

Groundbreaking Assistive Technology for blind people increases mobility and independence



- **Business Needs** - A way to remove barriers faced by blind and low-vision people
- **Network Solution** - Reliable wireless connectivity empowers blind people by delivering contextual information that helps them navigate their world
- **Business Value** - People with visual impairments can live with greater confidence and independence
- **Industry Focus** - Assistive technology
- **Size** - Startup

About Aira

Aira develops transformative remote assistive technology that connects blind and visually impaired people with a network of certified agents who can see their environment in near-real time. Aira's breakthrough platform blends wearable technology, dedicated connectivity, and human-assisted artificial intelligence to give blind and visually impaired clients information about their surroundings quickly and efficiently. AIRA agents serve as visual interpreters, helping blind people accomplish a wide range of daily tasks and activities.

The situation

Bandwidth is critical component of Aira's solution – its clients need to be able to connect with agents at any given moment, no matter where they are. But Wi-Fi coverage is far from universal, and some connections are unreliable. Aira needed a rock-solid way for clients to reach its agents whenever and wherever they need assistance.

Solution

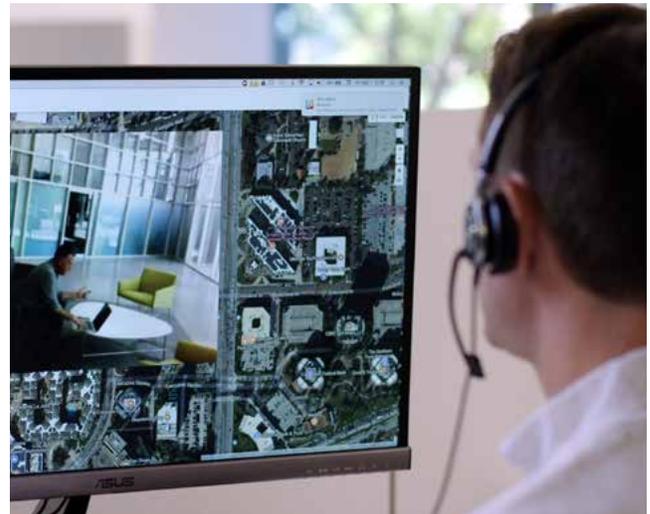
AT&T dedicated bandwidth links Aira users with agents who can help them live, work, and play with more confidence by giving them near real-time information about their environment. To ensure that agents can provide this important support in near-real time, Aira also chose AT&T Dynamic Traffic Management. This mobile data solution uses Quality of Service technology to prioritize Aira's data traffic on the AT&T 4G LTE network, helping to ensure that Aira clients have a predictable experience, even when there's a lot of network traffic.

On a mission to change the world

More than 10 million Americans and 285 million people worldwide are blind or visually impaired, according to the National Federation of the Blind and the World Health Organization. The pioneering technology company Aira was created to help remove barriers that visually impaired people experience, enabling them to live with greater independence. The idea for Aira came about when Suman Kanuganti and Yuja Chang, two of the company's co-founders, met Matt Brock, a blind communications professional. The three envisioned the possibilities that strategic use of technology could bring about to help visually impaired people.

The name "Aira" comes from the field of Artificial Intelligence (AI) and the ancient Egyptian symbol, the eye of RA, which connotes protection, healing and the power to perceive and interpret the universe.

Kanuganti, who is the company CEO, began planning Aira as part of the final project in his MBA graduate



program. "I chose this idea because I was excited about it and it was technologically very involved," he said. "I wrote a business plan that covered the research associated with the blindness, existing mechanisms on how blind people navigate their world on a day-to-day basis, and the technology that was out there." The project helped Kanuganti earn an MBA and launch a visionary new company.

"We are on a mission to positively impact the world," he said. "We believe the daily challenges faced by the blind and visually impaired community are not due to vision loss, but to lack of immediate access to information that the sighted community takes for granted." Aira's solution is engineered to solve this problem by using the Internet of Things, smart eyeglasses, wireless connectivity, and human-assisted artificial intelligence to provide contextual information when and where visually impaired people need it.

The technology works by enabling Aira clients to touch a button on their smart glasses and reach

a network of trained remote agents who access video, data, and sensor streams from the glasses. “This allows agents to truly immerse themselves in the user’s environment as they provide information, access, and assistance to the blind for virtually any activity at hand,” Kanuganti said. Aira agents assist with simple things such as reading and cooking at home, and with complex activities such as navigating busy streets and traveling. “We operate like a set of eyes, not like a brain,” he said.

The startup company, which officially launched in 2017, has attracted millions of dollars in funding from venture capitalists and strategic investors like the National Federation of the Blind. Aira was named the Consumer Technology Association (CTA)TM Foundation 2017 Eureka winner, an award given to companies with technologies that improve lives.

Connectivity is fundamental

Aira’s innovative platform required robust, reliable bandwidth to give clients information about their surroundings quickly and efficiently. “We knew as a matter of fact that connectivity was a fundamental technology that we needed to nail down to get this solution into the hands of millions of people who need it,” Kanuganti said. “It had to be reliable and consistent for the end user to always have an expected quality of service from Aira.”

To deal with the problem of inconsistent Wi-Fi availability, Aira sought advice from AT&T. Kanuganti and his colleagues met with AT&T innovators at the AT&T Foundry for Connected Health, which provides a collaborative environment in to develop valuable new products and services. “We wanted to create a

solution that would be so simple that people could press a button and within seconds have somebody saying, ‘How can I help you?’” he said.

Aira chose dedicated AT&T connectivity to link blind and visually impaired clients – Kanuganti calls them “explorers” because of the way they move confidently throughout the world – with certified agents who can help them accomplish a myriad of tasks by giving them information about their environment. And to make sure that agents can supply this important support in near-real time, Aira uses AT&T Dynamic Traffic Management, which prioritizes Aira’s data traffic on the AT&T 4G LTE network to give Aira clients the information they need when they need it.

“We started engaging the Dynamic Traffic Management piece and saw good improvements in terms of access to bandwidth,” Kanuganti said. “Blind people have a level of expectation that they can go out and not worry about getting lost because they have Aira. So as much as our explorers rely on Aira for helping them in any situation, anywhere in

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the world, they are indirectly relying on the quality of service that is provided by AT&T.” Blind people who use a guide dog or a white cane continue to use these assistive solutions with Aira, Kanuganti said. “Aira is augmenting their experience about interacting with the world.”

Helping people get up and go

Technology breakthroughs in 21st century have made life easier for people with disabilities. Voice assistants like Siri and Alexa can supply information and GPS technology can give blind people step by step directions to a shop, theater or any other venue they want to visit. However, technology has not been able to solve the “end of the journey” problem for blind people – once they reach their destination, there’s no way for them to know where the door is, and once they’re in a store, for instance, they have no way of locating the items they need.

Several companies have introduced services designed to help blind people identify objects, recognize faces, and get the value of currency, Kanuganti said, but there wasn’t an application to help them just get up and go. That’s where Aira differentiates itself from other solutions. “Many explorers have used Aira at airports to navigate all the way from arriving at a terminal, finding the gate, and getting on the plane to finding their bags and locating the people at the airport who are waiting for them,” he said. “An MBA student gets help tackling diagrams, getting information from the blackboard, and submitting coursework. It has enhanced his learning experience. He told us he doesn’t know how he would finish his degree without Aira.”

Another explorer recently worked with an Aira agent so she could visit her father’s grave at Arlington National Cemetery. “She was understandably very emotional because she had never gone to the cemetery before and she did it, on her own, independently,” he said. Another connected with Aira when he attended his father’s funeral. “He didn’t want to bother his family members during the service by asking what was happening at different times,” Kanuganti said. “His Aira agent was able to describe the service in detail, so he could experience the event more fully.”

One intrepid explorer made headlines last spring when he completed the Boston Marathon with the help of an Aira agent who supplied the visual information he needed during the run. For safety reasons, he also had a sighted guide running with him.

The majority of Aira explorers use the service to accomplish tasks that are part of their daily lives. One recently constructed a piece of furniture with the help of an agent who read and explained the pictorial directions to him. “He told the agent, ‘I absolutely could not have done that on my own, any other way,’” Kanuganti said. A new dad who is blind surprised his wife by installing baby locks on all their kitchen cabinets, and a young mother connects with Aira every night so she can read her daughter a bedtime story. Aira is with explorers every day as they navigate situations from the ordinary to the auspicious, creating moments of wonder, pride, sadness, and joy.

Compelling and meaningful change

In addition to enhancing simple interactions for people, Aira has become a game changer in promoting the independence, mobility, and productivity of blind and low-vision people, Kanuganti said, and it has the potential to bring positive change to other healthcare sectors. Aira was named “Best in the Show” at CES 2017 and at Mobile World Congress 2017. “Among incredible competition at these and other high-profile tech events, Aira consistently stands out as a novel concept tapping the potential within augmented reality to deliver compelling and meaningful user impact,” he said.

Aira’s assistive technology solution is the first product to come out of the AT&T Foundry for Connected Health, which helps to bring ideas from concept to commercialization faster than previously possible. “We found our roadmap,” Kanuganti said of Aira’s work with the AT&T Foundry. “Our

collaboration with AT&T continues to evolve and we are doing more and more projects with them.” For example, AT&T and Aira worked together recently in a Back to School program to provide Aira services at no cost to 100 visually impaired college freshmen.

The AT&T network will be even more important as Aira’s client list expands and as the company begins providing services internationally in countries such as Canada, Australia and the UK, to start. “I think this is just the beginning for this relationship,” Kanuganti said. Noting that there are other networking providers with which Aira might have worked, he said he chose AT&T because it recognized Aira’s potential. “It wasn’t a one and done deal – it’s a continuous engagement, a continuous relationship,” he said. “AT&T can work with us to build a robust solution not just now, and not just for the United States, but for the future and the entire planet.”

The company is already talking with AT&T about taking advantage of 5G, the next generation of broadband technology, to integrate more data into the Aira platform to enable technology such as smart cities and autonomous cars. “There is integration in each of these for Aira. It’s a matter of how much information we can augment onto our Aira platform.” As Kanuganti and his colleagues work with AT&T to deliver Aira solutions to people everywhere, he said, “I cannot emphasize enough on how much this collaboration means to our company. It’s a journey, and the journey is just beginning. The opportunities are endless.”

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