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SAP Mobility Solutions for Enterprise Asset Management

Streamlining Asset Management

Market trends and technology advancements drive EAM innovation

This reliance on assets, along with a number of recent market trends and technology advancements, is shaping the future of enterprise asset management (EAM) and driving a new, highly streamlined approach. Traditional activities, such as creating asset registries and orchestrating maintenance operations, are evolving into a more strategic, comprehensive, and standards-based type of asset management that impacts all facets of an organization.

As this new approach evolves, one of most influential technology advancements is the use of mobile devices and apps for managing assets in the enterprise.

"Best-in-class companies use asset management strategies to reduce operational cost, improve profitability, and improve their competitive edge."

Enterprise Asset Management in 2012: A Data Driven Predictive Approach to Maintenance, Aberdeen Group, December 2011

Mobile access improves productivity and asset optimization
Give maintenance technicians anytime, anywhere access to the information they need to do their jobs, and their safety and productivity in the plant and in the field will increase. With both online and offline access, you can ensure delivery of mission-critical support of assets without any interruptions or delays, leading to better performance and reliability across plants, fleets, networks, and the enterprise infrastructure.

Moreover, efficient maintenance organizations will see lower overall costs for service and repair because mobile asset management empowers technicians to prolong the life of assets by improving their reliability and performance.

Mobile is an essential element to executing on a Reliability Centered Maintenance (RCM) program where you can save 30-50% annually.

Integrated Backend Business Processes for Increased Field Productivity

Click the image for a larger view

Asset managers increasingly adopt mobile solutions

According to a 2012 report from the Aberdeen Group, the largest adoption of mobility solutions in the manufacturing sector is in asset management. The Aberdeen Group found that best-in-class companies are implementing mobile solutions at a higher rate than competitors for a number of different uses.*

*Source: Asset Management: Building the Business Case for the Executive, Aberdeen Group, December 2012

Mobility Gaining Ground
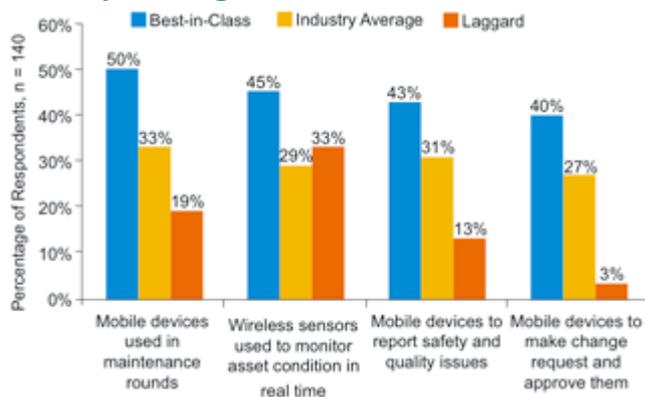
Source: Asset Management: Building the Business Case for the Executive, Aberdeen Group, December 2012

Going mobile delivers real benefits

Asked to stretch budgets and stay competitive in a market with rising risks and labor costs, asset managers are looking for operational efficiencies to keep costs under control. By using mobile apps for asset management, enterprises can expect to:

- Increase asset availability and minimize unplanned outages
- Increase operating equipment effectiveness
- Increase return on assets
- Reduce annual maintenance cost
- Optimize preventive versus unplanned maintenance
- Minimize recordable accident frequency rate
- Maximize the value of backend systems

By connecting, informing, and empowering the workforce with better asset management, executives and managers make better, more informed decisions every day.

How and Why to Use Mobile EAM

According to the Aberdeen Group, two of the largest challenges that companies must meet before adopting mobile apps are making a business case for the technology and selecting the most beneficial areas for its implementation.*

Making the business case

Equipment failure results in unexpected downtime, safety and environmental risks, and unmet production quotas – all of which negatively affect revenue. EAM helps companies move from primarily a reactive state, or solving problems as they appear, to a more proactive one where they can anticipate and address issues before problems arise.

A number of technologies are making this new, strategic approach possible and mobile is one of them. Integrating mobile devices and apps with existing asset management solutions can save time, reduce errors, and streamline processes, all of which reduce operational expenses and boost the bottom line. Mobile EAM also contributes to a high ROI as operational improvements reduce excessive inventory and maintenance costs.

*Source: Asset Management: Building the Business Case for the Executive, Aberdeen Group, December 2012

Using mobile EAM, enterprises can more effectively:

- **Dispatch work and change orders.** Instead of technicians checking in with dispatchers to receive assignments, mobile solutions allow communication in real time. Employees can work more efficiently and with agility, responding to actual conditions quickly. For instance, in emergencies, dispatchers can reassign the right resources with the right skills on the fly. Or, when technicians find unexpected conditions in regards to a piece of equipment, they can immediately submit maintenance requests, or even generate orders on the spot.

"Best-in-class companies are 65% more likely than laggard companies to invest in EAM solutions."

Source: Asset Management: Building the Business Case for the Executive, Aberdeen Group, December 2012

- **Gain remote access to important data.** Managing and maintaining physical assets often involves referencing schematics, manuals, specifications, and other content. In the past, field technicians have had to carry physical materials, but now with mobile apps, they can have real-time access no matter where they are. They can access content such as 3D work instructions, repair manuals, maps, and blueprints, as well streaming content such as training videos.

- **Integrate the field with back-office systems.** By inputting data directly into mobile devices, technicians no longer have to retype the information they gather on rounds and service calls. Apps can send collected notes and results directly to multiple backend systems, reducing errors, saving time, and eliminating busywork.

- **Improve rounds efficiency.** Mobile apps for rounds, such as those for meter readings and other repetitive daily activities, benefit operators and asset management teams. Responsiveness increases, process times shorten, and people no longer need to enter information into maintenance and billing systems at the end of the day.

Technicians complete their rounds faster, and management gains greater visibility into asset conditions and up-to-date customer information.

- **Reduce value chain costs.** Inventory management solutions allow maintenance teams to reduce costs associated with stocking, handling, and transporting parts and inventory throughout the entire value chain. Mobile inventory apps simplify cycle counts, shipping and receiving, inventory transfers, and other warehouse and storeroom operations. By using RFID, bar coding, and voice-to-text technology, companies can compress or eliminate many daily processes as well as increase employee safety and satisfaction. Mobile solutions also supply managers with more complete data for inventory and parts planning and analysis. Critical adjustments can be made to replenishment inventory levels, and shipping expenses for emergency inventory can be minimized.

- **Reduce maintenance downtime.** Scheduled maintenance overhauls and seasonal turnarounds can be massive undertakings, often requiring complete shut down and refurbishing of numerous pieces of equipment at manufacturing facilities, power

plans, and oil refineries. Mobile solutions enable turnaround specialists with real-time control over resources, employees, activities, and calendars. They can effortlessly collect and send notes and numbers directly to accounting, EAM, ERP, geographic information, inventory, and other systems to reduce errors, save time and eliminate busywork.

According to recent surveys, maintenance personnel spend less than 40% of their time on maintenance and repairs. The rest is spent on travel, overhead, and administrative work, such as entering data.

Source: SAP® Customer Reference Statistics

"Best-in-class companies are over 2.5 times more likely than the industry average to use mobile devices while making their maintenance rounds."

Source: Asset Management: Building the Business Case for the Executive, Aberdeen Group, December 2012

Measuring Success

Identifying the positive impacts of mobile solutions on the business and defining how to measure them is central to proving the business case. Mobile solutions from SAP drive

improvements in five main areas: safety, compliance, governance, productivity, and visibility.

SAP customers have seen the following improvements in their workforce when using mobile apps from SAP:*

- Safety incidents reduced to near zero
- Work capacity increased by 10 to 20%
- Labor productivity increased by up to 50%
- Rework reduced by 15 to 20%

Mobile apps from SAP have helped SAP customers realize these asset-related benefits:*

- Downtime and production delays reduced by 20 to 30%
- Preventable failures reduced by up to 90%
- Maintenance backlog reduced by up to 60%
- Inventory carrying costs reduced by 5 to 10%

*Source: SAP Customer Reference Statistics

Mobile Apps in Action

Mobile apps and devices can speed and simplify all kinds of day-to-day tasks related to asset management.

A technician improves service efficiency
By attaching all job-specific information to a work order, technicians can view relevant details and capture data as they go through their day. Access to inventory expedites the repair process.

1:00 p.m.
The technician arrives at a substation to fix a transformer and sets her work order status to "on-site" in SAP Work Manager. She notices some damage to the security fence. She takes a picture and attaches it to a new work order for the construction group using SAP Rounds Manager

1:05 p.m.
The technician then finds the transformer that overheated and shut down; she scans its barcode tag in SAP Work Manager to verify it is the one that she is supposed to repair.

1:10 p.m.
She accesses the problem description from the work order and finds that one of the fans in the forced-air cooling systems went out.

1:12 p.m.
She pulls up recent repairs for the transformer and finds that the fan failed three times in the past five months. The technician recognizes this as an issue and thinks perhaps there could be a problem in the fan's power supply.

1:13 p.m.
She pulls up the electrical diagram for this model on her mobile device and sees that the fan's power supply is behind Panel 3C.

1:20 p.m.
Next, the technician measures the power supply's output, finding that it is above spec. Realizing this is the cause of the problem, she clicks a link in SAP Work Manager to see a 3D visual work instruction to repair the transformer.

1:30 p.m.
She uses SAP Inventory Manager to see if there is a power supply at a local depot and finds one at the nearby Gallard Street depot in Bin 7.

1:55 p.m.
The technician picks up the power supply and drives back to the substation.

2:40 p.m.
She finishes replacing the faulty fan and the power supply.

2:45 p.m.
The technician closes out the work order, noting the resolution code and parts used. She checks "complete" on the service request and the mobile app automatically calculates the time spent on the task.

An engineer averts an emergency

When all equipment must run according to specifications, mobile solutions provide configuration information and advanced computations to engineers in the field so they can make on-the-fly adjustments based on deviation and repeatability. Furthermore, all adjustments and configuration changes are instantly reflected in the company's backend systems and are made available to other field employees. This not only leads to a higher degree of coordination and efficiency, but also helps to improve employee safety through up-to-date information on plant and equipment status.

10:30 a.m.
While performing daily rounds, an engineer notices irregular pressure spikes on one of the pumps of the third stamping press on the east production line.

10:35 a.m.

The engineer wonders if the machine would be able to sustain this pressure until the end of the shift. He pulls up the maintenance manual on his mobile device; the troubleshooting section says the current level of pressure on the machine is hazardous and the machine must be shut down immediately.

10:50 a.m.

The engineer double-checks the shutdown sequence in the mobile app and stops the press.

10:55 a.m.

The plant manager calls to see if work needs to be moved to the west production line. The engineer thinks the repair will be done soon and suggests that no alternative action be taken yet.

11:20 p.m.

The engineer checks his mobile app and finds that the maintenance team is on the way from Building C and should arrive within 10 minutes.

12:45 p.m.

The pump is replaced and the press is restarted with no further production delay.

Finding the Right Solution

Leaders in asset management are quickly adopting mobile solutions to streamline workflows, capture data in real time to feed backend systems, and cut paperwork out of everyday processes.

As you consider bringing mobile solutions into your operations, it's important to approach this new initiative carefully. To save time and money, you will want to look for a mobile solution that can integrate with your EAM solution and other business systems.

Take a holistic approach to scoping out your mobile project and select a long-term technology partner. For maximum ROI, consider:

- **Usability:** Look for an intuitive interface, a workflow that can mesh with your existing processes, and multiple options for which devices you can use. Make sure

people can use the mobile app with or without connectivity. As to the devices, make sure to select a tool that's easy to hold and use and one that has sufficient battery life.

- **Durability:** Make sure that your components can stand up to the rigors of daily use. For software, the system should be highly scalable and capable of accommodating the right number of people and data for your organization. For hardware, consider the environment where field technicians work. Ensure the devices can withstand field conditions, such as any extreme temperatures, moisture, dirt, or rough handling that comes with the job.
- **Flexibility and Scalability:** Understand that any good mobile solution will need to change over time as business, technology, devices, and regulations change. Select proven vendors and versatile solutions that can accommodate this kind of evolution. Find mobile solutions that can easily become part of your overall IT infrastructure, security profile, and backend system environment.

Finally, seek advice from mobile specialists. Look for companies that have deployed multiple solutions similar to yours, at companies like yours. Their experience can provide a set of industry best practices and understanding of other successful installations that will save you time and money in development, integration, and deployment.

Companies that use mobile apps for inventory management can reduce their manpower hours by 75%

Source: SAP Customer Reference Statistics

# Mobile Apps for EAM from SAP

Mobile apps from SAP provide the most complete portfolio of mobile solutions for enterprise asset management available.

SAP Work Manager mobile app
Give employees everything they need to efficiently and safely install, inspect, maintain, and repair assets in the field.

- Streamline processes by eliminating paperwork and reducing cycle time
- Cut maintenance costs by working to standards
- Get better visibility and improved analytics by capturing higher quality real-time data
- Keep assets running at peak performance with shorter response times and timelier maintenance
- Complete safety checks and follow safe work practices to protect employees
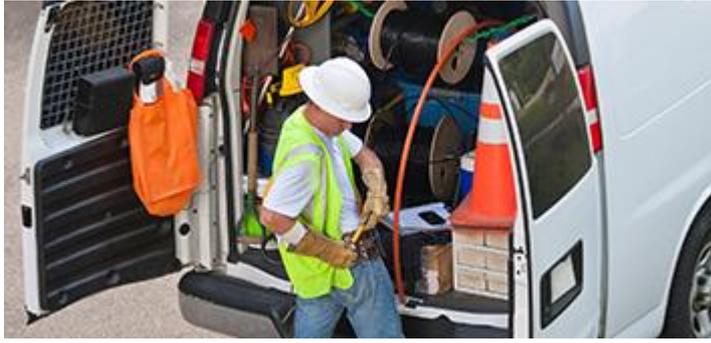
SAP Inventory Manager mobile app

Increase productivity, lower costs, optimize your supply chain, and improve customer service. SAP Inventory Manager provides precise, paperless tracking and ensures fast, efficient maintenance

- Perform physical and cycle counts quickly and with greater accuracy
- Check availability of materials while on the job
- Accept and distribute incoming materials by purchase order
- Prepick materials and issue, return, or transfer goods electronically
- Speed receipt and backorder reporting to and from shipping and receiving

SAP Rounds Manager mobile app

Streamline routine condition monitoring, meter reading, and field measurements by recording more accurate data and analyzing it faster.

- Eliminate paper forms and the time required to retype data into EAM systems
- Automatically compare new data to tracked historic standards and safe ranges
- Generate work orders and notifications of potential problems from the field
- Anticipate emergencies and outages with easy review of trend readings, points, and sequences.
- Download round data by equipment type or name
- Automatically calculate readings, limits, alerts, and collection frequencies

SAP 3D Visual Enterprise Viewer mobile app

Accelerate decision making, optimize productivity, and improve quality with software that integrates 3D visualization of assets and business data.

- Improve communication with internal and external customers and partners
- Optimize productivity with visual access
- Improve product quality and process efficiency by communicating visually
- Lower operating costs and reduce product lifecycles

SAP EHS Safety Issue mobile app

Enlist your entire workforce in maximizing employee safety by enabling them to quickly log issues directly into your environment, health, and safety incident management solution.

- Report employee safety issues on any mobile device when and where the issue is detected
- Attach up to four pictures or videos to fully document the discovery
- Augment any images with a recording of a spoken description
- Keep tabs on all employee safety reports sorting them by date, issue, or status

To Get Started

Boost Your Workplace Safety and Reliability with Mobile
This infographic shows you how companies are leveraging mobile solutions to transform

enterprise asset management, resulting in significant improvements in both their workforce as well as the management of their assets.

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