



Lean on me: IoT helps world's first smart cane make big strides

Business needs

- The reliable connectivity for a smart cane to help people with mobility or balance challenges stay active, safe, and independent longer and make the caring process more efficient.

Networking solution

- AT&T Global SIMs deliver worldwide, end-to-end connectivity, and the AT&T Control Center SIM management platform enables the company to deploy and manage its innovative devices.

Business value

- Enabling technology for revolutionary, category-defining, smart-assisted devices and their mobility care platform.

Industry focus

- AI-powered assistive technology and an AI-powered care platform

Size

- Startup

About CAN Mobilities

With a mission to advance human mobility, CAN Mobilities empowers independent living for seniors and others with physical challenges. It does this through innovation that sits at the intersection of devices, software, and artificial intelligence. CAN Mobilities' flagship product, the CAN Go™, is the world's first smart cane that unlocks mobility and care solutions at home and on the go. It combines advanced sensors, communication technology, and data-driven insights delivered via the CAN web portal—along with text-based report—to empower people with mobility challenges. These are people who now have a powerful new tool to stay active, safe, and always connected. What's more, the accompanying care portal helps caregivers and support group contacts stay connected, receive alerts, and coordinate care during emergencies, and keep an eye on their loved ones while having the peace of mind they will be alerted in case of a fall.

The situation

Reliable connectivity was key for CAN Mobilities' inaugural product, the CAN Go™ smart cane. However, early tests with telecommunications providers revealed dependability problems with the connectivity. CAN Mobilities needed highly reliable and secure connectivity to power its potentially life-changing solution.

Solution

AT&T Global SIM delivers worldwide, end-to-end connectivity to help support CAN Go™ technology, and the AT&T Control Center SIM management platform enables CAN Mobilities to deploy and manage its innovative devices with advanced diagnostic tools and smart process automation.

Support for seniors' independence. Ahmad AlGhazi was inspired to build a smart cane after taking care of his grandmother and witnessing her struggle to walk and maintain her independence. As an engineer, he thought about embedding technology in her mobility aid to empower her to stay independent while providing the family peace of mind.

He built a robotic device that could help his grandmother stand, sit, and walk, and won the reality TV show Stars of Science. "I discovered that I could merge engineering, design, and art to build way more impactful products," AlGhazi said. "And that's how I ended up moving to the Bay area and doing my master's in engineering management and software engineering in a program called Stanford Ignite at Stanford Graduate School of Business."

AlGhazi says his entrepreneurial journey really began at Stanford. "I was there to learn to commercialize the concept and address mobility challenges that hinder the independence of many seniors." He understood that an aging population and declining birth rates have created a shortage of caregivers. "Technology could solve that problem by helping people be independent longer, and making the caregiving process more efficient for those that need it," he said.

Bringing the cane into the 21st century. As people age, they sometimes need a cane, which often progresses to a walker or a wheelchair. "Their care needs expand exponentially as they move from a cane to a walker and from a walker to a wheelchair," AlGhazi said. "We saw that the market has not been very innovative; the cane has been almost the same since the caveman, and the biggest innovation for walkers has been the attachment of tennis balls to the bottom of it."

AlGhazi recognized there was room to innovate. "Everything today has been advanced except these devices," he said. He set out to bring the cane into the 21st century by identifying people who could benefit from a smarter device: older people with balance issues, people with chronic conditions related to mobility such as Parkinson's, MS, or osteoarthritis, and people recovering from procedures such as a knee or hip replacement.

"AT&T Business has a lot of loyal customers who rely on its innovation. It has great success stories with a lot of very successful companies, helping them bring cutting-edge technologies to market. That is definitely something that we respect and look for in our vendors."

Ahmad AlGhazi,
Founder and CEO, CAN Mobilities

"We wanted to embed technology into that simple tool to track different biomarkers that correlate to risk of falling or chronic condition management or recovery, and pack it with two-way voice calling and other safety features," he said. The tool had to be sophisticated but also easy to use.

A revolutionary mobility aid. AlGhazi and his team came up with CAN Go™, an artificial intelligence-powered smart cane that has a built-in phone for emergency calling, high-quality speakers, an embedded microphone, and reliable LTE technology.

The CAN Go™ enables users to make calls and talk directly from their canes. No other phone is required. Even if the CAN Go users have a phone with them, it's often challenging to juggle both the phone and the mobility aid device at the same time. What's more, users can hit a single button to call a designated family member, friend, or caregiver for assistance.

Other features include a bright flashlight that illuminates the path ahead and GPS tracking. GPS location mapping helps people pinpoint their location, enabling family or caregivers to find them quickly and easily if an emergency occurs. "There's a GPS coordinate that shows the user's location in case he or she is unable to speak or

has become lost,” AlGhazi said. “GPS tracking can also help users find the cane if they ever misplace it.”

People who use CAN Go™ like the modern, ergonomic design, which features comfortable hand grips, adjustable height, and durable construction. The cane charges with a convenient wall-mount magnetic charger. There’s also an included travel charger for on-the-go charging.

The cane encourages users to become more active by letting them set activity goals and track progress throughout the day, which they can view by minutes, steps, or miles. They can receive health reports daily, weekly, or monthly, based on metrics such as activity level, and share them with family and caregivers. There is also a rewards program that incentivizes a safe, healthy, and active lifestyle. It provides users with various rewards upon achieving certain milestones.

The best global coverage of any U.S. wireless provider¹. As happens with launching most inventions, the CAN Mobilities team experienced challenges. Early connectivity was problematic. “We tested in different senior homes, and the reliability wasn’t there,” AlGhazi said. “We needed to select the best telecommunications

company.” After rigorous research, CAN Mobilities selected AT&T, which offers the best global coverage of any U.S. wireless provider¹ and is America’s Most Reliable Wireless Network.² “AT&T delivers,” AlGhazi said.

AT&T Global SIM can automatically and remotely connect CAN Go technology, providing worldwide, end-to-end connectivity. The AT&T Control Center, a world-class IoT service management platform, gives CAN Mobilities the ability to deploy and manage its IoT devices with advanced diagnostic tools and smart process automation.

“The AT&T Control Center is straightforward,” AlGhazi said. “My colleagues say it is easy and simple. If they need anything, the AT&T Business support team is there. They get answers very quickly.”

AT&T Business’s high standards convinced AlGhazi to choose AT&T Global SIM to connect his smart canes. “The core of our relationship is connecting people to their loved ones,” he said. “Reliable, secure, connectivity is key to that. AT&T Business has a lot of loyal customers who rely on its innovation. It has great success stories with a lot of very successful companies, helping them



¹ Based on destination coverage in select countries: <https://www.att.com/ecms/dam/att/consumer/upperfunnel/2018/pdf/International-Travel-Guide.pdf>

² AT&T awarded Most Reliable Network by GWS OneScore 2022. GWS conducts paid drive tests for AT&T and uses the data in its analysis of wireless networks.

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bring cutting-edge technologies to market. That is definitely something that we respect and look for in our vendors.”

Helping people remain independent. AlGhazi said the security embedded into the AT&T wireless network is also very important to CAN Mobilities. “We take data and privacy and security very seriously,” he said. “Our users need to own the full control of their data and how they share it.” CAN Mobilities encrypts user data and stores it securely in the cloud. “Having AT&T Business enabling our network makes a huge difference.

CAN Mobilities staff are also impressed with the AT&T Business representatives that work with them. “We have a great team, and we’ve built a very strong relationship with them,” AlGhazi said. “They understood our vision of how to take these devices and create a new category products that will make a huge impact. They have done amazing work to help us bring our relationship to fruition and launch our product with AT&T Business.”

The team from AT&T Business was especially helpful in guiding CAN Mobilities through the certification process. “They were our advocates and heroes at AT&T whenever we needed any technical assessment or help,” AlGhazi said. “They definitely brought a lot of the top talent from AT&T Business to help us navigate.”

Preserving independence. AlGhazi is pleased with the launch of his company and the help it provides to people who need his smart cane. “CAN Go™ is the first and only smart walking cane on the market. Our goal is to help as many people as possible with our technology, and our mission is to help people stay independent longer and make caregiving more efficient.”

He has enjoyed speaking with customers who benefit from his smart cane. Hearing stories from satisfied CAN Go™ users motivates AlGhazi to continue to advance his product. “Thanks to the over-the-air updates, we can continuously add new features and improve the product without the user having to go to a store or do anything,” he said. “We are working on a new set of algorithms and will launch new and different products to add new solutions and experiences for our users,” AlGhazi says. “We’ll just keep getting better over time with AT&T Business.”