The Return on Intelligence

How Structured Information Drives Cost Control and Performance Across Capital Projects

assai

About This Report

This report draws on Assai's 35 years of project experience across capital-intensive industries, including oil and gas, nuclear, petrochemical, renewables, and infrastructure. It is supported by independent cross-industry analyses and published benchmarks from 2022 to 2025.

Despite billions invested in digital transformation, over half of projects still miss ROI targets largely because the data behind them can't be trusted.

The report examines recurring ROI patterns observed in organizations that have evolved from traditional document management to structured information control. All quantitative examples are aggregated and anonymized to illustrate measurable trends in cost efficiency, rework reduction, and data reliability.

Executive Summary

Everyone talks about digital transformation. In capital projects, one truth keeps coming back: data alone doesn't deliver ROI.

Across capital projects, teams now generate vast amounts of data, but much of it remains fragmented, duplicated, or locked in disconnected systems, preventing it from delivering real value. Project teams spend hours searching, verifying, and reworking, not because they lack systems, but because the systems don't speak the same language.

It is a silent drain with a massive price tag. Industry studies estimate that poor data quality and disconnected systems can waste 10 to 14 percent of total project cost, often tens of millions of dollars on a single major asset. And it's not just us saying so. Recent cross-industry studies confirm what we have seen for decades:

- Nearly 60% of energy and infrastructure projects exceed budget and schedule.
- Around 80% of project data remains unstructured or untrusted (Independent industry research and practitioner surveys)
- More than 90% of collected data still needs cleaning before it can be used effectively.

The data is clear, information chaos continues to erode ROI and undermine cost control long before projects reach completion.

Assai has witnessed this shift first-hand for over three decades. Across hundreds of projects, from refineries and nuclear plants to offshore platforms and renewables, we've seen the same thing: once information becomes reliable, everything else speeds up.

What once slowed teams down now drives performance.

That is the Return on Intelligence.

The Hidden Cost of Poor Control

Every project team knows the pain: the missing revision, the outdated drawing, the spreadsheet nobody fully trusts. The cost of those moments is rarely visible, but always real.

Recent cross-industry analyses show:

• 10–14% of total project cost can be lost to poor information quality and rework, equivalent to tens of millions of dollars per major facility.
• Up to 75% of effort in digital-transformation projects goes into cleaning and structuring data before automation or AI can begin. (Analyst research on enterprise data readiness and transformation programs)
• Across operations, teams spend 20–30% of their time simply searching for or validating data.

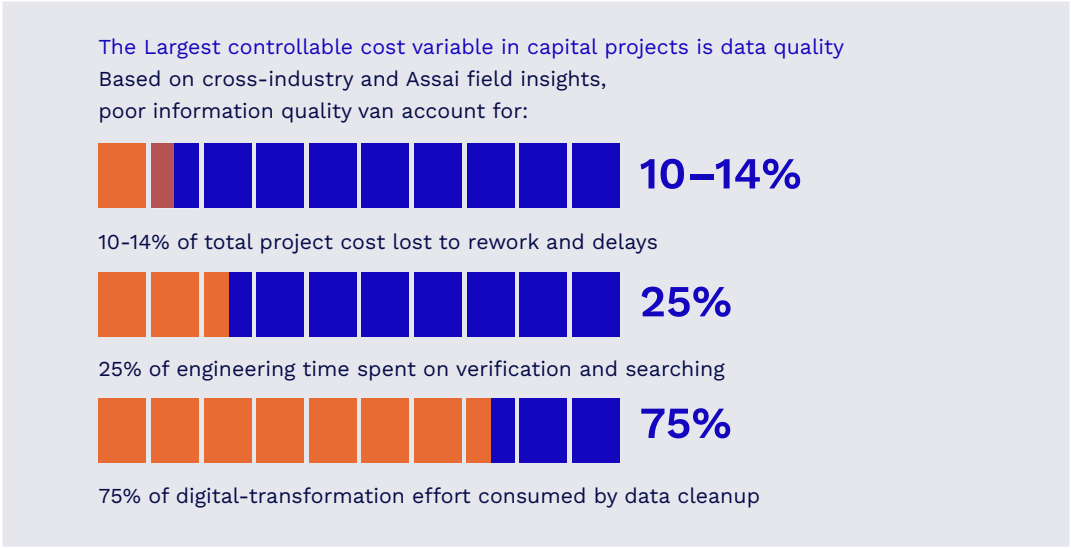
Assai's own field experience aligns with these findings. Across over thirty years of work with heavy-asset owners and operators, we have repeatedly measured 8–12% project-value loss in environments where control and governance were weak. External studies confirm it: bad data costs a lot of money.

The conclusion is consistent: data without trust drains ROI long before a project is complete.

Even mature digital organizations face the same challenge. The problem isn't technology, it's trust. When engineers can't find or verify the right version, progress stalls. Restoring trust through structure and governance delivers ROI you can actually measure.

Assai benchmarking shows that projects with more reliable information consistently experience fewer schedule delays and stronger on-time delivery, improving performance by several percentage points.

Figure 1. The Cost of Lost Control



SOURCE: INDUSTRY ANALYSES AND ASSAI FIELD EXPERIENCE, 2024–2025.

Proof in Practice: When Control Starts Paying Back

Across Assai projects, from energy majors to infrastructure leaders, the pattern repeats: once teams trust their information, performance takes off.

Case 1 – Energy Engineering Project

After introducing Assai for engineering document management, retrieval times fell by 60%, and audit preparation dropped from three weeks to three days. The project recovered thousands of productive hours within its first year.

Case 2 – Petrochemical Operator

By consolidating design, vendor, and operational data into a single Assai environment, version conflicts and duplicated work declined by over 70%, yielding a 7% OPEX reduction and significantly faster turnaround compliance.

Case 3 – Renewables Portfolio

Early implementation of structured control enabled digital-twin readiness at commissioning. ROI was achieved within 12 months and continued to grow as assets came online.

Different sectors, same story:
Visibility builds trust. Trust drives speed. Speed compounds return.

The Intelligence Edge

Every organization is collecting data. Only a few turn it into decisions.
The Intelligence Edge is the point where structure, context, and governance convert information into actionable intelligence. It's about making what you already have finally work together.

Assai's long experience proves that intelligence isn't born from AI or dashboards; it comes from the discipline of clean, connected, and contextual data.

When information is structured at the source:

- Decision cycles shorten by 30–40%,
- Audit preparation effort falls by up to 70%,
- Rework and duplication decline sharply,
- ROI becomes a continuous, measurable outcome.

Assai's experience shows that once structured control is in place, teams rapidly recover lost efficiency. Not through new tools, but through renewed trust in information flow.

That's the Intelligence Edge, where data stops costing money and starts earning it.

Data without trust drains ROI

Connected Control

Assai was built on a simple principle:
control isn't bureaucracy, it's performance design.

Most systems make people adapt to the software. Assai flips it. It fits the way engineering and operations already work. It connects what others keep apart - design, suppliers, project teams, and operations - so information moves as one. Assai's philosophy has always been clear: control, done intelligently, is what makes progress possible.

Connected Control means:

- Prevent rework with structure,
- Eliminate solos through connectivity,
- Enforce governance automatically, without friction, and
- Make performance transparent through visualization.

It's a framework refined over thirty years of partnership with heavy-asset leaders, from early document control to today's integrated data platforms. The result is quiet, continuous ROI: every correct document, every verified tag, every trusted dataset is a small gain that compounds into major performance improvement.

Connected control isn't another system layer.
It's the discipline that transforms information into lasting value: connecting teams, drawings, and documents into a single, trusted source of truth, ready for digital twins and the next era of industrial intelligence.

Collecting data isn't the problem. Knowing what to do with it is.

The Next Return

If Connected Control explains how structure delivers ROI, the next decade will show why readiness defines it.

The next wave of ROI won't come from automation alone. It will come from data that is ready, trusted, and traceable: information structured so that AI, digital twins, and analytics can deliver real value.

Recent industry evidence shows that most of the effort and return in digital-transformation programs lies in preparing data, not coding algorithms. No AI model, however clever, survives bad data. And no predictive system can perform without verified truth at its core.

Assai's evolution reflects that reality. We are extending the same intelligence and structure that have underpinned document control into full-scale industrial data performance - platforms where information is already validated, contextualized, and ready for insight.

The ROI of the future belongs to those who treat information like infrastructure, something solid you can build on. The Return on Intelligence begins long before the first algorithm runs. It starts when every document, tag, and model is trusted enough to be used without hesitation.

For Assai, the next decade is not just about adapting to data-driven operations but shaping how information governance defines industrial performance. The same frameworks that have supported the world's most complex projects now form the foundation for the intelligence platforms of the future.

The Return on Intelligence

Control used to slow you down. Now it means being ready for decisions, for audits and for whatever comes next.

The Return on Intelligence is simple. When you can trust your data, you can move faster, safer, and with less waste. You avoid reworking. You shorten schedules. You stop paying twice for the same mistake.

That's not theory. That's what we have seen repeatedly in the field.

Even in mature environments, progress isn't linear. The ROI curve begins with small operational wins that, over time, shift the entire culture of control.

Assai's role is clear: to make information reliable enough that progress never stalls. And in a world drowning in data, that's not just an advantage. It's the new definition of ROI.

The next frontier of ROI isn't automation. It is the intelligence behind it.

Progress in complex industries has always depended on people trusting what they know. The systems may evolve, but that truth never changes. Assai exists to make that trust measurable, repeatable, and real.

Data Sources & Validation

This report draws on Assai's long-term fi eld experience across capital-intensive industries, supported by aggregated and anonymized client benchmarks and ROI measurements collected between 2020 and 2025.
Assai's fi ndings are validated against independent, cross-industry research published by leading analyst fi rms and industry bodies, including Gartner, EY, PwC and AIIM, as well as insights shared through industry conference proceedings.

While individual publications refl ect specifi c points in time, their conclusions consistently align with Assai's observed results: poor information quality remains one of the largest controllable drivers of cost, delay, and rework in capital projects, while structured and trusted information directly improves performance and return on investment.

Next Steps

• Benchmark where your data integrity could boost ROI.
• Talk to our intelligence team to explore how intelligent control transforms operations.
• Join the Assai community and see how industry leaders are building their own Return on Intelligence.

The Return on Intelligence is already here and it's changing how heavy-asset industries define progress.

Based on Assai benchmarks, client ROI results, and cross-industry analyses in the energy, engineering, and infrastructure sectors (2022–2025).

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