

Agentic Intelligence for Construction

Visibility and Operational Control Across the
Construction Lifecycle

Whitepaper





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1. Introduction

Construction organizations manage some of the most complex operational environments in business today. Projects depend on countless moving parts—from budgets and schedules to labor, materials, equipment, and procurement activities. When one area falls behind, the impact can quickly ripple across the entire project.

Construction companies generate vast amounts of operational data, many teams still struggle to turn that information into timely decisions. Project managers spend valuable time compiling reports, procurement teams react to shortages after schedules are affected, and executives often lack real-time visibility into emerging risks.

The challenge is no longer collecting data—it is transforming data into action.

By combining self-service analytics, conversational AI, automated reporting, intelligent alerts, and Agentic AI capabilities through Athena — ConverSight's AI Employee — construction teams gain greater visibility, improve planning, reduce operational risk, and accelerate decision-making across every stage of the construction lifecycle.

2. The Construction Visibility Challenge

Construction companies generate enormous amounts of operational data every day. However, visibility across projects, resources, procurement activities, and financial performance often remains fragmented. As project portfolios expand and business conditions become more complex, organizations face several persistent challenges.

- 🌱 **Limited Project Visibility:** Project information often resides across multiple systems, departments, and spreadsheets. Executives, project managers, finance teams, and operations leaders frequently operate from different versions of the truth. Without a unified view of project performance, organizations struggle to identify issues before they affect schedules, budgets, and profitability.
- 🌱 **Cost Overruns and Margin Pressure:** Construction margins are constantly challenged by rising material costs, labor shortages, schedule changes, and unexpected project delays. Even small variances can significantly impact profitability. Unfortunately, many organizations discover these issues after costs have already exceeded planned budgets.
- 🌱 **Material and Supply Chain Disruptions:** Material shortages, supplier delays, transportation challenges, and price volatility continue to impact project timelines. Procurement teams often spend significant time tracking orders, managing vendors, and responding to supply disruptions rather than proactively planning for future demand.
- 🌱 **Resource and Workforce Constraints:** Balancing labor, equipment, and subcontractor resources across multiple projects remains a constant challenge. Without clear visibility into utilization and future demand, organizations risk both underutilization and resource shortages.
- 🌱 **Slow Reporting Processes:** Many construction organizations continue to rely on manually created reports and spreadsheets. By the time reports are generated, reviewed, and distributed, the information may already be outdated.

3. How ConverSight Supports Construction Operations

ConverSight extends existing construction systems by transforming operational data into actionable intelligence. By providing a unified view of business performance, organizations can make faster decisions while reducing reporting effort and operational risk.

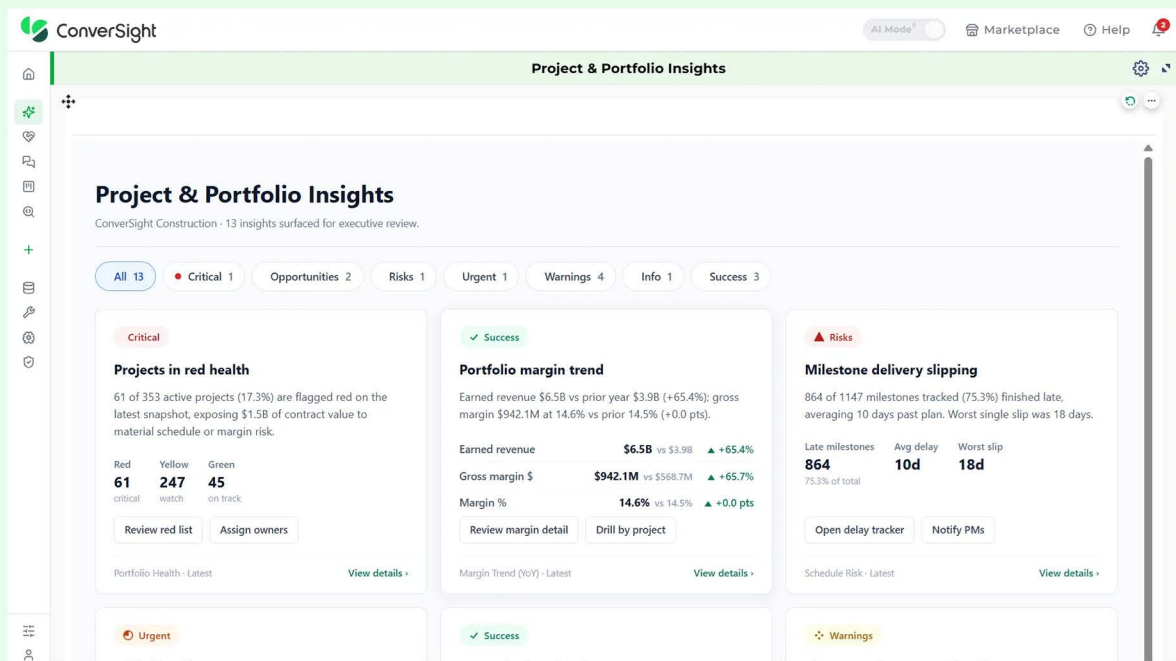
Project Performance Visibility

Successful construction projects depend on continuous visibility into project health. ConverSight brings together project, operational, and financial information into interactive dashboards and storyboards that provide real-time insight into project performance.

Teams can monitor:

- Work-in-progress (WIP)
- Project profitability
- Cost-to-complete
- Budget performance
- Schedule adherence
- Resource utilization
- Project milestones

Rather than waiting for monthly reviews, project stakeholders gain immediate visibility into emerging issues and performance trends. This enables teams to identify potential risks earlier and take corrective action before project outcomes are affected.



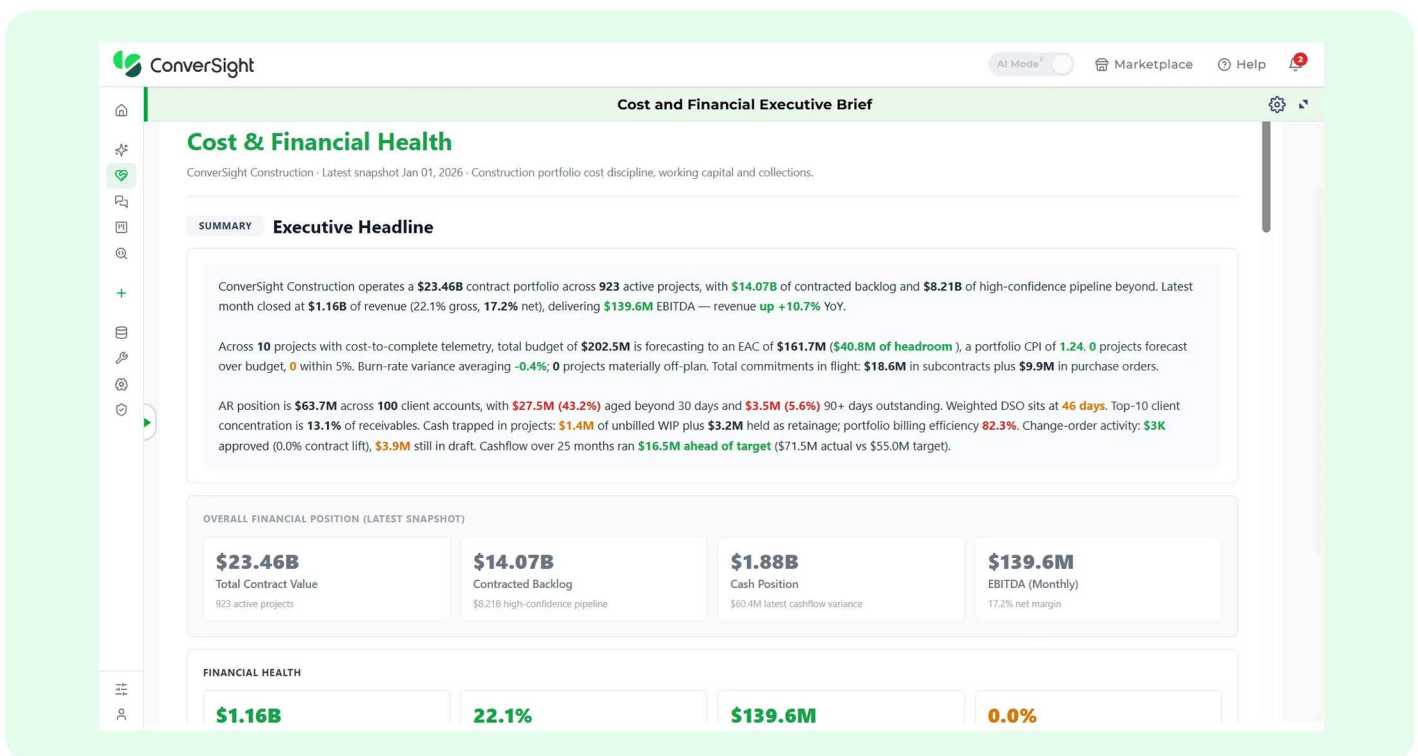
Cost Control and Change Order Management

Managing costs remains one of the most critical responsibilities within construction organizations. Project profitability can quickly be impacted by change orders, budget variances, scope changes, and unexpected expenses.

ConverSight helps organizations improve cost management by providing visibility into:

- Budget-to-actual performance
- Cost overruns
- Change order activity
- Margin trends
- Project financial performance

Instead of discovering issues after month-end reporting cycles, teams can identify variances as they emerge and respond proactively. Executives gain greater confidence in project profitability, while project managers gain the visibility needed to maintain control over project budgets.



Resource and Workforce Planning

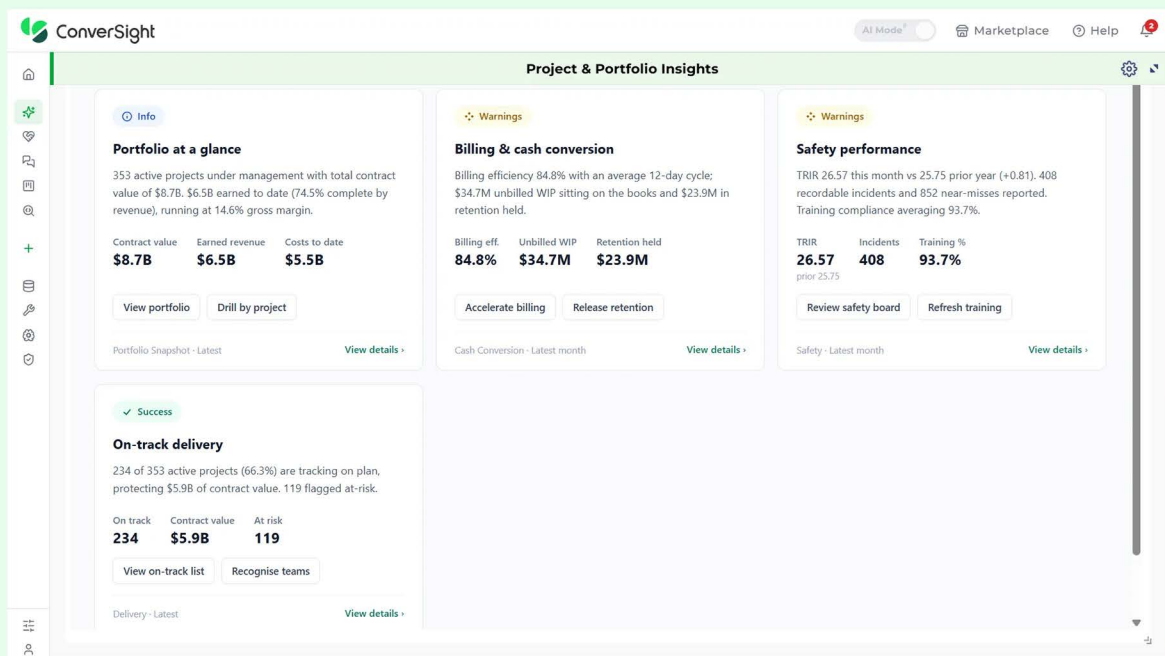
Construction companies must continually balance workforce availability with project demand. Labor shortages, equipment constraints, and subcontractor availability can directly impact project schedules and profitability.

ConverSight provides visibility into workforce and resource allocation across the organization.

Teams can analyze:

- Labor utilization
- Resource allocation
- Equipment availability
- Workforce demand
- Capacity planning requirements

This visibility enables organizations to make more informed decisions about staffing, scheduling, and future project commitments. By understanding future resource requirements earlier, organizations can reduce bottlenecks and improve operational efficiency.



Procurement and Material Visibility

Material availability plays a critical role in project success. Delays in receiving critical materials can halt project progress, create costly schedule disruptions, and impact customer satisfaction.

ConverSight provides procurement and supply chain visibility by enabling organizations to monitor:

- Purchase orders
- Vendor performance
- Delivery schedules
- Material availability
- Supply chain risks
- Procurement trends

Procurement teams gain a centralized view of supplier activity and can identify potential disruptions before they impact project schedules. This proactive approach helps organizations reduce risk, improve supplier collaboration, and maintain project continuity.

ConverSight

AI Mode Marketplace Help

3A Material Price Changes

Report period All Dates Save Run Report

MATERIAL NAME	Price budget	Price previous	Price current	Price volatility pct	On order qty
Steel Rebar #6	\$187.00	\$57.00	\$67.00	17.54%	6'
Adhesive	\$446.00	\$412.00	\$422.00	2.43%	35
Concrete Mix 5000 PSI	\$3,101.00	\$3,203.00	\$3,221.00	0.56%	36
Concrete Mix 4000 PSI	\$3,609.00	\$3,590.00	\$3,609.00	0.53%	88
Steel Pipe 2 inch	\$344.00	\$340.00	\$344.00	1.18%	9'
Copper Pipe 1/2 inch	\$879.00	\$1,034.00	\$1,047.00	1.26%	37
Caulk	\$1,198.00	\$1,141.00	\$1,150.00	0.79%	52
Dimensional Lumber 2x8	\$2,123.00	\$2,035.00	\$2,051.00	0.79%	4
Reinforcing Mesh	\$1,158.00	\$1,101.00	\$1,110.00	0.82%	92
Concrete Mix 3000 PSI	\$4,314.00	\$4,439.00	\$4,458.00	0.43%	1E
Gravel	\$2,711.00	\$2,892.00	\$2,903.00	0.38%	5E
Exterior Paint	\$3,394.00	\$3,495.00	\$3,514.00	0.54%	77
Copper Wire 10 AWG	\$2,654.00	\$2,621.00	\$2,630.00	0.34%	82
Drywall 5/8 inch	\$4,063.00	\$4,141.00	\$4,159.00	0.43%	12
Spray Foam Insulation	\$2,483.00	\$2,646.00	\$2,651.00	0.19%	8E
Copper Wire 12 AWG	\$4,961.00	\$4,855.00	\$4,865.00	0.21%	2E
OSB Sheathing	\$1,297.00	\$1,195.00	\$1,201.00	0.50%	31

Material Price Changes -AI Narrative

AI Narrative

Steel Rebar #6 Drives Volatility

Steel Rebar #6 accounts for a significant 87.57% of the total price volatility in materials, indicating a need for strategic sourcing and price stabilization efforts.

Adhesive Shows Moderate Impact

Adhesive contributes 12.13% to the overall price volatility, suggesting a moderate impact that requires monitoring but not immediate action.

Copper Pipe and Steel Pipe Show Minimal Volatility

Copper Pipe 1/2 inch and Steel Pipe 2 inch contribute 6.29% and 5.89% respectively, indicating stable pricing trends with minimal impact on overall volatility.

Reinforcing Mesh Exhibits Low Volatility

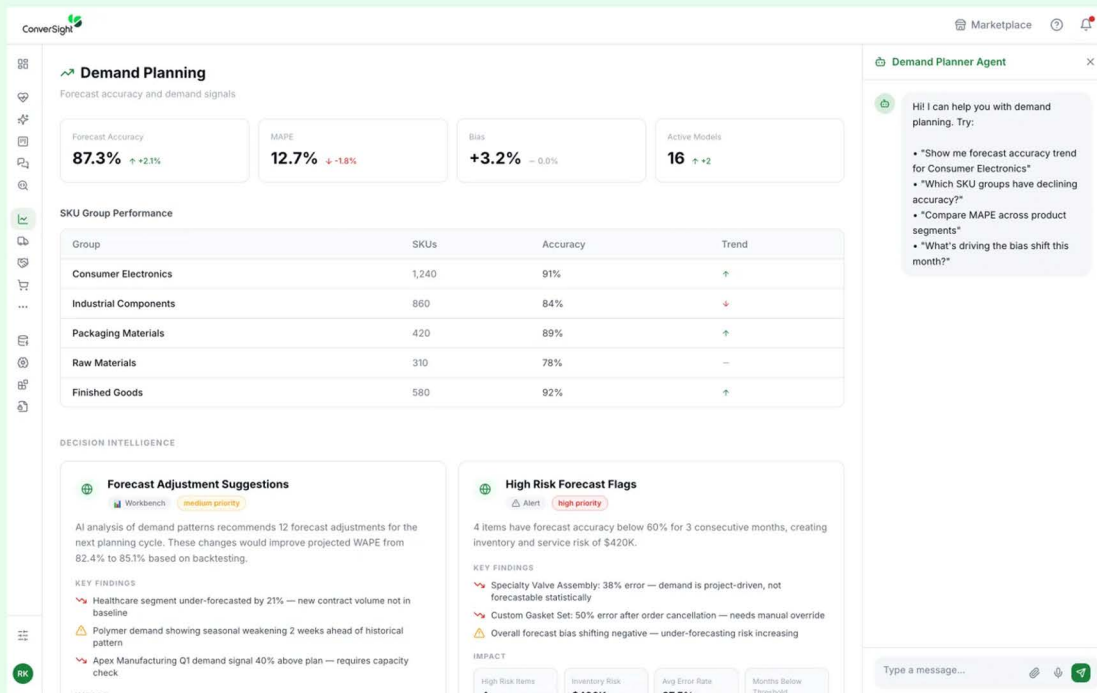
Reinforcing Mesh contributes only 4.09% to price

Forecasting and Planning

While visibility into current operations is essential, construction organizations must also prepare for future business conditions. Forecasting helps teams anticipate future requirements and make better strategic decisions.

ConverSight supports forecasting across several critical areas:

- **Revenue Forecasting:** Gain visibility into future revenue expectations based on project schedules, progress, and business pipelines.
- **Material Demand Forecasting:** Anticipate future material requirements and identify potential shortages before impacting project execution.
- **Workforce Forecasting:** Align labor requirements with future project demand and expected workloads.
- **Cash Flow Forecasting:** Improve financial planning with greater visibility into future revenue and expense projections.
- **Capacity Planning:** Understand future project demand and resource availability to support growth objectives.



Automated Reporting and Executive Visibility

Construction teams spend significant time gathering information from multiple systems and preparing reports for stakeholders. ConverSight automates this process by generating and distributing reports automatically.

Organizations can deliver:

- Executive storyboards
- Financial summaries
- Project performance reports
- Procurement updates
- Operational scorecards
- Supply chain summaries

Automated reporting reduces manual effort while ensuring decision-makers always have access to timely, accurate information. Executives gain visibility into business performance without waiting for monthly reporting cycles, while operational teams spend less time preparing reports and more time driving outcomes.

The screenshot displays the ConverSight AI interface. At the top, the 'Athena Conversation' header shows it was updated 5 months ago. The main chat area contains a query: 'What projects are at risk of missing the scheduled completion date'. Below this, a table provides the following data:

PROJECT NAME	STATUS	SCHEDULE VARIANCE DAYS	CRITICAL PATH DELAYS COUNT
Tech Campus	delayed	days2	3
Tech Campus	delayed	days-4	2
Tech Campus	delayed	days4	1
Tech Campus	delayed	days1	0
Tech Campus	delayed	days2	0

Below the table, it indicates 'Count: 8440' and a message: 'Story generation is unavailable because the current data exceeds the supported limit.' The interface includes a sidebar with navigation icons, a top navigation bar with 'Dataset', 'Insights', 'Marketplace', and 'Help', and a bottom input area with the prompt 'start shooting your question from here!'.

4. Forecasting and Planning with Agentic AI

While visibility into current operations is essential, construction organizations must also prepare for future business conditions. Forecasting in construction is uniquely challenging — you are not forecasting demand for a product on a shelf. You are forecasting material needs across dozens of simultaneous projects, each with its own schedule, risk profile, and dependency chain.

Over-order and you tie up capital, create storage problems, and erode margins. Under-order and a missing long-lead item halts a job, triggers delay penalties, and forces expensive emergency procurement.

ConverSight addresses the construction forecasting problem with three specialized AI agents that run continuously on your operational data.



4.1 The Demand Planner Agent

The Demand Planner agent reads project schedules and translates them into forward-looking material requirements — automatically, continuously, and by project. Where a manual process requires your team to sit down weekly and work through material needs project by project, the Demand Planner agent runs in the background around the clock.

- 🌱 Long-lead items flagged weeks ahead of the critical path — not days before they are needed
- 🌱 Material forecasts update automatically when project schedules change — no manual re-run required
- 🌱 Procurement decisions driven by project reality, not gut feel or last cycle's order history



4.2 The Supply Planner Agent

The Supply Planner agent reconciles what is on order, in transit, and in inventory against what each project is scheduled to consume — and flags mismatches before they become shortfalls. It does not just identify problems; it recommends solutions, weighing timing, cost, and vendor options to surface the best path forward.

- 🌱 Surplus inventory on one project redeployed to another before an emergency buy is triggered
- 🌱 Supply risks ranked by project impact — so teams act on what matters most first
- 🌱 Recommended actions delivered with full reasoning — so leadership approves with confidence



4.3 The Supply Assurance Agent

Planning and execution are two different things. The Supply Assurance agent bridges the gap between what was planned and what actually arrives — monitoring vendor commitments, tracking delivery status, and escalating proactively when a commitment is at risk.

In construction, a vendor who misses a delivery window by three days can cost far more than the value of that material. The Supply Assurance agent tracks every open purchase order against the project schedule it feeds, calculates the impact of any delay, and flags it to the right person before the job feels it.

- 🌱 Vendor commitments tracked against project impact, not just delivery dates
- 🌱 At-risk deliveries escalated early — when there is still time to act
- 🌱 When authorized: agent initiates supplier outreach, confirms delivery, and updates records autonomously

5. The Agentic AI Decision Framework

Traditional analytics help organizations understand what happened. Agentic AI helps organizations understand what is happening now, what is likely to happen next, and what actions should be taken — and then helps execute those actions within defined guardrails.

ConverSight's Agentic AI capabilities support construction teams through a continuous decision-making framework.

- 🌱 **Monitor:** Continuously track project activity, procurement performance, workforce utilization, financial metrics, and operational signals.
- 🌱 **Detect:** Identify anomalies, delays, cost overruns, supply chain risks, and emerging issues before they escalate.
- 🌱 **Recommend:** Provide suggested actions supported by business context and operational impact.
- 🌱 **Act:** Support execution workflows through controlled automation and business-defined guardrails.



4.3 CS App Deployment

ConverSight is not an all-or-nothing commitment. Organizations can start where they are and expand as their confidence grows. Athena operates across four levels:

Level 1 — AI Assistant

Ask any operational question in plain language and get an immediate, data-grounded answer. No SQL, no query builders, no waiting for IT to run a report. Ask for cost variance on a specific project, vendor delivery status, or a WIP summary — and get the answer in seconds.

Level 2 — AI Automation

Define a workflow once — Athena runs it automatically. Every Friday, generate a project risk summary. Every Monday, distribute a portfolio margin report to leadership. Every time a change order crosses a defined threshold, flag it to the project manager. This is your data working for your team — without your team having to work for it.

Level 3 — AI Co-Pilot

During active planning sessions, Athena works alongside your team as an active participant. She generates narrative insights, stress-tests scenarios, reconfigures views on demand, and helps leadership think faster and more clearly — without replacing the human judgment at the center of every decision.

Level 4 — AI Agent (Autonomous Execution)

For organizations ready to delegate execution, Athena operates as an autonomous team member. She monitors coverage, identifies risks, initiates supplier outreach within pre-approved lists, updates records, and escalates to leadership — all within a guardrail framework your administrators define. Every action is logged, auditable, and reversible.

6. Benefits for Construction Organizations

Construction organizations using ConverSight gain benefits across every stage of project execution.

-  **Improve Project Visibility:** Access a complete view of project performance, financial health, resources, and operational metrics.
-  **Reduce Cost Overruns:** Identify financial risks earlier and improve control over project budgets.
-  **Strengthen Procurement Planning:** Improve visibility into supplier performance, material availability, and supply chain risks.
-  **Improve Forecast Accuracy:** Make more informed decisions regarding labor, materials, revenue, and capacity planning.

- 🟢 **Accelerate Decision-Making:** Provide stakeholders with immediate access to actionable information.
- 🟢 **Reduce Reporting Effort:** Automate reporting processes and eliminate manual spreadsheet consolidation.
- 🟢 **Improve Project Profitability:** Enable proactive decision-making that helps improve operational performance and financial outcomes.

7. Conclusion

Construction organizations face growing complexity across projects, resources, procurement, financial management, and planning. While ERP systems provide a strong operational foundation, organizations increasingly require greater visibility and intelligence to keep pace with changing business conditions.

ConverSight helps construction companies transform operational data into actionable decisions. By combining project visibility, cost management, resource planning, procurement intelligence, forecasting, automated reporting, and Agentic AI capabilities, ConverSight enables organizations to operate more proactively and efficiently.

The result is improved project performance, stronger operational control, faster decision-making, and greater confidence in the decisions that drive business success.

Join our customers who have accelerated growth with ConverSight



About ConverSight

ConverSight is the category creator in Unified Decision Intelligence (UDI), combining agentic AI and analytics in one unified platform for supply chain organizations. ConverSight increases supply chain visibility, planning, forecasting, and data-driven actions without the complexity of traditional data science and limitations of traditional inventory management. ConverSight's patented AI employee, Athena, provides real-time insights, predictive analytics, and recommended actions. ConverSight was named a Gartner Cool Vendor, AI Agent of the Year 2025, Supply & Demand Chain Executive (SDCE) Top Software and Technology Solution 2024, and winner of the 2024 AI Breakthrough Award. Follow ConverSight on [LinkedIn](#), [Instagram](#), [Facebook](#), and [Youtube](#), tune into the Data Insights Podcast, or visit www.conversight.ai to learn more.

