

F R O S T & S U L L I V A N

# BEST PRACTICES

AWARDS

F R O S T & S U L L I V A N

2020 BEST PRACTICES AWARD



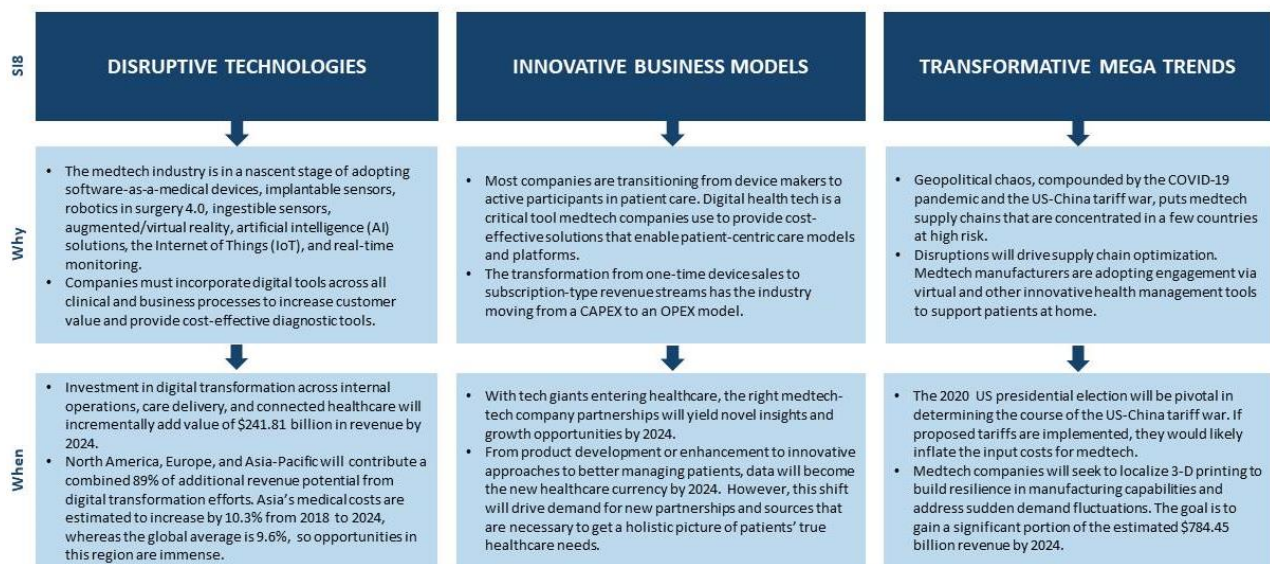
2020 NORTH AMERICAN  
SMART CONNECTED CHILLERS  
COMPANY OF THE YEAR AWARD

## Strategic Imperatives

Frost & Sullivan identifies three key strategic imperatives that impact the medtech industry: disruptive technologies, innovative business models, and transformative Mega Trends. Every company that is competing in the medtech space is obligated to address these imperatives proactively; failing to do so will almost certainly lead to stagnation or decline. Successful companies overcome the challenges posed by these imperatives and leverage them to drive innovation and growth. Frost & Sullivan's recognition of Johnson Controls is a reflection of how well it is performing against the backdrop of these imperatives.

### THE IMPACT OF STRATEGIC IMPERATIVE 8™ ON THE MEDTECH INDUSTRY

The following 3 strategic imperatives will ensure growth in the medtech industry.



## Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated companies. Johnson Controls excels in many of the criteria in the smart connected chillers space.

# AWARD CRITERIA

<i>Visionary Innovation &amp; Performance</i>	<i>Customer Impact</i>
Addressing Unmet Needs	Price/Performance Value
Visionary Scenarios Through Mega Trends	Customer Purchase Experience
Implementation of Best Practices	Customer Ownership Experience
Leadership Focus	Customer Service Experience
Financial Performance	Brand Equity

## ***Smart Connected Chillers for Facilities' Efficiency***

The heating, ventilation, and air conditioning (HVAC) industry shift toward emerging intelligent building infrastructure and construction projects has really driven HVAC control system development. With tightening government regulations on indoor air quality, healthcare authorities must ensure compliance and provide a healthy indoor environment for occupants. Thus, controlling variable environmental factors such as temperature, humidity, airflow, and pressure is crucial for maintaining healthy indoor air quality at healthcare facilities.

A chiller is one of the most critical pieces of equipment in a facility. It is responsible for the comfort and essential to the productivity and energy used in a building. Poor functioning chillers reduce production times and can lead to equipment shutdowns. Therefore, it is crucial to avoid emergencies and

unplanned repairs while minimizing chiller-associated disruptions and operating costs. Currently, commercially available chillers are more data-driven for optimal performance and predictive maintenance.

Leveraging over a century of expertise and the power of a 100,000 expert team spanning more than 150 countries, Johnson Controls has the broadest HVAC equipment and controls portfolio in the world. The company provides multiple types of chillers, optimizing facility conditions, efficiencies, and energy costs across various industries.

Specifically, in the healthcare space, Johnson Controls remarkable YORK YZ Chiller well-positions the company

*"The Smart Connected Chillers provide building owners and facility managers with novel, more effective tools to lower repair costs and minimize downtime due to unplanned equipment service, thus keeping their buildings operating at peak performance. As a result, the state-of-the-art chillers slash the total cost of ownership through improved reliability, enhanced performance and energy efficiency, extended asset life, and increased technicians' productivity.*  
- Pavel Zhebrouski, Best Practices Research Analyst

to transform the HVAC industry, recently winning the 2019 International Air Conditioning, Heating, Refrigerating Exposition Innovation Award in the Cooling Category. The YORK YZ state-of-the-art

technology maximizes a building's energy and water efficiency, contributing to a healthy working environment.

Johnson Controls offers best-in-class Smart Connected Chiller solutions. Each product incorporates a Customer Dashboard featuring the new "Chiller Performance Index" (CPI), enabling data-driven insights in real-time. With the innovation behind CPI, customers measure the value they receive and decrease energy consumption by 10% to 30% through the timely warning on machines not working properly. The Smart Connected Chillers provide building owners and facility managers with novel, more effective tools to lower repair costs and minimize downtime due to unplanned equipment service, thus keeping their buildings operating at peak performance.

As a result, the state-of-the-art chillers slash the total cost of ownership through improved reliability, enhanced performance and energy efficiency, extended asset life, and increased technicians' productivity.<sup>1</sup> The company connects the equipment's data to the cloud, delivering unprecedented insights into operations, efficiency, and maintenance. Its data-enabled smart chillers reduce unplanned and emergency repairs by as much as 66%, and its predictive algorithms generate a 65% reduction in the time-to-repair.<sup>2</sup>

Johnson Controls distinctly differentiates in the market as it pulls all the data directly from the machine and provides fault-detection diagnostics from the chillers cost-effectively. Also, it offers one dashboard to monitor all the connected devices, unlike most competitors pulling the data from the building automation systems. The company understands that optimized and integrated infrastructure streamlines communications and workflow, reducing healthcare facilities costs while enhancing patient and staff satisfaction, patient care, and overall hospital quality.

With the Internet of things (IoT), artificial intelligence (AI), and other innovative technologies, Johnson Controls successfully delivers smart hospital solutions worldwide, making healthcare facilities truly intelligent and providing better medical outcomes for patients. Today, more than 80% of North American hospitals develop patient-centered care with its strategic technology integration.<sup>3</sup>

### ***Timely and Effective Response for COVID-19 Pandemic***

The novel COVID-19 virus continues to strain healthcare systems with no proven treatment currently. As the pandemic disrupts the healthcare landscape, it creates enormous opportunities for the advancement of the HVAC industry. An increased need for airborne infection proof isolation rooms and negative pressure rooms propel requests for special ventilation facilities that capture the virus through air filters or dilution in lobby areas and patient rooms. The downside of this opportunity is the capacity challenges from the sudden exponential demand for negative pressure rooms and constraints in creating more such spaces.

Hospital HVAC systems play a crucial role in mitigating the spread of diseases like COVID-19. Thus, Johnson Controls is committed to serving the healthcare community during the crisis. The company

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<sup>1</sup> [https://www.johnsoncontrols.com/-/media/jci/be/specialty-pages/connected-chillers/be\\_paper\\_smartconnectedservices.pdf](https://www.johnsoncontrols.com/-/media/jci/be/specialty-pages/connected-chillers/be_paper_smartconnectedservices.pdf), accessed October 2020

<sup>2</sup> [https://www.johnsoncontrols.com/en\\_gb/digital-solutions/smart-connected-chillers](https://www.johnsoncontrols.com/en_gb/digital-solutions/smart-connected-chillers), accessed October 2020

<sup>3</sup> [https://www.johnsoncontrols.com/en\\_au/solutions-by-industry/healthcare](https://www.johnsoncontrols.com/en_au/solutions-by-industry/healthcare), accessed October 2020



leverages its global experience, national workforce, and healthcare expertise to quickly expand hospital capacity and enhance caregiver response for COVID-19. Notably, it successfully implemented solutions rapidly in China's healthcare facilities, like Wuhan Taikang Tongji Hospital.

Apart from its best-in-class services and technology, Johnson Control works closely with governments and scientists to better understand the coronavirus and tailor solutions for effective combat against the pandemic. As monitoring and measuring pressurization became extremely important, the company spent significant time with customers to well-equip healthcare facilities for the appropriate infection control. As a result, Johnson Controls ensures continued high-performance operations with the demand related to the COVID-19 public health crisis.

### ***Delivering Value for Customers***

Johnson Controls also focuses on active interaction with its customers and delivering value for various markets. Thus, the company provides proactive and reactive services. It monitors the equipment to

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***- Pavel Zhebrouski, Best Practices Research Analyst***

gather data and provide fault detection diagnostics while checking the chillers: ensuring the highest reliability around-the-clock. In addition to reacting to the alarms and alerts, Johnson Controls continually tracks the data and trends. Its proactive services come from its analytics offering, leveraging the unrivaled CPI, which indicates the machines' efficiency and reliability.

To serve customers in the best way, the company collects internal feedback from the sales and operations teams to understand how to position the offering and make the appropriate technology improvements. Furthermore, it conducts customer research to determine real customer needs. Specifically, Johnson

Controls understands that customers demand reliability related to cybersecurity and data security. Responding to these needs, the company offers a mix of remote services and professional support onsite.

With a successful track record of delivering projects and solutions, Johnson Controls understands the importance of a robust global partner network. For instance, through its partnership with Microsoft, it built a solution connecting equipment data to the cloud for unprecedented operations insights. Specifically, Johnson Controls has 4,000 chillers connected to the Microsoft Azure platform.

The company continues to reinforce its strong market position by recently introducing the OpenBlue platform. It is a digital solution suite that connects traditional operational technology, existing information technology systems, and cloud applications infused with AI and cutting-edge technology such as digital twins, enabling insight, integration, and collaboration. OpenBlue enables operating technologies to communicate and integrate across a range of systems seamlessly. Furthermore, it deploys powerful COVID-19 solutions such as contact tracing, social distance monitoring, thermal

cameras, clean air, touchless environments, compliance and reporting management, energy optimization, and advanced safety monitoring.<sup>4</sup>

## Conclusion

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Today, chillers are more data-driven for optimal performance and predictive maintenance. Johnson Controls promptly responded to this trend to deliver best-in-class Smart Connected Chillers solutions. Real-time Customer Dashboards with each connection featuring the “Chiller Performance Index” innovation provide various benefits, including remote monitoring, condition-based model service, maintenance and reliability, energy efficiency, and sustainability. It integrates with other building components, thereby operating as part of the overall building performance and sustainability system.

While continuing its innovative performance, the company leverages its experienced team, a solid background, and proven skillset and focuses on continuous development to deliver value to the healthcare space. Johnson Controls transforms hospitals with smart solutions and capabilities by supporting healthcare facilities through its best-in-class Smart Connected Chillers solution. Furthermore, as hospital HVAC systems play a critical role in mitigating the spread of diseases like the novel coronavirus, the company commits time and resources to serve the healthcare community during the COVID-19 pandemic.

For its innovative mindset and strong overall performance, Johnson Controls is recognized with Frost & Sullivan’s 2020 North American Company of the Year Award in the smart connected chillers market.

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<sup>4</sup> Johnson Controls Launches OpenBlue, <https://www.prnewswire.com/news-releases/johnson-controls-launches-openblue-301103666.html>, accessed October 2020

## What You Need to Know about the Company of the Year Recognition

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Frost & Sullivan's Company of the Year Award is its top honor and recognizes the market participant that exemplifies visionary innovation, market-leading performance, and unmatched customer care.

### Best Practices Award Analysis

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

#### *Visionary Innovation & Performance*

**Addressing Unmet Needs:** Customers' unmet or under-served needs are unearthed and addressed by a robust solution development process

**Visionary Scenarios Through Mega Trends:** Long-range, macro-level scenarios are incorporated into the innovation strategy through the use of Mega Trends, thereby enabling first to market solutions and new growth opportunities

**Leadership Focus:** Company focuses on building a leadership position in core markets and on creating stiff barriers to entry for new competitors

**Best Practices Implementation:** Best-in-class implementation is characterized by processes, tools, or activities that generate a consistent and repeatable level of success

**Financial Performance:** Strong overall business performance is achieved in terms of revenue, revenue growth, operating margin, and other key financial metrics

#### *Customer Impact*

**Price/Performance Value:** Products or services provide the best value for the price compared to similar market offerings

**Customer Purchase Experience:** Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

**Customer Ownership Experience:** Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

**Customer Service Experience:** Customer service is accessible, fast, stress-free, and high quality

**Brand Equity:** Customers perceive the brand positively and exhibit high brand loyalty

## The Growth Pipeline Engine™

### Key Impacts:

- ## The Innovation Generator™

### Analytical Perspectives:

- Mega Trend (MT)
- Business Model (BM)
- Technology (TE)
- Industries (IN)
- Customer (CU)
- Geographies (GE)

