
World Wide Technology Case Study



About World Wide Technology

Founded in 1990, World Wide Technology (WWT) has grown to become a global technology solution provider with \$13.4 billion in annual revenue. With thousands of IT engineers, hundreds of application developers and unmatched labs for testing and deploying technology at scale, WWT helps customers bridge the gap between IT and the business. By bringing leading technology companies together in a physical yet virtualized environment through its Advanced Technology Center (ATC), WWT integrates individually impressive technologies to product game-changing solutions.

Based in St. Louis, WWT employs 7,000 employees and operates more than four million square feet of warehousing, distribution and integration space in more than 20 facilities throughout the world.



Company

World Wide Technology

Country

Global

Industry

Data Center Solutions

Strategic Objectives

Gather and visualize data needed to improve return on investment for cooling across Advanced Technology Center (ATC) data centers:

- Solve hot aisle containment solution challenges.
- Maximize efficiency of air handling units.
- Reduce overall energy usage and costs.

Panduit Solution

SynapSense™ Wireless Monitoring and Cooling Control Solution

Software:

- SynapSense Version 7.4.0

Hardware:

- 2x Wireless Mesh (WM) Gateway
- 120x Wireless Mesh ThermaNode
- 5x Wireless Mesh Pressure Node

Business Benefits

- ROI of 50% on annual cooling costs.
- Less energy required for cooling, and a roadmap for optimizing cooling operations.
- A value-added solution attracting new business opportunities

Driving Energy and Cost Savings Through Data and Visualization

How Panduit Helped WWT Overcome Cooling and Containment Challenges in its ATC Data Centers

Across industries, sizes and geographies, leading organizations are laser-focused on becoming more agile and more efficient in order to maintain their competitive edge. And long-time data center partners Panduit and World Wide Technology (WWT) share a commitment to providing the unparalleled connectivity and physical infrastructure expertise that IT teams need to ensure that their complex data centers can keep pace with demands of the business.

WWT's Advanced Technology Center (ATC) is a collaborative ecosystem used to design, build, educate, demonstrate and deploy innovative technology products and integrated architectural solutions for customers, partners and employees around the globe. Organizations can take advantage of on-demand labs, product comparisons, proofs of concept, product benchmarking, functionality testing, and lab as a service.

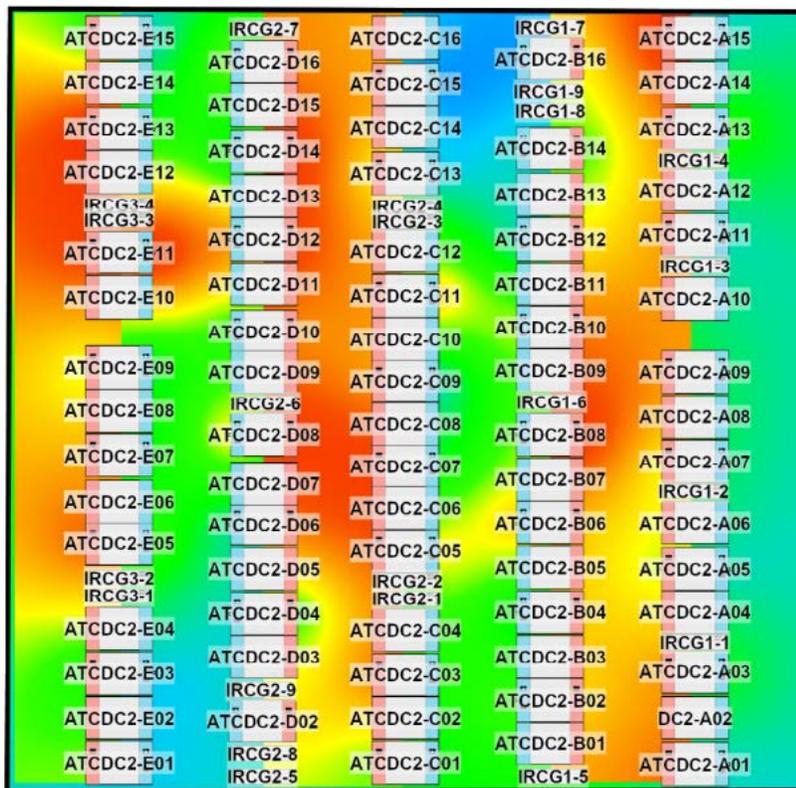
Lab as a Service (LaaS) provides dedicated ATC lab resources and unparalleled access to innovation through the ability to perform programmatic testing leveraging existing OEMs and technology.

Strategic Objectives

In the state-of-the-art ATC environment that's powered by four data centers housing more than 275 racks of equipment, the IT team was wrestling with operational inefficiencies caused by hotspots. Hotspots are local temperature variations that occur in a data center, and containment, which separates hot air from cold air, is a common approach for that's used for preventing them. But no approach is full proof, no data center is fully immune, and hotspots can be hard to find and fix. In fact, any time an ATC customer received an alert about a temperature fluctuation in their environment, the ATC IT team had to manually check all the infrastructure in the data center in order to identify the source of problem.

See a Problem, Solve a Problem

"We knew we had challenges with our hot aisle containment solution that were impacting our Delta T, or the temperature difference between the hot and cold aisles in the data center," said John Matthews, Director of Technical Operations at WWT. "But we didn't have a holistic solution for capturing the relevant data—server temperatures, rack temperatures and so forth—or a way to see where we might have hotspots that could be impacting the environment."



It was during a visit to the Panduit Experience Center that the team first learned about SynapSense™ Wireless Monitoring and Cooling Control Solution and its ability to help them overcome their cooling and containment challenges. SynapSense is a wireless monitoring and cooling control solution comprised of turnkey intelligent software and wireless sensors designed to help data center operators improve energy efficiencies and optimize cooling capacity. SynapSense provides real-time, two-dimensional imaging of the wireless sensor-monitored environment through thermal map color gradients overlaid onto the data center floor plan image. This information can then be displayed via maps or animated movies of temperature, pressure differentials, and humidity levels to identify developing hot spots or anomalies in the data center.

The WWT team was impressed by how Panduit was able to essentially configure any type of data center environment—hot aisle containment, cold aisle containment, or not containment at all—in order to enable customers to experience first-hand what SynapSense could do and see how it could help.

"We had evaluated other rack-level temperature monitoring systems, but they didn't provide the heat map functionality we desperately needed. We had thought our option was to develop it ourselves, until we saw first-hand what SynapSense could do. The Panduit Experience Center opened my eyes to the company's full suite of capabilities and the power of SynapSense," said John.





Another key SynapSense differentiator that intrigued the WWT team was the Wireless Sensor Mesh Network, which is comprised of robust gateways that collect temperature, humidity and pressure differential data from wireless sensors and transmit the data to the web-hosted software. They understood how the responsive software could enable them to monitor and receive alerts on changing conditions of their critical environmental resources, and receive unparalleled visibility, reliability, and resiliency to the data center. Unlike most traditional enterprise data centers, rapid-fire change is the norm in ATC environments, where data center technicians manage more than 400 proofs of concepts (POCs) per year for nearly as many clients. While some POCs run for more than five years, many are completed in one week's time, depending on customer goals and the specifics of the test plan.

A Fast Path to Big Results

The WWT team was equally impressed with the speed and ease of the SynapSense implementation.

Following the SynapSense demo, the Panduit and WWT teams met to discuss the specific objectives and design the deployment, which included:

- Identifying areas where we were not containing and optimizing.
- Setting alarms and alerts to basic thresholds and using software mapping to identify opportunities to optimize airflow for energy and cost savings as well as capacity recovery.
- Automatically monitoring the data center to optimize energy savings and resiliency.

After receiving a floor plan of ATC data centers, Panduit developed a MapSense diagram that included visual indicators for placement of temperature sensors and controllers. Next, the WWT team installed the equipment and configured the temperature sensors over a two-week period. The end result was a live image of the data center revealing hotspots where containment solutions could be optimized in order to reduce energy costs.

According to John, "Implementation was quick and easy, and after a meeting with the team to make a few tweaks, we were fully operational. Most data center infrastructure manager solutions are so complex that it can literally take years connect them to all touchpoints. With SynapSense, we were realizing value in a matter of weeks."

While WWT initially implemented SynapSense in only one slab-floor ATC data center, given the flexibility of the solution and the ease with which it can be implemented, WWT soon opted to expand into three data centers, including one with a raised-floor configuration. The slab-floor data centers contain hot aisle containment, and thus SynapSense is used to both validate and maximize the efficiency of the containment. In the raised-floor data center, which is a more common data center configuration, SynapSense is used to monitor rack inlet temperature, relative humidity and sub-floor air pressure to identify proper cooling and airflow efficiencies and ultimately identify developing problems before they occur. WWT had the ability to analyze trends, respond appropriately, reduce downtime, lower cooling costs and enhance equipment efficiency through this one convenient solution.



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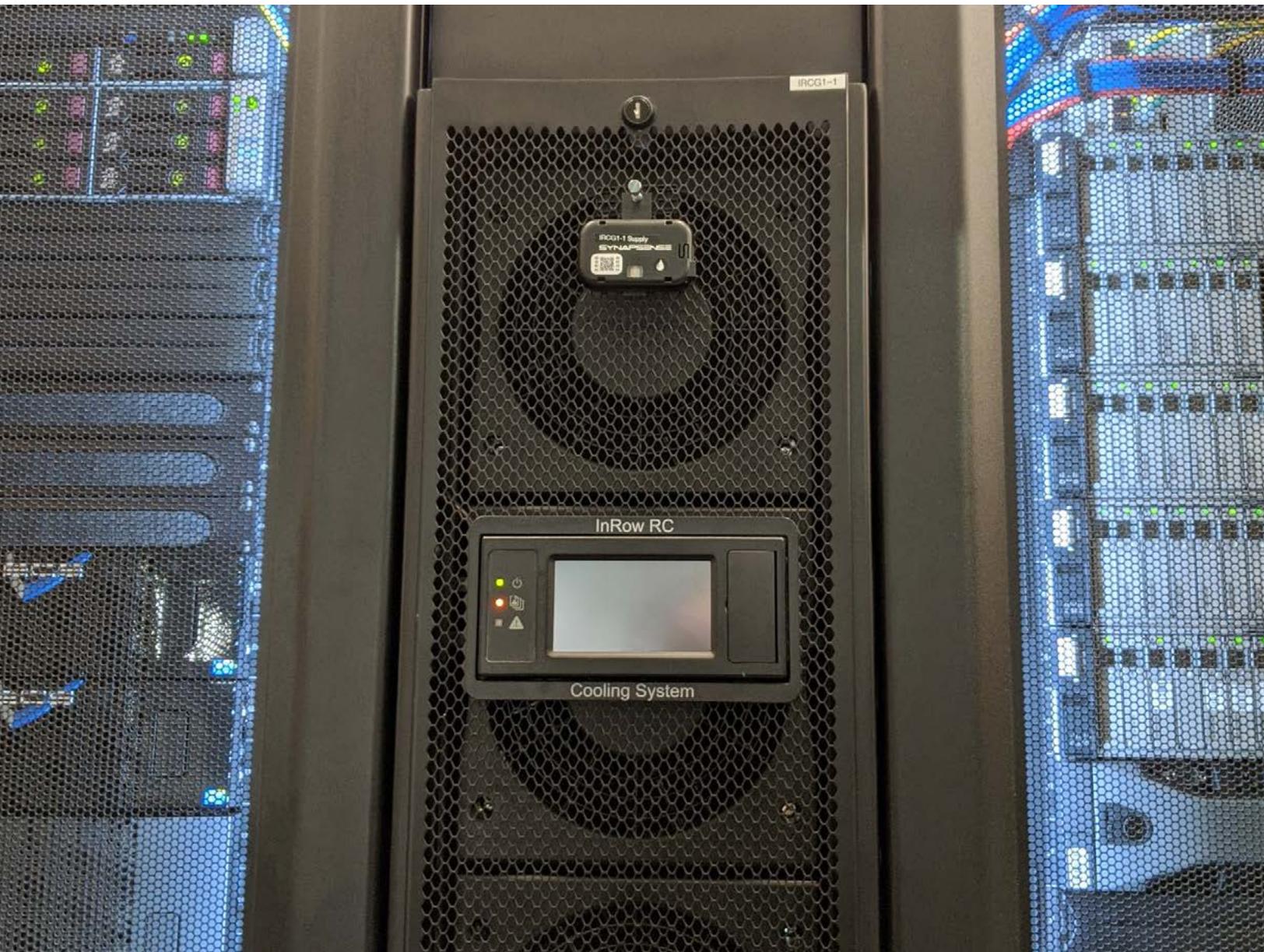
Business Benefits

Energy savings from cooling optimization

Almost immediately, WWT began realizing the benefits of the SynapSense deployment. The best-in-class data visualization capabilities enabled the team to quickly find and fix multiple containment gaps and opportunities for cooling optimization. They also learned they could reduce water temperatures of the chilled water plant and reduce fan speeds in certain areas. In fact, WWT realized a 50% annual savings on cooling costs in the ATC data centers in which they deployed SynapSense, and a 20% overall energy savings.

Business development opportunities from a value-add solution

With the success of the SynapSense deployment, WWT and Panduit launched the Panduit SynapSense Data Center Monitoring Lab, where teams can get a hands-on opportunity to explore the many factors that impact data center cooling, as well as to develop effective data-driven optimization strategies to increase capacity while reducing energy costs. The environment that supports the lab is monitoring an actual ATC data center, which gives a live view into how this solution can help quickly solve environmental risk and optimize operational performance.





Learn More

Partnering with the right physical infrastructure provider with depth and breadth of product offerings is no longer a casual need, it is the new reality.

Learn more about Panduit infrastructure solutions at www.panduit.com/mtdc.

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