Mobile Asset Management: SAP's solution portfolio and roadmap

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- Understand business drivers for mobilizing asset management business processes
- Get insights into customer achievements
- Learn about SAP’s mobile asset management solution portfolio and roadmap
Asset intensive enterprises

Keep the lights on, the trains running, and the world turning
THE WORLD IS ASSET INTENSIVE

- More machines (50B) than people exist in the world
- Annual global maintenance spend exceeds $447B

Assets are geographically distributed and the people that service and operate them are mobile
### Industry trends...

- Operating at or near 100% capacity
- Increasing risk and regulatory compliance
- Increasing energy, material and labor costs
- Increasing competition, consolidation, globalization

### IT mega-trends at work...

- Cloud
- Mobile
- Big Data
- Social Media
- Consumerization of IT
Mobile solutions virtualize business

Mobile enables you to
- Connect to enterprise data
- Collaborate with partners
- Conduct business
anytime, anywhere

Perform safety checks
Receive/respond to alerts
Manage approvals
Manage certifications
Receive training

Manage accounts/contracts
Coordinate orders/shipping
Monitor/reduce consumption
Manage issues/problems
Track/prepare for storms

Collect and manage samples
Conduct operator rounds
Inspect, maintain, repair assets
Manage inventory/spares
Ship and deliver

Respond to outages
Obtain permits
Manage fly ins and assignments
Manage shipments
Manage time, expense, billings, orders
ACCELERATE DECISION, CHANGE AND RESPONSE

- Respond instantly to changing demand/supply conditions
- Adopt new regulatory requirements faster
- Get ahead of outages, incidents and failures
- Shorten permit times
- Build plants and add network capacity faster
- Bring renewable sources and green tech on line faster

Real-time continuous customer visibility
- Launch new products/services faster
- Shorten billing/collection cycles
- Provision new customers/services faster
- Report outages faster
- Integrate new partners/suppliers faster
- Speed up parts orders/delivery
- More easily recruit, and train

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AND TRANSFORM YOUR BUSINESS

Simpler…
Streamline your processes including compliance and safety

Faster…
Respond more quickly to asset issues and customer requests

Smarter…
Build predictive maintenance programs built on more and accurate data (leverage SAP HANA)

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SUCCESSFUL COMPANIES HARNESS THE POWER OF MOBILE SOLUTIONS TO...

**Field Workforce**

Improve workforce safety and productivity, optimize asset performance and transform service delivery

**Result**
- Reduced safety incidents
- Reduced / shortened outages
- Improved work quality/uptime
- Shortened work cycles
- Improved customer satisfaction

**Managers & Executives**

Rapidly analyze asset and service performance, customer trends, financials and regulatory exposure

**Result**
- Reduced risk and associated costs
- Reduced regulatory fines
- Reduced service/production costs
- Deferred capital expenditures
- Increased revenues

**Customers & Partners**

Bring customers closer to their providers and empower them to more efficiently consume services

**Result**
- Faster response to markets
- Improved shipping coordination
- Improved service fly-in efficiency
- Improved permit processing
- Reduce delays and shortfalls

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**UNIQUE NEEDS OF ASSET INTENSIVE INDUSTRIES**

**Volatile Environment**
- Rugged intrinsically safe approved mobile devices
- Safety checks, steps, permits, approvals in every step
- Regulatory compliance throughout
- Real-time workforce geo-fencing

**Distributed/Dynamic Assets & Workforce**
- Full off-line / disconnected mobile capability
- Geo-tagging, map-based location and routing
- Real-time asset and workforce geospatial tracking

**Linear Assets**
- Linear asset inspections
- Geo-tagging and location based services

**Large Complex Equipment**
- Interactive 3-D visualization
- Long-cycle and complex maintenance

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POWERING A WIDE RANGE OF ASSET INTENSIVE INDUSTRIES

<table>
<thead>
<tr>
<th>Utilities</th>
<th>Telecom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>Mills</td>
</tr>
<tr>
<td>Oil &amp; Gas</td>
<td>Defense</td>
</tr>
<tr>
<td>Chemical</td>
<td>IM&amp;C</td>
</tr>
<tr>
<td>Transportation</td>
<td>Public Infrastructure</td>
</tr>
</tbody>
</table>
MOBILE APPS TO POWER CORE BUSINESS PROCESSES

Example: Utility companies

<table>
<thead>
<tr>
<th>Generation</th>
<th>Transmission</th>
<th>Distribution</th>
</tr>
</thead>
</table>
| • Installation, maintenance, repair  
• Operator rounds  
• Fire and safety rounds  
• Planned and unplanned Inspections  
• Planned shutdowns  
• Permits to work  
• Plant supervision  
• Warehouse management | • Linear network inspections  
• Pump and station Inspections  
• Specialized inspections – poles, waterways, aerial leakage  
• **Installation, maintenance, repair**  
• Network outage response  
• Permits to work  
• Vegetation management  
• Fleet maintenance  
• Inventory management | • Meter change-outs and readings  
• Connects and disconnects  
• Customer audits  
• **Install, inspect, maintain, repair**  
• Outage and emergency response  
• Storm damage surveys  
• Vegetation management  
• Fleet maintenance  
• Pole test and treat  
• Consumer/Citizen reporting |

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BENEFITS

Safety

- Incidents reduced to near zero (goal)
- Work capacity increased by 10-20%
- Labor productivity increased by up to 50%
- Idle time and over-time reduced by 40-60%
- Rework reduced by 15-20%
- Reduced down-time / production delays by 20-30%
- Preventable failures reduced by up to 90%
- Maintenance backlog reduced by up to 60%
- Inventory carrying costs reduced by 5-10%

Compliance

- Productivity

Governance

- Visibility
SAP Enterprise Asset Management supports organizations in **efficiently** and **sustainably** managing the **entire lifecycle** of **physical assets** in terms of **performance, risks, and expenditures** to achieve and maintain the stated **business objectives**.

[referring to PAS55 → ISO 55000]

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**Asset Portfolio & Project Management**

**Asset Information Management**

**Asset Visibility and Performance**

**Maintenance Operations**

**Maintenance Parts & Services Provisioning**

**Mobile Asset Management**

**Operational Risk Management**

**Real Estate Lifecycle Management**

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A non-incendive device is designed so it doesn’t generate or cause sparks.

I-Safe is a higher level of protection: these devices have to be used in places where there are higher concentrations of combustible substances.

“Class 1, Division 2” or “Class 3, Division 1”
COMPREHENSIVE PORTFOLIO OF MOBILE APPS

- SAP Business Objects Mobile BI
- SAP BusinessObjects Explorer Mobile
- SAP Strategy Management

- SAP Work Manager
- SAP Inventory Manager
- SAP Rounds Manager
- SAP Visual Enterprise Viewer
- SAP Multi Resource Scheduling
- SAP EHS Safety Issue

- SAP Work Manager
- SAP Inventory Manager
- SAP Rounds Manager
- SAP Visual Enterprise Viewer
- SAP Multi Resource Scheduling
- SAP EHS Safety Issue

- SAP mCommerce
- SAP mUtilities
- SAP Retail Execution
- SAP Precision Retailing
- SAP Sales Manager
- SAP Sales Order Notification
- SAP Customer and Contacts
- SAP ERP Order Status
- SAP Customer Briefing
- SAP Cust.Financial Fact Sheet
- SAP Workflow

- SAP CRM Service Manager

- SAP Finance mobile apps
- SAP Human Resources mobile apps
- SAP Procurement mobile apps
- SAP StreamWork for Mobile

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**PROVEN PROCESS APPLICATION PORTFOLIO**

**SAP Work Manager**
- Access to asset location, repair history, work order details, materials needed
- Complete Work Orders and capture all relevant data
- Create Notifications or Work Orders on the spot
- CATS - time & attendance
- Guided workflow

**SAP Rounds Manager**

**SAP Inventory Manager**

**Asset Management**
- Pre-built and pre-integrated apps
- 100% Configurable

**Condition Monitoring**
- Take measurements and readings
- Historic standards and safe ranges
- Generate notifications on-the-spot
- Trend readings, points and sequences to avoid emergencies and outages

**Material Management**
- Speed receipt and back-order reporting to-and-from shipping/receiving
- Perform physical and cycle counts quickly
- Accept & distribute incoming materials by PO

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Increase asset utilization and minimize downtime

Minimize manufacturing or supply chain interruptions due to asset malfunction or breakdowns

Increase technician efficiency while in the field

Enable data access and data entry anywhere, avoiding errors and speeding up end-to-end business process

Increase first-call closure rate

Provide accurate visibility of field activities to back office

Benefits

People and roles

Planner / Scheduler

Technician

Back office

Processes

Order planning

Schedule & dispatch

Review Work

Perform work

Confirm / technical completion

Order Settlement / Closure

ERP

ERP / MRS

SAP Work Manager

ERP
REALIZED BENEFITS

Increased Productivity

Took their paper-based workflow from 12 steps to only 5; increase work time for every tech

Increased average number of monthly work orders per employee from 43 to 87 by using SAP mobile

Cost Reductions

Reduced drive time by average of 30 min and reduced data entry time by average of 30 min each day

Reduced cycle by 80% - 2.5 hour substation inspection down to 20 minutes

360 Views of Operations

100% visibility of outbound shipments and those in transit to receiving locations where before there was 25% time spent sourcing or driving to located inventory

Compliance and Safety

Reduced DOT inspection effort by 75%

Bar coding with time/date stamps provided 100% EH&S inspection execution compliance
Architecture
SAP MOBILE PORTFOLIO AND PLATFORM

SAP Store

LoB/Industry Apps
Consumer Apps
Analytic Apps

SAP App Dev Tools

SAP Mobile Platform

Presentation Frameworks
Application Services
Foundation Services

SAP Afaria

App Catalog
Device Management
Apps Management

Sybase 365 Messaging Services
SAP Business Suite
SAP HANA & Other Databases
3rd Party Applications

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INTEGRATION FRAMEWORK ARCHITECTURE
SAP AGENTRY FOR SYCLO-BASED APPS

- SAP EAM
- Add-on
- SAP Agentry Editor
- Application Meta Data
- Eclipse
- SAP Agentry Server
- Application Meta Data Repository
- Transport and local Storage
- UI
- Meta Data Interpreter Engine
- SAP Agentry Client

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Roadmap
Roadmap*

Product expansion / continuous enhancements

Multi-device / OS strategy

Platform unification

SAP Mobile Platform (SMP), enterprise edition

* Detailed schedule not yet determined
Mobile apps for SAP EAM

Roadmap

Solution enhancements*

- Further integration into SAP's mobility portfolio / Platform
- GIS: Geospatial visualization on the mobile device as part of work order management process
- Support of Linear Asset Management (LAM) processes
- Integrated SAP 3D Visual Enterprise Viewer for animated work instruction and spare parts selection processes
- Enhance support for inspection processes
- Meter readings enhancements (utilities)
- Mobile document management
- UI and navigation enhancements
- Support for iOS and Android (SAP Rounds Manager, SAP Inventory Manager)

* Detailed schedule not yet determined

Planned innovations
Future components*

Benefits of Components

- Preconfigured and ready to deploy on top of core Apps (i.e. Work Manager & Service Manager)
- Custom tailored solutions without custom development
- Expand the scope of your project
- Address industry-specific needs
- Easily incorporate new technology
- Faster, low risk deployments

- Crew Management
- ERP Customer Service
- Pricing
- Warehouse Management
- Activity Journals
- PO Approvals
- Expense Approvals
- Travel Approvals
- Absence Approvals
- Time Approvals
- Analytics and Reports
- Workflow

*Schedule not yet determined for release of components
The art of the possible
Future direction
Key points to take home

- Mobility is a key strategic topic for SAP
- Standard solutions for mobile asset management based on proven Syclo apps
- Clear commitment for continuous improvements in mobility platform and apps
- Mobile asset management becomes more visual
- Mobile devices will become the new desktop – enabling more efficient asset management and operations, transforming the way companies work

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