

Powering the Future
of Healthcare ▶

 **CitiusTech**

Medical Devices

Building Connected Health
Ecosystems for Medical Devices



www.citiustech.com

Who we are

As a strategic partner to some of the world's largest healthcare and life sciences organizations, we play a deep and meaningful role in accelerating digital innovation, driving sustainable value and helping improve outcomes across the healthcare ecosystem.



CitiusTech is uniquely positioned to address complex MedTech industry challenges, accelerate digital innovation, drive rapid adoption of value-based care models, enhance patient engagement and empower healthcare organizations to deliver better care.

2,800+

Engineering & QA
professionals

30+

Healthcare
technology clients

400+

Medical devices
experts

4.5/5

Client satisfaction
score

Medical Device Connectivity: Market Report

- ▶ Medical device connectivity focuses on integration with:
 - **Clinical systems:** Device connectivity translates and transfers data between proprietary instrument formats to the input requirements of specific EHRs or other clinical systems
 - **Operational systems:** Device connectivity enables remote device health monitoring to drive serviceability and operational efficiency
- ▶ **Most frequently connected devices** include vital signs and patient monitors, anesthesia machines, ventilators, infusion pumps, Imaging systems, implantable cardiac devices, respiratory devices, neurological devices, and fetal monitoring devices
- ▶ **Typical device connectivity features** needed include bi-directional, standards-based connectivity, EHR integration support, scalable device health platform and support
- ▶ **Device connectivity moving beyond hospitals** to include diagnostic and imaging centers, home health, and ambulatory centers

\$1.7 Bn
global medical device
connectivity market size

CAGR 24.4%
medical device connectivity
expected market growth

\$4.9 Bn
projected market
valuation by 2026

Medical Device Connectivity: Challenges

- ▶ **Manual recording of device data** is inefficient and error-prone
- ▶ **Custom interfaces** are required for devices that send data in a native format
- ▶ **Legacy medical devices** that aren't internet-enabled
- ▶ **Consolidation of a variety of devices**, including third-party, in hospitals
- ▶ Device **connectivity breakdown** due to updates to device and HIT systems
- ▶ Device data **security and privacy**
- ▶ Additional **V&V effort and costs**



Reluctance of healthcare professionals to adopt advanced healthcare IT solutions are expected to limit the growth of the device connectivity market

Medical Device Connectivity Trends



Key Market Drivers

- Increased adoption of EHRs and HIEs
- Growing focus on care quality and connected care
- Cost benefits of connected health environments
- Growing regulatory requirements

Key Market Opportunities

- Improved clinical and operational efficiency
- Increased adoption of home health & telehealth
- Implementation across emerging, developed markets
- Consolidation of device connectivity market

Medical Device Connectivity: Key Use Cases (1/2)

EHR Chart Updates



- Fetch vitals data from patient bedside monitors and convert into industry-standard format for EHR consumption and automated charting

Remote Patient Monitoring



- RPM at home or inpatient setting based on data from smart devices
- 24x7 access to patient vitals using remote monitoring devices, enabling clinical interventions

Clinical Decision Support



- Provide clinicians and patients with person-specific information to enhance care based on data collected from medical devices
- Risk scoring and early warning system based on observation data from devices

Provider & Patient Engagement



- Provider engagement: Insights for early diagnosis and alerts for therapy adherence
- Patient engagement: Apps for chronic condition management and digital therapeutics to drive patient self-management

Medical Device Connectivity: Key Use Cases (2/2)

Smart Devices & Wearables



- Smart IoT-enabled devices and wearables with decision support alerts to streamline clinical workflows
- AI-based SaMD development for health monitoring, wellness coaching, and care management

Preventive Maintenance



- Centralized device health monitoring and predictive analytics for proactive device maintenance and track trends in device utilization, connectivity, battery level, performance, etc.
- Streaming device data analytics, enabling remote device configuration and updates

Clinical Research



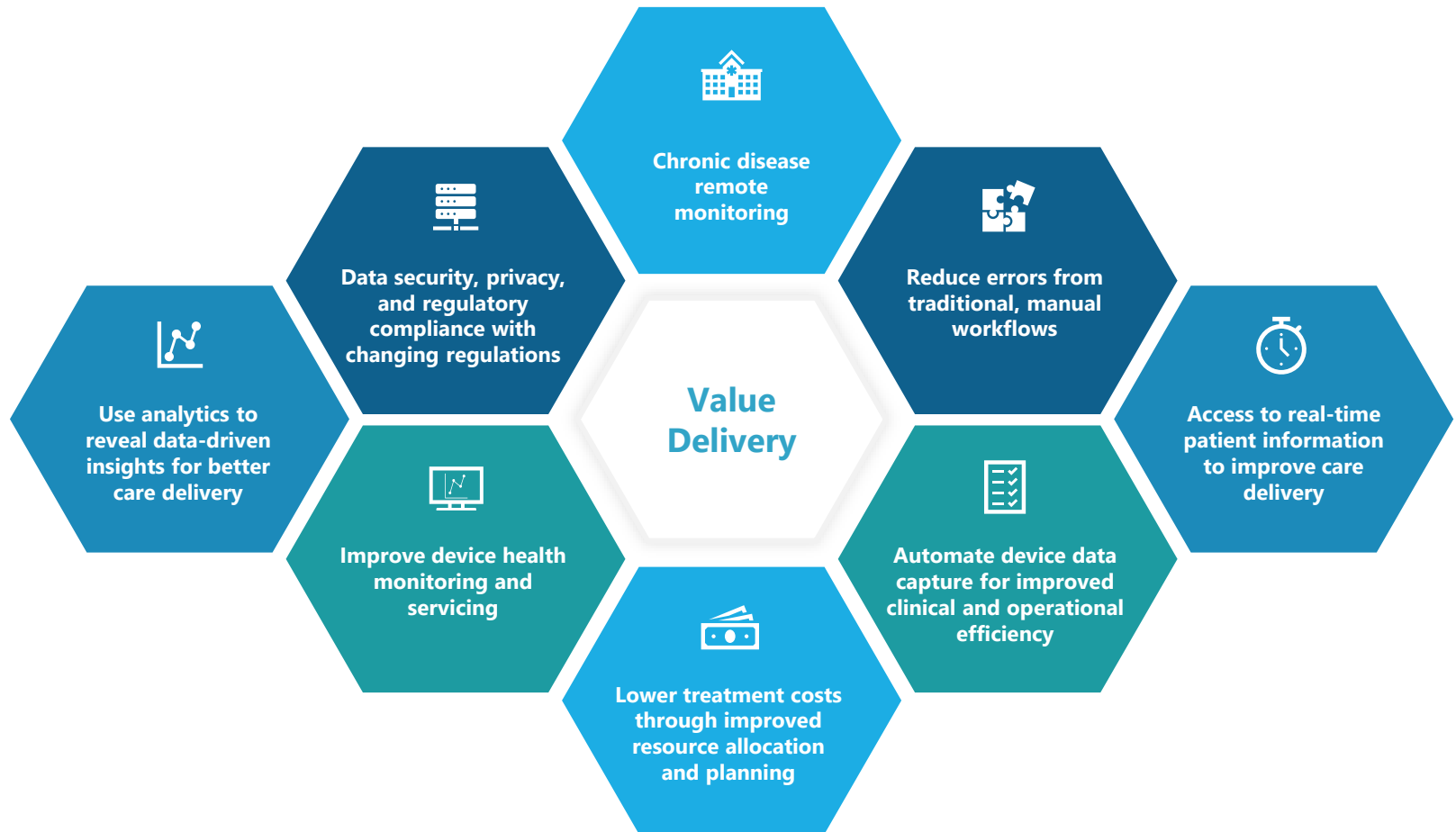
- Pre and post-market clinical evidence collection to ensure patient safety, clinical procedure efficacy, and treatments, as well as support device intended use

Smart Surgery



- Tele-surgery using remote surgery robots
- Connected devices to control room lighting, temperature, and virtual assistant-driven patient record retrieval during surgeries

Focus on Value Delivery



CitiusTech Medical Device Offerings

CitiusTech Medical Device offerings cover the end-to-end development, testing, clinical integration, security and support aspects of the product lifecycle.

Engagement Solutions

- Patient / Provider engagement digital platforms
- SMART Mobile Apps & Telehealth
- Smart Device Management

Connectivity

- Device / IoMT Interfaces to HIT Systems
- Device / IoMT Cloud Enablement
- Standards based and Custom Data Exchange – IHE, FHIR, HL7, DICOM etc.

Engineering

- Medical Device Software & SaMD
- Digital therapeutics
- V&V and Automation
- Serviceability

Recent Engagements

- Infusion Pumps Integration using IHE
- Product Identification IoT Platform
- ML Dose Optimization SaMD with 510(K) submissions for SaMD
- Embedded Development for CRRT Device
- Surgeon iPad application for Medical Device Data System
- DoD & FDA compliance on cybersecurity for CT Scan devices

Compliance & Security

- Vulnerability / Penetration testing
- Legacy device security testing
- DoD, FDA & CE Mark Compliance

Data Management

- Scalable health data platforms
- Data standardization and curation
- Streaming device data processing

Automation & Analytics

- Remote Device Analytics
- Clinical Decision Support
- Supply Chain Analytics
- Intelligent automation across value chain



Customer Value

Accelerated Smart Devices Ecosystem

Improved Patient Monitoring

Clinical Decision Support

Reduced device downtime

Fast Track Regulatory Compliance

About CitiusTech

With 6,500+ healthcare technology professionals worldwide, CitiusTech helps leading healthcare and life sciences organizations reinvent themselves by accelerating digital innovation, leveraging next-gen technologies, and driving data convergence across the healthcare ecosystem.

We provide strategic consulting, digital engineering, data, analytics & AI, specialized platforms and end-to-end solutions to over 130 organizations across the payer, provider, medtech and life sciences industries. Our key focus areas include healthcare interoperability data management, quality performance analytics, value-based care, omni channel member experience, connected health, virtual care delivery, real-world data solutions, clinical development, personalized medicine and population health management.

Our cutting-edge technology expertise, deep healthcare domain expertise and a strong focus on digital transformation enables healthcare and life sciences organizations to deliver better outcomes, accelerate growth, drive efficiencies, and ultimately make a meaningful impact to patients.

100%
healthcare focus

130+
healthcare clients

50M+
lives touched

4.5/5
client satisfaction score

\$340M+
worldwide revenue

Key Contacts



Dhaval Shah

Exec. Vice President
Healthcare Technology
CitiusTech

20+ years of experience in healthcare technology, spanning various domains including healthcare interoperability and enterprise application architecture. At CitiusTech, Dhaval heads strategic partnership management for large healthcare organizations.

Prior to CitiusTech, Dhaval worked with leading healthcare organizations and across multiple technology and business-focused roles.

Email Dhaval at:
dhaval.shah@citius.tech



Shujah Dasgupta

Asst. Vice President
Healthcare Technology
CitiusTech

15+ years of experience in developing and designing healthcare products. Leads Interoperability and Imaging practice at CitiusTech.

Shujah has driven multiple digital and product engineering engagements at CitiusTech, including managing large programs, setting up the medical imaging consulting practice, managing strategic customers and driving new business development.

Email Shujah at:
shujah.dasgupta@citius.tech

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