



# Embedded Medical Device Software Development Case Studies

GlobalLogic Partnerships That Transform Patient  
Care Services



Partnerships That Create World-Class Digital Patient Experiences

The world's leading MedTech, Med Devices, CROs, and In Vitro Diagnostics organizations are continuously seeking new ways to improve the quality and increase the value of the care they bring to their patients.

# They are tapping into the power of digital technologies to drive down costs, increase access to care delivery, and improve medical care.

Creating a user-friendly mobile app that communicates with a patient's medical therapy device can increase patient engagement, enabling much better patient performance, improving patient satisfaction, and helping the patient complete their therapy faster.

And embedding data management software and enabling connectivity for medical devices can make data more readily and rapidly available to be analyzed, creating opportunities for product innovation.

If your organization is embarking on any new digital engineering initiative or looking to adopt cutting-edge modern technologies in a strictly regulated environment, GlobalLogic can help.

GlobalLogic is a pioneer in developing solutions ranging from embedded medical device software to Software as Medical Devices (SaMD) and other patient therapy devices, as well as connected health systems and digital healthcare platforms.

Here are some success stories of organizations that partnered with GlobalLogic to create enhanced patient value that drives business outcomes.

## Let's Work Together

Searching for a new engineering partner? Let's see how we can help. [Click here to reach out to us.](#)

# Next- Generation Insulin Infusion Pump Design and Development

With the release of this product,  
the client was able to grow its  
revenue by 11%.



# Client Scenario

This client, a global leader in Healthcare technology, provides solutions to treat some of the most complex and challenging medical conditions.

As part of its continuous innovation, the client envisioned bringing the next generation of regulated products to market concurrently to drive revenue growth. They needed to scale massively and quickly while maintaining high-quality standards for existing product lines. This was particularly challenging because their sophisticated diabetes management solution included hardware and software elements.

# Our Approach

GlobalLogic assumed 90% ownership of the design and development of the insulin infusion pump, a key part of the overall solution.

GlobalLogic implemented all device features, including UI, software requirements, 2.4 GHz radio frequency interface, and the Bluetooth Low Energy (BLE) interface. GlobalLogic also performs ongoing product risk analysis and developed a unique automated testing framework that significantly reduced testing time. The product was approved as a Class III medical device by the U.S. FDA and Canada Health and has the CE mark, as well.

Based on this success, the client had GlobalLogic create a reliable, extendable platform for future system evolution. GlobalLogic developed, verified, and validated the client's next-generation flagship sound-processing software product as per ISO 13485 / ISO 62304 / ISO 14971, and CFR 21, ensuring each complied with harmonized medical device software standards (ISO 13485, ISO 14971, IEC 62304, and IEC 62366).

The client successfully brought its next-generation product to market. In addition to the closed-loop insulin therapy, patients benefited from an intuitive and inviting UI that was translated into 28 languages. The impressive functionality of the new device was designed to run for two weeks or longer on a single AA battery.

## Benefits

Because GlobalLogic had taken over most of the development, the client realized **45% cost savings** versus performing the work in-house.

Moreover, diabetes segment **revenue increased by 11%**, driven primarily by the successful adoption of the product on the market.

# Defibrillator / Patient Monitoring System Development

Companies sometimes require skilled and technically competent resources to enable them to scale work on major programs but do not need that level of staff continuously.



# Client Scenario

A European medical technology manufacturer that designed and engineered innovative products for cardiac defibrillation and patient monitoring planned to bring a new generation of monitor/defibrillator to market that would enable both life-saving defibrillation therapy and the monitoring of various vital functions such as oxygenation status, ECG, pulse rate, and non-invasive blood pressure.

The key challenge was finding embedded software product engineering talent with the expertise to design, develop and test the new product that had the ability to scale to their needs.

# Our Approach

GlobalLogic assisted in the full cycle development of the new Class III device.

From requirement definition, software architecture, and UI/UX design – and continuing through the integration of the developed application into the system – GlobalLogic led development supported by automated testing and continuous integration.

GlobalLogic enhanced device performance and stability by leveraging multiple nodes of data transmission and limited parameters of Wi-Fi and BT data transfer.

GlobalLogic partnered with the client to create a new software package that meets IEC 62304 Class C software requirements.

## Benefits

When the product is cleared and released, the client will have successfully brought to market a new product that enables connection to a wide range of external sensors from different vendors with maintenance supported by over-the-air updates.

The product also features a user-friendly human interface for simple, intuitive control based on human factors studies.

In addition, the platform concept developed by the GlobalLogic team serves as the basis for different product variations.

# About GlobalLogic

With more than 20 years of experience in regulated software product development and engineering services, GlobalLogic helps some of the world's leading Medical Technology, Medical Devices, Pharma, and Life Sciences organizations create world-class digital patient experiences, accelerate new product development, and capture new revenue streams.

**GlobalLogic**<sup>®</sup>  
A Hitachi Group Company

**20+** years industry experience

**2300+** industry-dedicated engineers

**300+** new products

**90+** clients

To learn more or speak with one of our experts, please reach out to [info@globallogic.com](mailto:info@globallogic.com).



We are on a two-decade-young journey and we're proud of our growth and the milestones we have achieved. A startup to a Hitachi group company, our product engineering story is unique. Thanks to our people who have been our companions and growth drivers in this amazing journey.

'We are GlobalLogic' is a spectacular showcase of what we do, what we represent, and our capabilities as a global leader in product engineering services.

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Thank you for reading

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