



SUMMARY

Organization:

Michael Baker Corporation

Objectives:

- Connect people and information across offices
- Increase team utilization
- Reduce relocations and travel

FAST FACTS

- Achieved 5X peak ROI
- Distributed teams got connected
- Team members became fully utilized
- Project profitability increased
- Project quality improved

MICHAEL BAKER CORPORATION




PROJECTWISE® ROI STUDY

THE BOTTOM LINE

An independent analysis of Baker's return on investment for getting Connected by ProjectWiseSM revealed that on just one project, the firm achieved a peak ProjectWise ROI of 5x. The payback period was six months, or two times faster than the 12-month industry benchmark that's typical for enterprise software deployments.

By implementing ProjectWise, Baker created an enterprise-level project team collaboration environment to connect people and information across offices. As each Baker team member got connected their utilization rate increased, while individual relocations and employee travel costs reduced.

KEY METRICS FOR SUCCESS

 Peak ProjectWise ROI	5 x ROI
 Time to ROI	6 months
 Industry benchmark for ROI	12 months

THE COMPANY

Michael Baker Corporation provides engineering, operations, and maintenance services for its clients' most complex challenges worldwide. The firm's primary business areas include aviation, environmental, facilities, geospatial information technologies, pipelines and utilities, transportation, water/ wastewater, and oil & gas. With more than 4,000 employees in over 50 offices across the United States and internationally, Baker is focused on creating value by delivering innovative and sustainable solutions for infrastructure and the environment.

THE CHALLENGE

When Baker Chairman Richard Shaw assessed how to maintain and grow profitability for the firm, his analysis landed squarely on one primary factor: maximizing the utilization rate of the company's employees. One reason why some Baker employees were underutilized was the lack of standard processes; another reason was the difficulties experienced when collaborating among Baker's 44 North American locations. Ultimately, Mr. Shaw determined that Baker's ability to maximize employee utilization significantly depended on the company's ability to more effectively integrate its CADD production offices.

Increasing employee utilization would certainly have a dynamic impact across the company. In past projects, some CADD and engineering staff were relocated to other offices so they could work more effectively with fellow project team members. This relocation, however, was expensive and adversely impacted staff morale, leading to increased staff turnover. And because access to project work was location-dependent, it was difficult to balance any workload across quiet and busy teams without forcing staff to travel.

BAKER'S CHALLENGES

- Maintain and grow profitability
- Maximize employee utilization
- Integrate CADD production offices
- Promote real-time collaboration
- Balance work across offices
- Reduce employee travel and relocation
- Reduce employee turnover
- Improve team morale



“Everybody knows who’s working on what... the PMs are seeing the profit because they don’t have to do the 200 to 300 hours of rework.”

–Garry Grafton, Baker

THE STRATEGY

With these challenges in mind, Baker formed the CADD Steering Committee and Digital Services CADD Support Team in July 2005. Its primary goal was to reduce overhead costs by minimizing staff relocation and reducing travel expenses. To further limit spending, the team sought to implement as many standards as possible, as quickly as possible.

Coincidentally, and around the same time, Baker learned that some state Departments of Transportation (DOTs) in New York, Michigan, Indiana and Kentucky started asking their consultants and contractors to get connected by ProjectWise – an engineering project team collaboration system. While Baker believed these organizations were among the first to ask consultants to collaborate in this way, Baker also felt sure that many more state DOTs would follow suit. Consequently, Baker felt that by implementing ProjectWise on its own projects, it could better maneuver itself to win additional contracts from these organizations.

THE SOLUTION

Given the challenges faced and its strategy for innovation, Baker laid out its plan to connect all people and information across its 44 North American offices using ProjectWise. The ultimate goal: Create an environment to enable real-time collaboration among colleagues – regardless of geographic location.

First, to ensure the team had the right tools and technologies readily available, Baker joined Bentley’s Enterprise License SubscriptionSM program, an innovative software subscription that provides significant competitive advantage while reducing annual software costs. Unlike other software subscription programs, the ELS

provides infrastructure professionals with unrestricted access to a comprehensive software portfolio for a single annual fee.

Next, to help achieve its collaboration and utilization goals, Baker decided to deploy ProjectWise – an engineering project team collaboration system used by multi-office organizations to efficiently and securely share work across offices. Through its new ELS, Baker could easily procure and deploy ProjectWise without any up-front capital investment in ProjectWise software.

ProjectWise® Integration Server	For enterprise-level content management and collaboration
ProjectWise® Caching Servers	For rapid, LAN-like access to information across all offices
ProjectWise® InterPlot®	For high-volume, high-performance print and plot production
ProjectWise® Web Server	For browser-based access to project information
ProjectWise® Passport	For any user to connect to any server from any location

Clearly, the ELS and ProjectWise were the ideal choice for Baker as it sought to optimize information sharing in order to promote real-time collaboration across distributed project teams.

THE PROJECTWISE DEPLOYMENT

Baker engaged Bentley’s Professional Services team to deploy ProjectWise. The Bentley team reviewed other best practice deployments around the globe – to determine the right balance of servers and services – to deliver a world-class solution.

MEASURING THE ROI

An early test of Baker’s ProjectWise deployment was on the high-profile I-15 NOW project in Ogden, Utah. Baker was lead designer for the \$182.9 million design/build highway reconstruction project awarded by the Utah Department of Transportation. Baker provided design services on the project, valued at \$16.4 million.

The ProjectWise learning curve was short for the Baker team that worked on the I-15 NOW project. Within just

BAKER’S RESULTS

- Distributed teams got connected
- Project profitability increased
- Team members became fully utilized
- Team productivity increased
- Project quality improved
- Staff morale improved across offices

three weeks, everyone was trained and the project was proceeding to plan, with a fully utilized team sharing work in real-time.

By connecting project team members across offices using ProjectWise, Baker maximized its employee utilization for the I-15 NOW project and its investment paid off.

Implementing ProjectWise achieved significant bottom-line results for Baker. In addition to saving jobs, improving moral, and delivering better projects, an independent analysis of ProjectWise ROI conducted by SMART LLP revealed a peak ROI for ProjectWise at 5-times the operating cost. Better still, the payback period for ProjectWise was just six short months, or two times faster than the industry benchmark of 12 months.

KEY BENEFIT AREAS

Baker VP Bill Trimbath lauded the virtues of ProjectWise, highlighting particularly Baker's achievement in maximizing its employee utilization. "The ability to transfer work between offices, probably resulted in saving many jobs because the work could be sent to the people who needed it rather than terminating their positions, or having to make them relocate," Trimbath said.

Analysis of Baker's early ProjectWise gains revealed many direct benefits in the following areas:

Connecting team members

- Subcontractors saved an hour per day by easily connecting to project information
- Half of the project team saved eight hours per month by reducing travel

Improving performance

- Remote colleagues saved seven hours per month using ProjectWise Caching Servers
- The entire team saved an average of one half-hour per day through faster finding

Implementing standards

- CAD users saved 3 percent of their work day through title blocks integration
- Team members saved 10 percent of their work day by standardizing drawing borders

Reducing rework

- Team members cut the time spent correcting file problems and errors by 3 percent
- Team members saved an average of one hour per drawing by avoiding rework

Automating plotting tasks

- Plotting time was cut by up to 20 percent – a 2 percent overall time saving for engineers – as a result of batch plotting PDF files rather than printing and scanning hard copies

Validating drawings

- Team members cut the time spent validating drawings by 20 percent as a result of improved drawing control



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— Bill Trimbath, Baker

ABOUT BENTLEY

Bentley Systems, Incorporated provides software for the lifecycle of the world's infrastructure. The company's comprehensive portfolio for the building, plant, civil, and geospatial verticals spans architecture, engineering, construction (AEC) and operations. With revenues now surpassing \$400 million annually, and more than 2400 colleagues globally, Bentley is the leading provider of AEC software to the Engineering News-Record Top Design Firms and major owner-operators, and was named the world's No. 2 provider of GIS/geospatial software solutions in a recent Daratech research study.

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MAXIMIZING EMPLOYEE UTILIZATION

- Lower FTP site maintenance, and file backup retrieval efficiencies, released two full-time CAD coordinators to other billable work
- Recruiting staff was far easier, as new team members could be placed in any office

IMPROVED PROJECT QUALITY

- Baker's work on the I-15 merited the firm Utah DOT's "Consultant of the Year" Award in 2007

Indeed, Baker's success on the I-15 NOW Project merited the firm some high praise from one of its key clients, as rigid quality control and improved quality assurance procedures impressed the state DOT in Utah.

"Baker accomplished all this and more, and the quality of their design is showing more and more each day as the project nears completion," said Randy Jeffries, design review manager from Utah DOT, in naming Baker its Consultant of the Year. "All things considered, the Michael Baker Jr., Inc., team has succeeded in helping the minds here at the department stretch to places they've never been before."

Baker is among an ever-growing list of top engineering firms to deploy ProjectWise for real-time collaboration. In fact, more than 80 percent of the ENR Top 500 Design Firms use ProjectWise to share work, improve project quality, and reduce costs.

"With results like these, it's no wonder that ProjectWise is the engineering project team collaboration system selected by multi-office organizations to efficiently and securely share work," said Joe Croser, global marketing director

of platform products and subscriptions for Bentley. "ProjectWise is time-proven to help firms large and small successfully deliver infrastructure projects."

ABOUT PROJECTWISE



ProjectWise is an engineering project team collaboration system that is used to help teams improve quality, reduce rework, and meet project deadlines.

Proven on projects of all shapes and sizes to increase productivity and reduce costs, ProjectWise is unlike competing systems as it is the only one that delivers integrated solutions for content management, content publishing, design review, and asset lifecycle management.

ProjectWise is optimized for real-time collaboration across distributed teams and can be deployed OnPremise at your office or OnLine as a hosted managed solution.

ABOUT SMART



SMART Business

Advisory and Consulting,

LLC (www.smartgrp.com) is a premier, full-service independent provider of financial advisory and business consulting services, serving clients throughout the US and globally. SMART offers innovative solutions to public and private companies in the areas of financial advisory and business consulting, technology, business process, accounting, compensation and benefits, and tax. Through an alternative practice structure, SMART and Associates, LLP offers clients a full range of attest services.

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www.bentley.com/projectwise

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