



The Digital Twin Solution for the Process Industry

PlantSight

Collaborate. Accelerate. Sustain.



Do you know *for certain* your plant is safe, reliable, compliant, and risk-free?

- ◆ Can I see all the plant data I need across engineering, operations, and maintenance?
- ◆ With all the changes, can I trust my asset information and ensure it is always accurate?
- ◆ Are we prepared for Industry 4.0? I have so much IIoT data, so why do I lack actionable insights?
- ◆ How can I quickly gather all information needed to safely plan and execute shutdown and turnaround projects?
- ◆ Will we be fined in the next regulatory compliance audit?
- ◆ How can digital twins contribute to meeting carbon neutrality goals?
- ◆ How do I calculate risk and minimize its impact?

Now is the time for Digital Twins.





Gain Digital Line of Sight

Your organization relies on trusted data to make decisions and meet business goals. Yet over the lifecycle of complex production assets, data (and documents and models) can lose integrity if not managed, controlled, and integrated.

Assets and people change, but asset information needs to live on. Trusted data helps you make the right decisions at the right time to ensure assets are safe, reliable, and performing optimally.

PlantSight brings all your plant data and information together, contextualizes it, validates it, and visualizes it across the lifecycle, from design review and approval to handover and into operations and maintenance. PlantSight transforms raw data into one complete and evergreen digital twin, available anywhere, anytime.

With PlantSight, you gain a digital line of sight enabling immersive collaboration, in the plant and working remotely, to reduce risk and eliminate data and organizational silos between engineering, operations, and maintenance. You can control and manage changes so you always know for certain the data you are working with is accurate.



Bentley and Siemens: Stronger Together

PlantSight was jointly developed for the process industries by Bentley Systems and Siemens. Bentley and Siemens have combined their technology and expertise to accelerate the digitalization of plants and infrastructure across the globe, assuring shareholders that their investments are secure and generating positive returns. Organizations that move with urgency to drive a digital strategy throughout their businesses will define the industry's future. Open and connected digital twin solutions will be key to future competitive advantages that fuel growth and profitability.



**30% improvement
in workforce
productivity**



**10-25% reduction
in unplanned
downtime**



**Millions saved
in reduced
operating costs**



**Reduce risk,
improve safety and
environment integrity**

**Experience the moment of knowing when you have gained
the insight to make the right decision at the right time.**

- ◆ Digital Enablement
- ◆ Operational Intelligence
- ◆ Visual Asset Performance Management
- ◆ Collaborative Engineering
- ◆ Working in a Standardized Connected Digital Twin Environment
- ◆ Powered by the Bentley iTwin® Platform



Choose PlantSight: The System of Systems for Your Digital Twin Environment



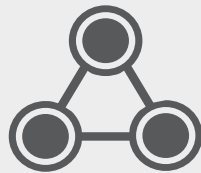
Digital Enablement

Build your digital twin fast and easy from multiple sources of 1D, 2D, and 3D data. Integrate all your IT, OT, and ET systems. Manage changes across the lifecycle. Trusted data, when and where you need it.



Visual Asset Performance Management

Mitigate risk and achieve predictable production. Solve IIoT data challenges and gain deep insight into plant asset behavior to make the best maintenance decisions. Ensure assets are safe and reliable to deliver sustainable performance over the long term.



Engineering Collaboration

Combine engineering, design, construction, operations, and maintenance data, including 3D representations and related data and documents. Gain insights and provide context, understand changes over time, enforce data integrity policies, and support audits. Connect remotely with stakeholders for ease of collaboration and review from the digital twin.



Operational Intelligence

Connect your physical asset to the virtual one to achieve better operations decisions with advanced analytics, machine learning, simulation, and modeling. Deliver effective IT/OT integration. Deliver the highest possible performance at the lowest cost.

Digital Enablement

Whether you're working behind the scenes as an engineer in plant design, chemical, process improvement, reliability, or asset integrity, or working directly on the frontline in operations or maintenance, you should have access to up-to-date asset and engineering information in a visual environment.

Digital twins start with good engineering data, but that data must be managed and kept up to date through a collaborative ecosystem.

Your plant is safe, compliant, and more efficient than ever with PlantSight.

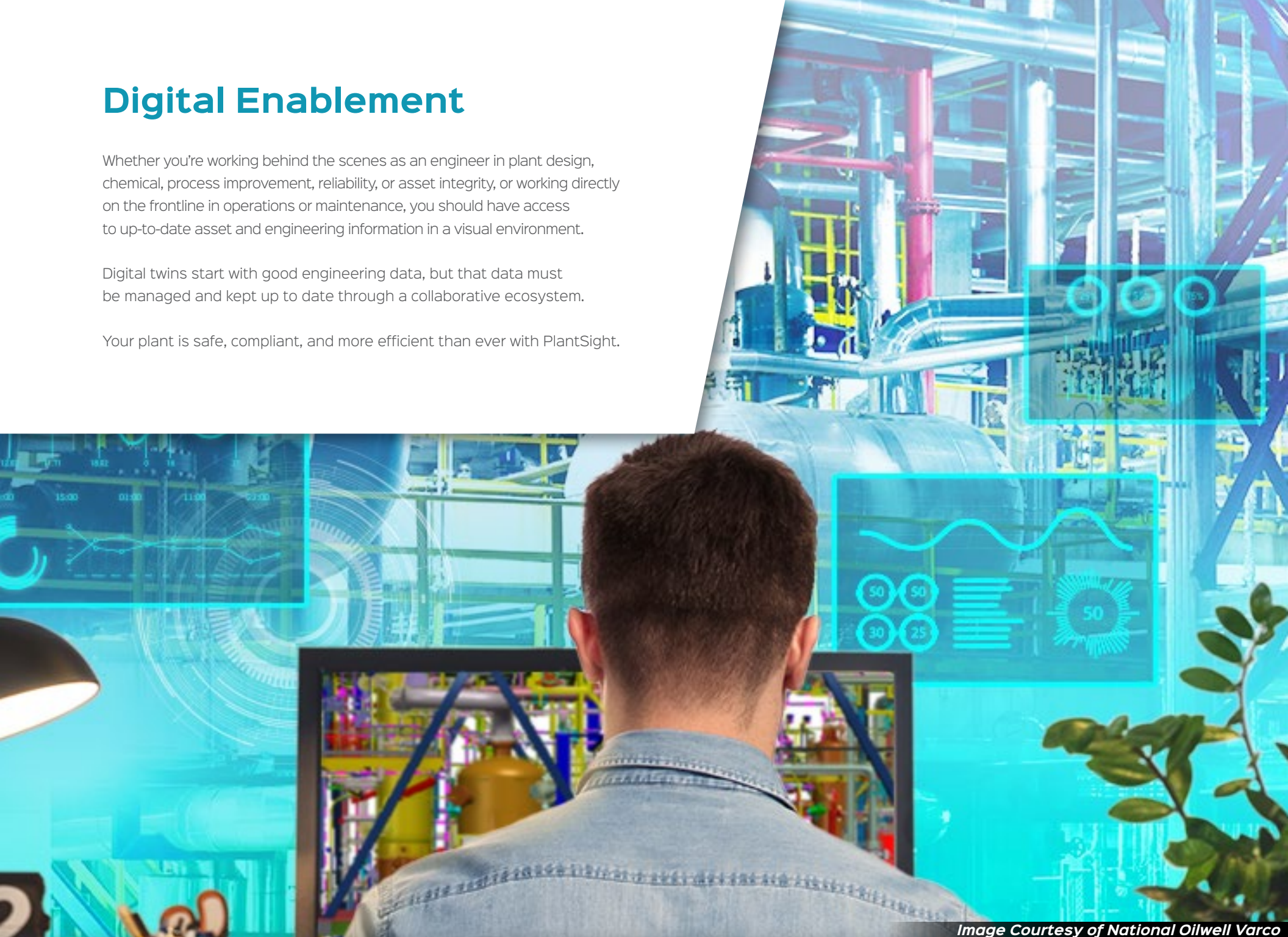


Image Courtesy of National Oilwell Varco



Digital Enablement

Zero to Twin in Minutes

- ◆ You can quickly create a reality mesh with Bentley's [reality modeling](#) technology. If you already have 3D models, we'll aggregate them, no matter the source, for one complete and evergreen digital twin.
- ◆ Use our patent-pending Zero to Twin AI to turn paper-based P&ID, PFD and isometric diagrams into intelligent living documents.

Visualization

- ◆ Did you know that visual data is processed 60,000 times faster in the brain than text? That's why PlantSight works in a visual mode of collaboration for you and your team with 3D models, ARVR/XR, picture-in-picture cross-probing, and more.

Connected and Open Environment

- ◆ Did you know that engineers spend 30% to 50% of their time searching for and validating information? PlantSight drives transparency and automation between plant engineering, operational technologies, and enterprise information.

Interoperability and Data Governance

- ◆ Bentley adheres to supplier-neutral interoperability and data standards for continuous handover and use of structured data.

Cloud Based

- ◆ Access data through Microsoft Azure for the most secure, scalable, and flexible environment. Azure enables remote collaboration and mobile access of your trusted asset data.

Evergreen Digital Twin

- ◆ With PlantSight, you can ensure digital models represent reality and are kept evergreen through a timeline of design change, clash detection, and asset change conflict resolutions.

Dashboards and Reporting

- ◆ With PlantSight, you have flexible, secured options to report asset performance and status to all levels in the organization.
- ◆ Power BI, AssetWise®, Siemens XHQ, and other dashboards are actionable from inside PlantSight.

[Watch Video](#)



Engineering Collaboration

To effectively plan and manage plant upgrades, modifications, risks, or additions, you need access to current engineering, operations, and maintenance data. As a plant ages, PlantSight provides a connected digital twin environment for all plant data in one place, so you have peace of mind that you are working with good quality data.

With PlantSight, you will see your engineering efficiency increase significantly.



Engineering Collaboration

Trusted Information Across the Lifecycle

- ◆ Safety and compliance are paramount in process plants. That is why engineering information management is the foundation of the digital twin.

Data and Model Aggregation

- ◆ Generate insights from 1D, 2D, and 3D engineering models from multiple systems.

Timeline of Change

- ◆ With PlantSight you have visibility to all changes to drawings, documents, and designs.

Configuration Management

- ◆ Keep pace with all changes to drawings, documents, and designs so that the virtual representation matches the physical. Seamless integration to AssetWise ensures information integrity.

Effective Collaboration

- ◆ Work remotely or in-house in an immersive digital mode of collaboration to eliminate siloed data between departments and locations.

Design Review and Approval

- ◆ Review and approve design changes from any location with project stakeholders.

Digital Handover

- ◆ Digital handover to operations enables you to ramp up production in half the time.

Manage Design Changes

- ◆ Analyze performance deviations and reflect minor design changes conducted in OpenPlant® into the digital twin quickly and easily.

Troubleshoot and Debottleneck the Plant

- ◆ With visibility to up-to-date engineering as well as operational and maintenance history and current asset health, you will have peace of mind when troubleshooting and debottlenecking the plant.

Manage Risk

- ◆ De-risk the plant by managing and minimizing risk early in the design process to reduce potential hazards before the operational phase.
- ◆ Plan and execute turnaround and shutdown projects. Pull together all the necessary information to safely plan these projects and manage all changes that occur to always keep your plant data up to date.

[Download Datasheet](#)



Visual Asset Performance Management

With a digital twin of your plant coupled with risk-based reliability and integrity management, you have asset intelligence at your fingertips for improved decision making.

Visual asset performance management — for a safe, reliable, compliant, risk-free, and cost-efficient plant.



Visual Asset Performance Management

Asset Health Monitoring

- ◆ Increase equipment availability and reliability by monitoring and managing asset health from the digital twin.

Improve Asset Integrity and Reliability

- ◆ Visualize the current condition degradation status of your assets in context of the reliability and integrity program with AssetWise used alongside PlantSight.

IIoT Data Insights

- ◆ Visualize IIoT data and analytics from sensors and systems including SCADA, Operations Process Historian, MindSphere, and more. Incorporate machine learning and AI to optimize asset performance.

Risk Prioritization

- ◆ Establish visibility to risk scores, risk matrix, and risk prioritization from APM based on consequence and probability of failure.

Improve Work Planning and Execution

- ◆ Verify job details and gain more situational awareness.
- ◆ Help planners consider restrictions, physical changes, and space clearances.
- ◆ Review HAZOP checklists, MSDS, Permits to Work, and lockout and tagout information, all from the digital twin.

Increase Safety and Reduce Risk

- ◆ Creating a digital twin of a process plant for health and safety purposes allows that knowledge to be catalogued digitally and enables new employees to learn and operate in a safe space to minimize risk, particularly in high-risk industries. Use AR/VR/XR on-site to familiarize technicians on the job.

[Watch Video](#)

Operational Intelligence

From improved fleet and plant performance to energy efficiency, chemical management, and risk analysis, PlantSight gives you operational intelligence at your fingertips.

Working in a collaborative and connected digital twin environment leads to new possibilities and better operational decisions, improving operational performance and saving you millions in reduced operating costs.

Future-proof your business today with PlantSight.



Operational Intelligence

Operational Insights

- ◆ With integration to AssetWise, you can monitor and manage operational risk, processes, production, chemical, and energy usage.

Production Simulation and Optimization

- ◆ Integrate to Siemens XHQ and gPROMS to simulate solutions with engineering and operations data for rapid predictions to achieve your business goals.

Machine Learning and Artificial Intelligence

- ◆ Incorporate advanced analytics, machine learning, and artificial intelligence techniques, such as regression analysis to predict outcomes and deliver more in-depth insights.

IIoT Data Ingestion and Analysis

- ◆ With integration to AssetWise, you can federate and analyze high-volume IIoT data and systems like SCADA, data historians, and MindSphere. In-depth analysis in PlantSight produces valuable actionable insights in context.

Compare Plant Performance

- ◆ Track and compare all your plants worldwide to spot problems and identify opportunities for improvement.

Improve Operation Decision-Making

- ◆ Make informed decisions confidently using trustworthy and actionable information. Visualize real-time information, hotspots of activity, or status across any given asset within the digital twin.

[Watch Video](#)

PlantSight Digital Twin Capabilities At A Glance

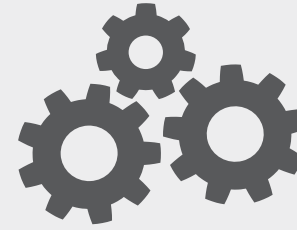
For Design and Process Engineers	For Reliability and Integrity Engineers	For Operations and Maintenance Engineers
<p>Data Visualization</p> <ul style="list-style-type: none">◆ Visualize production process via 3D models◆ Use AI to create intelligent data from paper P&IDs or PDFs◆ View and compare plant performance <p>Design Essentials</p> <ul style="list-style-type: none">◆ Assess access for constructability, maintainability, and operations with clash detection. Design review and approval – share data and collaborate remotely with stakeholders◆ Visualize existing brownfield assets to evaluate options for modifications <p>Connected Data Environment</p> <ul style="list-style-type: none">◆ Aggregate models from multiple sources in one digital twin in a consistent format◆ Integrates with other mission critical systems including SAP and Maximo <p>Timeline of Change</p> <ul style="list-style-type: none">◆ View a timeline of design changes to know what happened, when, and by whom◆ Make minor design changes and reflect the change in the digital twin <p>Digital Handover</p> <ul style="list-style-type: none">◆ Deliver an as-built digital twin for operational readiness and faster production ramp up time	<p>Data Visualization</p> <ul style="list-style-type: none">◆ Visualize plant assets and alarms in a 3D model◆ Visualize and trend condition degradation◆ View safety integrity data, HAZOP, SIS, SIF, SIL◆ View and compare plant performance <p>Remote Familiarization</p> <ul style="list-style-type: none">◆ Use 3D models to train / simulate asset operations and maintenance◆ Enable new employees to learn and operate remotely in a safe space to minimize risk <p>Advanced Insights</p> <ul style="list-style-type: none">◆ Make better decisions to mitigate risk◆ Integrate artificial intelligence and machine learning techniques◆ Gain insights on the risk profile of the asset <p>IIoT Analytics</p> <ul style="list-style-type: none">◆ Manage growing source of IIoT information◆ Visualize IIoT data within digital twin environment◆ Gain actionable insights into IIoT data faster <p>Alarm Management</p> <ul style="list-style-type: none">◆ Acknowledge alarms and trigger work	<p>Plant Optimization</p> <ul style="list-style-type: none">◆ De-risk shutdown/turnaround cycles◆ Improve work planning of scheduled and unscheduled jobs <p>Data Visualization</p> <ul style="list-style-type: none">◆ View maintenance and operational history◆ Assess area of work in the 3D model to determine if any special equipment is required to access the asset◆ Use mixed reality on-site to better visualize the situation and collaborate with engineering <p>Remote Familiarization</p> <ul style="list-style-type: none">◆ Train workers with the area and any associated restrictions; visualize physical changes◆ Review HAZOP checklist, MSDS, permits to work, and lockout and tagout information, all from the digital twin◆ Use mixed reality to train and simulate asset operations and maintenance remotely <p>Control of Work</p> <ul style="list-style-type: none">◆ Visualize the areas where work is being undertaken◆ Verify maintenance work details and gain situational awareness before executing work◆ Acknowledge alarms and trigger work



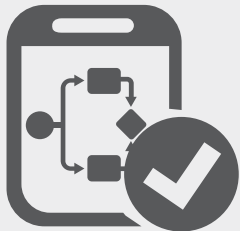
PlantSight: Delivering Results Fast



**Reduce project delivery
time by 50%**



**Reduce production
ramp up time by 80%**

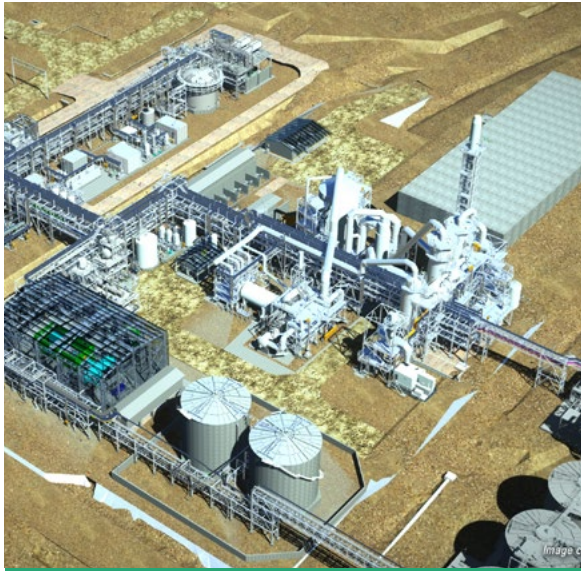


**Find and validate
information 30% faster**



**Reduce unplanned
downtime by 20%**

See What Leading Companies Have Achieved



Hatch

Sulfuric Acid Plant,
Democratic Republic of the Congo

By developing a digital twin, Hatch accelerated operational readiness and reduced capital expenditure costs by 20% and reduced the project duration from 12 months to just six. The plant achieved its full capacity within a week of hot commissioning, while going completely paperless at the same time.

[Read Case Study](#)

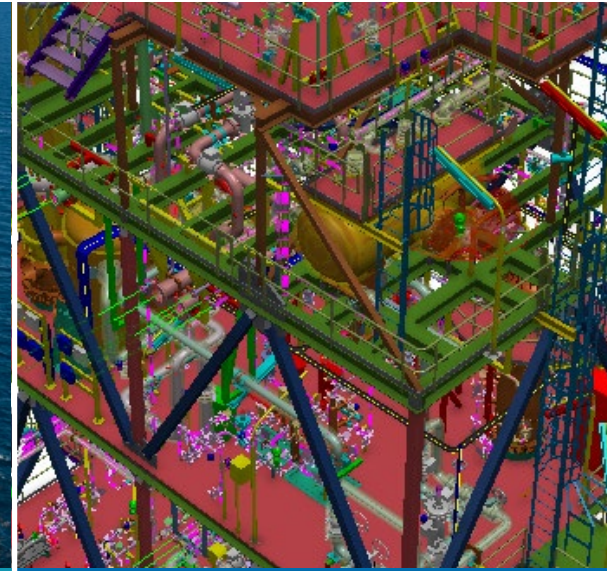


Shell Deepwater Project

Gulf of Mexico

Shell's Deepwater business has selected Bentley's digital twin approach to streamline its capital projects process and accelerate time to first oil. Shell will be able to accelerate capital project delivery and cut project delivery time by implementing an integrated digital project and engineering environment in the early phase design through to handover.

[Read News Item](#)



National Oilwell Varco

Wellstream Processing Division

NOV can now split designs into multiple files to enable multiple people to work on the same designs, as well as share files with multiple contractors and clients. Effective design review workflows means NOV personnel can work simultaneously on a single, large design and are immediately notified when clashes are detected.

[Read Whitepaper](#)

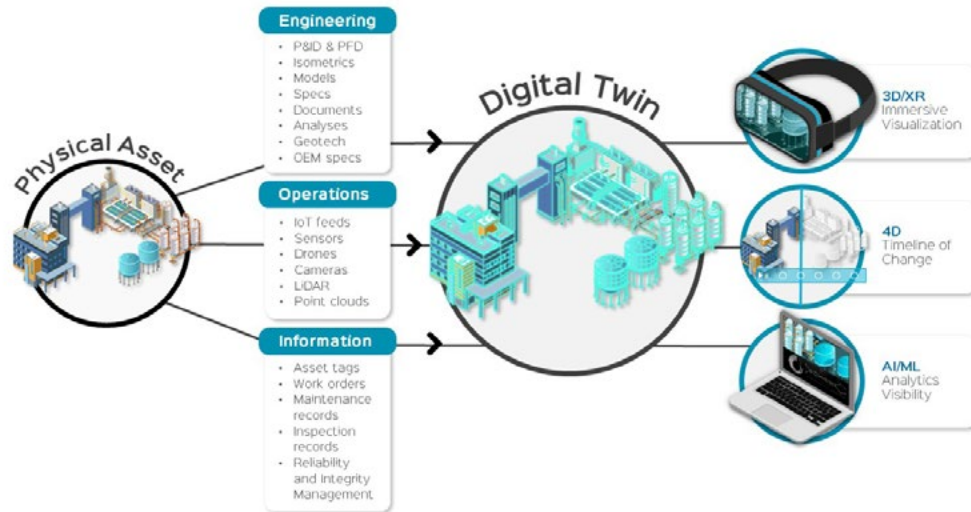


Why Now? Digital Twins Are Central to Digital Transformation

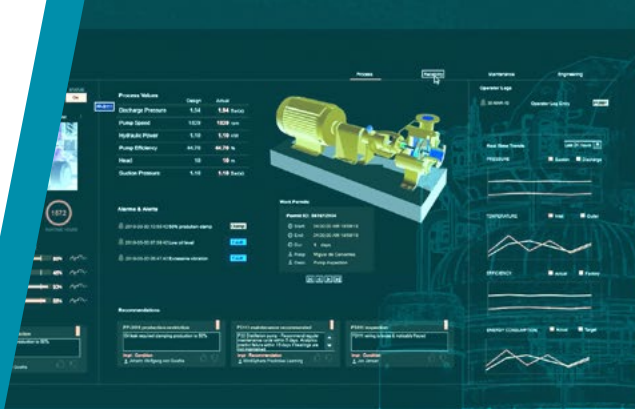
Now is the time to execute your digital strategy. Visualize your assets, digitalize your processes, and integrate your systems – for today and the next generation workforce.

Increase your decision power with PlantSight, the cloud-based system of systems that is transforming the way people, assets, and data work together in process plants to minimize risk and ensure predictability.

Collaborate. Accelerate. Sustain.



[Click Here to Book a Meeting Now](#)



Partnership for Success

Your success goes beyond software. It is also dependent on doing business the way that best serves your organization. That is why we have a variety of subscription and license options as well as 24/7/365 support to ensure you are up and running on your software quickly and continuously.

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Visit Us Online >

About Bentley Systems Bentley Systems (Nasdaq: BSY) is the *infrastructure engineering software company*. We provide innovative software to advance the world's infrastructure – sustaining both the global economy and environment. Our industry-leading software solutions are used by professionals, and organizations of every size, for the design, construction, and operations of roads and bridges, rail and transit, water and wastewater, public works and utilities, buildings and campuses, and industrial facilities. Our offerings include *MicroStation*®-based applications for modeling and simulation, *ProjectWise*® for project delivery, *AssetWise* for asset and network performance, and the *iTwin* platform for infrastructure digital twins. Bentley Systems employs more than 4,000 colleagues and generates annual revenues of more than \$800 million, in 172 countries. www.bentley.com

