CASE STUDY: ASSISTIVE TECHNOLOGY

How 5000 people with visual impairment are navigating city traffic with Başarsoft's innovative Seeing Eye application

Client: Seeing Eye: Ongoing project sponsored by the Turkish Ministry of Transportation; 5000 users
Challenge: To design an easy-to-use application enabling people with visual impairment to navigate independently in the cities where they live
Solution: Başarsoft scalable navigation data and software tailored for people with visual impairment

GÖREN GÖZ

"Seeing Eye"

Executive Summary

In the last decade, navigation technology has become popular among vehicle drivers. Navigation solved many problems, such as finding addresses, the fastest or shortest routes to a location, or the nearest restaurant or gas station.
In 2010 in Turkey, the Ministry of Transportation opened a tender to provide navigation for people with visual impairment, with the navigation system including a GPS-enabled mobile phone, up-to-date routable pedestrian maps, and a software integrating the phone and maps to provide voice-guided, turn-by-turn navigation, as well as enabling the user to browse the internet, listen to the radio, and hear time and date.
With this system, known as Başarsoft's Seeing Eye, people with visual impairment can live happier, more active and more socially integrated lives.

Customer Profile

This application was developed and distributed as a pilot study including 5000 people who had complete visual impairment.

Study sites were Istanbul, Ankara, Izmir, and three other large cities in Turkey.

In the second phase, another 5000 units in Android OS were tendered, to cover 25 of the 81 provincial capital cities, providing an expected benefit to 25,000 people with visual impairment.

Business Challenge

Unlike many of Başarsoft's other projects, Seeing Eye is a solution that must be safely and reliably usable by individuals who have little or no technical training.
The challenges include the following:
• We can supply fresh maps, but we cannot account for every physical obstacle or hole in the street
• People with visual impairment need more detailed instructions than do pedestrians, for example if there are two possible ways to turn left, the correct one must be specified
• The device's functions must be specially tailored to people with visual impairment
• Should the traditional walking-cane be used in combination?
• How should traffic lights and crosswalks be included?
• Walking vs public transport (buses/ferries/subway, etc)
• Which is safer for people with visual impairment: the shortest routes or the commonly used routes?
• In designing the system, how can we better think like the actual users?

"Now people with visual impairment can freely wander in the city and return home safely."

Kenan Önalan
Advisor
Ministry of Family and Social Services

başarsoft

This is a social responsibility project in which the Ministry wants to enable people with visual impairment to overcome the obstacles of daily life. Students can go to the library more easily, and workers can be more independent in going to and from their workplace. All users can visit their friends in greater safety and self-confidence.

Solution

Başarsoft has been collecting street level navigation data since 2004. The Seeing Eye project needed more sensitive data collection for pedestrians, especially those with visual impairment.
All bridges, traffic lights, pedestrian crossings, tunnels, and non-pedestrian routes were collected and updated for the safer navigation of people with visual impairment.
Over 1.5 million restaurants, pharmacies, governmental offices and some 300 other categories of important points were collected from the field.
Public transportation stops and routes, and taxi stands, were collected to define efficient transportation.
A custom application was designed to provide for efficient use of the telephone, messaging, internet browser, clock, alarm, radio and email, and even the battery status can be vocally reported to the user.

Results and Achievements

Through Başarsoft's Seeing Eye application, people with visual impairment have gained freedom to travel, even in crowded cities with heavy traffic. Users can search for any address and can listen to the simulation of how to go there. Users can learn what is around their current location, and now they can even learn if there is another person with visual impairment nearby.

As the user is travelling, if the user is going in a wrong direction the device explains this vocally and guides the user in the correct direction.

If the user is passing by the saved location of a friend, relative or favorite place, the device vocally informs the user of this.

We have consulted many people with visual impairment as to the detailed routes which should be provided in the system. In the system's design we have included many options specially customized for users.

CASE STUDY

"Now I can even tell a person who has normal vision how to go to the nearest pharmacy."

"I did not know there was a restaurant next to my apartment - nobody told me before. I learned it from this system"

- Users with visual impairment

Technology Used

Başarsoft's Yolbil navigation engine as the foundation of the navigation system

Başarsoft navigation maps

Text-to-Speech SDKs which can read each word out loud for the user

başarsoft

For more information:

Ankara
Ehlibeyt Mh. Ceyhun Atıf Kansu Cd. No: 114
Bayraktar Center
A Blok Kat 12 No: 41 Balgat/Çankaya
Call +90.312.4737080,

visit: www.basarsoft.com.tr

İstanbul
Barbaros Mah. Kayacan Sk. No:15 34746
Ataşehir
Call ++902163247080

e-mail: basar@basarsoft.com.tr

Odtü / R&D
Gümüş Bloklar A Blok Zemin Kat No:4
ANKARA