FROST & SULLIVAN

BEST PRACTICES

AWARDS

FROST & SULLIVAN

2020 | BEST PRACTICES AWARD

Trilliant

2020 GLOBAL
SMART CITY SOLUTIONS
COMPANY OF THE YEAR AWARD

Contents

Background and Company Performance

Industry Challenges

The growth of the Internet of Things (IoT) and Big Data tools are having a profound impact on consumer and business markets, enabling new products and services such as home automation, connected cars, and digital healthcare. In the enterprise market, including government agencies, IoT is accelerating the pace of digital transformation to help organizations become more efficient and effective. IoT solutions can also arm key officials in municipal governments with real-time data from sources such as emergency services, energy, and transportation to support and improve decision-making.

Today, city planners and managers face a range of challenges that create pressures on infrastructure and other city resources. Aging infrastructure, growing population, and rising citizen safety and security concerns prompt cities to deploy technologies that improve living standards while also reducing waste. Moreover, natural and manmade disasters create the need for city planners and local government agencies to implement programs and enact policies that enable early detection of such incidents and offer timely notifications to their citizens. City governments must also create programs, policies, and procedures that help law enforcement and first responders carry out their responsibilities efficiently. For cities operating their utilities, there also exist significant environmental sustainability pressures to improve water quality, conserve resources, and reduce carbon footprint.

From an economic standpoint, several state and city governments in the United States (US) continue to face revenue shortfalls and rising expenditures, forcing them to plug budget deficits through borrowing. Investing in technology can help drive change by allowing city planners to increase the overall attractiveness of their cities in terms of quality of life, avoid negative net migration, and even identify new revenue sources. To address such challenges, city governments turn to information and communication technology, including IoT-based solutions, to improve operational processes and outcomes, infrastructure, and overall environment.[1] The North American smart city market alone was worth $148.9 billion in 2018, and Frost & Sullivan expects it will increase at a compound annual growth rate of 10% through to 2025.[2] Given the large number of interdependencies and cross-leveraging of systems, sensors, and platforms required by the market, ease-of-integration and single-pane-of-glass visibility are vital in the context of smart infrastructure in urban environments. A vendor that can overcome these challenges and enable clients to achieve a high return on investment (ROI), avoid rip-and-replace strategies, and increase overall efficiency will capture significant market share and become a leader in the smart city solutions market.

Visionary Innovation & Performance and Customer Impact

Founded in 2004, North Carolina-headquartered Trilliant leverages more than 15 years in the connectivity market to develop unique smart city solutions that enable cities to link

---

[1] *Internet of Things—Creating Smart Cities and Engaged Communities Across the US Market* (Frost & Sullivan, February 2018)

[2] *The Future of Smart Urban Infrastructure in North America, 2018–2025* (Frost & Sullivan, November 2019)

different agencies' systems to improve situational awareness and operational efficiency. The Trilliant IIOT Platform allows city agencies to connect their various systems through a single, unified solution for complete visibility of their smart devices, sensors, and systems as well as those of other agencies within their city. Trilliant positions itself to provide superior customer service and support to its clients across the globe through its US, Canada, United Kingdom (UK), and Singapore offices.

Frost & Sullivan recognized Trilliant as the 2018 North America Enabling Technology Leader in the smart city solutions market and remains impressed by the company's continuing innovations, competitive strategies, customer support, impressive partnerships, and overall best practices.

Revolutionary Smart City Connectivity and Management Technology: IIoT Platform

Trilliant's highly scalable, flexible, and secure IIOT Platform enables a city's agencies to link all their IoT-connected devices, data feeds, and systems into a single comprehensive, integrated solution. The solution allows operators to be aware of the city's incidents and processes holistically to make real-time intelligence-based decisions while providing citizens with improved safety and security. The company's platform can save city maintenance and labor costs and valuable time, enabling city employees to be more productive. Trilliant displays data in a single pane of glass for informed, fast monitoring and rapid reaction times. Operators can prioritize events and alert the proper city resources needed to mitigate the incident. In specific events, a delayed reaction time can mean the difference in millions of dollars in damage; as such, Frost & Sullivan notes that some cities can realize an immediate ROI after Trilliant's IIOT Platform deployment and through one significant incident.

Trilliant's IIOT platform provides operators with unmatched analytics and insight into the city's data from smart devices, sensors, and systems. The company's solution consolidates a city's smart technology-collected information into a single platform, enabling operators to improve workflows, operational efficiency, employee safety, asset management, and systems' reliability through continuous automated monitoring. The fully customizable IIOT platform provides graphs, charts, and other information to help operators understand the massive amounts of gathered data and allows them to filter information as needed to reduce "screen noise."

Trilliant's IIOT Platform alerts operators to the city's system events, allowing them to analyze and manage situations and dispatch maintenance personnel. For instance, if a street lamp's light bulb burns out, the platform notifies the operator that the lamp post requires maintenance. Conventional city maintenance processes demand a city employee inspect each street light individually, increasing their workload and consuming time they could spend on more pressing needs. Furthermore, if an energy facility or one of its substations experiences a power outage in an area with traffic lights, the platform can help pinpoint the exact location of the outages, allowing for better coordination to help redirect traffic flow or deploy law enforcement to help direct traffic. Currently, cities handle such situations manually, requiring someone to inform law enforcement of a power outage so they can dispatch an officer to direct traffic. Trilliant's platform allows law enforcement to

manage potentially dangerous events more quickly and efficiently than traditional processes by alerting them instantly, increasing citizen safety significantly.

Trilliants IIOT Platform is compatible with all major IT hardware, software, and operating systems, allowing a city to reduce rip-and-replace practices; they can integrate the technology with their existing infrastructure, which considerably decreases financial costs and operational downtime. The platform collects and monitors data from a diverse range of smart devices, sensors, and other systems. The IIOT Platform can support millions of endpoints, including advanced traffic management, garbage receptacles, energy storage, surveillance cameras, and water treatment plants.

Trilliant developed SLC-3100, an intelligent wireless lighting controller that supports analog and digital sensor inputs and offers highly accurate power metering and health monitoring of a city's light fixtures. The technology's power metering feature enables operators to view lighting energy usage—in real-time or recorded past readings—while a separate capability allows operators to turn on/off or dim lights independent of each other. These SLC-3100 capabilities enable operators to monitor and adjust lighting, as necessary, throughout a city to reduce financial costs while ensuring each location is well lit to decrease crime and increase overall citizen safety.

Moreover, Trilliant offers SLC-3100 with an optional Global Positioning System (GPS) capability that enables UnitySuite® to alert and show operators automatically which light fixture requires attention, relevant information regarding that specific street light, and its exact location, allowing maintenance personnel to find and repair street lights rapidly. Without the GPS unit, cities can still record each pole's identification (ID) number, SLC ID number, and location by Latitude and Longitude, enabling operators and maintenance personnel to locate street lamps on a mobile map application—e.g., Google Maps—via Apple iOS and Android. However, this adds more work for city employees to log and find street lamps, and ultimately, it carries a higher labor cost for cities compared to cities that utilize SLC-3100's GPS option. Frost & Sullivan research analysts point out that Trilliant's non-GPS-equipped SLC-3100 still provides significantly lower financial costs to cities compared to cities that do not employ any street light monitoring solution.

Trilliant's smart metering technology—advanced metering infrastructure (AMI)—provides critical national infrastructure (CNI) companies, such as energy, water, and gas, with actionable intelligence and remote monitoring and management by securely integrating information technology and operational technology systems. Frost & Sullivan notes that Trilliant ensures its communications platform meets a region's strict industry compliance standards, which is vital for CNI organizations. The company's AMI solution and UnitySuite® software saves utility companies labor costs related to the traditional practice of deploying employees in the field to read and record consumer utility usage manually for billing purposes. One customer, Nolin Rural Electric Cooperative Cooperation, experienced a 99% reduction in truck rolls since deploying Trilliant's network to manage their advanced metering infrastructure. With Trilliant's UnitySuite solution, operators can view usage information remotely; and, thus, conduct streamlined timely and accurate billing practices while improving employee safety through reduction of time in the field manually

managing meters. Utility facilities using Trilliant's AMI technology can monitor and detect system losses—e.g., gas or water pipe leaks—and predict future consumer use, enabling CNI organizations to prepare for and prevent supply shortages. Utility facilities can also disconnect or reconnect services remotely—in less than 30 minutes—to a consumer or location, and Trilliant's AMI solution notifies the utility company of outages and energy restorations in real time, enabling operators to deploy maintenance personnel quickly to decrease operational downtime.

Impressive Partnerships, Case Studies, and Client Satisfaction

Trilliant closely collaborates with its world-renowned partners to offer best-in-class systems integration, software and analytics, distribution automation, smart metering, smart cities and smart street lights, and smart consumer solutions. The company's global partners include innovative industry leaders such as Apollo Metro Solutions, Ecobee, eMeter, General Electric, SAS, MultiTech, GridDirector, IBM, LS Research, and Siemens. Through the company's in-depth expertise and robust partner network, Trilliant positions itself to excel at complex CNI integrations while significantly reducing a client's operational downtime and increasing ROI and safety. Furthermore, the company works closely with clients and partners to ensure that it meets clients' needs during the implementation and configuration process. For instance, Trilliant supports clients' system design planning, all while ensuring that they deploy the proper solutions and prepare for long-term goals to accommodate future growth.

British Gas in the UK deployed Trilliant's smart metering solutions throughout its service area. A few years after the program launch, the utility company conducted a study that revealed consumers living in houses equipped with Trilliant's smart metering technology used 6% less gas and 7% less electricity than houses without smart meters. British Gas discovered that this discrepancy was because smart meter consumers were aware of their energy use through Trilliant's platform; these households saved financial costs while also reducing their carbon footprint.

Another case study demonstrates how Trilliant's solutions can impact CNI organizations annually. A utility in the Northeast US experienced a 90% reduction in safety incidents and a 50% reduction in "high bill" calls from customers while saving 65,000 gallons of fuel and avoiding 569 tons of carbon dioxide emissions. They also achieved a 20% reduction in power outage time by receiving seven times more data through Trilliant's automated solution.

In an already expanding market, Trilliant positions itself to grow and capture more market share in the smart city solutions industry by remaining innovative and providing clients with an exceptional customer service experience. The company continually looks for devices, sensors, and systems that it can integrate with its technology to develop a more comprehensive solution for clients to enable them to achieve higher ROI and further improve efficiency.

Conclusion

Frost & Sullivan research shows that many cities hesitate to deploy smart technologies due to budgetary concerns, risk of operational downtime, and uncertain return on investment. The Internet of Things' (IoT) proliferation introduces benefits that enable cities to implement smart technologies that streamline workflows, improve operational efficiency, and increase citizen safety. Trilliant's IIOT Platform solution enables a city's agencies to link and view their smart IoT-connected devices, data feeds, and systems in a single, comprehensive platform for superior situational awareness and actionable insights. The company's platform decreases consumers' energy usage and enables cities to achieve a high return on investment and increase safety for citizens. With its innovative solution, exceptional customer support, and strong overall performance, Trilliant earns Frost & Sullivan's 2020 Global Company of the Year Award in the smart city solutions market.

Significance of Company of the Year

To receive the Company of the Year Award (i.e., to be recognized as a leader not only in your industry, but among non-industry peers) requires a company to demonstrate excellence in growth, innovation, and leadership. This excellence typically translates into superior performance in three key areas—demand generation, brand development, and competitive positioning—that serve as the foundation of a company's future success and prepare it to deliver on the 2 factors that define the Company of the Year Award: Visionary Innovation and Performance, and Customer Impact).

Understanding Company of the Year

Driving demand, brand strength, and competitive differentiation all play critical roles in delivering unique value to customers. This three-fold focus, however, must ideally be complemented by an equally rigorous focus on Visionary Innovation and Performance to enhance Customer Impact.

Key Benchmarking Criteria

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated each factor according to the criteria identified below.

Visionary Innovation & Performance

Criterion 1: Addressing Unmet Needs
Criterion 2: Visionary Scenarios through Mega Trends
Criterion 3: Implementation Best Practices
Criterion 4: Blue Ocean Strategy
Criterion 5: Financial Performance

Customer Impact

Criterion 1: Price/Performance Value
Criterion 2: Customer Purchase Experience
Criterion 3: Customer Ownership Experience
Criterion 4: Customer Service Experience
Criterion 5: Brand Equity

Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate Award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

STEP		OBJECTIVE	KEY ACTIVITIES	OUTPUT
1	**Monitor, target, and screen**	Identify Award recipient candidates from around the globe	• Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies	Pipeline of candidates who potentially meet all best-practice criteria
2	**Perform 360-degree research**	Perform comprehensive, 360-degree research on all candidates in the pipeline	• Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates	Matrix positioning of all candidates' performance relative to one another
3	**Invite thought leadership in best practices**	Perform in-depth examination of all candidates	• Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps	Detailed profiles of all ranked candidates
4	**Initiate research director review**	Conduct an unbiased evaluation of all candidate profiles	• Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles	Final prioritization of all eligible candidates and companion best-practice positioning paper
5	**Assemble panel of industry experts**	Present findings to an expert panel of industry thought leaders	• Share findings • Strengthen cases for candidate eligibility • Prioritize candidates	Refined list of prioritized Award candidates
6	**Conduct global industry review**	Build consensus on Award candidates' eligibility	• Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates	Final list of eligible Award candidates, representing success stories worldwide
7	**Perform quality check**	Develop official Award consideration materials	• Perform final performance benchmarking activities • Write nominations • Perform quality review	High-quality, accurate, and creative presentation of nominees' successes
8	**Reconnect with panel of industry experts**	Finalize the selection of the best-practice Award recipient	• Review analysis with panel • Build consensus • Select winner	Decision on which company performs best against all best-practice criteria
9	**Communicate recognition**	Inform Award recipient of Award recognition	• Announce Award to the CEO • Inspire the organization for continued success • Celebrate the recipient's performance	Announcement of Award and plan for how recipient can use the Award to enhance the brand
10	**Take strategic action**	Upon licensing, company able to share Award news with stakeholders and customers	• Coordinate media outreach • Design a marketing plan • Assess Award's role in future strategic planning	Widespread awareness of recipient's Award status among investors, media personnel, and employees

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS

About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation, and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.