



Case Study

Advancing Surgical Care Through Live Collaboration

When facing surgery, patients aren't thinking about the technology around them — they're thinking about trust — trust that they're in safe, capable hands. Behind that trust, however, a quiet revolution is underway in operating rooms (ORs) around the world, one driven by transformative technology. At the heart of this change is Medtronic's Digital Technologies team, focused on building a more intelligent, connected, and supportive future for global surgical care.

The Challenge: Secure, Real-Time Collaboration in the Operating Room

The COVID-19 pandemic introduced new challenges for surgical care. It limited the number of people allowed in ORs while increasing the need for collaboration and support. Trainers, consultants, and support staff had restricted access, yet patients still needed highly coordinated, expert care.

Medtronic began reimagining what was possible. Could surgeon trainees learn without physically crowding the room? Could Medtronic representatives provide technical support to clinicians without being onsite?

Medtronic's Digital Technologies Division

Medtronic's digital technologies division, part of its medical surgical unit, leads the development of next-generation connected surgical technologies. As the world's largest medical equipment manufacturer, with \$31B in annual revenue, hospitals and clinicians worldwide trust Medtronic.

In collaboration with:

Medtronic

The Solution: Touch Surgery™ Ecosystem

Initially focused on securely capturing and storing surgical videos on AWS, Medtronic soon saw broader potential. With Arrow Electronics' help, they developed the Touch Surgery™ Live Stream technical specification, a market-leading, real-time streaming platform that delivers:

- Secure, high-quality video broadcasts to support surgical training and education
- Remote technical support from Medtronic representatives without a physical presence in the OR
- Streamlined logistics by reducing foot traffic and simplifying credentialing
- Remote surgical training and mentorship with uncompromised clarity and quality

Medtronic turned to Arrow to help select ideal technology providers and accelerate development to meet ambitious performance and deployment goals.

Technology Overview

Medtronic engaged with Arrow to design Touch Surgery™ Live Stream, a secure, high-definition system enabling real-time video and audio streaming of surgeries to remote participants. Tailored for minimally invasive and robotic-assisted procedures, the solution allows:

- Immersive remote training experiences
- Secure viewing and sharing of surgical procedures for educational purposes

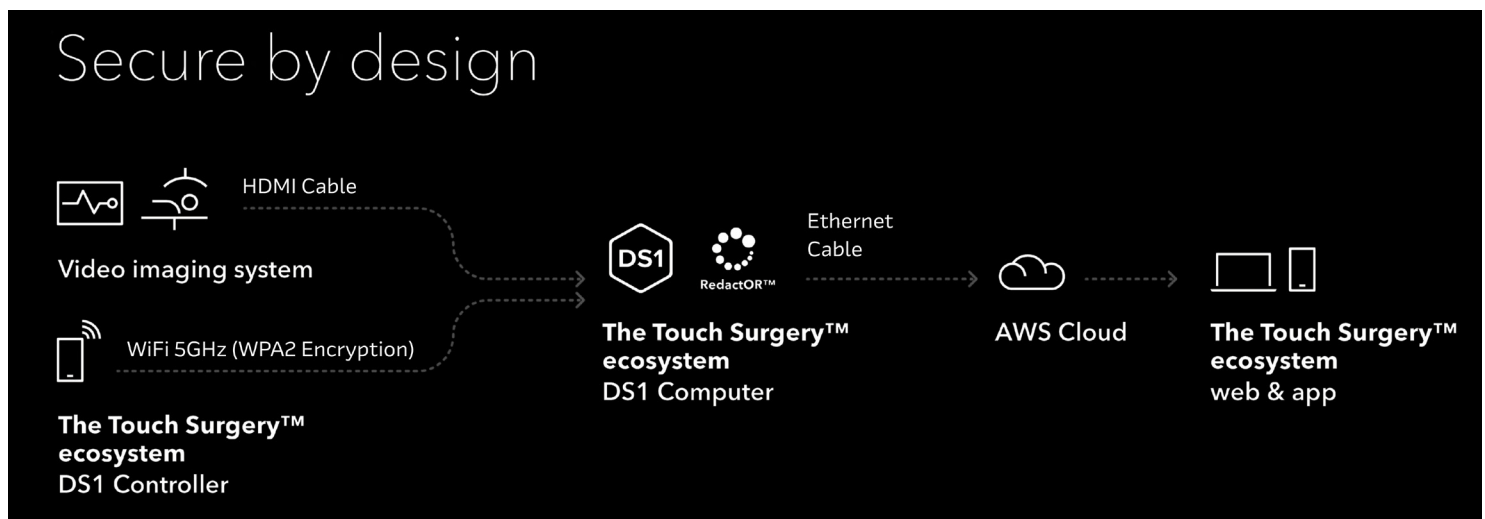


Figure: How Touch Surgery™ Live Stream works

Integrated with AI-powered Performance Insights, the platform captures post-operative surgical data and applies advanced algorithms to analyze workflows, instrument usage, and anatomical landmarks. These insights support continuous performance improvement* and education as part of The Touch Surgery™ ecosystem.

Disclaimer: Touch Surgery™ is not intended to direct surgery, or aid in diagnosis or treatment of a disease or condition.

*VBA also showed the impact of the pilot 'Marginal Gains' course, with a mean SQA improvement of 30% after the course, suggesting a trend toward better surgical performance that warrants further exploration in larger studies. These insights suggest the potential of such advanced technologies to provide surgeons with granular information to study and improve their performance. [www.ejso.com/article/S0748-7983\(25\)00438-X/abstract](http://www.ejso.com/article/S0748-7983(25)00438-X/abstract).

Touch Surgery™ Live Stream is a Seamless Part of Our Ecosystem

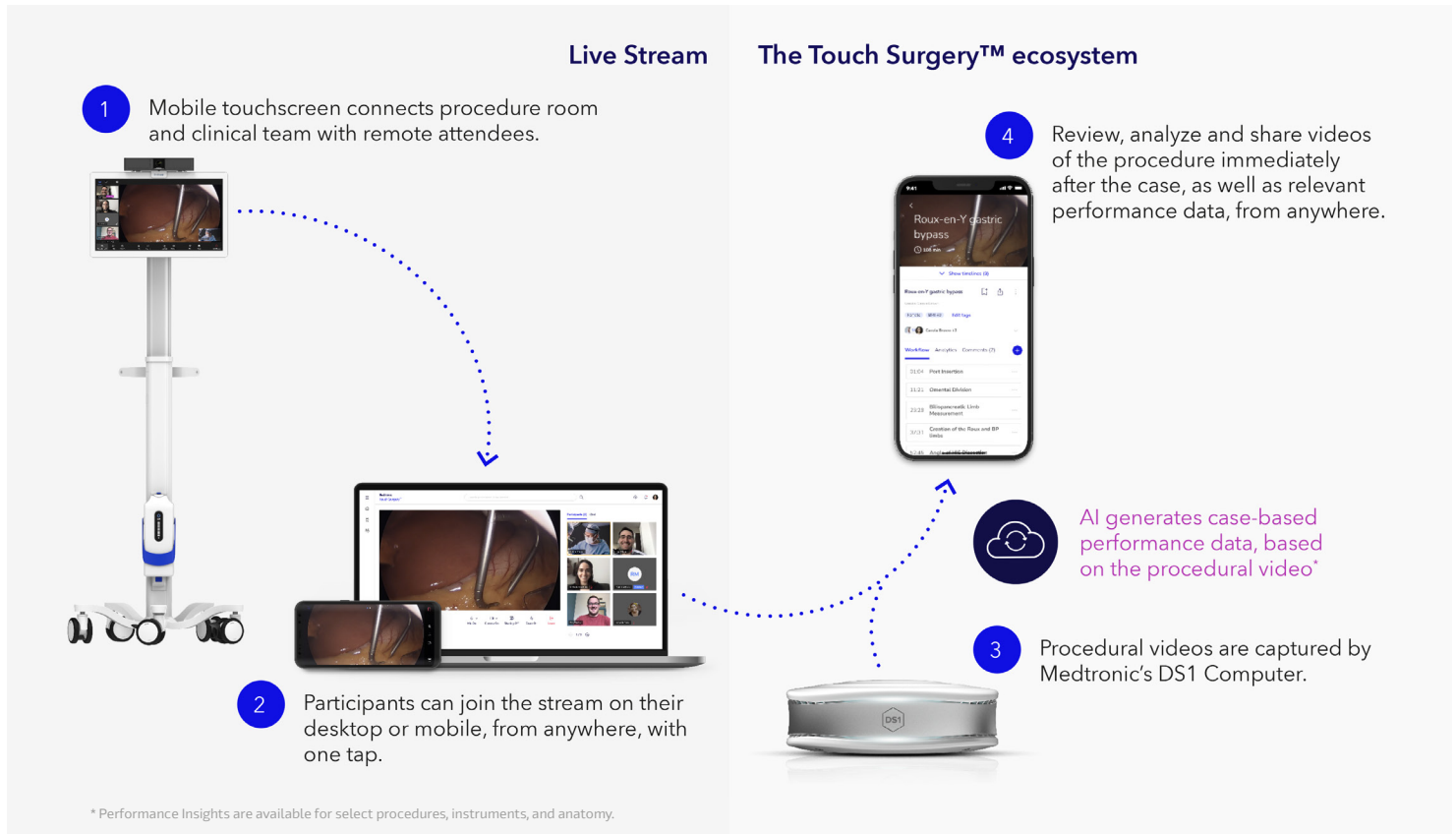


Figure: The Touch Surgery™ ecosystem

Arrow worked with Medtronic from the early prototyping, supplying and integrating a complete technology stack to bring Touch Surgery™ Live Stream to life, including:

- **Audio-Visual:** The Bose Professional VB-S Video Bar was chosen for its superior decibel output, which overcomes OR noise and delivers crystal-clear communication alongside 4K ultra-HD video.
- **Compute:** The Elo Touch Android All-in-One (AiO) is a robust and flexible touchscreen computer optimized for surgical environments.
- **Custom Cabling & Integration:** These items are packaged as a consolidated, plug-and-play solution for rapid deployment and ease of installation.
- **Accessories & Peripherals:** Bytec medical stands and battery systems for mobility, power redundancy, and future-proofing the setup.

Arrow played a critical role in validating the system — helping ensure all components were tested, interoperable, and fully compliant with the healthcare industry's stringent operational and regulatory standards.

Strategic Collaborations

Arrow, chosen for its reputation as a key service provider in the healthcare industry, was involved early in the development process. As a strategic advisor, Arrow guided Medtronic through technology selection, system integration, and supply chain management, helping ensure a seamless rollout of this advanced surgical solution.

Arrow selected top-tier technology providers, Bose Professional and Elo, for their proven reliability and performance:

- Elo Touch Android All-in-One delivers high-resolution video via a surgical-grade touchscreen interface ideal for OR environments.
- Bose VB-S Video Bar provides exceptional audio quality with advanced microphones and 4K video, enabling real-time, bi-directional collaboration even in noisy surgical settings.

How This Supports Clinicians and Patients

Surgeons using The Touch Surgery™ ecosystem access on-demand product support, and stay current on the latest surgical techniques. Trainees can observe high-definition surgeries from anywhere, without physically entering the OR. The result is smarter, more connected care for patients.

Summary

Medtronic's Digital Technologies real-time surgical streaming platform, The Touch Surgery™ ecosystem, marks a significant advancement in connected healthcare. With Arrow's support, Medtronic was able to rapidly develop and deploy a reliable, scalable AV solution that transforms operating theatres into collaborative hubs.

Key to the platform's success was the integration of the Elo Touch Android AiO touchscreen computer for crisp, high-definition visuals and the Bose Professional VB-S video bar with its advanced audio features and bi-directional communication capabilities.

Arrow's engineering, operational, and integration support across multiple hardware components, while enabling future scalability, secured its place as a long-term advisor. Together, Arrow, Medtronic, Bose Professional, and Elo are helping reshape the future of surgical care and education with a global, future-ready solution.

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The Result

With Arrow's support, Medtronic successfully launched Touch Surgery™ Live Stream, a platform that is:

- **Collaborative:** Enables secure, real-time communication between surgical teams, students, and experts worldwide
- **Secure:** Protects patient data and surgical content with healthcare-grade encryption and strict access controls
- **High-performance:** Delivers crystal-clear audio and video reliably for real-time collaboration
- **Scalable:** Supports future hardware integration and expanded capabilities

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