

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 →



Usability Problems

- Found **15** usability problems
- From which **3** are major usability problems and it is very important to fix them (severity = 3)

net
TICKET

Horários
e Preços

Bilheteira Alfa e Intercidades

IDA

Origem Estações

Destino Estações

Data 2014-02-10

VOLTA

Data

Nº Passageiros 1

Classe: ☐ Conforto/1ª
☒ Turística/2ª

OK

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:



net
TICKET

Horários e Preços

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

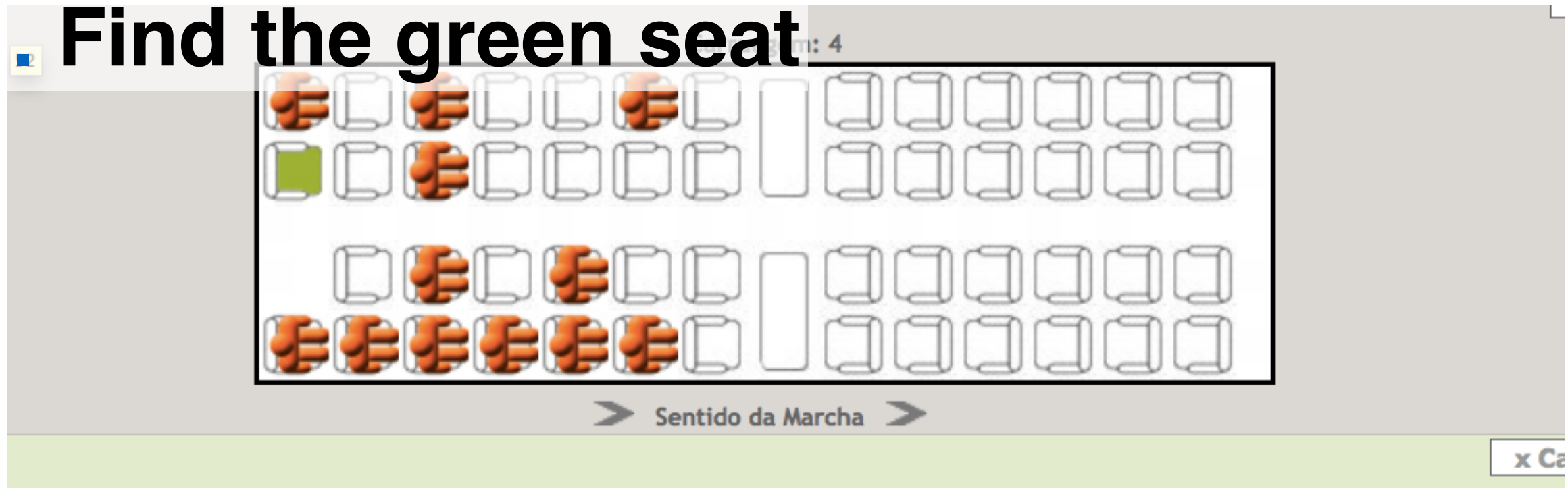
Port

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



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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