

Boston's autism app



Left: Marie

Duggan has created a series of visual aids to communicate with her autistic 19-year-old son, Michael. Above: Michael and his sister Kate, 18, talk in the visual-aid-filled family home. (Essdras M Suarez/Globe Staff)

By [Lawrence Harmon](#)

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MICHAEL DUGGAN was overturning a table of trophies and jamming his hands into a celebratory cake at a sports banquet for disabled youths several years ago when he met Boston Mayor Thomas Menino. The two hit it off. Now, the 19-year-old Roslindale man and his family are teaming up with key players in Boston City Hall to improve the lives of people with autism, a disorder that robs people like Michael of normal linguistic and social abilities.

Boston, like other cities, is creating computer applications to improve the delivery of basic services, such as alerting public works about potholes. But the most dramatic technical breakthrough at City Hall might come in the field of human services — an iPhone application for people with autism. The app, which Menino aides are helping along, is cheaper, less socially ostracizing, and more effective than other so-called “alternative and augmentative communication” devices that rely on symbols, line drawings, and cartoon images.

This is what a city with real intellectual heft in the areas of medicine and technology can do. Technology transfer — the sharing of technical skills and knowledge among governmental

and private institutions— is normally seen as a federal responsibility. But cities can play a significant role, too.

Marie Duggan, Michael's mother, is the administration's guide into the world of autism, a disorder that affects about 1.5 million Americans. During neighborhood events, the Duggans drew close to Michael Kineavy, one of the mayor's top aides with a knack for helping the underdog. The relationship would lead to the creation in 2006 of a special program for low-functioning autistic students based at West Roxbury High School, sparing some parents the pain of sending their children to residential treatment and saving the city the cost of outside placements. A city-sponsored summit on autism would follow, leading Marie to Nigel Jacob, a member of Menino's two-man research and development team. Jacob, a PhD candidate at Tufts University, and Marie, a self-taught computer whiz and mother of six, spoke the same language when it came to smartphones.

Marie believes that an iPhone application could go a long way toward replacing the dozens of low- and high-tech communication devices that line her home. One wall of her kitchen is covered with hundreds of product logos attached by Velcro that Michael peels away for his shopping trips. There are visual cues for his chores (26 steps for doing laundry) and pictorial locators for his five siblings (sports practice, upstairs, etc.) The house is chockablock with timers, laminating devices, symbol-based activity sheets, visual schedules, and technical devices, including a tablet-style computer. Michael uses it to press symbols that activate the recorded voice of one of his siblings to form a grammatically-correct sentence. "I want to drink Sprite, please," he says on this occasion.

"If I see it then I understand it. That's Mike all the way," says Marie.

The array of communication devices is designed not only to help Michael communicate but spare his family the consequences of his frustration, which can take extreme forms. And given Michael's size — 6-foot-4, 296 pounds — the Duggan home is a happier place when Michael can express his needs.

Marie has become so successful at adapting communication devices for her son that she is in demand as a speaker at autism workshops and has formed her own nonprofit organization, Technology for Autism Now, Inc. But she lacked industry contacts. So City Hall's Jacob guided her through that world. And now her ideas for creating an iPhone application for autistic users are generating enthusiasm from the MIT Media Laboratory and FableVision, a Boston-based multimedia education publisher.

The consensus of the experts so far is that the iPhone, with its built-in camera, would work better than other alternative communication devices because it can create concrete images with real photos and videos instead of abstract and confusing symbols.

FableVision is looking to convert Marie Duggan's field research and early prototype into a marketable application. It's a niche product, and CEO Paul Reynolds expects that it may require investment by a foundation that is more interested in social dividends than quick returns.

The app will help Marie Duggan. She has a hard life. She's lucky if Michael sleeps a few hours at night. But she's glad to live in a city where the mayor walks up to the lady with the out-of-control kid and asks how he can help. And if he doesn't know the answer, he can go back to City Hall and find people who do.

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