

The Project Confidence Book

Eight best practices for driving project confidence



With \$57 trillion in spend expected by 2030, the capital project industries remain challenged to deliver projects on time and within budget.

The Bottom Line

Investment in innovative technology solutions can translate into:

- Process efficiencies
- Timely and accurate intraday feedback about activities and progress
- A collaborative and transparent work process

To consistently achieve these results, leading companies understand that they need:

- A common method to measure across all projects
- More efficient and accurate estimates
- Efficiency from time/motion improvements
- Job site safety
- Continuously operational equipment
- Project loss elimination
- Data-driven decisions
- Cross-enterprise comparisons, including task productivity across projects

But a number of leading project-driven companies have proven to be highly specialized, complex and full of innovation. What have these companies realized that others have not? The scale and complexity of today's infrastructure, building, oil and gas, mining and utilities projects call for real-time field management with active portfolio-wide analysis. It all comes down to getting faster access to field data to manage resource consumption and better inform decision making.

So what's the secret?

Smart companies are adopting modern, digital and connected project controls solutions which enable project transparency.

The result?

Increased project collaboration, productivity and performance, ultimately reducing risk by adding certainty.

These integrated solutions empower engineers, project managers and all stakeholders to communicate project status swiftly and accurately across all disciplines. And with the ability to have visibility into the status of all projects in the portfolio, senior management can now act instead of react.

In other words, they rely upon a “no-surprises” approach to executing successful projects.





Eight practices for project success

A best practice approach to optimizing capital project outcomes.

1. Win jobs at the right price
2. Execute projects at the lowest cost and highest quality
3. Take care of resources by optimizing work practices
4. Create a data-driven organization
5. Use quantities as the common denominator
6. Standardize account codes for consistent reporting
7. Leverage a consistent model
8. Create a learning organization

1

Win jobs at the right price

Innovative capital project professionals like you realize that success starts with standard processes and core estimating methodologies. But without the right software backing you up, closing the gap between lofty statements and hard reality can be difficult. With the industry only becoming more competitive, you must be able to rely on a streamlined project costing process that provides accurate estimates. It's the only way to win good work from which you can squeeze a profit.

Your checklist for success:

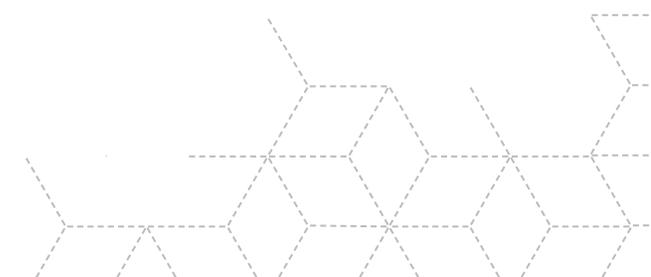
- ✓ Do our tools help standardize our processes?
- ✓ Do we have an active view of common company KPIs?
- ✓ Do our estimators bid with consistent rates?
- ✓ Can we fact check numbers on work we don't self-perform?
- ✓ Are we able to benchmark against historical bids?
- ✓ Can we risk-rank estimates against historical as-built project data?

InEight's project cost management solutions help companies establish standard processes and core project cost methodologies. An innovative benchmarking capability proactively risk-ranks estimates based on previous estimates and as-built data from similar historical projects.

Along with common views, industry-specific cost libraries and central resource rates, these capabilities lead to more efficient estimating processes, which means winning (more) profitable work.

3x the work. The Aiken group has tripled the amount of work they can bid using InEight solutions.

Streamline estimate processes to win more profitable work



2

Execute projects at the lowest cost and highest quality

Leading companies leverage field-ready software to bring job site data to the project managers responsible for tracking progress against plans. Plan KPIs then are fed to the front office, which measures performance across the portfolio, providing clear visibility to all stakeholders. Interoperable software platforms provide this visibility in real-time, establishing a single source of the truth.

Integrate to optimize performance

Your checklist for success:

- Can we tie together scope, schedules and actuals to obtain a single source of project truth?
- Do we have an active view of job site performance, shift-over-shift?
- Are we confident in our earned value measurement?
- Do we have an early warning system to forecast and adjust against project loss?

During project execution, InEight solutions can be used to integrate accounting, scheduling and estimating systems with actual job site data. This provides owners, EPCMs and contractors with the performance visibility needed to take early corrective actions to keep projects on time and within budget.

With flexible percent complete calculations and automatic earned value measurement, InEight project control solutions provide the ability to control and forecast costs, revenues, hours worked and productivity, helping ensure successful project completion at the lowest cost and highest quality.

According to KPMG (2015), energy and natural resources projects are deemed to be underperforming.

3

Take care of resources by optimizing work practices

Having accurate project information in real-time is essential for making critical decisions and remaining ahead of your competition. Without these capabilities, poor tracking of daily work activity makes root cause analysis virtually impossible, while unexpected equipment issues uncovered during daily inspections can lead to significant project delays.

The Construction Industry Institute (2015) reports only 30 percent of projects are completed within 10 percent of planned cost and schedule.

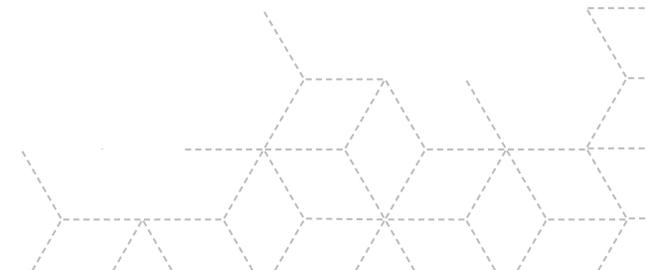
Your checklist for success:

- How connected are our office and job site teams?
- Do our financial systems have an active view of project performance data?
- Are we creating daily work plans for foremen and their crew?
- Are our work plans optimized based on work completed the previous day?
- Do our foremen have real-time visibility on their crew's performance (plan vs. budget)?
- Are we using technology to optimize project performance in the field?
- Are we using active dashboards to make decisions across the office and the job site?

InEight field execution and management solutions are a critical part of the InEight® Project Suite application portfolio and can be connected with ERP and financial systems for optimal control, visibility and process efficiency. Daily data flow also allows optimization and course correction, which can save significant time and money.

At customer sites, engineers, mechanics, foremen, superintendents and project managers leverage the InEight Project Suite platform to process thousands of plans each day on hundreds of projects worth billions of dollars.

Utilize mobile field solutions to improve resource consumption.



Create a data-driven organization

Companies of all sizes struggle with knowing whether field activity matches the plan. Crews struggle to focus on the most critical tasks, and problems are only reported to managers long after they actually happen. What's worse, slow and often inaccurate paper processes only get in the way and cause project delays, cost overruns, inefficiencies and surprises for the management team. What are innovators doing instead? Deploying digitized processes to collect job site data on both labor hours and quantity progress.

Your checklist for success:

- Are we leveraging digital processes to collect job site data?
- Are we able to capture best practices to optimize work in the field?
- Are we using technology to capture daily work plans, time sheets and material quantity claims?
- Can we easily view and analyze completed work?

60 PERCENT REDUCTION.

Using InEight solutions, Kiewit is seeing a 60 percent reduction in administration on 6 million time sheets.

Deploy digitized processes to provide visibility for critical decisions

5

Use quantities as the common denominator

Project-driven companies need a common approach to measure activities, progress and tasks across all projects and their related functions. This includes things such as cost modeling, scheduling, financial and project controls. Many companies recognize this and default to using cost as their common unit of measure. But using cost for operational comparisons and decisions has some significant limitations, such as regional variation, material price fluctuations and inflation over time. InEight has found that leading companies with a heavy focus on managing capital projects have instead adopted quantities as their basic unit of measure when it comes to operational control and performance.

Your checklist for success:

- Have we adopted quantities as our basic unit of measure?
- Are we able to track standard quantity consumption across regions and time frames?
- Are we able to continuously improve outcomes project by project?

Using quantities instead of cost helps managers quickly focus on areas that can be improved for maximum impact. In addition, by identifying high-performing teams, the company can institutionalize best practices that can lead to significant productivity enhancements that move the company forward.

This approach is only possible with a unified and connected interoperable system for project control, with common views and dashboards unique to InEight.

Employ standard units of measure to create clear benchmarks

Westney (2014) reports that there has been 24 percent growth in construction indirect costs since 1995. (net of inflation and escalation)



6

Standardize account codes for consistent reporting

Comparing task productivity across similar and dissimilar projects isn't always the easiest undertaking. But for innovative companies, the ability to cross-compare is essential to knowing where management needs to focus their attention.

By using standardized cost codes, cross comparing projects becomes relatively simple. This enables managers to identify, accurately compare and learn from similar project performance details across both an active and historical portfolio.

Your checklist for success:

- Are our account code structures detailed down to three levels?
- Are we leveraging cost codes to compare projects?
- Does our management have access to consistent dashboards and reports reflecting active project performance across our portfolio?

The InEight platform allows companies to standardize their coding structures to provide a common “thread” across projects, even those with substantially different work breakdown structures. Bottom line: common account code structures enable consistent reporting and improved decision making, regardless of project type. If your company is performing hundreds of projects a year, applying best practices learned through similar projects can quickly translate into saving millions.

Standardize coding structures for consistent reporting

15 TO 20 PERCENT REDUCTION

Hunter Contracting has reduced labor overruns by improving accuracy on estimate-to-actuals.

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Leverage a consistent model

A splintering of project disciplines and the lack of standard file formats for applications perpetuate significant problem areas for most companies. Similar to sending a coded message without the key, this makes it difficult for stakeholders to communicate efficiently and effectively.

To ensure all stakeholders are on the same page, successful companies are consolidating data from key systems to create a unified project information model (PIM) that can be leveraged across the project life cycle from takeoff to turnover.

Project information modeling for a single source of truth

Your checklist for success:

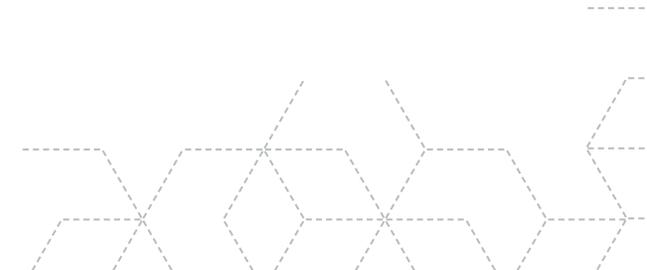
- ✓ Can we efficiently process multiple proprietary design models?
- ✓ Are we centrally aggregating all design, quantity and project data?
- ✓ Are we empowering stakeholders with a unified project information model to prevent loss, like that caused by design changes?

InEight creates a single source of truth by aggregating all design, quantity and project data across the project life cycle. With this functionality, the focus is on linking business data into a project information model that includes details about every object that needs to be manufactured, procured, constructed, installed or maintained.

With all project details around schedule, cost, budget, progress, status, procurement and performance aggregated and readily available to all stakeholders and related processes, delivering successful capital projects has never been more efficient.

12,000 MAN-HOURS

Kiewit Corporation has saved over 12,000 man-hours/year by eliminating manual entry and aggregating data models.



Create a learning organization

The most successful companies are constantly adjusting to what they've learned. If you stand still, you'll lose your competitive edge. In the world of capital projects, improvements must continually be made to simply keep pace. Your organization should be adaptable and able to take the best processes from the most productive teams and feed them back into the rest of the organization.

Establish 'Centers of Excellence' for continuous learning

Your checklist for success:

- ✓ Are we able to identify top performing individuals, teams, projects and processes objectively and determine why they're successful?
- ✓ Do we formally capture top performance and efficient processes into best practices?
- ✓ Do we promote and install documented best practices across all projects and throughout the organization?

In addition to using innovative technologies to improve performance, companies that are ahead of the curve establish continuous improvement resources — "Centers of Excellence" — for specific disciplines to gather best practices. Having a connected system of applications capturing, aggregating and sharing information across disciplines in a consistent and standardized manner ensures the most accurate and timely depiction of performance anomalies. Documenting the learnings from top portfolio performers serves as a best practice to be applied not only to under performers, but across the organization. Documented internal best practices also serve to build a foundation on which new hires can be trained from the best.

98% of megaprojects suffer cost overruns of more than 30 percent. (McKinsey Research)

Putting it into action

The McKinsey Global Institute estimates that the world will need to spend

\$57 trillion on infrastructure by 2030 to keep up with global GDP growth¹

To succeed in tomorrow's global capital project marketplace, you must prepare for a collaborative, digital and industrialized reboot of what you may have done in the past. Even if your team has been the best in the industry for years, another company will eventually surpass you unless you continuously improve. If you organize your team around InEight's eight best practices and proven solutions, you'll take on projects with even greater levels of teamwork, efficiency and confidence.

¹Source: <http://www.mckinsey.com/industries/infrastructure/our-insights/imagining-constructions-digital-future>



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The bottom line

Smart companies are adopting modern, digital and connected project controls solutions.

The scale and complexity of today's infrastructure, building, oil and gas, mining and utilities projects call for real-time field management with active portfolio-wide analysis. It all comes down to getting faster access to field data to manage resource consumption and better inform decision making.

Integrated solutions empower engineers, project managers and all stakeholders to communicate project status swiftly and accurately across all disciplines. And with the ability to have visibility into the status of all projects in the portfolio, senior management can now act instead of react.

Investment in innovation technology solutions can translate into:

- 1. Process efficiencies.**
- 2. Timely and accurate intraday feedback about activities and progress.**
- 3. Collaborative and transparent work process**

Drive certainty in a specific discipline or collaborate across entirely flexible, expandable suites of solutions.



**PROJECT INFORMATION
MODELING**



UNITE



CAPTURE

**PROJECT COST
MANAGEMENT**



ESTIMATE



CONTROL

**FIELD
EXECUTION**



PROGRESS



PLAN



INSPECT

**PROJECT
ADMINISTRATION**

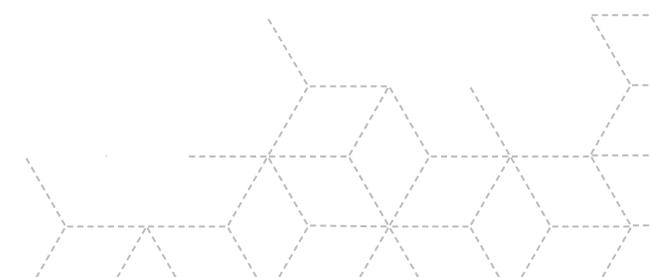


CONTRACT

**ACTIONABLE
INSIGHTS**



REPORT



Flexible, expandable solutions

Better visualize scope and work, more accurately forecast costs, oversee every aspect of your project plans and progress, and execute each of those plans safely, delivering quality assets to owners, on time and on budget. InEight® software suites include the full range of functionality needed to deliver predictable outcomes from model takeoff to asset turnover.

Model Quantities

Easily generates quantities and counts needed for estimating and procurement

Cost Estimating

Sets the standard for accuracy, performance and multi-user collaboration throughout the estimating process

Budgeting & Forecasting

Simplifies managing budgets, tracking earned values and budget variances, and managing forecasts

Project scheduling

Easy cost scheduling with bidirectional integration of Oracle Primavera or MS Project

Design Management

Easily manages scope of work and quantities across all disciplines

Progress Measurement

Streamlines daily work plan collaboration, crew assignment, and tracking hours and quantities

Work Planning

Instills a disciplined and effective approach to work planning, enabling crystal-clear communication of the work to be performed

Field Inspections

Ensures operational efficiency and compliance by streamlining field-level inspections and other workflow-driven processes

Contract Management

Simplifies the workflow required to create and manage contracts through the duration of the projects

Asset Turnover

Streamlines asset turnover process with a central repository of model and project data and documentation

Cloud Platform

Modern, standards-based foundation that connects InEight software suites to third-party applications such as design, ERP/accounting, scheduling and document management.



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