

Design of SmartMoving, an application for pedestrians with impaired mobility

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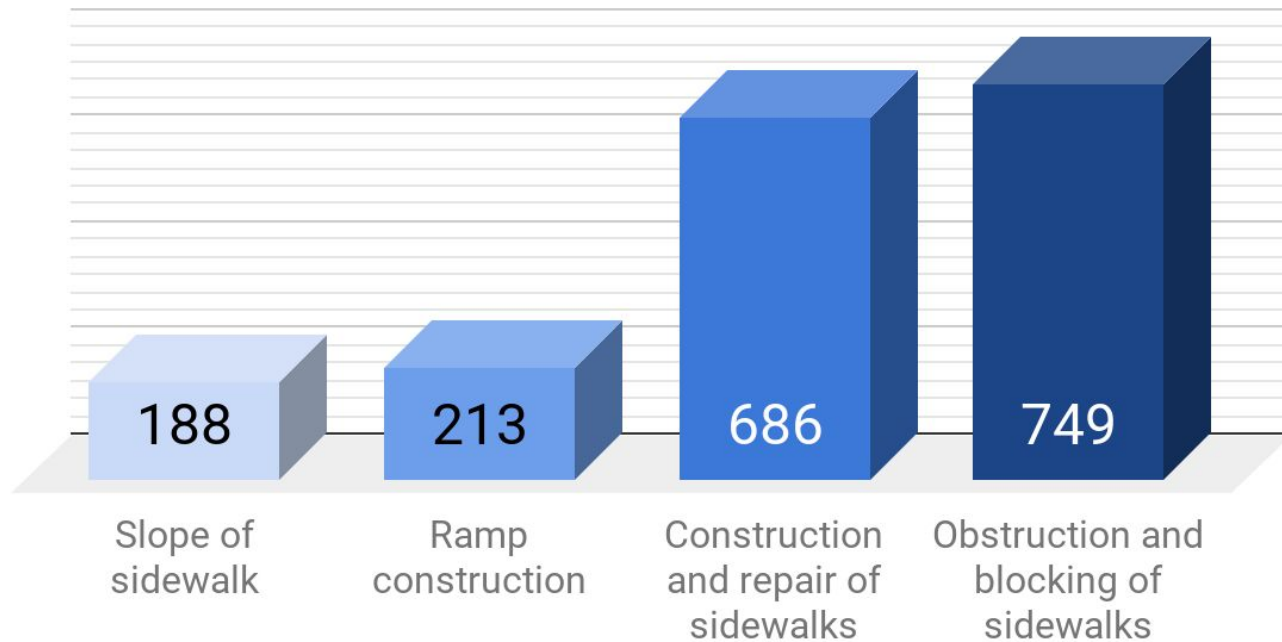
Motivation

- The state of the **sidewalks** is a **problem** that affects the citizens of Asuncion, particularly those with **reduced mobility**
- According to a **survey** conducted in Paraguay in 2017, **86%** of respondents have a **smartphone** with **Internet** access
- The **Municipality of Asuncion** does not have automated **mechanisms** to communicate the updated **status** of the **sidewalks**

Motivation

1.836 Complaints from the Municipality

Year 2018



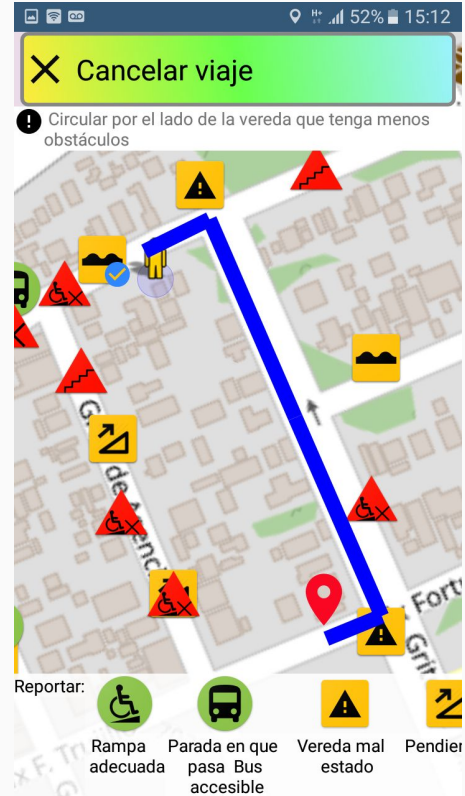
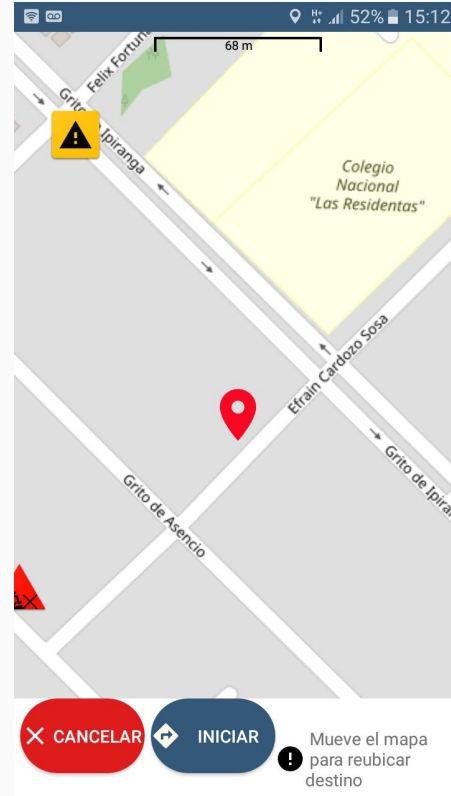
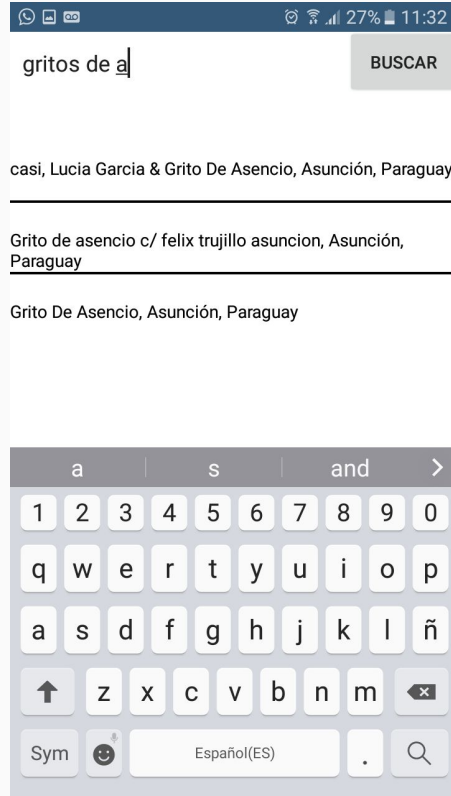
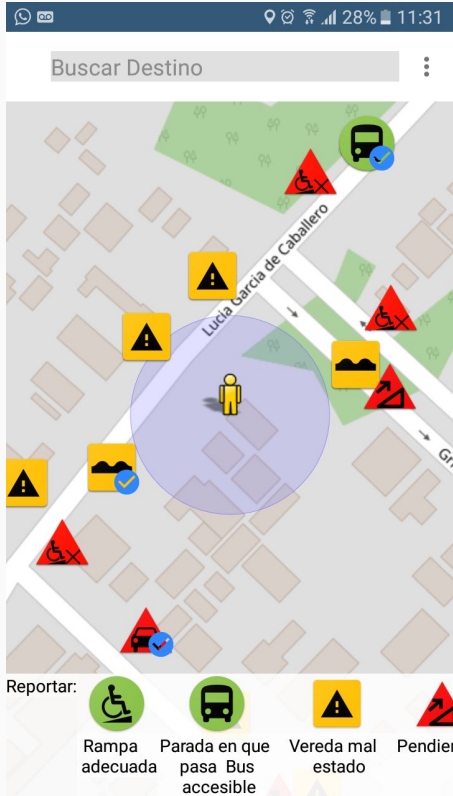
Motivation

Taking this situation into account, this work proposes a **mobile application** that

- Collects information about the **state of sidewalks** with the participation of **citizens**
- Makes the collected **information available** to citizens
- Recommends suitable **pedestrian paths**

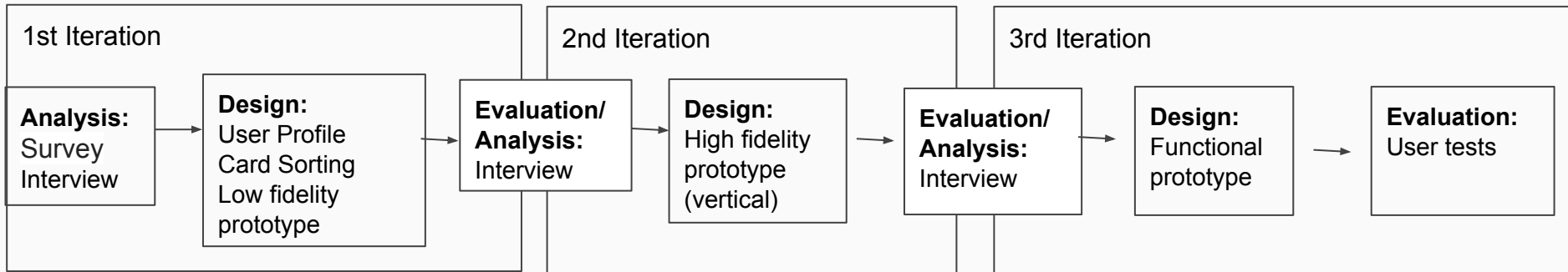
The development of the application has been carried out following a **User-Centered Design** (UCD) methodology

The SmartMoving application



SmartMoving: User-Centered Design

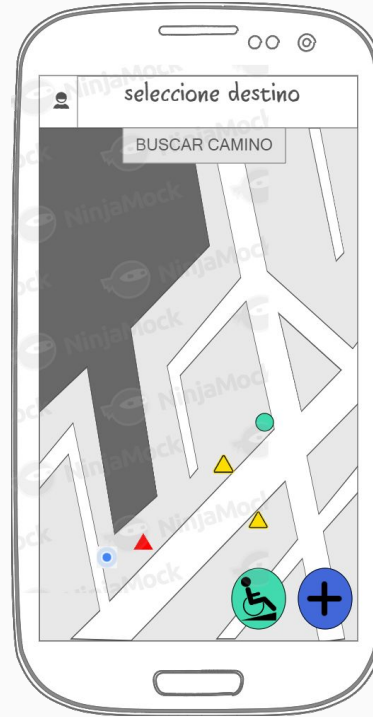
Process pipeline:



Summary of results

1st Iteration summary:

- Evaluation of the **low fidelity prototype**
- **3 Interviews**
 - **User profile:** person with reduced mobility who has a smartphone
- We conclude that the interface of the SmartMoving prototype needs to be improved to enhance intuitiveness

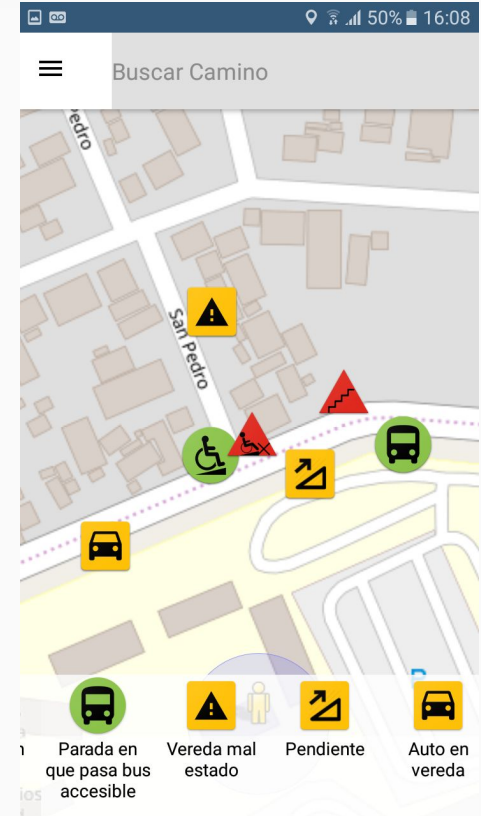


Summary of results

2nd Iteration summary:

- **5 problems** to solve
- **3 Interviews**
 - Same **user profile**
- Evaluation of the **high fidelity prototype**

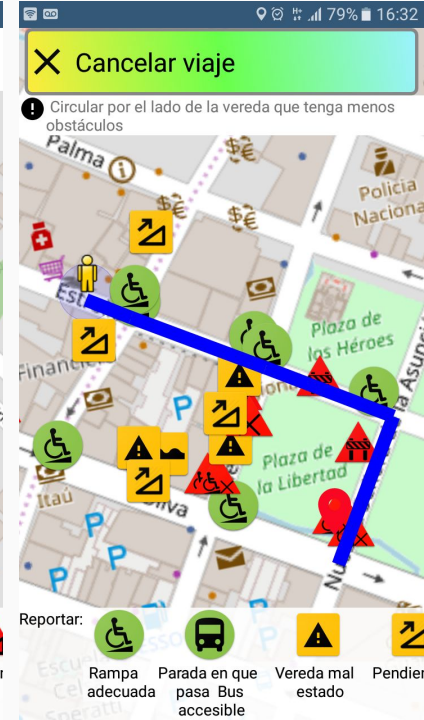
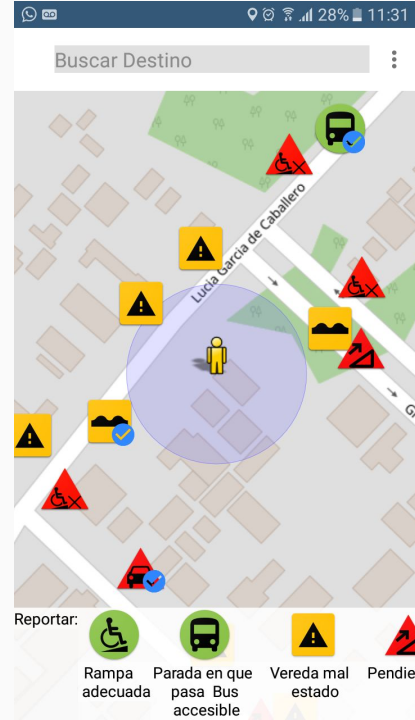
- We conclude that the high fidelity prototype is generally well understood by the interviewees, but some modifications are necessary



Summary of results

3rd Iteration summary:

- 4 **problems** to solve
 - Evaluation of the **functional prototype**
 - 3 **tests with users**
 - **Usability questionnaire**
-
- We conclude that a version of SmartMoving was developed that will be useful for the user profile that we defined in the first iteration



Conclusions

- The applied **UCD process** resulted in **streamlined** application design and implementation
- **Positive feedback** was collected from interviews, user tests and usability questionnaires
- SmartMoving could be a promising option for better solutions closer to people with special needs
- Will be the first app to generate data about the state of the sidewalks in Paraguay

Thank you very much!

¡Muchas Gracias!



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