NOVA NOVA SCHOOL OF SCIENCE & TECHNOLOGY

Interação Pessoa-Máquina

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Transit Pass Application

Stage 2: User and task analysis

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1. Problem

Public transportation users face a lot of problems daily due to the lack of a digital transit pass or the automatization of certain tasks like the charging of passes and access to transport information, for example. It's with the development of this transit pass mobile application that we intend to fix them.

2. Users

There is only a simple main user class – people who use public transportation. Because everyone can use public transportation there's not really a specific demographic for these users, as they can be of any age or gender. Because of this broad range of users that can have variant educational backgrounds, different experience with mobile devices and different attitudes when in contact with technology, we want to make the application as simple and as user friendly as possible, with such intuitive functionality that even an older person with minimal experience with technology could use it.

Even though anyone can use public transportation, one would argue that the three main types of passengers are students, workers, and the elderly. With that said, we decided to interview one person who belongs to each of the enumerated groups.
The interviews centered around how an application could improve the usage of public transportation and what tasks could be bettered with it.

Both the student and the worker agreed that an application that could replace the physical transit pass was a must in the times we are living, in which everything is becoming increasingly digital. The student expressed how much he would like for the transit pass to be on his phone as, unlike his wallet, he never forgets it home, and as such he would never again become stranded and arrive late to class. At the same time the worker expressed a more practical opinion, as the reason he'd like the transit pass to become digital is so that he won't have to go through the trouble of searching his wallet for the transit pass every time he goes in or out of the transport, or when the transport fiscal comes to check if he has a ticket, as most of the times he already has his phone out. On the other hand, the older person was reluctant about it, as he knows very little about technology and still uses an old "dumbphone" and, as such, he said he'd prefer for the transit pass to remain physical so he can continue to easily use public transportation. This opinion was to be expected as older folks tend to not be technologically literate, and often refuse to learn. He did however agree that for the younger folks it probably is a great idea since, in his words, "they are always glued to their phones". We then continued the interview with only the student and the worker, as the old man had already expressed his lack of interest. They both expressed great interest in all the functionalities, as we had planned to implement most of the day to day needs of someone who uses public transportation (Buying tickets, renewing the pass, charging zapping, checking the timetables, using the tickets/pass/zapping), but each of them had a request about a specific pain point for them as someone who uses public transportation. The student asked for a way to activate/renew their pass profile (sub23) as every year he has to wait in long lines to be able to do so. And the worker asked for a way to easily check the alerts and news that issued by the transport companies, so that he can always know when there is a strike or something is wrong with the trains for example, so that he can plan accordingly as not to arrive late at work.

3. Tasks

Goal	**Renew pass**
Pre-conditions	• Have an account • Be logged in • Have a valid method of payment • Have access to the internet
Sub-tasks	• Choose previous method of payment or add a new one • Pay the monthly fee
Exceptions	• Payment rejected • Error due to loss of connection to the internet
Characteristics	• Only used once a month, unavailable if monthly payment was made

Goal	**Buy tickets**
Pre-conditions	• Have an account • Be logged in • Have a valid method of payment • Have access to the internet
Sub-tasks	• Choose what kind of ticket to buy • Pick date and hour of trip if the ticket so requires it • Select previous method of payment or add a new one • Pay for the ticket
Exceptions	• Passenger limit exceeded • Payment rejected • Error due to loss of connection to the internet
Characteristics	• There is no limit to the number of tickets bought • Tickets can be bought at any time • Frequently used

Goal	**Access timetables**
Pre-conditions	• Have an account • Be logged in
Sub-tasks	• Select means of transportation to check
Exceptions	• Although rare, timetables can be outdated if there's no access to the internet
Characteristics	• Timetables can be accessed at any time • Frequently used

Goal	**Review travel history**
Pre-conditions	• Have an account • Be logged in
Sub-tasks	• If wanted, select timeframe
Exceptions	• There is no travel history
Characteristics	• Travel history can be accessed at any time • Used sometimes

Goal	**Choose path in map**
Pre-conditions	• Have an account • Be logged in • Be connected to the internet
Sub-tasks	• Choose an origin and a destination • Select departure or arrival time
Exceptions	• Not reachable through public transportation • Cannot create routes because of loss of connection to the internet • Impossible time for arrival
Characteristics	• Possible to use as long as there is internet connection • Frequently used

Goal	**Use pass, zapping or ticket**
Pre-conditions	• Have an account • Be logged in • Have a pass, zapping or bought ticket
Sub-tasks	• Select pass, zapping or ticket needed to board
Exceptions	• Zapping doesn't have enough credit • Pass was not renewed for the month • Not the required ticket
Characteristics	• Application's most used feature

Goal	**Renew pass profile (4_18, sub23 or social+)**
Pre-conditions	• Have an account • Be logged in • Have valid documents that prove eligibility for the profile • Have internet connection
Sub-tasks	• Select pass profile • Upload needed documents to application
Exceptions	• The documents are rejected • Documents don't go through because of loss of connection to the internet
Characteristics	• Less frequently used feature, only useful for when the user wants to change profile or their current one expires

Goal	**View transport alerts**
Pre-conditions	• Have an account • Be logged in
Sub-tasks	• N/A
Exceptions	• Not updated if there's no access to the internet
Characteristics	• Used mostly due to the tardiness of public transportation

4. Scenarios

Scenario 1 - Julie can't fail her class again

Having already failed this class 2 times before, Julie decided to study extra hours the night before the final exam. In retrospective, she realized that this wasn't a very smart decision considering the fact that the exam started at 9 a.m.

Waking up after she slept through her alarm she put on some pants, grabbed her bag and ran out of her home. Realizing that she had already missed her 8:30 a.m. train she opened her Navegante App to check if the next train would be there in time. She arrived at the station just as she checked in the Fertagus train timetable that the next train was the last one that would make her arrive on time. In the station, as she tried to use her pass QR Code, the access was denied and she realized that that day was the start of the new month and that her pass had expired. Listening to the arrival of the train, Julie realized she had no time to lose and immediately renewed her pass with the click of a few buttons, finally entering the platform and making a last run. This time Julie finally was able to pass her class.

Scenario 2 – Bree refuses to be late

Bree hates to be late so, when her means of transportation were tardy by 5 minutes, she decided to open her Navegante App to check if the cause of this tardiness was stated in the alerts tab. There, she found an alert stating that someone had parked on the metro line and caused some problems. Realizing that there would be an overlap between the two transports she had to take, she decided to use the path finding feature in the app – she selected the origin, destination and the arrival time she had planned on with her friends. Finding one possible path that fulfilled her demands, she decided to take it and, since it was necessary to buy an extra ticket, she used the app to charge her zapping with an extra 3 euros.

Scenario 3 – Mrs. Mayer swears she didn't kill her husband

After being missing for an entire month, it was no surprise when the police finally found Mr. Meyer's body. After the initial shock and mourning period, the police and the rest of the family started to suspect the wife, as one usually does. As she was called for questioning and asked for her alibi, she realized that, since she travelled alone, she had no one to corroborate her story. It was then that she remembered her guardian angel – the Navegante App, which keeps a record of all the trips a user takes. By selecting the estimated day of death on the app's travel history, it confirmed that she was in fact out of the city when the murder occurred. With that information, she was released as she was proven innocent. But was she?...