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Information Fuels Asset Performance

Effective Information Management ensures
maximum uptime of your assets

This paper looks at the main challenges to engineers, plant managers, and maintenance workers when managing asset-related information; and outlines key solutions and benefits your organization can realize when you extend your enterprise asset management (EAM) system with an enterprise content management (ECM)-based plant asset management solution.



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Introduction

Energy is an asset-intensive industry. Whether you are in mining, oil and gas, petrochemicals, power generation/distribution or renewable energy, you need a vast array of plant and field assets for production, processing, refining, and bulk transportation and distribution. In today's competitive global space, maximizing asset return—from design through build, operations, maintenance and decommission—is critical. With tens of millions spent each year on maintenance and billions spent on construction investments, asset management and maintenance management systems must leverage the latest technologies to maximize uptime, drive cost-effective operations, ensure safety and deliver a strong return on investment (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 throughout 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.
- **Innovation** Continual technological change, such as the rapid advancement of new extraction and processing methods, means you must upgrade facilities regularly throughout their lifecycle—many times, if an asset is particularly long-lived. This requires not only ongoing maintenance and update procedures, but large shutdown-turnaround projects that must be executed with the utmost speed and efficiency. And if the latest management systems and software are not employed to facilitate and regulate these procedures, downtime and production losses may ensue.
- **Compliance** Today's companies deal with a growing range of safety, environmental, financial and other regulatory requirements, with increasing penalties for non-compliance. As a result, you must constantly maintain and document your compliance with HSE (Health, Safety and Environment) and other standards throughout the entire life of each asset and 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.
- **Reputational Risk** Along with compliance risk, reputational risk is a major concern, as we have seen in the negative results of several recent environmental incidents. Unexpected equipment failures or downtime can result in environmental incidents, loss-of-production penalties and failure to meet contractual obligations—all of which can severely tarnish a corporation's reputation.

Uptime is critical to maximizing asset ROI, meaning assets must run at peak capacity throughout their lifecycle. This demands careful planning, an effective asset management strategy and shrewd investment in the right asset management tools and applications. Most current Enterprise Asset Management (EAM) systems, 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—both structured and unstructured—that organizations create and collect; nor can they easily integrate and correlate that information with other management applications. Unless substantial integration work is done, today's EAM systems can create information silos that introduce risk and limit ROI.

This paper looks at the main challenges this poses 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)-based plant asset management solution.

“The global process industry loses \$20 billion, or 5% of annual production, due to unscheduled downtime, with an average hourly cost of about \$12,500”

ARC ADVISORY GROUP

Challenges to Successful Asset Management

Companies devote considerable resources to the capital projects phase of an asset, including implementing asset management systems. It is critical to effectively manage information in those early stages. Yet transitioning from capital projects to operations and then extending your information solution along the life of the asset—which are equally important steps—can also present specific challenges. Too often, companies overlook the benefits of integrated information and business processes, or simply lack the tools to handle them. These challenges can involve 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 commissioning is critical to maximizing long-term asset value. These challenges break down into three main categories.

- 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 physical data, 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. 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.
- 2. Maintenance—manage collaboration and revision control for routine maintenance and during major shutdown projects** Information must be readily available to plant personnel, engineers and vendors, as effective collaboration is critical to efficiency. Otherwise, unexpected delays or downtime can create a number of ongoing problems, such as unfulfilled contracts, profit loss and environmental incidents. On the backend, documents must be revised to reflect all maintenance procedures, technological updates and equipment changes.
- 3. Effective management of change (MoC)—document and manage compliance through the total asset lifecycle** Poor information management can create security, safety, technological and business 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

- Physical Records – Certificates, permits, licenses, land files, well files, etc.
- Engineering – Engineering drawings, technical information, engineering standards, construction work packages, etc.
- Projects, Operations & Maintenance – Standard operating procedures, maintenance work packages, 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 to the functional location of the asset.

What separates an ECM-based solution even further from the pack, 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—for example, shutdown-turnarounds, 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. Redlining processes can also be built in, so central documents are clearly marked up when they are not up-to-date with revised field documents.

An effective ECM solution should also integrate easily with both SAP® and Oracle®, the industry's most common ERP solutions. Existing EAM systems do a great job of managing most maintenance-related tasks and alerting staff about required work based on stored equipment specifications. When you apply ECM to plant and field asset management, however, you can also link business processes to the asset as well as work orders, purchase orders and vendor documents.

A leading-edge, ECM-based solution essentially serves as the process and content management layer for all assets within your EAM, paving the way for a truly end-to-end asset lifecycle management solution.

ECM-BASED ASSET MANAGEMENT SOLUTION SCENARIOS

- ECM-based solutions enable process optimization and predictive maintenance. This allows organizations to correlate and analyze asset information to ensure plant and assets are running at peak efficiency.
- Content-focused tools should integrate with other enterprise asset management tools into the workflow. From a work order, an effective EAM solution can produce an expanded predictive maintenance workflow that notifies reliability engineers to conduct an equipment failure analysis, documents findings in the system, and directs the plant manager to upgrade other similar pieces of equipment across the plant.
- During scheduled maintenance—or “shutdown-turnaround”—organizations can reduce the timeframe and improve efficiencies by packaging the right information and delivering it to EPC contractors and suppliers, when and where it's needed—all under strict revision control, in a collaborative workspace, and with integrated best-practice workflows.

Handover from the capital projects phase to the operations phase can be a major roadblock, which often causes considerable time and cost overruns. If your ECM asset management solution can reduce the timeframe on an \$8 billion project by just 3–7%, overall savings can be in the tens of millions.

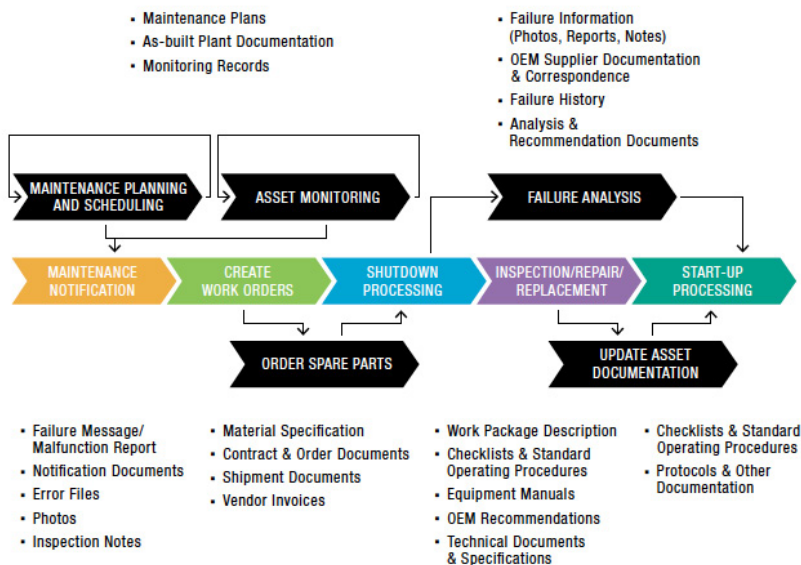
The Benefits of Integrated Asset Information Management

The right plant and field 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;
- 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.

To safely manage global risks, you need the ability to transparently support your business processes and compliance requirements while maintaining an audit trail throughout the entire life of your asset.

ASSET MAINTENANCE PROCESS – THE IMPORTANCE OF DOCUMENTS



With OpenText Plant Asset Management content and collaboration capabilities are tightly integrated with the core plant asset management processes such as planned and unplanned maintenance. The graphics shows typical maintenance process (coloured) with associate process and important asset documentation that needs to be managed as part of the asset lifecycle.

OpenText Plant Asset Management—ECM That Increases Uptime and Drives Productivity

OpenText Plant Asset Management is an ECM-based solution that can extend your EAM system. Designed to integrate asset management with ERPs such as Oracle or SAP, Plant Asset Management helps to enhance asset maintenance, integrate unstructured data with the operations stream, increase uptime, enable collaboration, simplify asset-related document management, improve compliance, reduce risk and safeguard the long-term value of your asset investments.

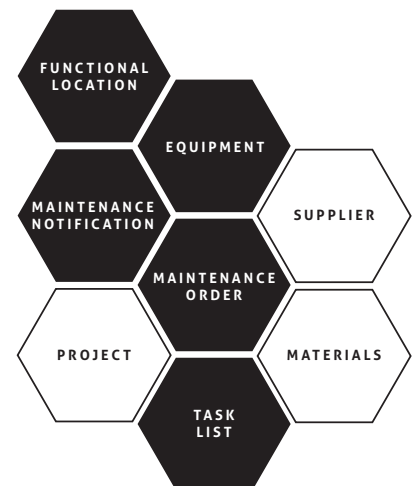
Key Plant Asset Management features include:

- **Managing all technical documentation** a 360-degree view of information, linking all unstructured asset documentation to the asset’s functional location in your EAM
- **Maintenance Project Workspaces** template 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 capability that augments ERP and EAM systems, further automating business processes such as work orders, equipment failure analysis and predictive maintenance
- **Integrated redlining capability** to ensure central documents remain consistent with revised plant and field documents
- **Effective Management of Change (MoC)** to support transparent compliance
- **Extend your Enterprise Asset Management with ECM**, with integration to your ERP systems from SAP or Oracle, enabling integration of content and business processes for work orders, purchase orders, supplier information, etc.
- **Digital Asset Management capability** to supplement your asset documentation and maintenance projects with rich media such as videos and images.
- **Optional GIS integration** enhanced management of geo-referenced assets

OPENTEXT PLANT 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.
- ECM is our foundation, not a product feature.
- Regulatory compliance and Management of Change (MoC) are inherent.

CONNECTING CONTENT TO ASSET MANAGEMENT PROCESSES



Companies are Taking Charge of their Asset Information with OpenText Plant and Field Asset Management solutions

Encana

Encana, a leading North American natural gas producer, uses OpenText Plant Asset Management to manage all technical documentation, procedures and maintenance/inspection history for their distribution pipeline, substantially reducing their risk for HSE incidents and compliance infractions.

Newfield Exploration

Newfield Exploration, an independent US crude oil and natural gas exploration and production company, uses OpenText Content Server Integration with Oracle® Financials and P2 Enterprise Upstream to enable centralized access to all well asset information across the organization, enabling better, more timely decision-making around operations and asset maintenance.

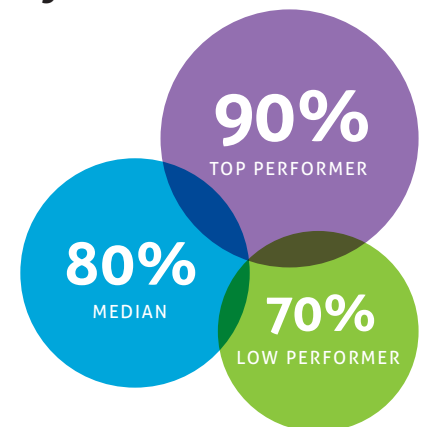
An Australian Energy and Resources Company

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
- We are unique in providing a single platform for managing and integrating enterprise content and enterprise resource planning with plant and field asset documentation
- Our core platform manages your critical business information through the total lifecycle of your assets
- OpenText Plant Asset Management is part of a larger Energy Solutions Suite, which includes Capital Projects, Controlled Engineering Records, Contract Management, and Transmittal Management. The full suite helps you solve interrelated business problems where integrating people, processes and business information is advantageous and driving efficiency and improving organizational agility are critical

Best performers have a 3 times less non-productive asset life time¹



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The Future of ECM-based Asset Management

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

Competition, innovation, compliance, reputational risk—how your company manages and leverages these issues is directly related to the effectiveness of your plant and 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 plant and field asset management solution 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 plant and field asset management in your organization, or for specific information on OpenText Plant Asset Management software, please contact:

Advisors@opentext.com

1-800-499-6544

www.opentext.com

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 (NASDAQ: OTEX; TSX: OTC), please visit www.opentext.com.

