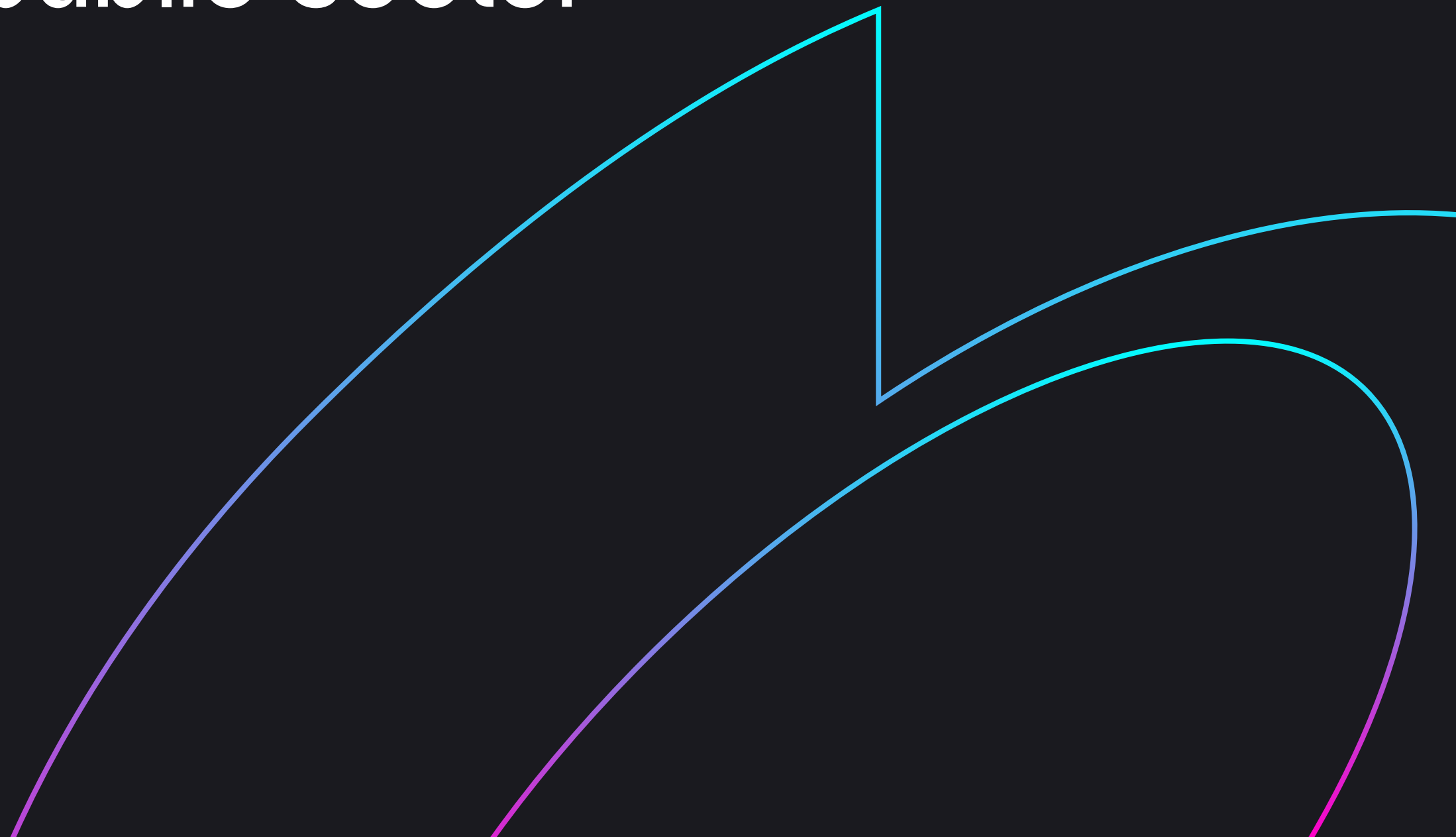




EBOOK

Maximizing impact in the public sector



Introduction

Public works, transit services, educational facilities and wastewater management systems are essential for communities to function and thrive. In today's digital age, the **public sector** strives to address evolving public needs and demands while enhancing the experience for customers and employees.

Because of the complexities and unpredictable political, economic and social environments impacting the public sector, agencies and organizations can better prepare and respond to crises by embracing digitalization. With digital transformation, the public sector can build and maintain a more sustainable infrastructure, enhance public safety, reduce costs while optimizing resources, increase transparency and accountability, and ultimately, deliver better experiences.



Public sector impact



Utilities

The lights stay on. The heat runs. The water flows. Utilities form the invisible backbone of daily life — and when they fail, communities feel it immediately. Reliable utility infrastructure is what allows everything else to function.



Wastewater/water

Clean water is a public health issue, an environmental issue and an equity issue. Effective water and wastewater management protects communities from disease, safeguards ecosystems and ensures that one of our most critical resources remains safe and accessible.



Municipalities

From maintaining roads to issuing permits to managing parks, municipalities are where government meets daily life. The decisions made at the local level shape how communities grow, how residents move through their cities and how public dollars get put to work.



Public transportation

A well-connected transit network expands opportunity. It determines whether someone can get to work, access healthcare or participate in their community — without needing a car. Transit infrastructure is one of the most direct levers for reducing inequality and improving quality of life in urban and suburban areas.



Public safety services

Fire departments, police agencies and emergency management teams are on the front lines when things go wrong. Their ability to respond quickly and effectively depends on the systems, resources and infrastructure behind them.



Education

Schools and universities are where communities invest in their future. Safe, well-maintained educational facilities directly affect student outcomes — and the long-term health of the communities they serve.



Federal entities

Federal agencies set the standards, fund the programs and coordinate the responses that shape public life at every level — from national infrastructure investment to safety regulation and emergency response.

Public sector challenges

The public sector must navigate various obstacles that impact safety, stability, efficiency, productivity and sustainability. **Governments** are generally slower to adopt technology than the private sector because of deficient funding, higher public scrutiny, complex contracting processes, lack of internal IT capacity and agency fragmentation.

Because of the slow adoption rate and the increasing pressure to do more with less, public sector agencies struggle to optimize, secure and manage the vast amount of structured and unstructured data they generate, store and analyze. This has resulted in a backlog of issues affecting the public sector's efficiency.

How many of these challenges is your organization facing today?

- **Compliance and standards:** Meeting evolving government and industry regulations while maintaining consistent adherence across operations.
- **Workforce management:** Keeping teams safe, trained and retained in an environment where skilled labor is increasingly hard to find.
- **Project execution:** Managing projects efficiently with the right people, tools and processes in place from the start.
- **Budget stewardship:** Delivering on scope and schedule while serving as responsible stewards of public funds.
- **Collaboration and data trust:** Working from consistent, reliable information across projects, teams and operational boundaries.

- **Outdated systems:** Relying on project control systems and legacy tools that can't keep pace with today's operational demands.
- **Process inefficiency:** Losing valuable resource time to disconnected tools, manual maintenance tasks and time-consuming paper-based processes.
- **Visibility and auditability:** Struggling to access, retrieve and audit information across the organization when it matters most.
- **Communication gaps:** Bridging the information divide between upper management, supervisors and frontline technicians.
- **Shift and event management:** Operating without standardized digital shift logs, event logs or escalation processes — increasing risk and response time.
- **Asset investment reporting:** Overcoming reporting obstacles that slow down asset investment decisions and performance analysis.
- **Unplanned maintenance:** Maximizing asset performance and reducing the operational and financial impact of unplanned downtime.

Ineffectively addressing these challenges may negatively affect your projects and daily operations in the form of project delays, missed deadlines, operational inefficiencies, workplace incidents, unplanned downtimes and resource issues. These problems may lead to additional issues such as financial audits or shortfalls, contract terminations, fees or penalties, legal disputes, workforce attrition and more.

Digital transformation for the public sector

According to **Gartner's** top trends for government technology, agencies are looking to embrace technologies that will empower citizens and employees across multiple channels and modes of interaction. In doing so, organizations that correctly deploy digital solutions can expect to positively impact the total experience for a more comprehensive transformation of services to support goals and priorities. Amid the fourth industrial revolution, the public sector must continue to accelerate and evolve by adopting advanced technologies that include:

Artificial intelligence (AI) and automation

Agencies are incorporating AI-powered and autonomous solutions to fine-tune their operations, lower expenses, elevate quality, minimize waste and reduce downtime.

Advanced analytics

Advanced analytics involves using sophisticated statistical techniques and state-of-the-art technologies to analyze data, extract valuable insights, recognize patterns and provide predictive capabilities.



Predictive maintenance

Deploying maintenance and sensor software allows for continuous real-time monitoring and analysis of your operational sites. These advanced technologies can identify potential incidents, whether at the level of individual components or entire facilities and ensure peak operating efficiency.

Machine learning

Falling under the artificial intelligence umbrella, machine learning centers on creating algorithms and statistical models. These tools empower computer systems to enhance proficiency in a particular task by analyzing data without explicit programming. In simple terms, machine learning allows machines to glean insights from data and use that knowledge to make predictions and informed decisions.

Digital twins

Digital twins offer operators virtual duplicates of systems and processes, allowing them to perform testing, integration, simulation and monitoring. This functionality empowers operators to base their decisions on data and enhance efficiency. Learn more about digital twins in this informative video.

IIoT

The Industrial Internet of Things (IIoT) enables organizations to monitor and manage processes beyond traditional systems' capabilities.

Mobility and the connected worker

Applications that untether workers from an office-only environment and provide the necessary information to perform duties more efficiently and productively on the go and in the field. Connected worker technology includes wearables, digital work procedures, mobile apps, remote operator assistance and video training resources. This technology is not limited to the private industrial sector but is equally essential for public sector organizations that manipulate data and execute work processes in the field.



Octave's Smart Digital Reality and the public sector

The Smart Digital Reality represents a unified, real-time portrayal of industrial facilities' physical and digital aspects, enhanced with intelligent process automation and data analytics capabilities. Leveraging a digital framework, this platform establishes connectivity across the entire lifecycle of assets, ensuring secure and sustainable operations, cost efficiency and improved production and workforce productivity.

Octave's approach to the Smart Digital Reality within the public sector assists organizations and agencies in **designing, building, operating and protecting** safe, sustainable, cost effective and efficient services. This is achieved by collecting data from diverse sources, contextualizing and visualizing it and subsequently enhancing operational processes across the entire asset lifecycle.



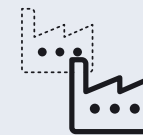
Streamlined workflows

Customized sensor and software systems seamlessly integrate into your existing workflows, enhancing their speed and adaptability.



Unified realities

A digital twin that blurs the boundaries between the physical and digital, offering a comprehensive 360-degree view of the public sector.



Beyond the digital twin

Facilitating autonomy in both your digital twin and operations, enabling the development of solutions and processes that reduce, or potentially eliminate, the need for human intervention.



The digital backbone

Octave's core technology competencies enable a feedback loop called the digital backbone – creating freedom of insight so you can be proactive, preventative and event-predictive.



Design

Schematics and 3D
Engineering analysis
Engineering info management
Geospatial



Build

Construction
Project performance
Supply chain management
Completions



Operate

Enterprise asset management
Asset performance
Quality assurance
Operations optimization



Protect

Public safety
Inter-agency collaboration
Physical security
Industrial cybersecurity

Databridge Pro

Databridge Pro is Octave's common integration platform that seamlessly moves and transforms data across systems, connecting and enabling workflows end-to-end across the Design, Build, Operate and Protect pillars.

Digital solutions for the public sector

Regardless of your current digital maturity level, you can empower your organization to take the necessary steps to develop a Smart Digital Reality with Octave. Create an interoperable digital backbone to fuel data into and across your projects and operations, starting with implementing essential solutions in top-priority areas and integrating supplementary tools to establish a holistic ecosystem.

Here are some of the key solutions available to empower efficient public sector projects and operations with data-driven insights:

Octave InConcert (formerly HxGN SDx2)

Enhances efficiency across the project and asset lifecycles as the engineering system of record that provides the definitive, contextualized source of truth. Improve project execution, support digital twins and sustaining engineering while reducing asset downtime and improving safety.

Octave Sequence Enterprise (formerly EcoSys)

Optimizes your project portfolios, identifying the right timing, capacity and resources while controlling costs and improving the outcomes across all your projects.

Octave Tempo Operations Management (formerly j5 Operations Management)

Streamlines workflows by facilitating the documentation and oversight of critical processes, including shift operations management, maintenance and process work, while promoting effective process control.

Octave Attune EAM (formerly HxGN EAM)

Enables critical asset management by delivering accurate and trusted data, strategic insights and informed decision-making that complies with existing policies, investment plans and asset performance.

Octave Tempo Operating Procedures (formerly AcceleratorKMS)

Expedites the digital transformation of high-risk operational procedures and work processes and enables the management, governance and distribution of critical content to the workforce for peak operations.

Octave Loop Core (formerly HxGN Supply Chain Core)

Loop Core is a SaaS, web-based, scalable supply chain platform for capital projects. It helps reduce risk, control costs and accelerate schedules— covering BOM intake, material planning/procurement, expediting/logistics, contracts and site material readiness with a shared portal and actionable analytics to identify bottlenecks and optimize decision-making.

Octave OnSite Visualize and Visualize Max (formerly iConstruct PRO and MAX)

Allows users to configure and manage a range of information from various design models (plus additional data) into a manageable, multi-user format through powerful and advanced Building Information Modeling (BIM) technology. Visualize Max includes all Visualize features plus a specialized Control Panel designed for Advanced Work Packaging (AWP) and Workface Planning.

Octave OnSite Completions (formerly Intergraph Smart Completions)

Creates a foundation of information with traceability and accountability for planning, execution and custody transfer processes by aligning activities and handover requirements between construction and commissioning through operations.

Octave Forte 3D (formerly Intergraph Smart 3D)

Enables the design of complex industrial facilities by distributed teams across a region or around the world. The fully integrated environment allows maximum design production control and security with powerful change management and tracking capabilities. Laser-scan point cloud integration and modeling tools enable the ongoing "as-built" representation for optimum downstream use in the facility lifecycle.



Octave Tempo Control System Effectiveness (formerly PAS PlantState Integrity)

Ensures safe, reliable and compliant industrial operations with solutions for alarm management, boundary management, control loop monitoring and tuning and managing Independent Protection Layers (IPL) on a single platform.

Octave NetWorks (formerly HxGN NetWorks)

NetWorks extends enterprise asset management capabilities by empowering utility and telecommunications operators with accurate location-based digital twins of networks and supporting structures. Through data-driven insights and predictive solutions, NetWorks optimizes engineering and operations by enhancing efficiency, shaping a smarter, more resilient future.

Public sector customer success stories

As the public sector strives to build stronger, more equitable communities and more resilient economies, it will require a progressive acceleration of technology to address what Deloitte calls “transformational trends” in areas such as data, funding and workforce to pool resources and capabilities.

Gartner reports that global government IT spending rose to 589.8 billion in 2023, an increase of 7.6% from 2022, with most of this expenditure going toward initiatives to enhance the resilience and efficiency of public services. In addition, Gartner noted that governments are inclined to purchase solutions that are environmentally sustainable, energy-efficient and resilient to natural disasters, climate change and physical and cyber threats.

With this sector poised for a boost of \$1.75 Trillion (BCG 2023) in annual productivity by 2033, propelled by generative AI, agencies and organizations require proven digital solutions that will empower their workforce and enable heightened agility, transparency, productivity and operational efficiency across projects and assets.



Customer success spotlight

Serving millions of customers with robust municipal water project efficiency and cost control

This [American municipal utility](#) serves a growing population of 4.1 million people via an intricate water system with an annual budget of over \$4 billion and a dedicated workforce of approximately 9,500 employees.

Before building a digital backbone

The utility's Water Engineering and Technical Services division oversaw a 10-year capital water system initiative, managing over 200 projects through its Capital Improvement Program Management System (CIPMS) launched in 2001. This system included budgeting, forecasting, performance and earned value management, scheduling and resource management. A primary goal was to monitor the progress of 28 critical projects mandated by the state's Department of Public Health to improve the water supply quality and safety. Challenges such as prolonged monthly procedures, intricate project status completion and complex resource loading led the organization to upgrade its aging CIPMS.



After building a digital backbone

In response to challenges in performance management and reporting, the organization upgraded its aging CIPMS. Opting for Sequence Enterprise Enterprise Project Performance software as the central hub, the solution standardized project structures and automated data sharing among Primavera P6, the budget system and the legacy ledger. This brought substantial labor reduction, immediate project visibility and improved reporting flexibility. The Sequence Enterprise upgrade enabled swift access to role-based dashboards, quick revisions to project schedules and enhanced performance metrics for efficient project management. The web-based solution also reduced data errors and required minimal post-deployment IT resources. This success led to the ongoing development of enhanced metrics and potential expansion into Operations and Maintenance (O&M) Budgeting and Power System use.

Success snapshot	
Customer	One of the largest municipal utilities in the United States, serving over 4.1 million customers
Challenges	• Prolonged monthly procedures • Intricate project status completion • Complex resource loading • Aging capital improvement system • Comprehensive system management • Compliance with state mandates • Project scalability
Solution	Sequence Enterprise
Results	• Standardized project structures • Automated data sharing • Labor reduction • Immediate project visibility • Improved reporting flexibility • Swift access to role-based dashboards • Quick revisions to project schedules • Enhanced performance metrics • Reduced data errors • Minimal post-deployment IT resources • Ongoing development of enhanced metrics

Customer success spotlight

Taming the ebb and flow with better, safer, more efficient operations management

A [Canadian municipality](#) operates five wastewater treatment facilities, collectively processing around 270,000 cubic meters of water daily. The inflow, drawn from gravity sewers or force mains linked to thirty-six pumping stations, undergoes treatment along a river. The process involves settling tanks for solids removal, bacteria for organic matter breakdown and ammonia conversion, chemicals for phosphorous removal and ultraviolet light for disinfection.

Before building a digital backbone

The client encountered operational hurdles as it depended on disparate paper logbooks and spreadsheets across its five treatment plants and thirty-six pumping stations. This method posed challenges in accessing historical data, hindering communication and operational effectiveness. Multiple users using spreadsheets led to issues such as missing files and versions, complicating activity tracking. Manual tasks and work planning contributed to operational ambiguity. The objective was to streamline data retrieval, meet regulatory log requirements and improve efficiency. Additionally, compliance with local sewage and wastewater regulations and ensuring accessibility of logs for regulatory scrutiny were essential goals, aiming to overcome past challenges and promote compliant wastewater treatment operations.



After building a digital backbone

The client opted to adopt Tempo Operations Management Solutions, implemented by Octave Partner, InSource Software Solutions, to modernize information management, replacing outdated paper and spreadsheet methods. Despite initial skepticism, the user-friendly Tempo Operations Management interface on desktop and mobile devices improved communication and eliminated unnecessary travel. The system streamlined historical logbook retrieval, preventing duplicates and established a centralized web platform, resolving issues with scattered spreadsheet files. Tools like Tempo Operations Management Operator Rounds and Mobility enhanced operational planning and accountability. With bidirectional connectivity to external databases, the digitalization process ensures compliance with local sewage and wastewater regulations. This implementation efficiently responds to regulatory requests, providing a digital storage solution for compliance purposes and enabling clearer operations tracking across forty-one locations.

Success snapshot	
Customer	A major Canadian municipality wastewater treatment plant
Challenges	• Disparate information management • Limited historical data accessibility • Spreadsheet-related issues • Manual task and work planning • Regulatory compliance challenges • Past challenges hindering operations
Solution	Tempo Operations Management
Results	• Modernized information management • Improved communication and reduced travel • Streamlined historical logbook retrieval • Centralized web platform • Enhanced operational planning and accountability • Digitalization with bidirectional connectivity • Efficient response to regulatory requests • Clearer tracking of operations

Customer success spotlight

Driving increased productivity and transparency with contextual, real-time data for better communications, decision-making

An essential provider in the transportation industry, [this organization](#) is North America's largest passenger transport business. Operating effectively for over 20 years, they maintain a significant footprint across 1,200 sites in the United States, Puerto Rico and Canada. A longtime user of Attune EAM, Octave's SaaS-based asset management solution, this company implemented the Attune EAM mobile application to boost efficiency, improve communication and reduce clerical work.

Before building a digital backbone

The company's technicians had previously used Attune EAM to overcome inefficient processes that limited their ability to service vehicles as efficiently as possible. This was the first step in the right direction, but they also realized the need for a mobile solution. This was because the daily productivity of technicians was restricted by needing to go back and forth to the supervisor to ask about what they were supposed to do next, hunting to see which parts were available for specific jobs and locating them, figuring out which tools were needed and going back and forth to find them; and unclear roles in connection with each job. Another challenge was the need for a leaner information flow and work process between the maintenance technicians and floor supervisors.



After building a digital backbone

The organization implemented the Attune EAM mobile application to address these issues, leading to significant improvements. This action included improved communication among upper management, supervisors and technicians, enhanced efficiency with comprehensive vehicle data access, reduced clerical work through automated task management, improved resource allocation with efficient work order assignments, real-time data access for informed decisions and elevated overall productivity by streamlining processes and eliminating non-value-added tasks. This comprehensive approach successfully met the organization’s goals of enhancing efficiency, reducing clerical work and improving communication.

Success snapshot	
Customer	One of the largest passenger transportation companies in North America
Challenges	• Inefficient vehicle servicing • Paper-based workflows • Inadequate communication • Lack of real-time visibility • Limited access to critical information • Streamlined information flow
Solution	Attune EAM
Results	• Streamlined communication • Increased efficiency • Reduced clerical work • Enhanced resource management • Real-time data access • Heightened overall productivity • Achievement of efficiency goals

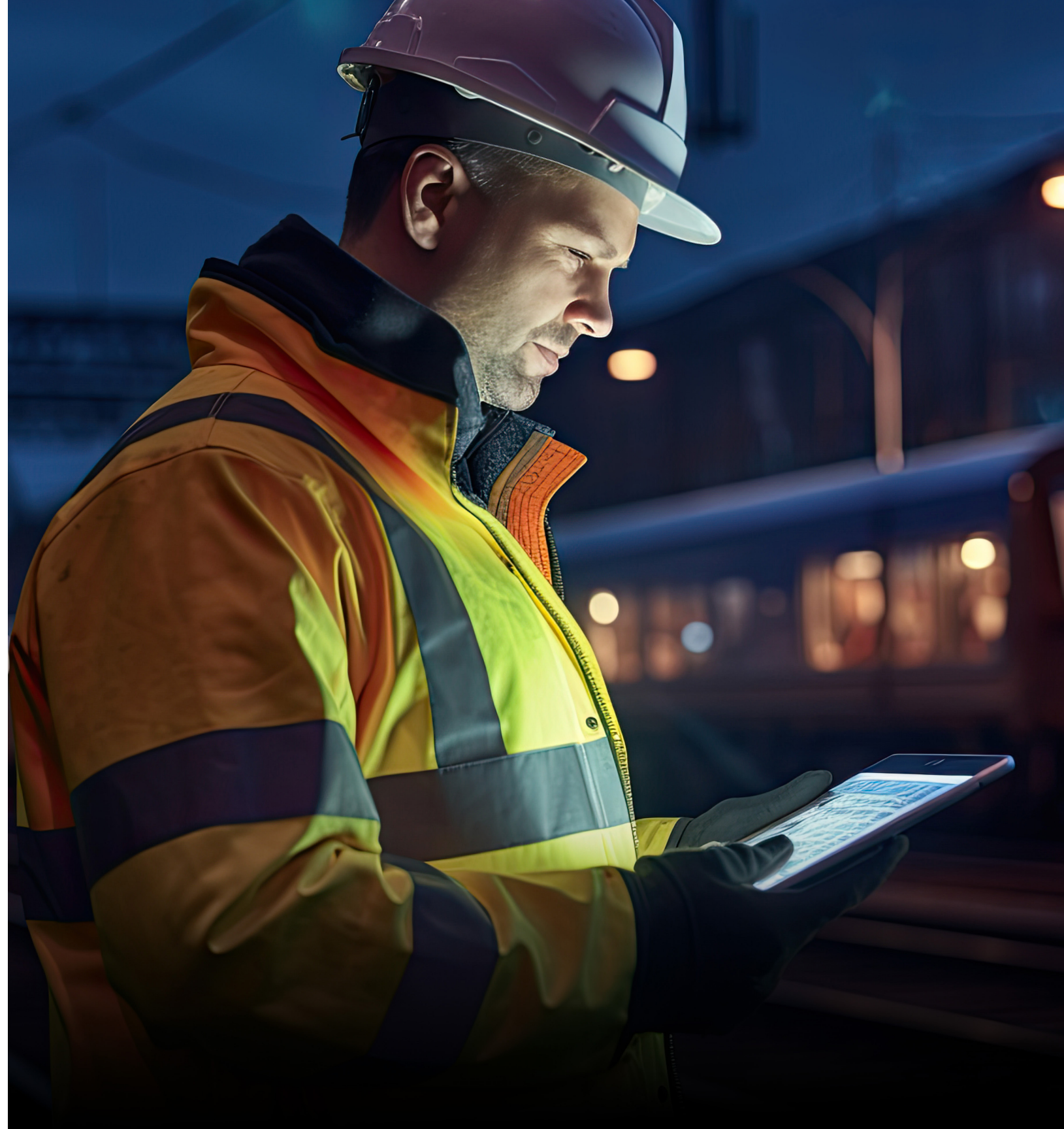
Conclusion

At Octave, we understand the broad range of public sector challenges.

No matter where your city, county or state agency is in its digital transformation journey – from the initial stages or more advanced – we can help elevate your digital maturity and improve your performance across projects and operations.

Contact us today to learn how you can address the evolving landscape of public sector needs and demands and shape the future of your community with Octave's Smart Digital Reality.

[Contact us](#)



About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we’ve partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what’s possible from day one onward.

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