

THE ULTIMATE GUIDE HEAVY CIVIL CONSTRUCTION MANAGEMENT SOFTWARE

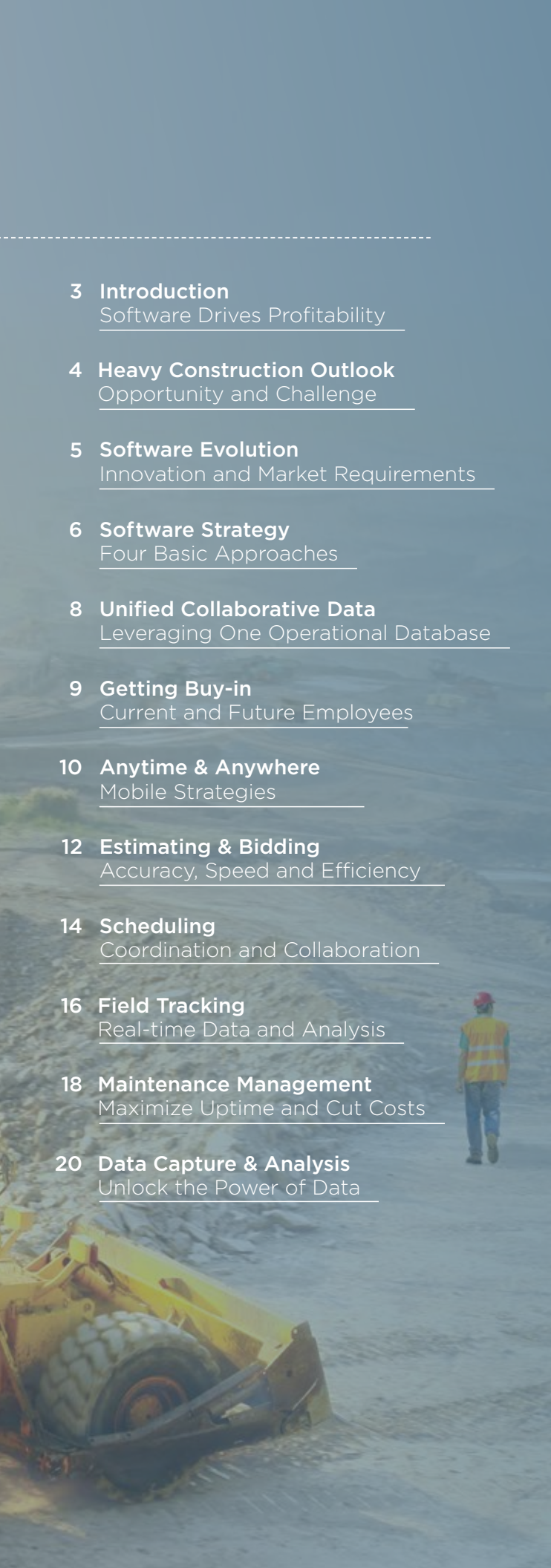
DRIVING PROFITABILITY WITH A COHESIVE
ESTIMATING AND OPERATIONS PLATFORM



SOFTWARE

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INTRODUCTION

SOFTWARE DRIVES PROFITABILITY

Not too long ago, software and data were secondary concerns in heavy construction. Paper and spreadsheet-based management tools put competitors on equal footing. Winning bids and earning profits hinged more on hands-on experience, personal expertise, and gut feeling.

That's changing fast. Specialized software is creating imperative opportunities to increase accuracy, agility and efficiency across estimating and operational workflows. Aggregating, analyzing and acting on the vast amount of data available can be the difference between profit and loss. Companies that do not have a proactive and cohesive software strategy are finding it increasingly difficult to compete against the ones that do.

This guide looks at the options and approaches that construction companies should consider in order to stay on the winning side of this dividing line.

HEAVY CONSTRUCTION OUTLOOK

| OPPORTUNITY

Increasing demand to revitalize aging infrastructure and initiate new transportation, utility, energy and commercial projects should drive an increasing volume of work.


| CHALLENGES

- Margin pressure and competition are intensifying in response to funding limitations associated with much of that work
- Jobs are becoming more complex. Compliance and regulatory requirements are on the rise
- To win bids and stay profitable, it is becoming increasingly important to maximize efficiency and optimize all assets – including data


Modern software solutions and a clear strategy about how to employ them can help companies seize these opportunities, address challenges and improve profitability.



MORE WORK



MARGIN PRESSURE



PROJECT COMPLEXITY



REGULATION/POLICY

CONSTRUCTION EVOLUTION

SOFTWARE INNOVATION AND MARKET REQUIREMENTS



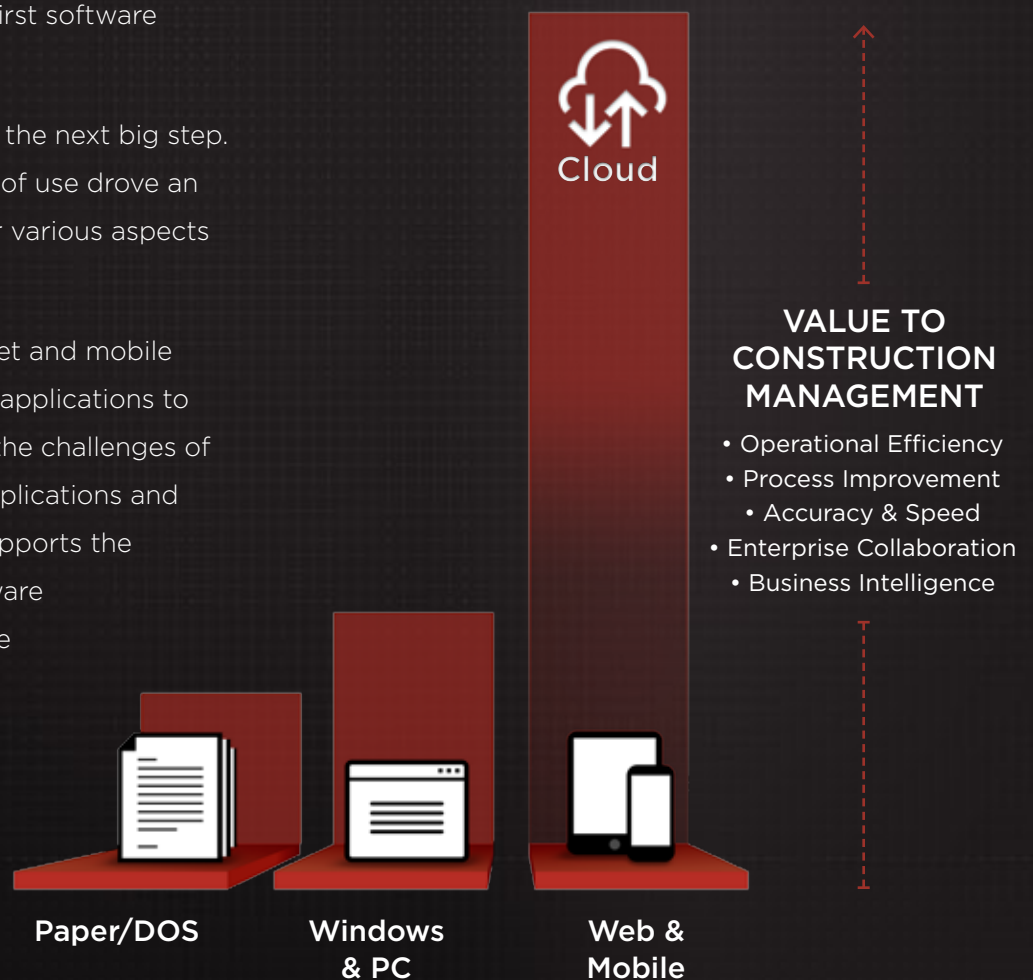
Heavy construction continues to trail other industrial sectors in software solutions that automate processes, streamline workflows and enable data-driven analytics. The reasons are easy to appreciate. Most companies focus attention and investment on what they know best: hands-on construction expertise. Partial software solutions and challenging user interfaces also made it difficult to achieve the true ROI potential of a comprehensive software strategy.

UNIFIED PLATFORM

Paper & DOS—When estimating and operations were managed with pencils and calculators, DOS applications and spreadsheets presented the first software breakthrough.

Windows & PC—Windows was the next big step. Standardized interfaces and ease of use drove an explosion in niche applications for various aspects of the construction workflow.

Cloud, Web & Mobile—Internet and mobile capabilities brought construction applications to the field – but also compounded the challenges of managing and integrating new applications and data sources. Now, technology supports the vision of an enterprise-class software platform with applications that are powerful, easy to use and unified. That vision addresses current market pressures, as well as the expectations of an increasingly tech-savvy workforce.



ESTIMATING & OPERATIONS

FOUR APPROACHES TO SOFTWARE

Keeping up with software technology and making the right investment at the right time can be challenging. Start by stepping back and taking a big-picture look at the four basic approaches.

1

Stay Old School

Spreadsheets are familiar and comfortable. The investment is minimal, and so is the learning curve. However, limitations invariably emerge as volume, job complexity and margin pressure increase and as competitors move to specialized software.

2

Piece Things Together

Independent, stand-alone software tools can be very effective for estimating, field logs, scheduling and many other specific functions. The challenge is managing multiple solutions, keeping them in sync and trying to make them

talk to each other. That typically requires IT expertise, redundant databases and complex integration steps. Niche software providers can also struggle to help their customers scale up as they grow or keep up as new technology emerges.

“Challenges with integrating and syncing multiple applications can outweigh the benefits they deliver.”

3

Go with Accounting or ERP Derivatives

Shooting for all-in-one solutions, providers of enterprise accounting and resource planning software have added on applications for construction estimating and operations. Integration is part of the promise, but programs developed from an accounting or planning perspective can be cumbersome and difficult to use in the construction environment. The frequent complaint from estimators, project managers, foremen and crews is “they just don’t work the way we work.”

“They just don’t work the way we work.”

4

Adopt a Unified Platform

A unified platform for estimating and operations includes individual software applications designed from the outset to work together. Each workflow element is optimized for a specific function, and data flows logically and collaboratively among them without integration, syncing or the need for redundant databases. The platform covers estimating and operations workflows – where profits are won and lost – and it should connect seamlessly with accounting and project management/ERP solutions.

“Specialized applications share and update unified data in real time”



UNIFIED APPLICATIONS & DATA

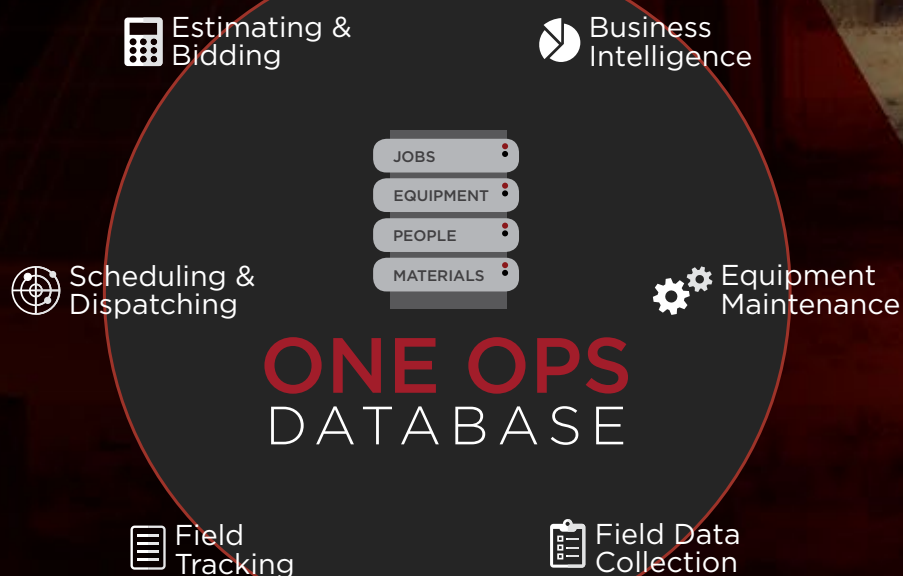
LEVERAGING ONE OPERATIONAL DATABASE

Specialized software applications enhance performance across specific functions like estimating, scheduling and dispatching, field tracking and maintenance.

The real opportunity at the enterprise level is unifying these individual workflow elements so the collective benefits exceed the sum of the individual benefits.

A single operational database is a vital feature of a unified software platform and a big advantage in the construction environment.

Maintaining data on employees, equipment and jobs in one central database eliminates redundancy, errors and inconsistency. This structure puts everyone in the company on the same page at the same time by allowing specialized software applications to be truly networked. Data flows collaboratively to and from all of the applications. Add, remove or change operational data in one application, and the updates are instantly accessible in the other applications.



GETTING BUY-IN CURRENT AND FUTURE EMPLOYEES

A big reason many construction companies hesitate to invest in software is the expected push back. Owners and managers often look at “old school” employees unfamiliar with computers and entrenched in “the way we’ve always done it” and perceive a barrier that’s just too big to overcome.

Fortunately, when they choose software designed specifically for construction workers and a construction environment, they are pleasantly surprised by how short the learning curve is and how quickly it is embraced. The critical questions to ask in the selection process are:

- Is it easy to learn and intuitive to use, even for people with little or no computer skills?
- Will it give employees the added satisfaction of being able to do their jobs better in a relatively short amount of time?

Appealing to the Next Generation

Attracting younger employees with high skill levels is a challenge across the construction industry. Computers and software are second nature to these workers. They were raised with them and they know the advantages.

They also expect to work with the latest and best software available in order to excel and advance their careers. As contractors compete for these employees, the ones that can meet those expectations have a major advantage.

ANYTIME & ANYWHERE MOBILE STRATEGIES

Mobile technology has emerged as a disruptive game changer in the construction environment. Beyond simply displacing paper- or PC-based processes, mobile technology is creating revolutionary opportunities to capture and share more data with less effort, redesign inefficient processes and collaborate in real-time.

Laptops have given way to tablets that are always on, connected and easy to use. Original applications for field tracking have been supplemented by mobile applications that optimize processes and data across the entire operations workflow.

As with software elements, however, fragmented mobile applications create challenges. Sharing information across niche mobile applications can be difficult or impossible, and mastering the ins and outs of several systems is an added burden on employees. The preferred alternative is a single mobile application covering scheduling, dispatching, field tracking and equipment maintenance functions.

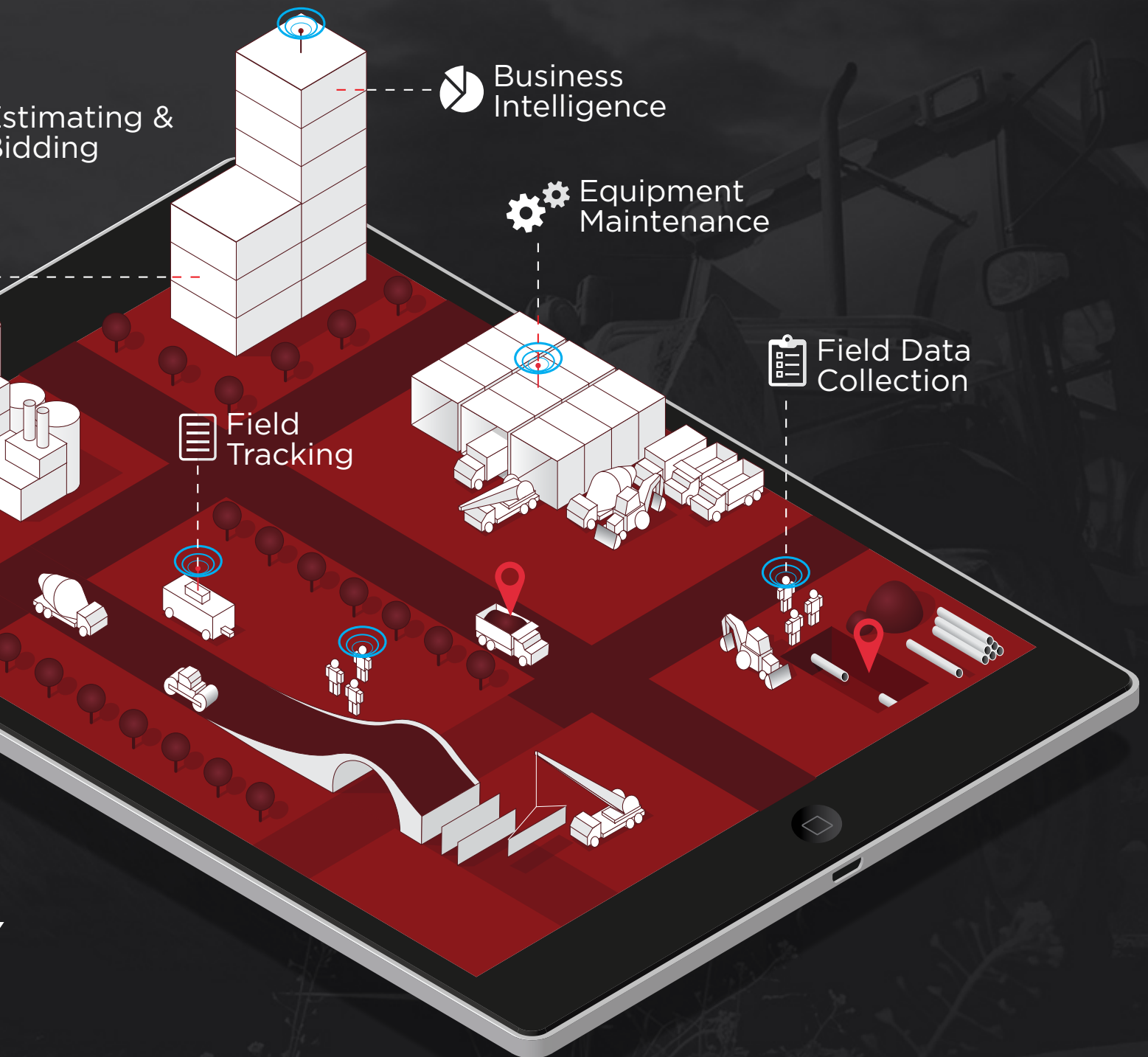
 Scheduling & Dispatching

ACCURACY EFFICIENCY PROFITABILITY

- Unified Data
- Connected Applications
- Collaborative Workflow
- Data-driven Decision



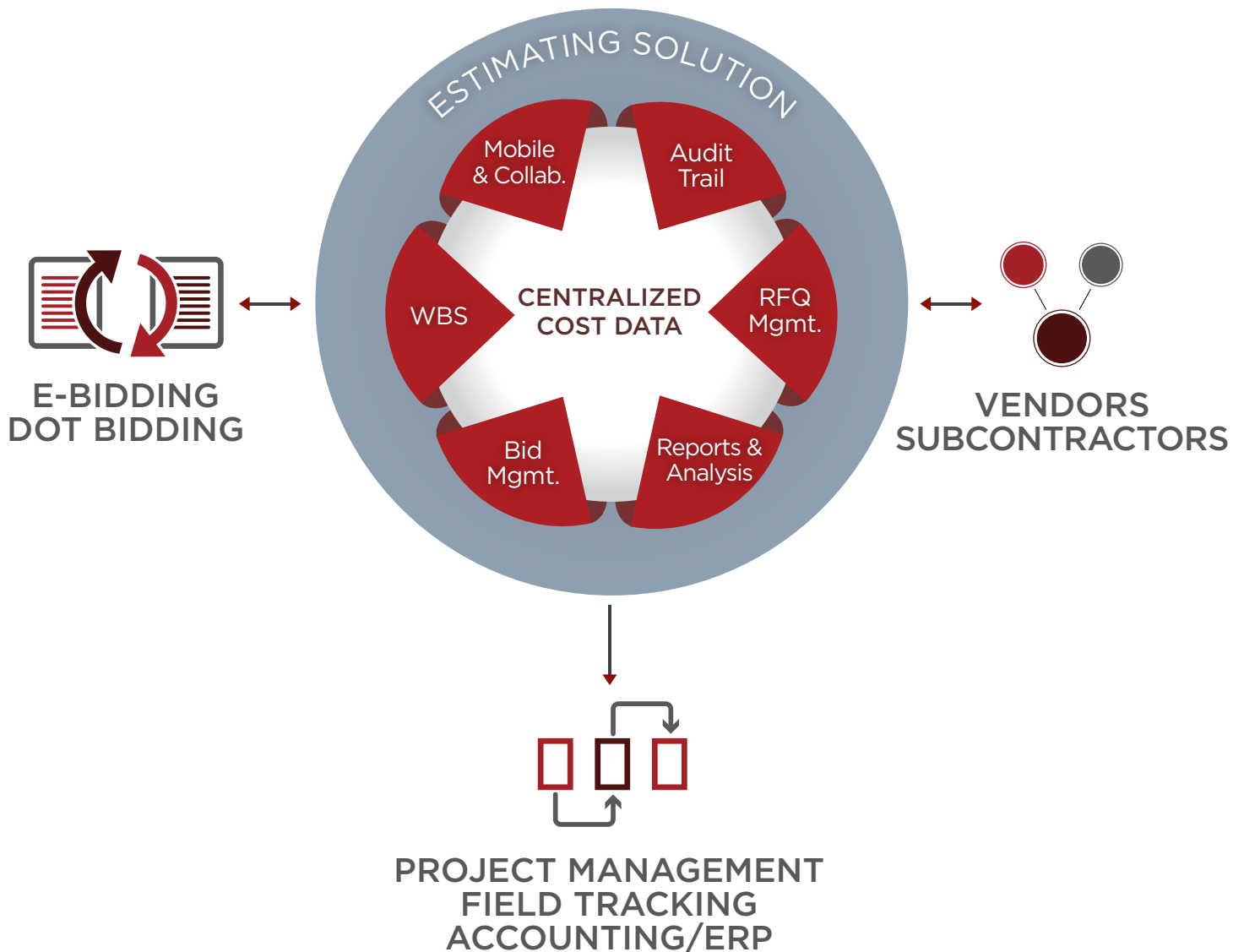
SOFTWARE



ons
ows
Making




EXCEL
COST DATA PROVIDERS



SPECIALIZED ESTIMATING SOFTWARE

WIN MORE OF THE RIGHT JOBS

Earning a profit begins with estimating. Construction companies that step up from spreadsheets or outdated software complete more bids in less time. They also achieve levels of accuracy, flexibility and analysis that help them win the right jobs at favorable margins. Essentials of an advanced software solution are:

- A centralized resource database used by everyone preparing bids to access accurate, up-to-date costing information for labor, tasks, materials and equipment
- Features and functionality that make it easy to pull in these cost structures according to the requirements of the specific bid
- Scalable, enterprise-class performance so the software grows with your company and runs fast and reliably with one user or hundreds of users

COMPREHENSIVE ESTIMATING SOLUTION

Estimators want software that works the way they work. Creating item databases, crew and task templates and reusable cost structures must be easy and intuitive. Using these building blocks to create bids has to be logical. Additional features to look for include:

- Flexibility – Bid with as much or as little detail as required according to pay items or WBS levels
- Collaboration – Allow multiple estimators to work on a bid simultaneously
- Mobility – Work remotely, with access to resources, and then synchronize with the server
- Bid Management – Leverage built-in markup and pricing schemes
- Market Analysis – Compare and analyze competitors' bids on public projects
- Management Reporting – Aggregate data from estimates in your database for powerful intelligence
- Audit Trail – Estimate history and recovery

INTEGRATION IS ESSENTIAL

Estimating is not an isolated activity. A strong software solution should deliver seamless integration advantages that improve accuracy and save time.

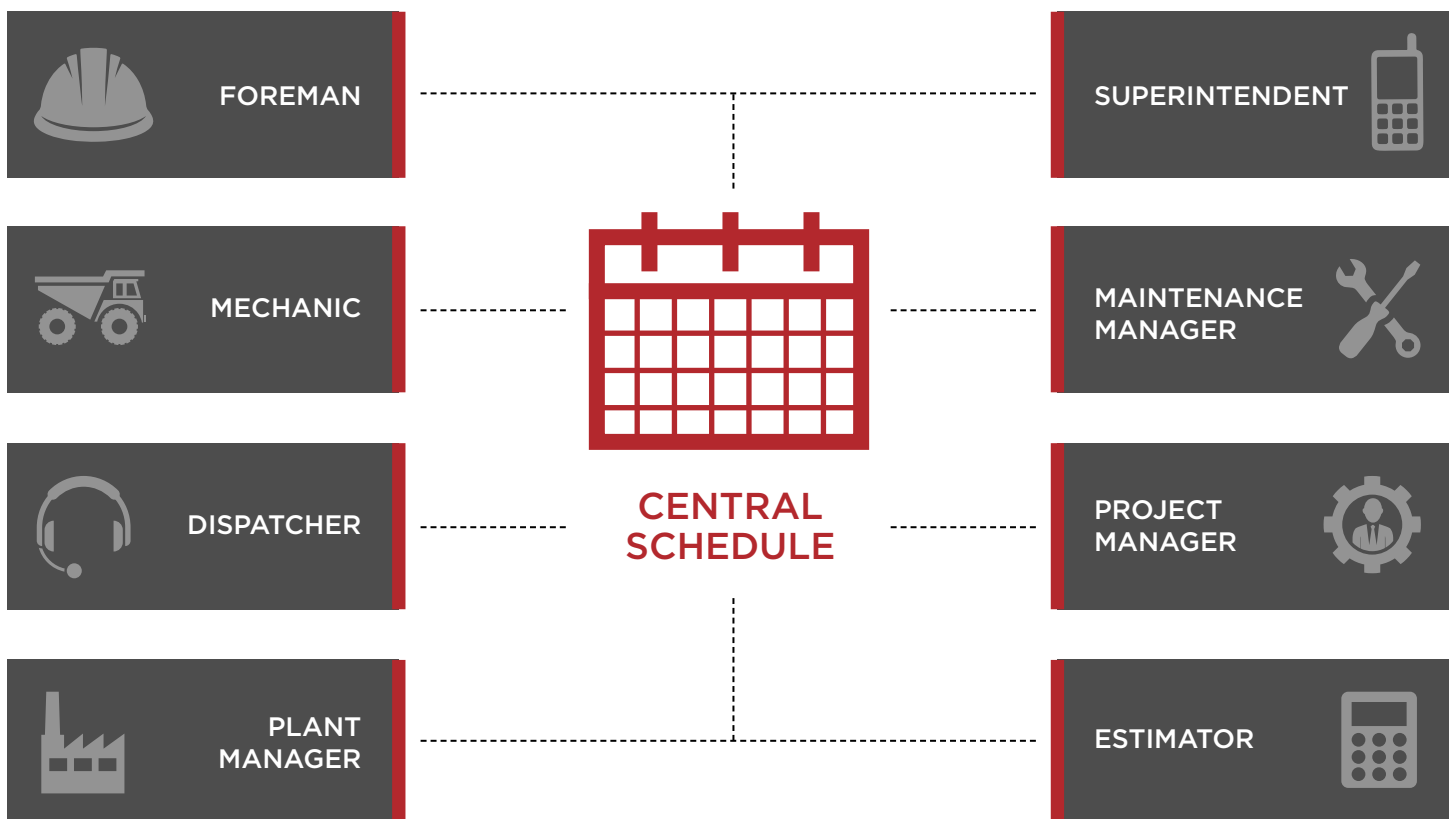
- Excel tables and other cost databases
- Electronic bidding systems, including built-in DOT capabilities
- Vendors and subcontractors – automated process to communicate with subcontractors to move more rapidly and accurately through the bid process
- Project management and accounting/ERP Integration



SCHEDULING & DISPATCHING

VISIBILITY AND COLLABORATION ARE ESSENTIAL

In construction, precise coordination of people, equipment and materials over extended time periods is a critical, complex and continuously evolving challenge. Replacing a disconnected mix of spreadsheets, phone calls, whiteboards and messages with a specialized software solution simplifies the process and provides real-time visibility. Employees can work together and keep projects running at optimal efficiency.



BE PROACTIVE INSTEAD OF REACTIVE

Software makes it easy and intuitive to schedule and assign resources in real time. Schedulers can also be alerted in advance of conflicts with labor, equipment or materials so they can prevent last-minute scheduling emergencies and minimize interruptions or downtime.



Increase visibility

Electronic scheduling ensures that resource status and changes are seen enterprise-wide on a role-specific basis. Flexible calendar views and seamless updates keep everyone on track in real-time. Map views with location based information add more value.



Access data everywhere

Access to a centralized schedule and scheduling functionality from mobile tablets is essential, allowing employees to work from anywhere to create requests, fill assignments, generate moves or resolve conflicts.



Add value with reports

Reporting allows managers to drill deeper, analyze moves, view crew availability, track production targets and summarize activity. Subscriptions can also be set up so that employees receive reports they need, when they need them.



FIELD TRACKING

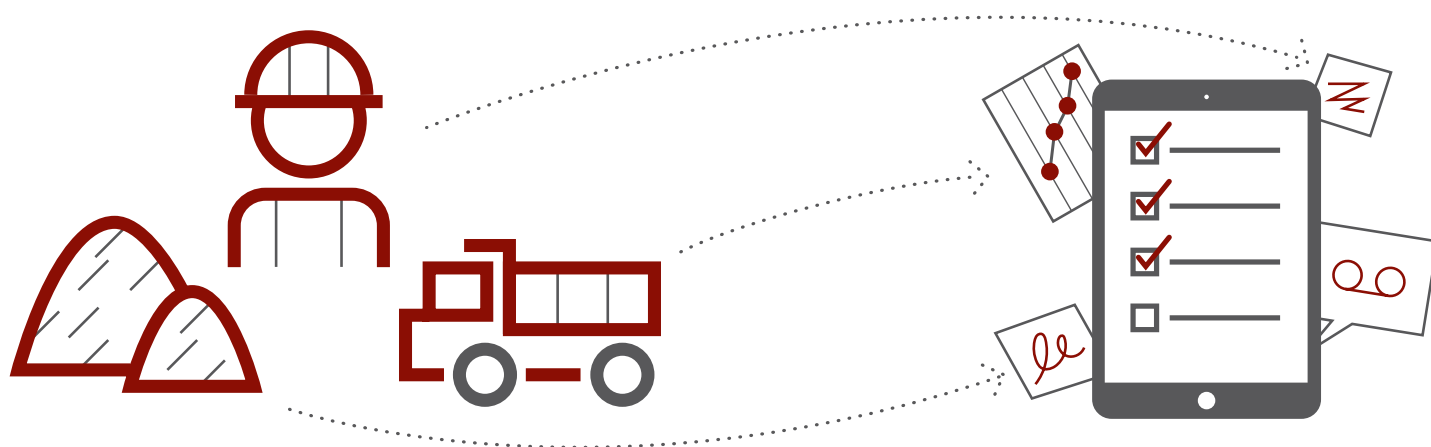
REAL-TIME DATA AND REDEFINED PROCESS

Once a project is underway, field tracking software is essential for capturing information on job performance and analyzing it in comparison to the bid to manage costs. Immediacy is critical. The faster a company has an accurate picture of what is happening in the field, the faster it can react with appropriate operational adjustments. Minimizing inefficiency, redundancy and delays in this field data capture and analysis process are parallel goals.

Customizable electronic field logs with user-defined field and full mobile capabilities are foundational capabilities for the most effective daily reporting of:

- Production Quantities
- Equipment Hours
- Trucking
- Employee Hours
- Materials
- Subcontractor Activities

Mobile tablet functionality is also critical for empowering employees to manage field logs and timecards, sign-off electronically and view data anytime and anywhere. Additional features to look for include customizable dashboards and reporting, as well as the ability to manage production and time-and-materials (T&M) work on the same log.



A mobile tablet app empowers employees to capture, create, modify and submit field logs, and view reports and dashboards.

Bid information and phase codes
can be imported from the estimating software

Progress tracking on electronic field logs flows directly
to management reports

Repair requests created in the field flow directly to the
Maintenance Management System

Payroll, production and equipment data flows directly
to the accounting system

Status and location of resources is available in real-time from the systems used
for scheduling, dispatching and maintenance

**WHEN FIELD
TRACKING
SOFTWARE
IS UNIFIED
WITH OTHER
OPERATIONAL
APPLICATIONS,
THE ACCURACY
AND EFFICIENCY
BENEFITS ARE
COMPOUNDED**



MAINTENANCE MANAGEMENT

MAXIMIZE UPTIME AND CUT COSTS

With so much financial risk and reward riding on their equipment, it's no wonder so many companies are moving from fragmented paper- and spreadsheet-based systems to a specialized Maintenance Management Program. A good program provides enterprise-wide visibility and enables them to...

Centralize Information

Establish a single source for equipment status, history and documentation

Manage Maintenance Processes

Streamline creation and execution of repair requests and work orders

Drive Preventive Maintenance

Set up and stay on top of proactive, user-defined programs to prevent unplanned work, increase uptime, cut costs and improve safety

Plan and Schedule

Assign maintenance labor, parts, materials and tools with drag-and-drop ease on a central schedule to make ongoing adjustments that maximize efficiency and uptime

Gain Mobile Agility

Access documentation and manage repair requests, work orders, and time cards in the field and in real time

Leverage Telematics and GPS Data

Aggregate data coming directly from equipment – automatically – and use it to drive maintenance and prevention intervals

Improve Reporting and Analytics

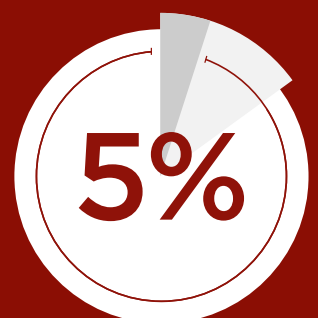
Track key indicators and leverage data to make more informed repair, replacement and rental decisions

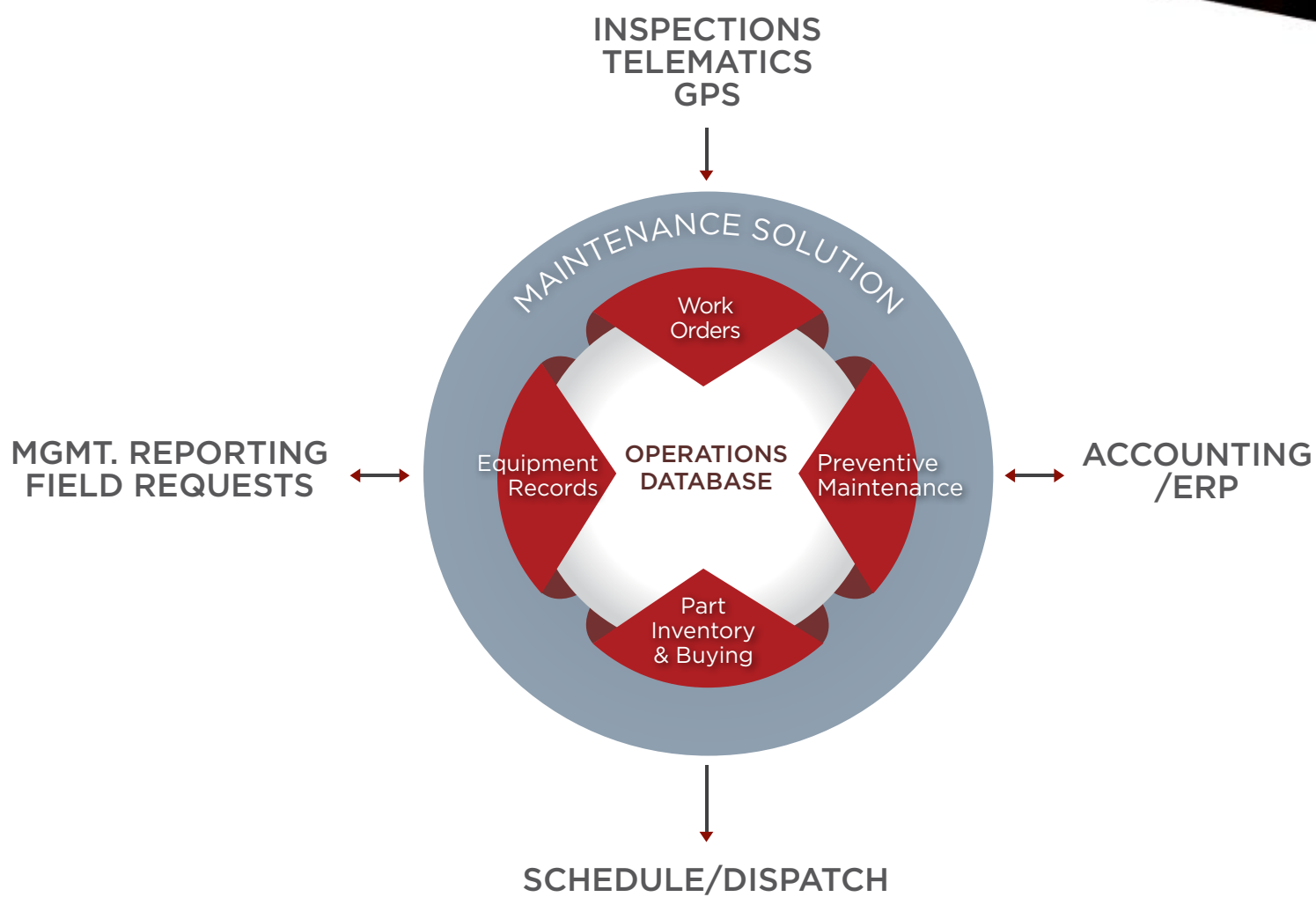
Maximize Warranty Coverage

Savings generated by a Warranty Tracking feature alone could justify the cost of a Maintenance Management Program

HOW DO YOU MEASURE UP?

Industry leaders hold maintenance costs to around five percent of revenue. For others with reactive approaches, that total can climb to fifteen percent or more.





FOR
MORE
INFO:

MANAGER'S GUIDE



[Click for B2W's Ultimate Equipment Manager's Guide
to an Enterprise-class Maintenance Program]





DATA CAPTURE & ANALYSIS

UNLOCK THE POWER OF DATA

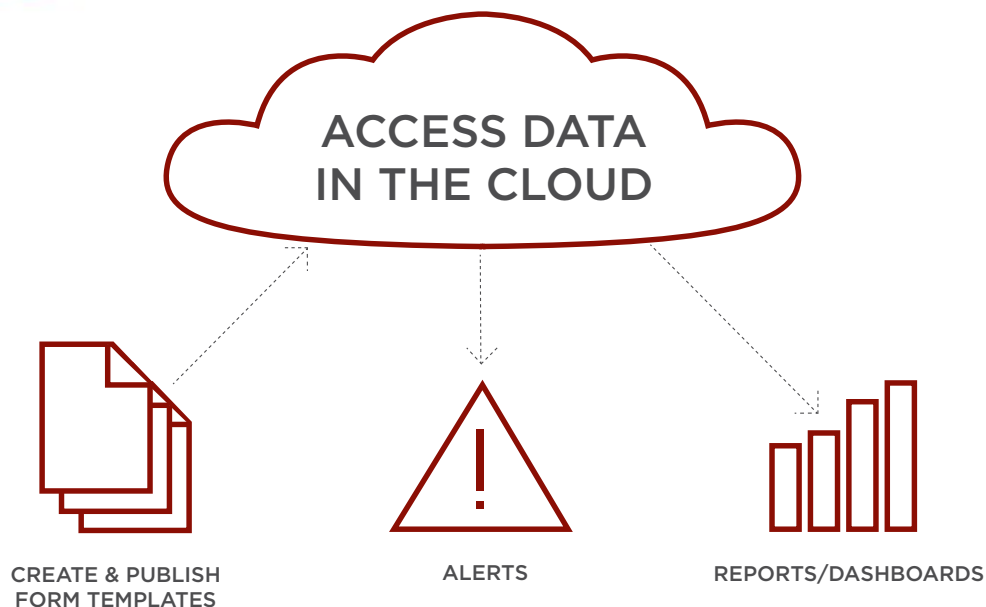
Information is an underutilized asset in construction. Most companies waste too much time trying to collect, find and organize it, and too little time using data to drive better decisions and higher profitability.

Data capture and analysis may be common within purpose-built software for progress tracking, time cards, equipment maintenance and many other functions. The big challenges are:

Collecting the remaining, disparate data related to safety, quality assurance, inspections and other areas of the workflow in an efficient, structured manner.

Aggregating all of the enterprise data and converting it into actionable business intelligence.

THE RIGHT INFORMATION
GIVEN TO THE RIGHT PEOPLE
AT THE RIGHT TIME EMPOWERS
THE RIGHT DECISIONS



An enterprise-wide software solution can reverse the “content chaos” and unlock the power of data, allowing companies to:



Create customized electronic forms with speed, ease and the ability to capture rich content like photos, videos, attachments, e-signatures, timestamps and GPS coordinates.



Establish an enterprise-wide system – leveraging mobile capabilities – to bring immediacy and efficiency to how employees find forms, fill them out, submit them and access the data they contain.



Mine data from forms and other electronic sources to create analytical reports, and dashboards populated with accurate, up-to-date information – tools that empower data-driven decision making.



Generate immediate alerts and notifications – triggered by data entered on an electronic form and delivered automatically in the application, by text message or by e-mail.



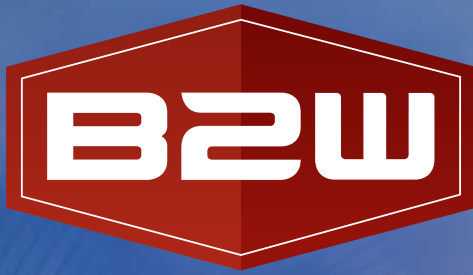
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