

Agenda

- ➔ ■ Usability / User Experience
 - Human Factors
 - User-Centered / Usage-Centered Design
 - Interaction Design
 - Usability Test / Study
 - Multimodal Interfaces
 - Designing UIs of Mobile Devices
 - Human-Robot Interaction

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1

Usability / User Experience

- ➔ ■ Usability
 - User Experience

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Control Interface

- <http://www.controlinterface.com/home.html>



Heating

- How to switch to summer mode?



Heating (cont.)



5.5.2 Heizbetrieb ausschalten (Sommerbetrieb)

Vorlauftemp.	
Heizung aus	
Abbruch	Ok

1. Um im Sommer den Heizbetrieb auszuschalten, die Warmwasserbereitung aber weiterhin in Betrieb zu lassen, drücken Sie (II).
 - ◁ Im Display erscheint der Wert der Heizungsvorlauf-temperatur.
2. Stellen Sie die Heizungsvorlauf-temperatur mit auf **Heizung aus**.
3. Bestätigen Sie die Änderung mit (Ok).
 - ◁ Der Heizbetrieb ist ausgeschaltet. Im Display er-scheint das Symbol .

Garage Entry

- How to open the door for walking in?



Car Windows

- For driving out of the garage, entering the ticket into yet another machine is necessary.
- How to open the windows of the car?

Car Info Screen

- Stopping and entering Start/Stop Mode



Car Info Screen (cont.)

- How to do anything else, like placing a phone call?



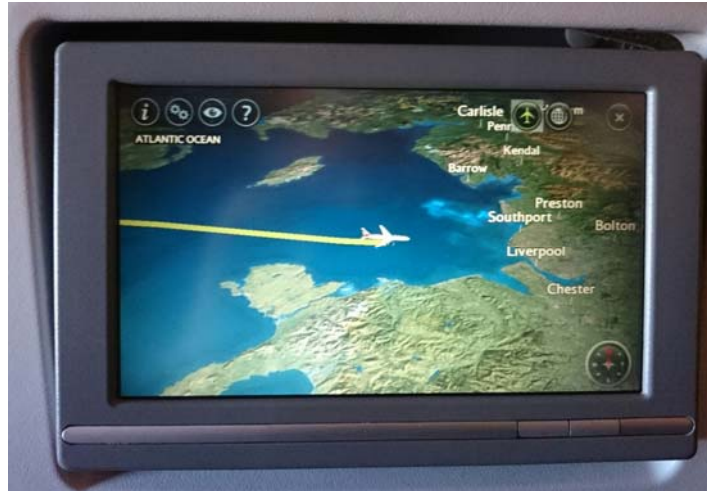
Car Key

- How to close (the doors of) the car?



In-flight Infotainment

- How to leave this beautiful and animated map?



In-flight Infotainment (cont.)

- There is an additional input device:



In-flight Infotainment (cont.)



- Up or down?



Coffee Machine



Bohnenbeh. füllen
Betriebsbereit

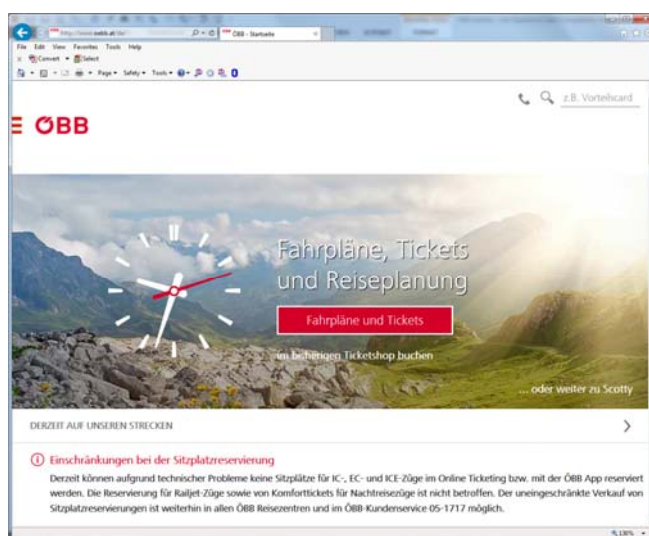
- How to get coffee again?
- Fill in beans, of course!
- And, **press for at least 6 seconds!**

Web-pages for eShopping

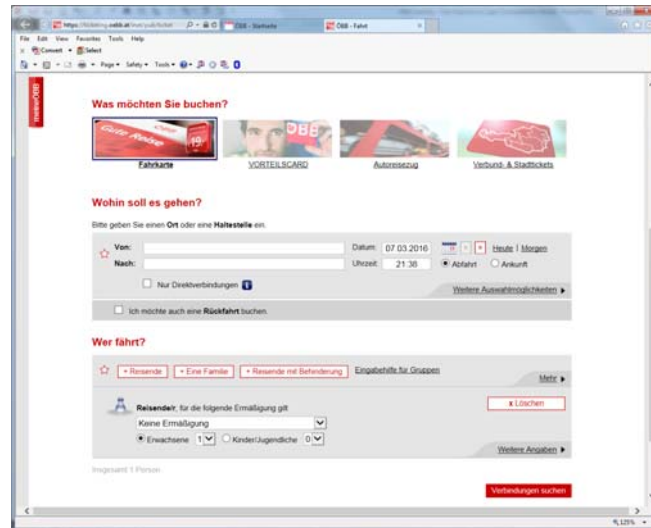
- Single predefined categorization of items and specific spelling makes finding them difficult.
- Search results include items out of stock.
- When going back to a list of search results, it is positioned at the top again.
- After having put an item into the cart, the search criteria are gone.
- Delivery restrictions only shown at check-out.
- Country-specific offers shown to everyone.

Web-page of ÖBB

- How to find your connection?
- How to compare prizes?
- How to get your prize reduction?
- How to buy your ticket?



"Old" Web-page of ÖBB



Definition of Usability

■ ISO 9241-11:1998(en)

"usability"

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."

■ James R. Lewis, Usability: Lessons Learned ... and Yet to Be Learned, *Intl. Journal of Human-Computer Interaction*, 30: 663–684, 2014

A more in-depth discussion

Usability Evaluation

- To find usability problems
- Techniques:
 - Usability Inspection:
Check-list
 - Questionnaire:
Subjective Feedback
 - Usability Test:
Actual use on a given task

Euro Coins



- How to find the ones needed?

Usability / User Experience

- Usability
- ➡ ■ User Experience

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21

Definition of User Experience

- ISO 9241-210:2010(en)
- **“user experience**
person's perceptions and responses resulting from the use and/or anticipated use of a product, system or service
Note 1 to entry: User experience includes all the users' emotions, beliefs, preferences, perceptions, physical and psychological responses, behaviours and accomplishments that occur before, during and after use.
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Definition of User Experience (cont.)

- ISO 9241-210:2010(en)



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Note 2 to entry: User experience is a consequence of brand image, presentation, functionality, system performance, interactive behaviour and assistive capabilities of the interactive system, the user's internal and physical state resulting from prior experiences, attitudes, skills and personality, and the context of use.

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Definition of User Experience (cont.)

- ISO 9241-210:2010(en)



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Note 3 to entry: Usability, when interpreted from the perspective of the users' personal goals, can include the kind of perceptual and emotional aspects typically associated with user experience. Usability criteria can be used to assess aspects of user experience.

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