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Information Drives Asset Performance

This paper looks at the main challenges of managing enormous amounts of asset-related information within the manufacturing industry and the strain on engineers, plant managers, and maintenance workers they produce. It describes the benefits your organization can realize when you extend your enterprise asset management (EAM) system such as SAP® Plant Maintenance with an Enterprise Content Management (ECM) solution.

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Introduction

The manufacturing industry is asset-intensive. Whether a discrete or process manufacturer within various industries, such as high tech, automotive, aerospace, consumer packaging, it takes a wide array of assets to keep your business performing efficiently. In today's competitive global market, where companies spend tens of millions annually on asset construction and maintenance, doing everything to maximize return on assets and operational efficiency is critical. For manufacturing companies, this means that minimizing production downtime is a top asset management priority. If there is an unplanned production outage while a critical order is being run on a tight timeline, production schedules are shot, profit margins shrink and your return on investment (ROI) decreases—not to mention the customer/reputational issues that missed deadlines can create. To meet these challenges, leading companies are leveraging asset management and plant maintenance systems such as SAP and technologies to maximize uptime, drive cost-effective operations and ensure a strong ROI.

In fact, many of the industry's sharpest and most chronic pain points are directly related to issues around asset management:

- **Competition** – Maximizing uptime through detailed knowledge of your assets' lifecycle is absolutely critical. If operational efficiency wanes because assets are out of commission or operating below peak efficiency, companies can quickly lose traction in today's ultra-competitive markets. Focusing on lean operations and continually improving processes to eliminate inefficiencies is also key. The more you know about your own assets' performance, as well as that of manufactured products sold or leased into your customers' environments, the better you'll be able to respond to customer needs—and the sharper your competitive edge will be.
- **Innovation** – Continual technological change, such as the rapid advancement of new production methods and machinery, "smart" assets with sophisticated control and monitoring capabilities allow organizations to achieve competitive advantages. This requires regular maintenance cycles that must be executed with the utmost speed and efficiency and supported with accurate information. If the latest management systems and software are not employed to facilitate and regulate these procedures, downtime and production losses are an almost inevitable result.
- **Compliance** – Today's companies face a growing range of safety, environmental, financial and other regulatory requirements, with increasing penalties for non-compliance: "Complying with workplace regulations costs an average of \$2.2 million per manufacturing firm or about \$1,700 per employee."¹ For example, in the United States alone, you must maintain and document your compliance with more than 81,405 pages of regulations. HSE (Health, Safety and Environment) and other standards records must be maintained throughout the entire life of each asset and kept current any time you change key processes. This involves a considerable range and flow of information that must be managed, accessible, transparent and accurate at all times.

"Best in class manufacturing companies experience 90% equipment effectiveness, less than 3% unscheduled downtime, significant reduction in maintenance costs, and an increase in return on assets."

ABERDEEN

Reputational Risk – Along with compliance risk, reputational risk is an ongoing concern. Unforeseen events, such as employee injuries, unexpected equipment failures or downtime, can result in environmental damage, loss-of-production penalties and failure to meet contractual obligations—all of which can severely tarnish a corporation's reputation. Many times organizations measure risk as a critical success factors when determining asset performance.

Moreover, asset information knowledge is important regardless of ownership or deployment environment. It is important whether the assets are:

- Fully owned and maintained by yourself or a third party
- Leased and maintained by yourself or a third party
- Vendor-managed assets

Shrewd investment in the right asset management tools and applications can help your organization control these pain points, all while driving the uptime and keep the cost of quality at a reasonable level. Most current Enterprise Asset Management (EAM) systems, however, while good at task assignment and process automation, do not have broad functionality when it comes to managing the enormous amounts of asset-related information such as technical documentation, work instructions, and safety data sheets. More often than not, both structured and unstructured information that organizations create and collect cannot be easily integrated and correlated with other management applications. Unless substantial integration work is done, today's EAM systems can create information silos that introduce risk and limit effective response capabilities.

This paper looks at the main challenges for engineers, plant managers, and maintenance workers; outlines key solutions and technologies; and describes the benefits your organization can realize when you extend your EAM system with an Enterprise Content Management (ECM) solution.

Challenges to Successful Asset Management

Companies devote considerable resources over the life of an asset, which can easily span decades. From the beginning, the design and construction of new projects need to be managed and documented. Transitioning from asset construction to operations and maintenance along the lifecycle of the asset can also present specific challenges, such as the controlled document handover between different stakeholders and organizations.

Too often, companies overlook the benefits of integrating unstructured content and business processes, or simply lack the tools to holistically manage work orders, maintenance records, vendor purchase orders (PO), engineering specifications, incidence reports and regulatory reporting. Companies need a system that can link all this information—wherever it resides in the organization—back to the asset.

Understanding the unique challenges asset information management presents beyond the capital projects phase is critical to maximizing long-term asset value. These challenges can be broken down into three main categories.

Handover from the capital projects phase to the operations phase can be a significant roadblock, which often causes considerable time and cost overruns. If your ECM asset management solution can reduce the timeframe on a \$100 million project by just 3 –7%, hundreds of thousands can be saved

1. **Managing technical documentation—eliminate silos and contextualize your asset information**

The vast majority of organizational information—emails, contracts, faxes, manuals and more—is unstructured, meaning it is not classified and stored in traditional databases or easily used by applications. While this can apply to paper-based documents, the digital age disproportionately amplifies the problem, especially for rich media such as images, audio and video. To complicate the issue, unstructured content, which often exists in multiple versions, is sometimes handled by different individuals, housed in discrete systems and siloed in various departments or even in different organizations. For companies with numerous, dispersed global assets, this creates problems that extend beyond central business processes and operations and can make it difficult to establish a single point of truth from which all organizational information can be viewed. Furthermore, if third parties are managing your assets while in transition to an operational stage, you require additional emphasis on communication, collaboration, data and logistics.

2. **Maintenance—manage collaboration and revision control for routine maintenance and during product turns and maintenance cycles**

Information must be readily available to plant personnel, engineers and maintenance, as effective collaboration is critical to efficiency. Otherwise, unexpected delays or downtime can create a number of ongoing problems, such as inefficient production turns, profit loss and environmental incidents. On the backend, documents must be revised to reflect all maintenance procedures, technological updates and equipment changes.

3. **Effective change management during product turns and retooling cycles—document and manage compliance through the total asset lifecycle**

Poor information management during equipment set-up or re-tooling can not only slow productivity and create significant risks to your margins, it can create business and safety compliance risks. In our vigilant, post-financial-crisis environment, companies must accurately document, transmit and report their complete history of asset maintenance, inspections and changes in order to remain compliant.

UNSTRUCTURED CONTENT EXISTS IN ALL AREAS OF THE ORGANIZATION.

Some examples of unstructured content include:

- *Equipment Documentation*—maintenance logs, technical drawings, modified specifications, manuals, etc.
- *Maintenance Work*—Standard operating procedures, maintenance schedules, contracts, etc.
- *Correspondence*—Email, transmittals, invoices, compliance reporting, etc.
- *Digital Assets*—Training videos, asset images, operational logs, etc.

New ECM-based Solutions Revolutionize Asset Management

To meet these challenges, companies are making long-term strategic decisions about the EAM, Enterprise Resource Planning (ERP) and ECM systems they will employ. As you consider solution requirements, start with the core ability to manage technical documentation. With an ECM-based asset information management solution, you can not only integrate and distribute organizational information, but also link that information to processes or asset-related objects such as functional locations, equipment and work orders.

What separates an ECM-based solution even further from the typical point solution, however, is the ability to manage asset-related, structured and unstructured content in any format—including digital media, images, emails, supply chain documentation and ERP-generated business content—and make it easily accessible from a single point of truth. In order to truly benefit your business, all information should be easy to organize around different types of projects, such as product turns and reliability or equipment failure analysis; creating job-specific collaborative environments and organization-wide information workflows that include both internal and external participants. A variety of features can augment this capability, such as predefining best practice workflows for certain key activities by templating them into the system.

In order to maximize the return on your assets and create stability across the full manufacturing lifecycle, an effective ECM solution should also integrate easily with ERP solutions such as SAP. This will help ensure, for example, that the bill of materials is always accounted for when a new product is being produced or when your product cycle changes. While existing EAM systems do a great job of managing most maintenance-related tasks and alerting staff about required work based on stored equipment specifications, an ECM solution should be integrated directly into the EAM business processes for the assets supporting work orders, maintenance records, purchase orders, engineering specifications, incidence reports and regulatory reporting, etc. A leading-edge, ECM-based solution essentially serves as the content management layer for all assets within your EAM, paving the way for a truly end-to-end asset lifecycle management solution.



The Benefits of Integrated Asset Information Management

For manufacturing companies looking to enhance their competitive advantage, the right asset management solution can help take your assets successfully from the capital projects and handover phases, through a long lifecycle of efficient operations, and ultimately through decommissioning. With the right solution, your organization will be better able to:

- Embed compliance and risk management in your EAM system;
- Link documents and business processes to your assets to improve productivity;
- Provide stakeholders within the process the ability to see the documents which support it from multiple user interfaces such as SAP, Microsoft® Windows, Office, email, and web;
- Improve knowledge-sharing and collaboration through organization-wide access to information;
- Strengthen your compliance posture with consistent, secure records management across all data and processes;
- Leverage real-time access to structured and unstructured data to realize commercial and strategic advantages;
- Respond quickly and effectively, and with all critical information at hand, to avert potential disasters and manage reputational risk;
- Integrate information management benefits realized during the capital projects phase into the overall asset lifecycle.

Meeting product quality and safety standards, while maintaining profit and growth targets, creates real compliance and business challenges. ECM-based EAM can help you build compliance and risk management into your assets' entire lifecycle.

ECM for Enterprise Asset Management by OpenText: Increase Uptime and Drive Productivity

OpenText delivers expertise in Enterprise Information Management (EIM) and offers unique SAP-tailored solutions that have been productized specifically for SAP Business Applications. ECM for Enterprise Asset Management is a business value solution that builds on products such as OpenText Extended ECM for SAP Solutions and enhances and extends SAP Enterprise Asset Management. It integrates unstructured content with the operations stream, increases uptime, enables collaboration, simplifies asset-related document management, improves compliance, reduces risk and safeguards the long-term value of your asset investments.

Also, with a single repository, content silos are removed and assets are more easily found and accessed. ERP and EAM solutions, when integrated with ECM, provide the context to content because it is tied directly to the structured data which manages the asset.

Key benefits using ECM for Enterprise Asset Management include:

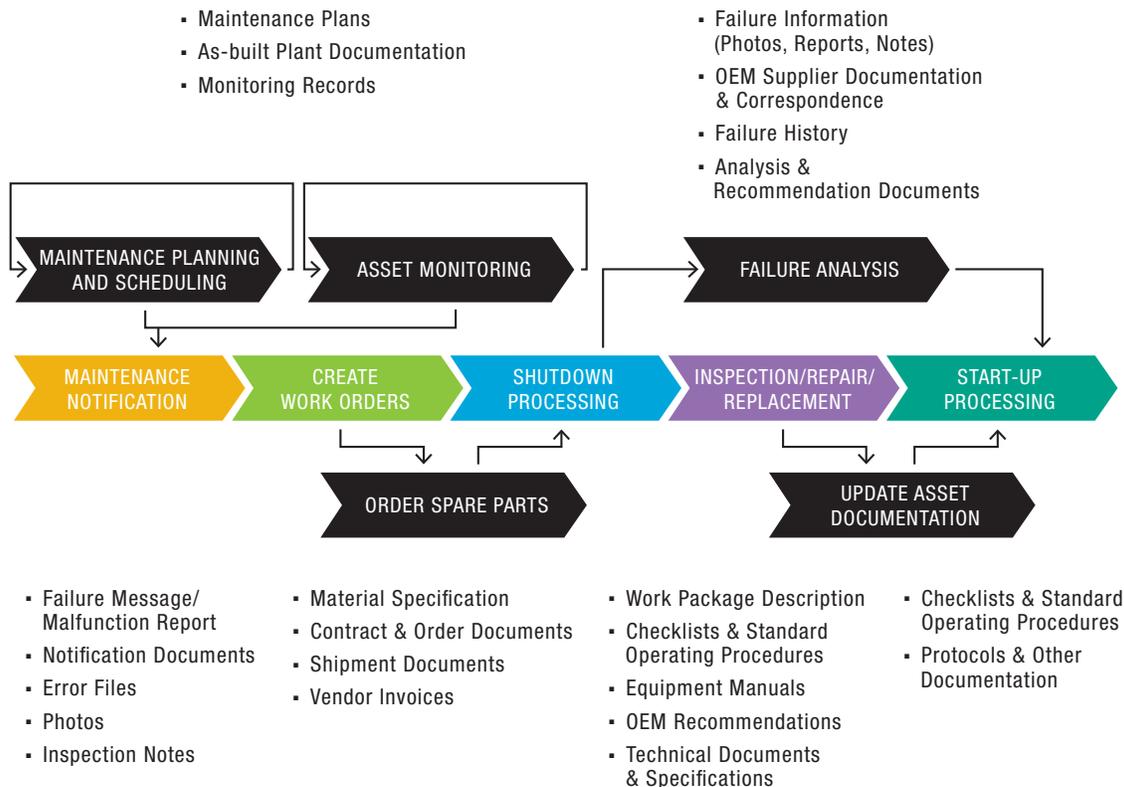
- **Management of all technical documentation**—provides a 360-degree view of information, linking all unstructured asset documentation to functional locations, equipment, work orders, maintenance notifications, purchase orders, supplier information, etc. in your EAM.

- **Maintenance project workspaces**—templated workspaces for specific maintenance projects, such as shutdown-turnaround, equipment failure analysis and routine maintenance—to provide secure collaboration and revision control for all information pertaining to that project.
- **Best practice workflows**—integrated workflow and forms management capability that augments ERP and EAM systems, further automating business processes such as work orders, equipment failure analysis and predictive maintenance.
- **Ubiquitous access to information**—access asset and plant information together with associated documents from your SAP applications, Microsoft Eco-system (Windows, Office, SharePoint), web browser and mobile devices.
- **Archiving & Records Management**—manage complete lifecycle of asset documentation; capture and preserve digital and paper records; reduce costs and improve performance by archiving of asset data and content; assure compliance into internal and external regulations
- **Management of Digital Assets**—provide plant operators and maintenance workers with multimedia content such as equipment manuals, images, and training videos to support asset operation and maintenance work.

OPENTEXT ECM FOR ENTERPRISE ASSET MANAGEMENT DIFFERENTIATORS

- Extend your EAM system, linking best practice business processes and all forms of information to your assets.
- Achieve integrated collaboration and revision control for maintenance projects.
- Regulatory compliance and managing change are inherent high yield cost savings areas.

Asset Maintenance Process – The Importance of Documents



With OpenText Extended ECM for SAP Solutions® content and collaboration capabilities are tightly integrated with the core asset management processes such as planned and unplanned maintenance. The graphics shows typical maintenance process (colored) with associated processes (black) and important asset documentation that needs to be managed as part of the asset lifecycle.

Taking Charge with ECM for Enterprise Asset Management

REWAG is responsible for the high-quality supply of energy and drinking water in and around Regensburg in Germany. They had the daunting task of digitizing the house connection file as a follow-up project to their initial implementation. The house connection file contains all the information on electricity, gas, water and telephone connections, as well as corresponding quotations, technical surveying sketches, correspondence, etc. In addition, the basic data was created in SAP IS-U, the standard industry-specific software for energy providers, for billing purposes and the generation of invoices. With the introduction of OpenText Extended ECM for SAP Solutions, the files are now digitized and linked to relevant SAP data, making information more accessible and contextualized.

Belgian Railways uses SAP enterprise asset management, integrated with OpenText Extended ECM for SAP Solutions, to reduce document handling costs and to enable easy access to unstructured content for operators, technicians and engineers. Asset management allows for greatly increased response to demands for traceability, conformity and safety certificates while allowing documents to be integrated with business processes and accessible from multiple user interfaces. The resulting agility allows the Belgian Railway to better meet evolving customer demands.

IBAAarau is the main supplier of electricity, gas, water, telecommunications solutions, and electrical installations for the district of Aarau, the capital of Aargau, Switzerland. IBAAarau uses OpenText Extended ECM for SAP Solutions to manage all types of content in the form of digital files and dynamically connects them to the SAP data such as EAM (equipment, functional locations, work orders), projects, vendors and customers. Users experience a world of data that is simple to navigate. They can instantly access information when it is required – in the context of the SAP transaction, directly via the SAP interfaces, or via their preferred interfaces (web browser, Microsoft Office applications, or the standard file explorer) for non-SAP-users. With OpenText Extended ECM for SAP Solutions, IBAAarau has an ECM solution with a seamless integration into SAP and Microsoft Office, which it now uses in all processes.

A large diversified Australian energy and resources company is incorporating asset management into the capital projects phase of large coal mine and related infrastructure projects to ensure fast, comprehensive, secure documentation handover to operations.

WHY OPENTEXT?

- OpenText is the largest independent ECM vendor globally.
- OpenText has a strategic partnership and with SAP and integrates in all major SAP Business applications such as ERP, SRM and CRM.
- OpenText is unique in providing a single platform for managing and integrating enterprise content and enterprise resource planning with asset documentation.
- OpenText provides an Enterprise Library to manage your critical business information through the total lifecycle of your assets.

Due to the rising amounts of structured and unstructured information involved, asset management has emerged as one of the business processes in greatest need of ECM integration.²

The Future of ECM-based Asset Information Management

While EAM systems may provide the most effective management for an individual asset, companies dealing with huge number of assets and the exploding amount of unstructured content they generate face a crisis of diminishing returns. They are discovering that asset information management tools that cover the core requirements for a range of assets provide better long-term value.

Competition, innovation, compliance, reputational risk all impact how your company manages and leverages assets by relying on accurate information; which is directly related to the effectiveness of your asset management solutions, and by how well those solutions can handle, organize, correlate, maintain and distribute your organization's asset information flow.

More data should mean more capability, not more problems. The right asset information management solution, as part of a broad Enterprise Information Management (EIM) strategy, can help you extend your EAM functionality, close information management gaps, maintain your assets, reduce costs, push uptime to the maximum and improve your overall ROI, all while expanding the value of your core EAM and ERP investments.

To learn more about how effective ECM can enhance asset information management in your organization, or for specific information on ECM for Enterprise Asset Management solutions, please contact:

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ABOUT OPENTEXT

OpenText provides Enterprise Information Management software that enables companies of all sizes and industries to manage, secure and leverage their unstructured business information, either in their data center or in the cloud. Over 50,000 companies already use OpenText solutions to unleash the power of their information. To learn more about OpenText, please visit www.opentext.com.

1. Mercatus Center, George Mason University, A Review and Synthesis of the Cost of Workplace Regulations, by Joseph M. Johnson. <http://milaero007.com/anm/anmc.cgi?a=79201&l=http%3A%2F%2Fheartland.org%2Fpolicy-documents%2Freview-and-synthesis-cost-workplace-regulations> (Accessed April 11, 2012.)

2. AIM, AIM White Paper: Connecting ERP and ECM: Measuring the Benefits, by Doug Miles, p. 6. http://www.capitalcapture.com/uploads/files/Connecting_ERP_and_ECM_-_Measuring_the_benefits.pdf (Accessed January 12, 2012.)

