: Bis zu 40% sparen**: Shows a stylized illustration of a shopping cart with coins.
- So siehst du die UEFA Champions League**: Shows the UEFA Champions League trophy.
- Wir haben eine Überraschung für dich**: Shows a colorful illustration of a shopping cart, a movie camera, a euro symbol, and musical notes.
- Zum Einkaufen bitte anmelden**: Includes a yellow 'Sichere Anmeldung' button.

Example

Amazon – HCI in Context



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The screenshot shows the top navigation bar of the Amazon.de website. It includes the Amazon logo, a search bar with a magnifying glass icon, and various links such as 'Hallo' (Hello), 'Lieferadresse wählen' (Select delivery address), 'Alle' (All), 'Warenrücksendungen und Bestellungen' (Returns and orders), and 'Einkaufswagen' (Shopping cart). Below the main navigation, there's a secondary menu with categories like 'Alle', 'Bestseller', 'Amazon Basics', etc., followed by a prominent call-to-action button 'Einkaufen finanzieren – Mehr erfahren' (Finance shopping – Learn more).



Benötigen Sie Hilfe beim Anschauen der UEFA Champions League auf Prime Video?

Besuchen Sie die [UEFA Champions League-Seite](#) auf Prime Video, um Antworten auf häufig gestellte Fragen zu erhalten. Sie können auch den Diskussions-Thread zur UEFA Champions League im [Amazon-Forum](#) einsehen.

Hallo. Wie können wir Ihnen helfen?

Einige Dinge, die Sie hier machen können



Meine Bestellungen

Pakete verfolgen
Bestellungen bearbeiten oder
stornieren



Rücksendungen und Erstattungen

Artikel zurücksenden
Rücksendeetiketten drucken



Support für Digital Services und Geräte

Hilfe & Support für Geräte finden
Geräteprobleme beheben

Exercise

How many computers do you have?



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Data Analytics

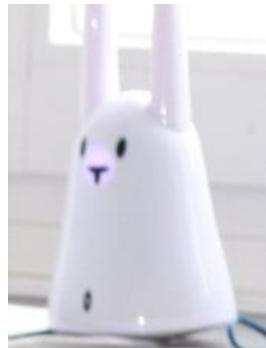
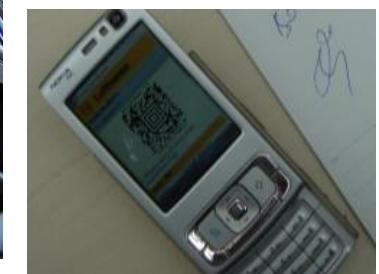
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How many computers do you have
at home?

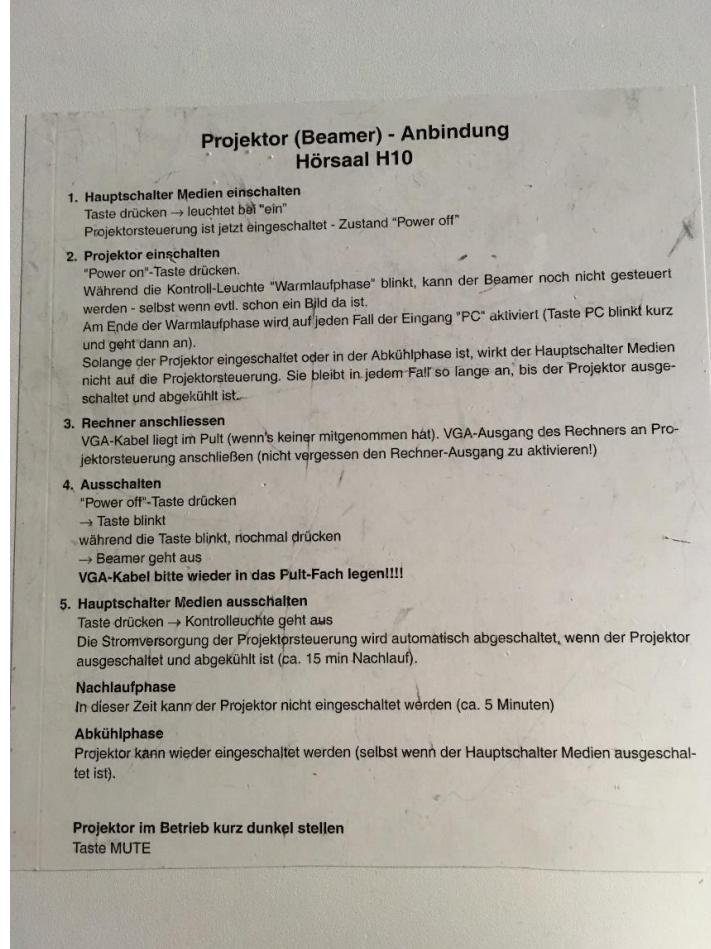
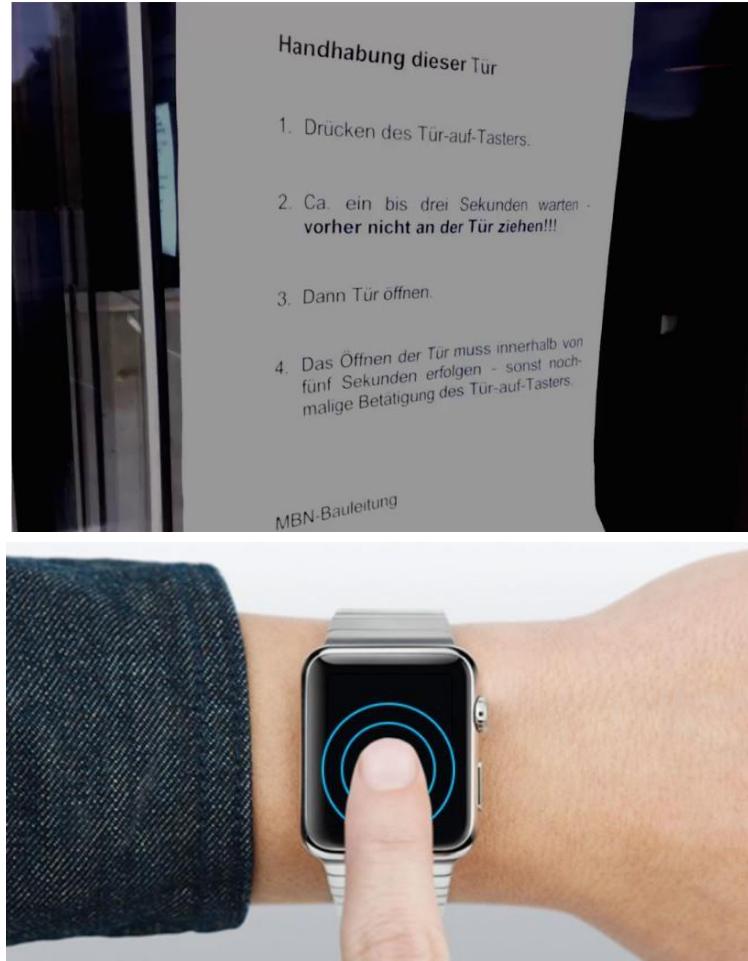
How many computers do you
normally carry with you in your
pockets?

What is a Computer?



Photos by D. Kern, A. Schmidt, 9to5Mac, BMW Models(<https://bmwcarusa.com/new-2022-bmw-x6-m50i/>)

User Interfaces?

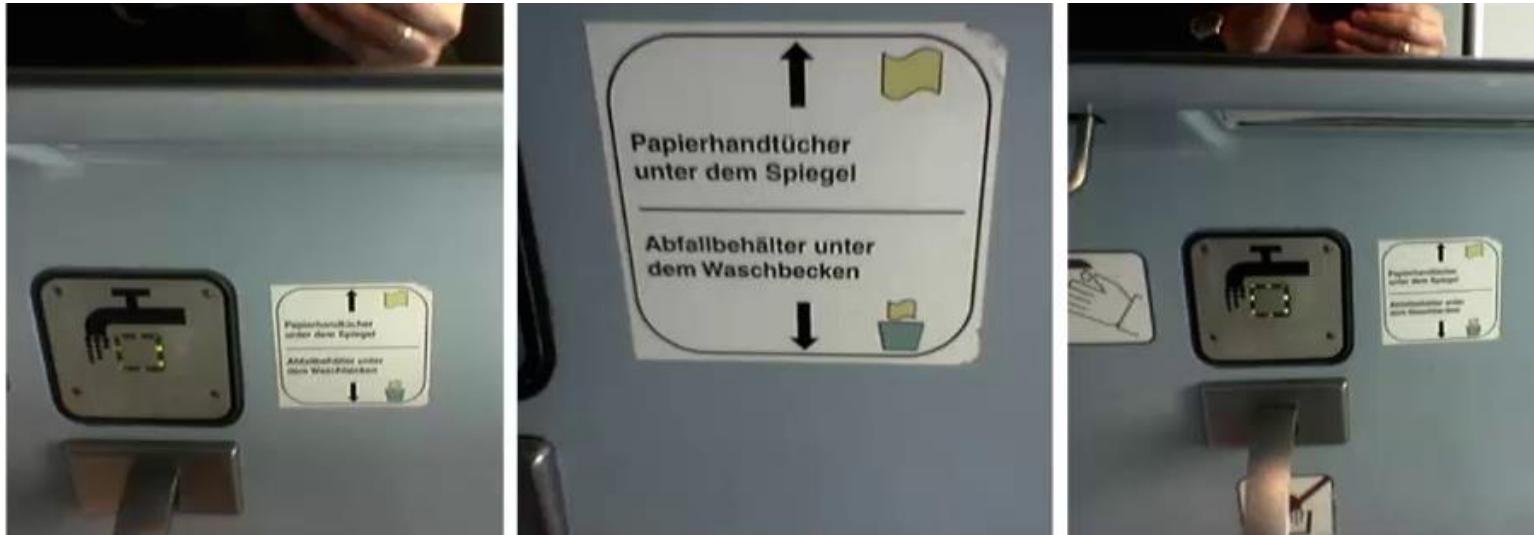


Photos by D. Kern und A. Schmidt

User Interfaces?



Should be obvious!



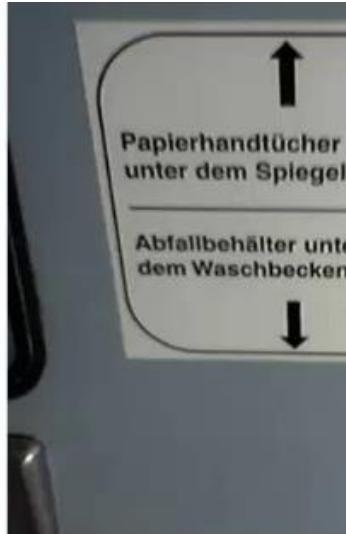
Remember: Signs and explanations for things that **should be obvious** are usually an indicator for a design problem

of
Design problem.

User Interfaces?



Easy to be able
say a good user interface.



A USER INTERFACE IS LIKE A JOKE.
IF YOU HAVE TO EXPLAIN IT

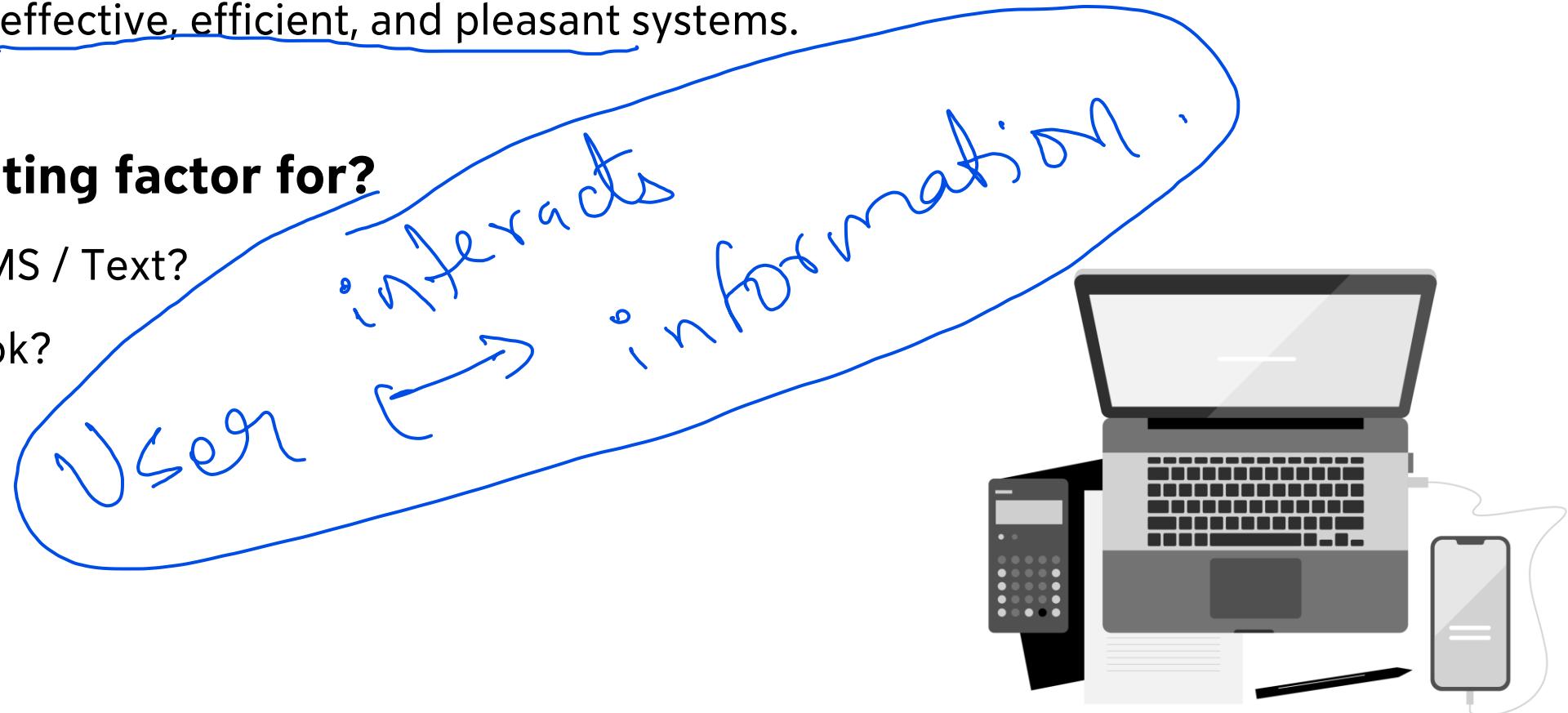
IT IS NOT THAT GOOD.



As technology advances the interface between the user and the information has become most critical for creating effective, efficient, and pleasant systems.

What is the limiting factor for?

- Writing an SMS / Text?
- Writing a book?



Exponential Growth of:

- Computation Power
- Memory

However:

Human abilities stay (more or less) the same!!

Therefore:

HCI is **THE** topic of the future

