

Focus on Customer Comfort to Improve Productivity and Sales

Increase customer and employee satisfaction with building management solutions that deliver productivity and revenue

This solution brief describes how to solve business challenges and enable digital transformation through investment in innovative technologies.

If you are responsible for...

- **Business strategy:**
You will better understand how a central building equipment management solution will enable you to successfully meet your business outcomes.
- **Technology decisions:**
You will learn how a central building equipment management solution works to deliver IT and business value.

Executive Summary

Brick and mortar businesses rely on the building experience to support their mission—happy shoppers, comfortable guests, and productive employees. Businesses with small and mid-sized buildings, or those with multiple buildings, may lack on-site building personnel to manage equipment. As a result, staff who are focused on serving customers are oftentimes interrupted when issues arise. When these systems are not running at optimal performance it negatively impacts productivity and revenue. Systems such as lighting and heating, ventilation, and air conditioning (HVAC) impact the behavior and satisfaction of customers and employees.

Riptide Inc.* makes managing the building experience easy and painless by providing monitoring and control systems that connect and regulate equipment. Using Intel® technology, Riptide provides Internet of Things- (IoT) and cloud-based solutions to optimize comfort and security, improve safety, and reduce energy consumption. Riptide's systems can also sense equipment problems before failures occur, preventing expensive downtime.

Building comfort is a key factor in the overall brand experience. Riptide provides user-friendly tools for real-time temperature and lighting adjustments so staff can remain focused on serving customers. Riptide also provides critical insights into equipment health, allowing businesses to proactively address maintenance issues before they become problems.

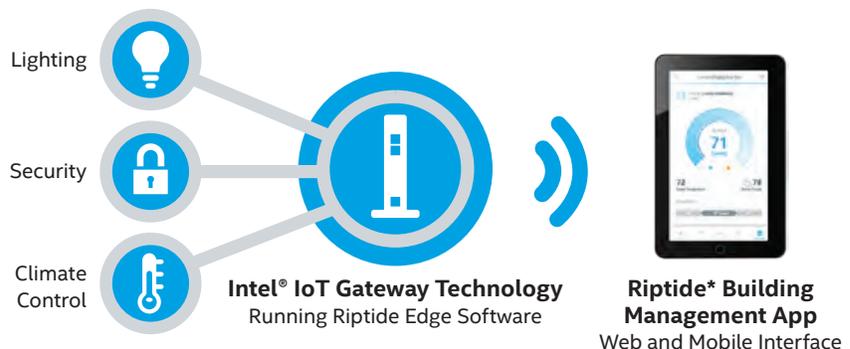


Figure 1. Using Intel® IoT Gateway Technology, Riptide* connects existing building equipment for pain-free management so businesses can focus on customers.

Business Challenge: Building Systems Impact Business Performance

Businesses with small or mid-sized buildings (up to 50,000 square feet) seldom own expensive building automation systems (BASs). Facility management resources are limited and staff are focused on running the day-to-day business and keeping customers happy, not on monitoring behind-the-scenes mechanical, electrical, and plumbing equipment. But systems such as lighting and heating, ventilation, and air conditioning (HVAC) can be key to the overall comfort and experience of building occupants. When these systems fail it can result in a loss of productivity and even revenue.

Building equipment is often in out-of-the-way locations (such as roof tops or back rooms) and staff lack visibility into its performance. This makes it difficult or impossible to predict problems. System failure often occurs during peak-load times when already compromised equipment is pushed to the limit. Heating systems can fail during the coldest months of winter, exposing workers to frigid temperatures. And air conditioners often fail during heat waves, leaving retail staff to swelter in hot, empty stores.

Businesses with small and mid-sized buildings need affordable and easy-to-use solutions that integrate building systems and provide real-time visibility into their performance, which in turn can optimize occupant comfort while also providing important insights into the health of equipment.

Real-time Visibility Provides Important Insights

Whether buildings are used for retail, office, or educational purposes, the occupants' building experience impacts the performance of the business or institution. Keeping building systems that provide lighting, temperature control, ventilation, and security working optimally can make a difference.

Comfortable Retail Customers Spend More Money

Brick and mortar retailers focus heavily on brand experience. Customers' perception of products and services directly correlates to how much money they spend. It also determines how likely they are to promote that brand to others—a critical form of marketing that relies on the customer's first-hand experience.

Building systems that manage temperature, lighting, and environmental safety are often-overlooked influencers of the brand and shopping experience. From the safety of food products to the cleanliness of the restrooms, the holistic customer experience goes far beyond products and services.

Solution Benefits

- **Increased performance and revenue.** Customers judge brand experience on a number of factors, including environment. Building temperature and lighting affect the customer experience, and Riptide helps businesses optimize the comfort of buildings to increase sales and employee productivity.
- **Reduced maintenance and energy costs.** Riptide helps businesses predict necessary maintenance before equipment fails so repairs can be scheduled during non-peak hours. It also provides insights into energy consumption, making it easier to adjust operations and equipment for greater efficiency.
- **Improved safety and security.** Business owners can use Riptide's cloud-based technology solutions to easily monitor temperature, lighting, and access to buildings. Whether the concern is food safety or protecting inventory, the responsibility of security and safety no longer rests solely on multiple staff members in varied locations whose job is to focus on making sure customers are satisfied.

A recent survey conducted by Riptide* suggests that comfortable shoppers spend more money. When asked about their retail shopping experience, 70 percent of respondents reported that they will go elsewhere if the store is too hot, too cold, or too stuffy. Of those shopping for a specific item, customers might purchase only that item without browsing other products.¹

Students Perform Better in Quality Indoor Conditions

Students who attend schools with well-ventilated classrooms, comfortable temperatures, and lighting that simulates natural sunlight are better able to focus on their work. The Journal Behavioral and Brain Sciences states: "Inadequate lighting, noise, low air quality, and deficient heating in the classroom are significantly related to worse student achievement."²

Schools present additional challenges for administrators and facility managers because the buildings are often decades—and in some cases centuries—older than contemporary buildings. Additionally, some schools are subject to tight budgets and resource constraints. Optimizing these buildings for student learning must be affordable and provide a clear return on investment through improved student performance, increased enrollment, or decreased operating costs.

"If the store is uncomfortable, it shows an inattention to customer satisfaction, and I do not wish to spend time or money there."

— Survey respondent

Employees are More Productive in Well-lit Environments

Today, businesses are looking for ways to improve employee productivity and increase retention rates. Job satisfaction is linked with environmental comfort, such as adequate lighting, consistent temperatures, and the organization's commitment to energy conservation. Indoor air quality can impact the number of sick days employees take. A recent study indicated that a 94-percent increase in air quality resulted in a 40-percent increase in employee-reported productivity.³

The cost of energy, while an important consideration in controlling building systems, is a fraction of the cost of lost productivity. According to the "3-30-300" rule of thumb, "a typical organization spends \$3 per square foot on annual utilities, \$30 on rent, and \$300 on payroll."⁴ The office building environment is a critical component in optimizing employee productivity.

Solution Value: Well-run Businesses Run Smart Buildings

Riptide solutions for small and mid-sized buildings can help businesses deliver on their core mission. The benefits include:

- **Optimized comfort.** Lighting, temperature, and ventilation can be easily defined to optimize comfort at different times of the day or week. With a user-friendly interface, making on-the-fly adjustments is easy and convenient.
- **Greater equipment efficiency.** Riptide captures information about the health of equipment and proactively alerts owners to problems before equipment fails. Unexpected fixes are often more costly, but advanced notice allows businesses to schedule repairs at convenient times, minimizing the impact to their business. Monitoring also provides insights into energy consumption, allowing business owners to analyze and adjust operations or equipment for greater efficiency.

- **Improved safety and security.** Managing issues such as food safety temperatures, exterior lighting, and automatic door locks are simplified with Riptide. Whether a business employs 5 or 500 people, consistent, predictable building management helps protect inventory, cash, and data.
- **Increased productivity.** Studies have proven that students and employees perform better in well-lit, well-ventilated environments with consistent temperatures. Increased employee satisfaction is also linked with better employee retention.
- **Increased revenue.** Retail shoppers associate their experience with the overall brand. They are likely to spend more time and money—as well as recommend the brand to others—when stores are comfortable, well lit, and safe.

Combining the reliability and power of Intel® technology with other third-party products, such as sensors, Riptide's end-to-end cloud-based solutions take the pain out of managing building equipment. Using Internet of Things- (IoT) and cloud-based technology, Riptide connects building equipment to control systems that can be monitored and adjusted using a variety of interfaces, including mobile devices.

Solution Architecture: Riptide Solutions Built on Intel® IoT Gateway Technology

Riptide delivers a single, turnkey solution for businesses with small, mid-sized, and multi-site buildings. Intel® IoT Gateway Technology provides the foundation for solutions with high-performance, security-focused, and open, IT-friendly systems, including wireless, edge-to-cloud, and IoT innovations (see Figure 2). Data is collected from various existing systems, such as lighting and HVAC, and is then standardized and integrated to provide a clear view of energy consumption and equipment health.

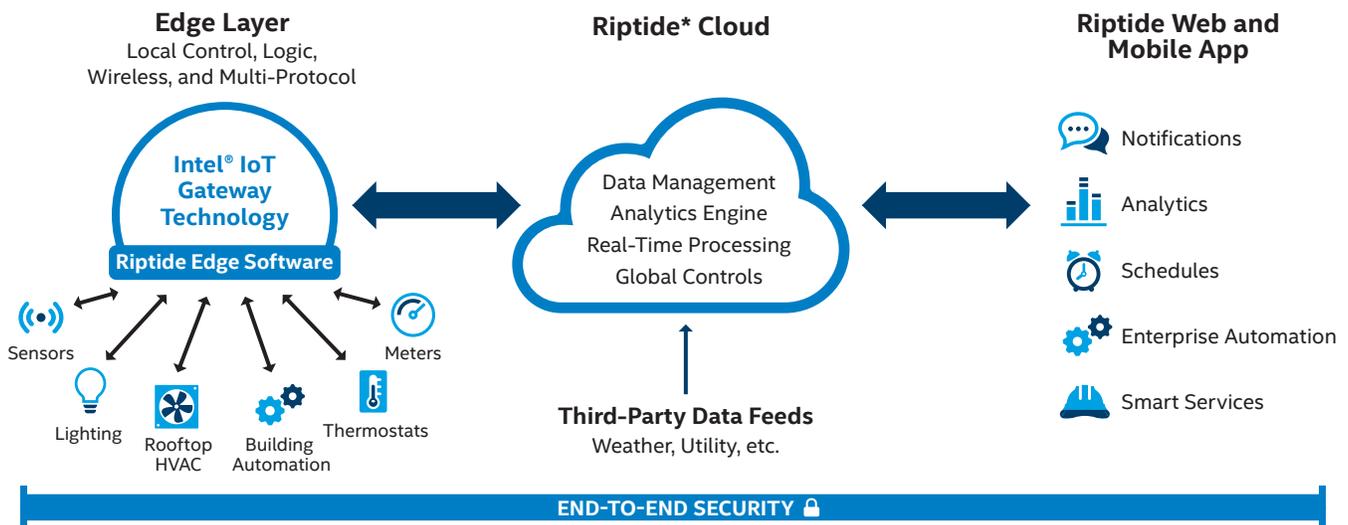


Figure 2. Equipment data is collected, transmitted, and analyzed to ensure building systems are functioning within pre-defined policies for lighting, security, and HVAC. A user-friendly interface allows owners and employees to quickly and easily make adjustments or identify problems.

Conclusion

The comfort and safety of the building—temperature, ventilation, lighting, and security—play a significant role in the productivity of employees and students, as well as the overall satisfaction of customers. Surveys suggest that students perform better in healthier environments, and retail shoppers spend more money in comfortable stores. Top performing organizations know that the customer and brand experience include the building experience.

Riptide delivers end-to-end solutions for businesses with small, mid-sized, and multiple-building sites using IoT and cloud-based technology that connects and optimizes existing building equipment. Built on Intel technology, Riptide offers reliable, powerful turnkey solutions that help businesses stay focused on customers.

Find the solution that is right for your organization. Contact your Intel representative or visit intel.com/energy.

Solutions Proven By Your Peers

Intel Solutions Architects are technology experts who work with the world's largest and most successful companies to design business solutions that solve pressing business challenges. These solutions are based on real-world experience gathered from customers who have successfully tested, piloted, and/or deployed these solutions in specific business use cases. Solutions architects and technology experts for this solution brief are listed on the front cover.

A Closer Look at Riptide Inc.*

Riptide Inc.'s mission is to provide an exceptional building experience. Business owners rely on buildings and equipment to support their business. Riptide solutions make the physical environment easier to control. Maintaining the perfect customer experience is not easy, but decades of experience in cutting-edge building systems enabled Riptide to develop the first simple solution for operators of buildings up to 50,000 square feet.

Whether it is 10 buildings or 10,000, Riptide helps connect and simplify the health and management of building control systems.

For more information about Riptide, visit riptideio.com

Learn More

You may also find the following resources useful:

- **Riptide Building Automation Systems:** riptideio.com
- **The Wireless Internet of Things: Finding the Right Tool for the Job:** blogs.intel.com/iot/2016/02/22/the-wireless-internet-of-things-finding-the-right-tool-for-the-job/?wapkw=iot+preventative+maintenance

Solution Provided By:



¹ Based on a 2016 retail shopper survey commissioned by Riptide and conducted by Two-Bit Operations, LLC.

² Indoor Air Quality and Student Performance bbs.sagepub.com/content/1/1/4.abstract?patientinform-links=yes&legid=spbs;1/1/4

³ Qualifying the Hidden Benefits of High-Performance Buildings [www.sustainabilityprofessionals.org/system/files/Valuing Green Building.pdf](http://www.sustainabilityprofessionals.org/system/files/Valuing%20Green%20Building.pdf)

⁴ True or False: Saving Energy in the Workplace Automatically Drives Productivity www.energymanagertoday.com/true-false-saving-energy-workplace-automatically-drives-productivity-0105930/

All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest Intel product specifications and roadmaps.

Cost reduction scenarios described are intended as examples of how a given Intel-based product, in the specified circumstances and configurations, may affect future costs and provide cost savings. Circumstances will vary. Intel does not guarantee any costs or cost reduction.

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