Customer Stories:
Biotricity

AT&T Business

The heart of the matter: medical wearable tech needs stellar IoT

- **Business needs** - Fast and reliable connectivity to enable remote biometric monitoring for cardiac patients.
- **Networking solution** - AT&T Global SIMs support rapid, secure transmission of patient data.
- **Business value** - Quick diagnosis and swift intervention
- **Industry focus** - Medical diagnostic and consumer healthcare technology
- **Size** - Tracking more than 200 billion heartbeats a year

About Biotricity

Biotricity develops comprehensive remote health monitoring solutions for the medical and consumer markets. The company has transformed the healthcare market by bridging the gap in remote monitoring and chronic care management. Doctors and patients trust Biotricity's unparalleled standard for preventive and personal care, including diagnostic and post-diagnostic solutions for chronic conditions.

The situation

Patients using Biotricity's innovative medical devices are monitored in real time by certified cardiac technicians. The company's precise cardiac monitoring and recording requires speedy, abundant, rock-solid connectivity.

Solution

AT&T Global SIMs provide worldwide, end-to-end connectivity to support the innovative wearable Biotricity devices. The AT&T Control Center enables Biotricity to quickly deploy and control its devices to dynamically adapt to changing circumstances.

A mission to combat heart disease

Cardiovascular disease is the leading global cause of death. Waqaas Al-Siddiq, Ph.D. set out to create a cardiac monitoring device that would deliver better patient data to physicians to ultimately improve patient care.

Al-Siddiq is a serial entrepreneur with advanced degrees in computer engineering, economics, and business administration. "I just didn't think patient medical devices were accurate enough, and the medical device companies were very dated and siloed," he said. He saw innovations in diabetes management solutions but no significant progress in combatting heart disease. "It's the number-one issue in every country in the world and nobody was really looking at it."

He recognized the need for clinical-grade monitoring and founded Biotricity to deliver innovative biometric solutions to the medical and consumer markets. Existing devices were passive, requiring patients to regularly present the devices to physicians. It often took two weeks or more before the data from the devices became available to physicians.

Al-Siddiq knew that active monitoring could provide accurate data more quickly and save lives. He and his team created Bioflux®, a high-precision mobile cardiac telemetry device that monitors and transmits cardiac information in real time. Patients no longer take a device to their physician and wait for a report. When Bioflux detects an anomaly, it transmits the information to a medical call center that's staffed by cardiac technicians who review the patient data and provide emergency response when necessary.

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>
> **Waqaas Al-Siddiq, Ph.D.**
> Founder and CEO,
> Biotricity, Inc.

Life-saving technology

In the three years since the company introduced Bioflux, Al-Siddiq said it has helped to save thousands of lives. "I think the last time we did the statistics we found that 26,000 people are alive today because of our device."

Cardiac events often occur while people are sleeping. "Many people are alive today because our device went off while they were sleeping and alerted a nurse, who called and got that patient into the hospital," Al-Siddiq said.

Less dramatic but equally important are potential problems that Bioflux has prevented. "There are many people who we have diagnosed early, before they had a heart attack or stroke," Al-Siddiq said. "We caught the issue and alerted them. There's no damage to the heart muscle because we were able to see the issue before anything happened."

A new model of cardiac care

Biotricity has not only disrupted the cardiac device market, it has also made it easier for physicians and patients to get its revolutionary devices. In the past, patients who needed a cardiac device had to deal with a device manufacturer. “Sending the patient to a provider that is not the cardiologist can result in insurance issues and denials, and it becomes a big mess for the patient,” Al-Siddiq said.

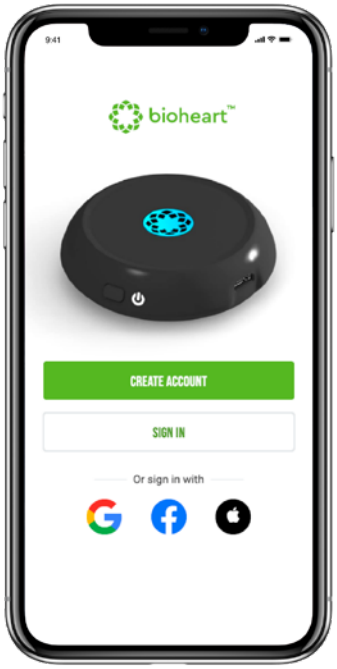
Biotricity provides its devices directly to cardiologists, who can choose to prescribe them for their patients. “When you deliver technology to the doctor, the doctor’s really in control,” Al-Siddiq said. This distribution model has minimized problems. “So not only are we enabling and democratizing the process, but the way we decided to commercialize has actually made it much easier for the patient from an administrative and financial perspective.”

The model has resulted in fewer problems for patients. “These are just ancillary benefits, which we weren’t even really aware of until we heard about it from our doctors and their patients,” Al-Siddiq said.

The company works with 2,200 physicians across 31 states, who serve about 4 million patients. Biotricity hopes to increase access to cardiologists for people in areas with limited access to cardiac care. “We’re going to continue to make the technology available to as many doctors as possible,” Al-Siddiq said.

A suite of monitoring solutions

Biotricity has worked to add new monitoring solutions. Its Biotres™ device is a wireless, wearable Holter patch designed for cardiac patients with an active lifestyle. The small device has no lead wires and is worn beneath a patient’s clothing, making it easy to wear. Its extended battery life allows up to 30 days of use with charging.



“We’re very excited about that in terms of patient comfort,” Al-Siddiq said. “The easier it is for patients to wear something, the better they will comply and the easier it will be for us to collect data and deliver a diagnosis.”

The company has also introduced a device for people who don’t have a diagnosis but want more information than fitness trackers provide. Its Bioheart™ wearable is a continuous heart rhythm monitor that uses advanced technology that was previously only available with a prescription. “We’ve taken our clinical high-end, high-risk patient diagnostic technology, simplified it, and made it available to the consumer,” he said.

Time Magazine recently recognized the value of Bioheart by naming it one of the world’s 100 top innovations of the year. The one-of-a-kind heart rhythm monitor delivers personalized insights to help users monitor their heart health. “Being recognized by Time is an honor,” Al-Siddiq said. “Over the years, I have seen some of the best brands and technologies represented in the Time list. To now be a part of that is very special.”

In search of the best connectivity

As the Biotricity team prepared to launch its first devices, it considered the best way to deliver patient data to its cardiac technicians. Spencer LaDow, Biotricity Vice President, Engineering, cast a wide net as he sought to ensure the best solutions. "Everything comes down to usability, and a lot of that involves connectivity and power usage," he said.

The company hoped to enable patients to wear the devices longer before they had to charge them, so it needed a connectivity provider with a nationwide footprint. "We have a lot of rural patients, so having the best connectivity around the entire country was very important," LaDow said. He was also interested in finding a modem small enough to fit in the compact Biotricity devices.

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> Vice President, Engineering,
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Al-Siddiq said the AT&T national coverage was an important selling point. "We never had to consider which state to go into because of coverage issues," LaDow said, "so that has really enabled us to go wherever we can find talent and human resources, which is great. That's a big benefit for us."

The company's needs were complicated by Biotricity's business model, he added. While most organizations download much more data than they upload, Biotricity downloads only kilobytes of data, but uploads gigabytes of patient data to the cloud. "It's completely opposite to the way most cellular networks are designed," Al-Siddiq said.

Top-notch expertise

The Biotricity team considered several providers but quickly agreed that AT&T Business offered the services and support that would best enable their groundbreaking devices. AT&T Global SIM cards deliver dependable end-to-end connectivity to Biotricity devices. LaDow said size and power were important considerations. "We looked at a lot of modems to find the smallest one with the least amount of power usage and great coverage and decided that the modules supported by AT&T Business were great."

The cloud-based AT&T Control Center makes it a simple matter for the company to manage its suite of cardiac monitoring devices. The cloud-based platform, powered by Cisco, gives Biotricity visibility and agility.

Deploying the AT&T solution was very smooth. "We learned a lot of new things from the cellular side and did not have any issues from AT&T Business," LaDow said. "Everything was great. Patients were happy."

He was grateful for the seasoned professionals that assisted Biotricity. "AT&T Business expertise has always been top notch," LaDow said. "They are very smart people who helped us get through the certification process. Everyone was knowledgeable, easy to work with, and very quick to respond. That's what we look for in any relationship."

Al-Siddiq was impressed with the AT&T Business subject matter experts who worked with Biotricity. "The AT&T cybersecurity and VPN tunneling teams are very talented, creative people," he said. "We hadn't even launched a device yet, so this was uncharted territory. AT&T Business said, 'OK, we'll design this together.'"

Valuable support

AT&T was also helpful in advising Biotricity on data protection. "Cybersecurity is important in healthcare," Al-Siddiq said. "We run our own APN (Access Point Name) and have proprietary encryption that allows us to control whether devices have internet access. There's a whole team at AT&T that you can work with on this. That's very important because we're dealing with patient data. Working with AT&T Business was very valuable."

LaDow appreciates the support Biotricity receives from AT&T Business. When a client had difficulty getting connectivity because of a large hill behind its building, the support team from AT&T Business was able to suggest ways to boost the signal and overcome the difficulty. "The back-end support from AT&T has been very helpful."

He also praised the AT&T Control Center, an IoT connectivity management platform that makes it a snap for Biotricity to deploy, manage, and monetize its connected devices around the globe. "Being able to track all our SIM cards when we have thousands of lines with AT&T has been seamless," LaDow said.

Al-Siddiq appreciated the assistance he and his team received from AT&T. "AT&T Business was working at the highest levels with us when we didn't even have a product launched," he said. "Most large corporations don't do that."

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> **Spencer LaDow**
> Vice President, Engineering,
> Biotricity, Inc.

Benefits for patients and physicians

Al-Siddiq said he is confident that AT&T Business will meet Biotricity's connectivity needs as the company grows. "We're strategically going to expand wherever we have the relationship," he said. "Having the global team and the flexibility that AT&T Business offered was certainly a deciding factor for us."

Patients appreciate the benefits of the Biotricity devices. "The main thing our patients come back with is the peace of mind they have in knowing that they're being monitored," Al-Siddiq said.

And physicians experience a better and cleaner workflow thanks to the Biotricity model. In the past when doctors prescribed a medical device, it often tied up office staff to coordinate with providers, ensure they get the correct device, and troubleshoot any connectivity problems.

With Biotricity, patients receive their medical devices at the doctor's office. "They know the hookup is good because they can test the signal before the patient leaves," Al-Siddiq said. In addition, Biotricity's devices send data to the cloud, where physicians can view it any time. "It gives the doctors access if they're concerned about a particular patient. That access and insight is a big benefit for the physician."

"And because of the way we've commercialized it, our model also supports the growth of practices, since physicians can now bill for reading the patients' medical data, as opposed to sending it to a lab and having them bill for it."

Boosting access to cardiac care

AT&T Business has supplied the reliable connectivity for the Biotricity devices since the company's 2019 launch. Biotricity has equipped thousands of cardiac monitors with AT&T connectivity to service over 140,000 patients since April of 2019 and looks forward to shipping another few thousand in the next year.

Al-Siddiq looks forward to continuing to transform healthcare. During the pandemic, Biotricity supported patients who couldn't get care by delivering its cardiac monitoring devices. "Now we are working to continue to transform accessibility of cardiac care."

The company is building what it says is the world's largest cardiac cloud to deliver access to cardiologists to people throughout the U.S. "We're working to enable anybody, anywhere in the United States to have access to a cardiologist," Al-Siddiq said.

Biotricity plans to launch an app that will enable patients to connect with cardiologists in the company's network. "The doctors can prescribe a Bioflux, and it'll ship directly to your door," he said. "And this will rest on the backbone of connectivity, thanks to AT&T."