User Interface Evaluation of the CP's Website

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INTERACTIVE COMPUTING SYSTEMS — MAP-I

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CP - Comboios de Portugal, EPE

- State-owned company

- National and international **rail services**

CP.pt
Homepage

Heuristic Evaluation

- 10 Usability Heuristics for User Interface Design (Nielsen, 1995a)

- Severity Ranking [0,4] (Nielsen, 1995b):
  ‣ 0 - not an usability problem
  ‣ …
  ‣ 4 - usability catastrophe

- 2 expert evaluators

I got this.

Usability Problems

- Found **15** usability problems

- From which **4** are major usability problems and it is very important to fix them (severity = 3)

1

The "**Timetable and Prices**" form is very similar with the form for buying tickets. Non expert users might not notice the **difference**.

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1. Misspelled Porto: Porta

net TICKET

IDA

Origem   Estações

Porta Nova

Destino   Estações

Data   2014-02-10

Hora ...

VOLTA

Data

Hora ...

OK

2. Hit backspace

IDA

Origem   Estações

Porta

Destino   Estações

3. Hit backspace again

IDA

Origem   Estações

Port

Destino   Estações

2

Auto complete in the "*Timetable and Prices*" and *netTicket* forms: Sometimes, when the user misspells a letter of the station name, the system completes with another station's name, and the user has to hit the backspace button **one more time** than usual

1. Find the green seat

Lugar Livre

Lugar Ocupado

Lugar Atribuído a si
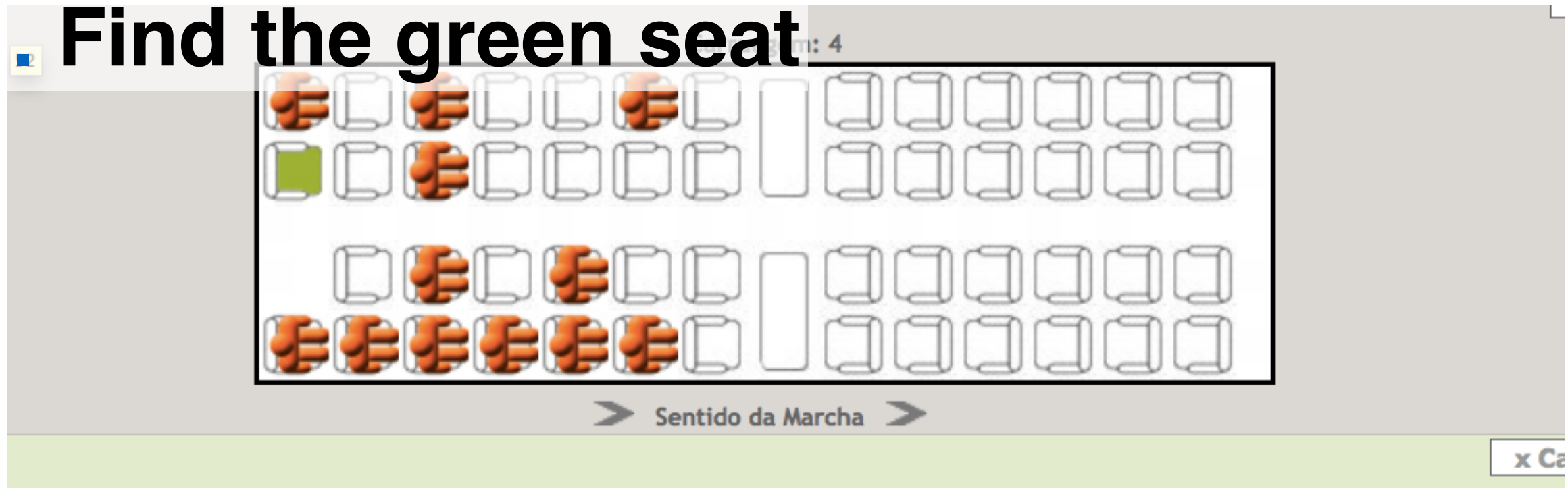
2. Click it

3. Click in an empty seat

3

The **seat selection** is made in a uncommon way. One has to first click on the previous seat and then on the desired seat.

Usability Test

Participants

- 2 users

- Ages between 21 and 26

- College students at University of Porto

Tasks

1. Select the English Version of the application

2. Find the schedule for a trip from Braga to Aveiro

3. Find a cheap trip from Braga to Aveiro

4. Buy a ticket from Braga to Porto

Observation

- Screen and audio recording

- Think-aloud (TA)

- Data Logging Form

- Quick post-task interviews

- System Usability Scale (SUS) questionnaire

- Post-test questionnaire

Usability Metrics

- Effectiveness
  - ‣ Completion rate
  - ‣ Unassisted completion rate
  - ‣ Number of assistances
  - ‣ Number of steps made differently
  - ‣ Back button hits
  - ‣ Errors
- Efficiency: Errors
  - ‣ Task time
  - ‣ Completion rate efficiency
- Satisfaction
  - ‣ SUS

Main Results

- Mean task duration: **2'35"**

- Mean number of steps made differently: **2**

- Mean back button hits: **2.5**

- Unassisted completion rate: **75%**

- Completion rate efficiency: **38%/min**

- SUS score: **60** (good)

Post-test Questionnaire

- The design of the site matches CP's image.

- Content is relevant and meets user needs.

- Not well-suited for first-time visitors.

- Navigating the website is not fun.

Observation and Interview Output

- The "Timetable and Prices" form is not easy to find, even experienced users

- Timetable results should have filters (price, service, etc.)

- Selecting a seat is an usability catastrophe

- The registration process is "noisy"

Conclusions

- **Heuristic Evaluation** is very efficient (resources, time).

- **Usability Test** would be more useful after fixing the issues found with the **Heuristic Evaluation**.

- Sample is **too small** for statistical analysis (at least 20).

- A sample with **2 users** was **enough** to find important usability problems.

- Think-aloud technique is very simple but it is not so easy to implement.

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Main References

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