



SAFE PASSAGE

ADA kiosks and tactile maps guide the disabled.

Joe Cioffi, M.Ed. is an advocate for the deaf-blind who has spent over thirty years as a teacher of independent travel.

He launched an innovative company called InTouch Graphics (*intouchgraphics.com*) over twenty-five years ago to create some of the first tactile-visual maps in line with inclusive and universal design principles. An orientation and mobility specialist, Cioffi established ClickAndGo Wayfinding Maps (*clickandgomaps.com*) in 2010 and is currently the CEO.

“My experience as a teacher and advocate in deaf-blindness coincided with a mainstream explosion of mapping technologies,” says Cioffi. “These technologies, however, were not freely accessible to blind and deaf-blind users.

“In some cases where devices were designed with a few accessible features, they were priced far beyond the economic reach of blind and deaf-blind individuals who needed them the most.”

There is a serious lack of appropriate wayfinding support for blind pedestrians in transit, higher ed, and urban environ-

ments. “Despite legislation that generally supports disability issues, specific wayfinding supports, as a rule, are lacking across all venues in the U.S.,” says Cioffi.

Armed with a mission, Cioffi’s concept for ClickAndGo was to develop a technology exclusively for deaf-blind users that would deliver accessible, high-quality route travel information at no cost.

No product existed that could provide step-by-step navigation support and walking directions for both indoor and outdoor environments. “We learned that we could expand this free service to blind users (hearing-blind),” he says. “Later we broadened this vision to include wayfinding supports for wheelchair travelers.

“Now we offer a service that can impact users of all abilities—delivering quality data to users on their own personal device—free of charge.”

Here’s how the technology works: ClickAndGo Navigation relays narrative walking directions and virtual tours using low-vision maps and real-time location support via Apple’s iBeacon technology and devices that pick up signals from the

ClickAndGo iPhone app. The iBeacons are placed at all relevant locations within venues (including entry and exit points) and provide landmark identification, hazard and construction announcements, and location-specific orientation support.

“The narrative data is actually the heart of our technology,” says Cioffi. “We’ve only recently begun offering low-vision maps and iBeacon support.

“Quite frankly, the service is only as good as the data we collect and compile. One might think of ClickAndGo as the visually impaired traveler’s alternative to Google pedestrian directions but highly specialized to meet their unique needs.”

The directions and descriptions in the app are customized to include important details necessary for a blind person





to navigate: signalization, travel distance, intersection geometry, acoustic cues, changes in slope and texture, location of important and highly visible landmarks, among other features.

“These narratives emphasize specific cues that a pedestrian who is blind or has low-vision relies upon and which are unavailable from any other wayfinding system. We now have our technology licensed in a variety of venues, including city parks, universities, government facilities, hotels, and transit environments,” says Cioffi.

A Washington D.C. Metro station piloted ClickAndGo navigation for their two-level facility at Gallery Place. Begun in late 2014, the company has just been awarded a phase two contract to deliver more robust wayfinding projects for seven additional D.C. stations beginning this fall. The first phase delivered solely narrative walking directions, but phase two will include iBeacons.

ClickAndGo’s kiosk solution is now being used at Columbia University’s

Teachers College, which in 2015, recognized that their newly installed wayfinding kiosks for students and visitors had one very important drawback: they were completely inaccessible to blind travelers.

“To resolve this, we developed a fully accessible “equivalent database” of pedestrian walking maps for blind users. We believe this represented the first project anywhere that delivered an equivalent accessible body of data for a previously inaccessible visual kiosk system,” says Cioffi.

With one-in-five people potentially in need of devices that provide assistance, why is there not more interest in developing a market? Cioffi’s experience has taught him that it’s all about profit.

“Since companies are by nature profit-driven, most have not been interested in creating solutions for a demographic that is not likely to pay directly for the technology,” he says, noting that 70 percent of the blind are either unemployed or underemployed and, for the deaf-blind, the numbers are significantly higher.

In addition, many companies act only out of fear. “The usual motivation involves a fear of being out of compliance and perhaps facing community protest or legal action—both of which are infrequent,” says Cioffi.

Cioffi has encouraged facilities and government-run locations to become accessible in the spirit of the Americans with Disabilities Act. With this introduction, Cioffi and his team follow up by offering their expertise in transforming their venues into accessible places, and most importantly, making the service free for users.

In essence, he’s shifting the cost to those who are responsible for the safety and well-being of their citizens, visitors, guests, and patients.

A new project for the city of New York is on the horizon that includes accessible wayfinding in three venues: a ferry terminal, city park, and pedestrian plaza. In these locations, disabled pedestrians will have access to virtual tours, intersection descriptions, points of interest, and

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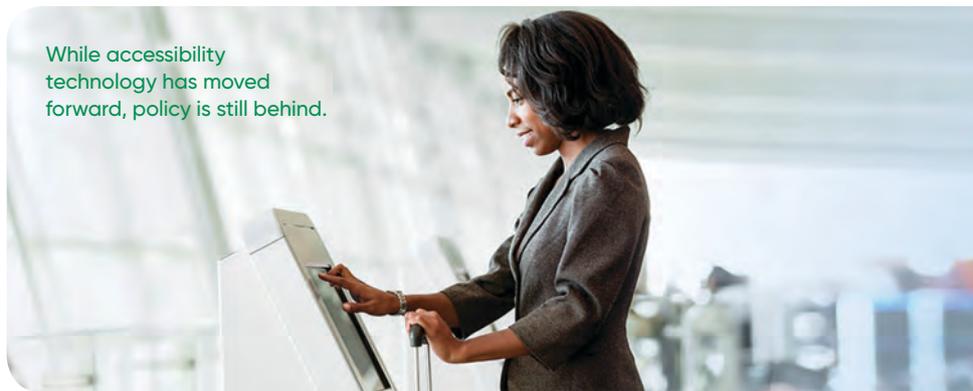


indoor and outdoor route/walking directions. There will also be low-vision route and tactile maps, and iBeacons will be installed to deliver real-time messaging.

To gather this data, ClickAndGo takes the information about the visual environment, reformats it for input into a narrative database, and then supports it with low-vision (high-contrast) maps and tactile maps. This is all complemented by a venue-wide installation of iBeacons that provide real-time messages to support orientation and navigation.

While the technology seems complex, it's easy for anyone to access and download. For the blind, the company has made a special effort to ensure the relevant data is accessible in a variety of formats. Once ClickAndGo is implemented within a venue, an unlimited number of users can access the data without the need for any special device.

“Our data is made available through every possible delivery mechanism, low-tech to high-tech, including interactive



While accessibility technology has moved forward, policy is still behind.

voice response technology via any telephone or cell phone, auditory output via any standard computer screen-reader, direct text or MP3 download from the Web, or via large print or Braille,” says Cioffi. “We deliver via iPhone App and soon will launch an Android App. In the case of a deaf-blind user, data can be accessed through any refreshable Braille device.”

Cioffi says universities and colleges are interested in these products since they are invested in providing accessibility to

blind students who need to navigate campus daily. Transit and other facilities also show interest, but they move slowly.

“As a society, I think we are increasingly respecting the needs of the disability community and understanding that we have an obligation to provide safe and reasonable access to public buildings, parks, public transit, etc.,” says Cioffi. “With emerging intelligent camera technology, artificial intelligence, and sensors of various kinds, better innovations are inevitable.” ■



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