DevonWay Mobile Work Execution in Asset-Heavy Industries

White Paper

Overview

DevonWay mobile work execution solutions make the overall work management process more efficient and improve work task execution quality. DevonWay helps maintenance technicians, supervisors, operations, and records management personnel increase efficiency and reduce the administrative burden on work management. Improve task execution quality by providing more access to relevant and up to date work status information, enhanced oversight, improved data acquisition, data analytics, and trending.

Most facilities plan work orders using an asset management system, such as SAP or IBM Maximo. During the work order planning process, planners produce work packages that incorporate a defined work scope and task attributes, needed permits or permit requests, documents, procedures, drawings, forms, check sheets, technical manuals, and any other references needed by technicians to perform the task.

Printed work packages inherently have many barriers to productivity and work execution quality, so the opportunity in front of organizations today is executing the transition from paper to a fully electronic, mobile process.

The DevonWay mobile work solution provides multiple benefits. While the specific process improvements for each customer will vary, the following categories typically produce the biggest benefits:

- Work Package Generation and Assembly
- Manual Transportation, Tracking and Locating of Work Packages
- Validation of Controlled Documents
- Elimination of Redundant Data Entry
- Archive Record Generation
- Human Performance

Work Package Generation and Assembly

In a paper-based work order management process, once planning is completed using the EAM system, work packages are manually printed, assembled into 3-ring binders with associated tabs, transported, and stored in a location accessible to the executing organization. This is a very labor and material intensive process. Additionally, the cost of paper alone can be significant. To automate the above, interfaces are built between the customer's existing EAM system, the existing document management system, and the DevonWay mobile work management solution. With these interfaces in place, when a

planner finishes planning the work package, a work order status change (such as Ready) triggers the DevonWay solution to electronically create, assemble, and store the work package in the designated location. This process eliminates the need for manual printing and assembly while drastically reducing the cost of paper and copier supplies.

Manual Transportation, Tracking and Locating of Work Packages

Based on attributes selected by the planner during the work order planning process, each work package can be placed in predetermined workflows appropriate for the type of task. For example, a work package that has the "pressure boundary" attribute selected can be automatically placed in a workflow that ensures the work package has the additional In Service Inspection (ISI) pre-work and post-work reviews and approvals. Every work package includes a historical audit trail and electronic signature panel, and can be viewed throughout its entire workflow lifecycle, eliminating the daily frustration associated with physically tracking down paper work packages.

Validation of Controlled Documents

Regulatory and best business practices dictate that controlled documents be validated as being the current revision prior to performing work with them. In a paper work package environment, controlled document revision validation is not only a time consuming administrative burden to execute, but it can be an organizational vulnerability if not performed properly. Paper based work order validation is typically performed by an individual manually entering each controlled document number into the controlled document management system to verify the revision in the work package is the most up to date document. This manual validation process takes valuable resources away from more productive and skill based activities. With the DevonWay mobile work management solution, manual validation is eliminated and replaced by a fully automated validation process, thereby releasing valuable resources for more productive activities.

Elimination of Redundant Data Entry

When workers compile paper work packages, minimum information such as: a narrative log or summary of work performed, parts installed, M&TE used, and as found/as left data are manually entered into the appropriate sections of the paper work package. When the work package is completed, the written information is manually entered again into the EAM and other systems. This double entry of work package data requires significant resources and introduces the potential for transcription errors or omissions. With the DevonWay mobile work package solution, data is entered one time on the mobile device and is automatically transferred to one or more of the appropriate databases, eliminating redundancy and the potential for data transcription errors or omissions.

Archive Record Generation

Most companies convert completed paper work packages to a digital archive format (such as PDFA) by manually scanning each page of the work package. In addition to the scanning process, even before paper work packages are scanned, completed paper work packages must be prepared, packaged, and shipped via formal transmittals by the executing organizations to record archival personnel. With the DevonWay mobile work package solution, completed work packages are transmitted automatically to

the electronic records management system, thereby eliminating the potential for loss of records during transmittal while also freeing up the resources needed to manually scan thousands of pages of work.
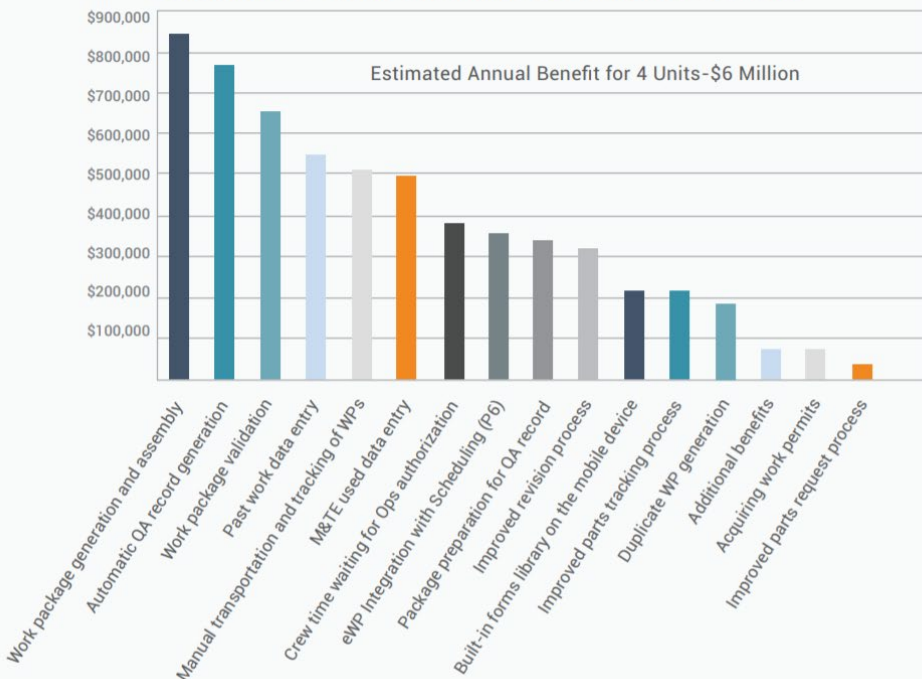
Human Performance

The DevonWay platform is designed to extend across business processes to share common functionality within an applications platform. One of our customers, for example, uses the same mobile app for initiating a mobile observation and coaching card that they use to check out and execute a work package, allowing for the seamless capture of important human performance data during work execution. Additionally, mobile work packages ensure workers execute the right steps in the right order every time. Through rich, colorful, interactive content, the overall quality of work instructions is improved. This experience helps ensure timely and efficient procedure execution while minimizing the opportunity for human error. Further, this reduces data entry results in time and cost savings, a dramatic reduction in human error related to misreading or mistyping procedure data, as well as the potential benefits of immediately sending as found equipment and other data to external systems rather than waiting hours or days for the manual data entry to take place. Expected Cumulative Savings The scalability of the DevonWay mobile work package solution provides the ability to expand and leverage the overall solution benefits across an entire organization. Below is a figure that highlights the potential benefit categories and savings for a typical four unit nuclear plant. While the exact savings and categories will vary based on a customer's specific business processes, the recurring annual dollar savings expected is approximately $125 per work package, or $1.5 million per unit ($6 million for the site).

Expected Cumulative Savings

The scalability of the DevonWay mobile work package solution provides the ability to expand and leverage the overall solution benefits across an entire organization. Below is a figure that highlights the potential benefit categories and savings for a typical four unit nuclear plant. While the exact savings and categories will vary based on a customer's specific business processes, the recurring annual dollar savings expected is approximately $125 per work package, or $1.5 million per unit ($6 million for the site).

FOUR UNIT SITE ESTIMATED ANNUAL EWP BENEFIT BY CATEGORY

Estimated Annual Benefit for 4 Units-$6 Million

NOTE: This figure does not include any credit for improving task execution quality by providing technicians, supervisors and managers more access to relevant and up to date status information, enhanced oversite, improved data acquisition, data analytics and trending.