

MEDTECH INNOVATOR BUILDS A COMPREHENSIVE DIGITAL HEALTH ECOSYSTEM TO TRANSFORM ECG DATA MANAGEMENT WITH APEXON

Enabled 3X Faster Cardiac Data Analysis, Improved Patient Adherence by 40%, and Accelerated Clinical Trial Readiness with Apexon's Scalable, Cloud-Native Health Analytics Platform

ENGAGEMENT BACKGROUND

A leading MedTech innovator focused on cardiovascular health for women aimed to revolutionize how medical-grade data is collected and used in real-world environments. Their mission was to integrate smart wearable technology seamlessly into everyday clothing to enable continuous, clinical-grade monitoring of cardiac health.

To achieve this vision, this MedTech innovator partnered with Apexon to engineer an advanced, cloud-based analytics platform that could gather, interpret, and visualize critical health data from wearable sensors embedded in garments. This collaboration was key to unlocking real-time insights and empowering personalized cardiac care.

THE CHALLENGE

BRIDGING THE DATA GAP IN WOMEN'S HEALTH

Optimizing data collection and analytics for innovative healthcare solutions

This MedTech company, despite their innovative hardware design, faced significant challenges in translating their vision into a real-world solution. Here's a closer look at the hurdles they needed to overcome:



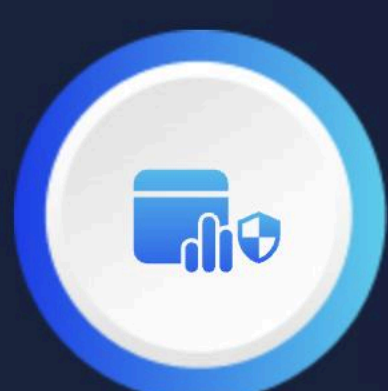
LIMITED SOFTWARE EXPERTISE

While the company excelled in hardware development, building a complete digital health solution required expertise beyond their core competency. They lacked experience in mobile app development, backend infrastructure creation, data management best practices, and navigating the complexities of regulatory compliance for medical devices.



ENSURING CONTINUOUS ECG DATA COLLECTION

Capturing seamless 24/7 ECG data posed a significant challenge. Maintaining minimal packet loss even with potential Bluetooth connectivity disruptions was crucial. Factors like user movement or distance from the phone could interrupt data transmission, potentially creating gaps in the vital health data.



DATA CONSISTENCY AND SECURITY

Maintaining the integrity of the collected ECG data was paramount. This meant ensuring data accuracy, implementing robust security measures to protect user privacy, and adhering to HIPAA regulations for safeguarding sensitive health information.



NAVIGATING THE FDA REGULATORY LANDSCAPE

Gaining FDA approval is a rigorous process. The customer needed to ensure their solution met all the necessary safety and efficacy standards for medical devices, a critical step for market validation and widespread adoption.

THE SOLUTION



BUILDING A COMPLETE DIGITAL

The customer sought a comprehensive solution encompassing the development of both mobile and back-end applications. Apexon leveraged its expertise in digital engineering to create a robust mobile application for users to access and manage ECG data seamlessly. The back-end application was architected as a cloud-native solution, utilizing serverless technology for enhanced scalability and efficiency. Our customer – the MedTech innovator, while excelling in hardware design, lacked the expertise to translate their vision into a complete digital health solution. Apexon addressed this gap by:

- **Mobile App Development:** Apexon built a user-friendly mobile application for continuous data collection, allowing users to capture their ECG data conveniently.
- **Secure Backend Infrastructure:** Apexon developed a secure cloud-based backend infrastructure to store, process, and analyze the collected ECG data efficiently.
- **Data Management Expertise:** Apexon's data engineering expertise ensured the design and implementation of a robust data pipeline for data collection, storage, and management, adhering to best practices and security protocols.



ENSURING SEAMLESS ECG DATA COLLECTION

Maintaining uninterrupted 24/7 ECG data capture was a significant challenge. Here's how Apexon addressed it:

- **Robust BLE Communication Protocols:** We leveraged our expertise in BLE (Bluetooth Low Energy) to implement reliable data transmission protocols, minimizing data loss even with potential Bluetooth connectivity disruptions.
- **Data Buffering and Batching:** To address potential disconnections, we implemented data buffering on the device. This allows temporary storage of data until a stable connection is re-established. Additionally, efficient batching was implemented for optimized data transmission.



PRIORITIZING DATA INTEGRITY AND SECURITY

Data security and privacy were paramount for this MedTech customer. Apexon ensured a secure and compliant data environment by:

- **Secure Data Pipeline Design:** A secure data pipeline was designed on the backend to extract metadata and encrypt the data, safeguarding sensitive user health information.
- **HIPAA Compliance:** The data pipeline and overall solution were designed to comply with HIPAA regulations for protecting patient privacy.



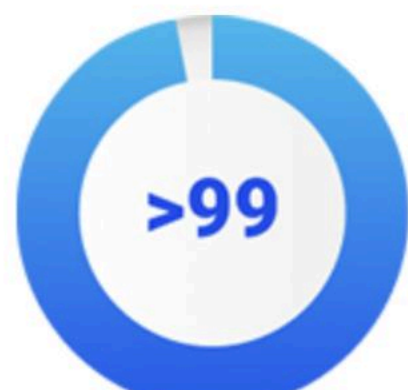
NAVIGATING THE FDA APPROVAL PROCESS

Gaining FDA approval for medical devices is a rigorous process. Apexon provided guidance and support to the company throughout the process, ensuring their solution met all the necessary safety and efficacy standards. This support paved the way for FDA submission and ultimately, market validation.

KEY RESULTS

Revolutionizing Women's Health Monitoring

Apexon's collaboration with the company yielded impressive results, paving the way for a groundbreaking solution in women's health monitoring:



ACHIEVED >99% DATA TRANSMISSION ACCURACY

- ✓ Exceeded customer's initial goals for seamless ECG data collection, ensuring high-fidelity data for analysis.



STREAMLINED USER EXPERIENCE

- ✓ Developed a user-friendly mobile app for continuous data collection and tagging, empowering users to actively track their health.



SECURED AND HIPAA-COMPLIANT DATA MANAGEMENT

- ✓ Established a robust data pipeline with encryption and adherence to HIPAA regulations, safeguarding sensitive user health information.



ENABLED RESEARCH ADVANCEMENT

- ✓ Built a researcher portal to facilitate secure data access and collaboration, accelerating research efforts in women's health.



FDA SUBMISSION READINESS

- ✓ Supported the customer in preparing the necessary documentation for FDA submission, bringing their innovative solution closer to market approval.

BEYOND SOLUTIONS: BUILDING A SUSTAINABLE FUTURE

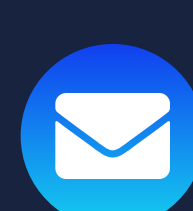
Apexon's partnership with this MedTech customer extends beyond building the initial solution. We are continuously collaborating to:

- **Expand Functionality:** Integrate features for capturing exercise data, vital signs, and sharing them with healthcare professionals, further enriching the data collected.
- **Facilitating Research Collaboration:** Apexon is actively supporting the customer in establishing partnerships with universities and research institutions. This collaboration leverages the MedTech customer's innovative solution to drive groundbreaking research in women's health, ultimately accelerating advancements in the field.



Apexon is a pure-play digital engineering services firm focused on helping companies accelerate their digital initiatives from strategy and planning through execution. We leverage deep technical expertise, Agile methodologies and data-driven intelligence to modernize systems of engagement and simplify human/tech interaction.

We deliver custom solutions that meet customers' technology needs wherever they are in their digital lifecycle. Backed by Goldman Sachs and Everstone Capital. Apexon works with both larger enterprises and emerging innovators-putting digital to work to enable new products and business models, engage with customers in new ways, and create sustainable competitive differentiation.



INFO@APEXON.COM



WWW.APEXON.COM

FEELING SOCIAL?

