Busfinder, an infomobility app accessible to people with blindness or visual impairment

Presentation abstract

In this paper an important solution to improve the accessibility to public transport is presented. An app with important features that are especially useful for people with blindness or visual impairment was developed. In particular, the app peculiar features improve the accessibility to the service also for occasional customers with blindness or visual impairment, which may be using the public transport of the city of Cagliari for the first time. In the latter case tourists with blindness or visual impairment are ensured an unprecedented attention and safety while travelling around the city. These special features have been developed in an app, called BUS FINDER.

In fact, in 2012 CTM S.p.A., Cagliari's public transport company, launched an infomobility app for smartphones called Busfinder, where it is possible to buy tickets and to find the news on the service, the expected bus traffic in real time and a journey planner. To date the app has been downloaded more than 173,000 times and it is used daily by 68% of our passengers.

In September 2017 CTM S.p.A. issued a new release: Busfinder was made accessible to people with blindness, who are increasingly showing their need to move independently by using the public transport. The idea was developed in collaboration with the Unione italiana Ciechi (Italian Union of the Blind and Visually Impaired) to find a solution to a problem affecting people with blindness: they were unable to know which bus to get on so they were forced to ask the driver or other passengers waiting at the bus stop. Once on board, it was difficult to orient themselves and figure out which stop to get off at.

Given the opportunities offered nowadays by new technologies and the valuable help provided by smartphones with features specifically designed for people with blindness or visual impairment, Busfinder has been optimized for speech synthesis, by associating speaking labels to the graphic symbols used, by giving a textual meaning to colours and by removing unnecessary words that could create confusion.

For the first time in Italy, two important new features have been introduced, the "Book your Stop" feature and the "Trip Assistant" feature, which assist people with blindness from the pre-journey planning to their destination. In order to assess the effectiveness of our project, the beta version of the app was tested by a volunteer group of people with blindness and visual impairment.

In order to use these features it is necessary to activate the voice over for speech synthesis and geolocation from your smartphone settings. A short description is reported below.

Thanks to the "Book your Stop" feature, people with blindness can report their presence at the bus stop to the driver arriving on the desired bus line. In fact, if people with blindness are at a bus stop where several bus lines pass, they are unable to understand if the arriving bus is the desired one and they cannot inform the driver (by raising their arm) that they want to get on board. Thanks to the "Book your Stop" feature, people with blindness are automatically located through the gps, they can choose the desired line arriving at the bus stop and with a simple click they can send an automatically generated e-mail to the AVM (Automatic Vehicle Monitoring) control room, which will inform the driver of the presence of a passenger with blindness at the bus stop.

The second feature, called "Trip Assistant", has been specifically designed to provide passengers with blindness with a virtual assistant on board. The app automatically detects the starting point on the line route and allows passengers with blindness to choose their destination stop. Through speech synthesis

it is possible to get information about the next bus stop and to follow your route. A voice message eventually announces the arrival at the chosen destination. These features, which are a key element in improving the accessibility to information and to the service, will be further developed in the coming months, thanks to a close collaboration with end users.

Lead speaker : Roberto Murru

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> **Biography :** Born in Cagliari in 1965, Engineer and Designer, he works in the field of architecture, interior design, graphic design and also communication. Formerly Director of the European Institute of Design in Cagliari, from 2007 to 2014 he has been a board member of the ERSU, a kind of Regional University foundation in Cagliari. Since August 2014, he is the President of CTM spa, the company of local public transport in Cagliari. In 2017 he was appointed also as General Manager of CTM. He is a member of UITP Transport Economics Commission, UITP Design and Culture Platform and the board of Directors of ASSTRA.

2nd speaker :

> **Organisation** :

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