Enterprise Assets and IT Asset & Service Management for the Healthcare Market

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Agenda

- Introductions and Objectives
- Vision
  - Enterprise Assets and IT Asset Management
  - Healthcare Challenges and Business Imperatives
  - Value of IT Asset Management
- Value
  - Solution Map
  - Business Experience
  - Case Studies
  - Value Proposition
- Summary
Challenges & trends in Healthcare:

Customer Pain Points

- **Finances:** Providers often have thin operating margins and inadequate capital for major improvements and expansions
- **Regulation:** Governments use their market clout to impose many regulations on hospitals, and often cut provider funding
- **Clinician shortages:** Many hospitals face critical shortages of nurses and other medical specialists
- **Competition:** Growing competition from smaller providers such as ambulatory surgery centers and retail clinics
- **Quality:** Providers must upgrade medical quality to demonstrate value and quality for performance bonuses
- **Facilities, equipment:** As healthcare demand grows, providers must expand and upgrade facilities, and invest in medical technologies (e.g., digital medical imaging systems). Also, managing increased number of complex Assets, including IT-embedded, IT-enabled and IT assets

Healthcare Business Imperatives

- Improve Quality of Patient care and “public image”
- Reduce Risk of (non) Compliance
- Visibility, Transparency, Availability and Reliability of
- ALL assets in the organization
- Risk & Compliance Management
- Regulations (HIPAA, JACHO, FDA)
- Cost Pressures
- Impact of New Technologies, IT (enabled/ assets
- Education, cultural change, ethics

Industry Trends

- **Healthcare costs rising rapidly** due to aging populations, costly new medical technologies and drugs, and consumer demand for more and better healthcare services
- **Personalized Healthcare:** convergence of Diagnostics and therapeutic treatment to provide personalized patient care
- **Providers rapidly migrating from paper to electronic** medical records, driving demand for clinical apps and IT infrastructure
- **Market pressures** forcing providers to increase efficiency, improve quality and enhance clinician productivity
- **Growing transparency and consumer movements** require providers to compete on price and quality
- **Governments** fund large part of healthcare and impose tight regulation on the industry
Confronting Challenges in Healthcare

“Healthcare 2015: Win-win or lose-lose?”
an in-depth healthcare industry study from IBM.
From the IBM Value Series

Focus on value – Consumers, providers, and payers will agree upon the definition and measures of healthcare value and then, direct healthcare purchasing, the delivery of healthcare services, and reimbursement accordingly.

Develop better consumers – Consumers will make sound lifestyle choices and become astute purchasers of healthcare services.

Create better options for promoting health and providing care – Consumers, payers, and providers will seek out more convenient, effective, and efficient means, channels, and settings for health promotion and care delivery.

Healthcare providers expand their current focus on episodic, acute care to encompass the enhanced management of chronic diseases and the life-long prediction and prevention of illness.

Consumers assume personal responsibility for their health and for maximizing the value they receive from a transformed healthcare system.

Payers and health plans help consumers remain healthy and get more value from the healthcare system and assist care delivery organizations and clinicians in delivering higher value healthcare.

Suppliers work collaboratively with care delivery organizations, Clinicians, and patients to produce products that improve outcomes or provide equivalent outcomes at lower costs.
Enterprise Asset & Service Management (EAM)

- **Integrated** approach to manage all critical & strategic enterprise assets.
  - hospital equipment ranges from equipment used in emergency rooms (such as surgical supplies and equipment), to testing tools and equipment (such as ultrasound machines), to equipment for direct patient care (such as monitoring equipment or other equipment used in intensive care units).

- Spans **all phases of the asset life cycle:**
  - Specification, design, construct, maintain, decommissioning and disposal.

- Provides all parties involved:
  - asset owners
  - asset operators
  - asset service-providers

- Complete **visibility** real-time into asset performance and all related maintenance/services issues of **all asset (types)**

- Manages asset investments and related costs **across the entire asset service network in the organization and throughout the entire life cycle.**

- Integrates with ERP/Financials, as well as with other Operational systems, e.g. LIMS, Document systems, etc.

- Provide full visibility and **support of the service management activities**
Asset Convergence

- Healthcare organizations are experiencing the convergence of Physical and IT assets
- This convergence blurs the line between Physical and IT assets
- Requires a system to manage both in a single solution.
IT Asset & Service Management (ITSM)

IT Asset Management is critical for:

- Controlling cost
- Avoiding the penalties of non-compliance
- Enabling quality service levels
- Security
- Aligning IT with the business
- Organizational efficiency
- IT Security

People are always asking these questions:

- What devices do we actually have?
- Where are they at all?
- Who's using them?
- How are they configured?
- Are they available now and in good shape?
- Do they comply with licensing requirements?
- What value do they provide to the business?

Most devices are in departmental budgets, so it is hard to get answers to key questions.
Most equipment or devices are in departmental budgets

- Answer these questions:
  - What devices do we actually have?
  - Where are they all?
  - Who’s using them?
  - How are they configured?
  - Are they maintained and/or calibrated?
  - Do they comply with licensing requirements?
  - What value do they provide to the business?

Challenge to manage it all:

- Increasing cost of managing hardware and software assets because of dispersed locations, mobile equipment, employee off-site and vendor equipment, license compliance, financial management, and diverse lease and warranty information
- Inability to perform cost-efficient periodic asset validations and inventory processes
- Use of valuable business resources to perform inventories and asset administration rather than their primary business function
- User involvement required for asset audits and inventory data collection
- Ineffective processes
- Processes that do not allow tracking of historical data
- Lack of integration with other systems
- Inefficiencies and inaccuracies resulting from the fact that device management is 90 percent process and 10 percent tools
For effective asset management you need:

- Asset accounting and inventory reporting for end user device software, hardware and security compliance
- Non-intrusive method for device audits and inventory data collection that requires limited user involvement
- Ability to perform periodic asset validations/updates
- Elimination of manual inventory processes
- Ability to meet audit compliance standards
- Ability to track assets globally across geographic boundaries
- Reliable information for refresh planning and scheduling

Forty percent of CEOs say that asset management is the third key focus for boosting financial performance.¹

¹ IBM Business Consulting Services, The IBM 2006 Global CEO Study.
### Drivers of comprehensive Asset and Service Management:

- Cost inefficiencies and complexity associated with redundant asset management infrastructure
- Need to measure and manage the availability and use of all strategic assets
- The emergence of pervasive devices, embedded chips, RFID, sensors, detectors and IP addresses attached to enterprise assets (IT-embedded / IT-enabled, etc)
- Improved risk management across the enterprise
Maximo Asset Management for Healthcare & Life Sciences

- Maintenance Engineering
- Maintenance Operations
- IT Asset & Service Management

- IBM Maximo Asset Management
- IBM Maximo Calibration
- IBM Maximo Change & Corrective Action Manager
- IBM Maximo Mobile
- IBM Maximo Service Provider
- IBM Tivoli Asset Management for IT
- IBM Tivoli Service Desk

- Availability – Reliability – Condition Based Maintenance – Quality
- Asset Lifecycle Management
- Corrective & Preventive Action (CAPA)

Regulatory Compliance: Compliance Assistance Documentation
Aligned with Industry Best Practices

**ITIL based workflows**

The Service Desk receives a service request. This is deemed an incident →

Multiple incidents are reported and a problem is raised. The root cause of the problem is identified →

A change is raised to fix the problem →

This is done within a specific timeframe based on SLAs

Tivoli Service Request Manager shows the relationship between the related Incidents, the Problem and the Associated Change

Scenario: the root cause of multiple incidents is a problem with a server needing more memory

A Change work order is created to add memory to the affected ERP Server
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Maximo Asset Management – Healthcare solutions

- Addresses business challenges of Operations and IT
- Consolidates point solutions for Asset and Service Management into a logical suite of applications
- Addresses business challenges of:
  - Healthcare organizations
  - Hospitals
  - Medical Device or Diagnostics Equipment Manufacturers
- Provides asset and service management support for:
  - Asset owners/operators
  - 3rd Party Maintenance Service Providers
  - Facilities management
- Includes enhanced Workflow
  - Event Driven
  - Context-based
  - Escalation Manager
- Consolidates point solutions for Hospital equipment, facilities, calibration tools and asset management
- JACHO and FDA (CFR part 11) compliant
- ITIL-based
- KPI, Reporting and Analysis Tools
- SOA technology framework compliant
Systems Integration

Enterprise Management
- Customer Relationship Management
- Business Intelligence & KPIs
- Regulatory Reporting (JACHO)
- ERP /Financial Management
- Human Resource Management

Operational Systems
- Performance monitoring
- Diagnostic integration (LIMS, etc)
- Dispatching & scheduling
- Document & Process management
- Graphical Information

Maximo Asset Management

- Asset Management
- Service Management
- Contract Management
- Work Management
- Inventory Management

Graphical Information
Maximo Calibration Manager

- **Focus and commitment for a strong Calibration solution:**
  - Calibrate Instruments, MT&E, Standards
  - User-defined Calibration Data Sheets
  - Fully 21 CFR Part 11 compliant
  - Calibration Job plans & Job Plan Revision Control
  - Calibration Intervals
  - Calibration Work Orders
  - Traceability and Reverse Traceability
  - Loop Calibrations
  - Calibration History

- **Calibration as option of Maximo, or part of the Industry Solution Maximo for Life Sciences**

- **Mobile Calibration Manager**
  - With Maximo Mobile Work Manager
  - Mobile extension of Maximo Asset Management

- **Fully Integrated with the Maximo suite**

- **Growing number of Clients:**
  - from various industries:
    - Utilities, Nuclear, Chemical & Petrol, Automotive, Aerospace & Defense and Life Sciences & Healthcare:
    - (85+ in total worldwide)

- **Special Interest Group Maximo Calibration**
  - User driven, cross industry
Maximo Asset Management Mobile

- Maximo Mobile for Work Management
- Maximo Mobile for Inventory Management
- Maximo Mobile Calibration Manager

- Developed on Maximo’s standards-based architecture (XML, Java)
- Built as an option to Maximo Asset Management making it easy for organizations to centrally manage and extend their Maximo applications to remote workforces.
- Benefits: increase quality data, lower labor cost
Business challenges:

- How are you currently managing incidents, problems and resulting equipment changes for your operational assets?
- Does your current asset management system provide functionality in the following key areas – Incident and Problem Change and Release Management?
- Are you able to effectively manage your change and corrective action process with your current asset management system?
- Are you able to develop standard templates and processes (used by all business units) based on: common ways of working; common support and implementation models; regulatory requirements, industry standards and methodologies?
Change & Corrective Action Manager Value Proposition:

- Leverage Maximo’s Architecture to enable customers to:
  - Meet evolving regulatory and business requirements due to high degree of configurability.
  - Track, manage and document every step of the Commitment Tracking and Change and Corrective Action (& Preventive Action) processes (CAPA).
  - Increase operation efficiencies by identifying incidents before they turn into problems.
  - Reduce regulatory compliance burden through an established, documented process from root cause through corrective action release.
  - Enable personnel to focus on maximizing preventative actions by minimizing reactive and corrective tasks.
  - Leverage full asset traceability to close the loop from commitment to completion.

Business Case: Enables organizations using Maximo to manage asset related changes, commitments, corrective and preventive actions associated with regulatory requirements and industry best practices.
Healthcare Market Experience

- Maximo Asset Management: #1 in Enterprise Asset Management *
- Maximo Asset Management in leadership quartile for EAM /Manufacturing (Gartner Magic Quadrant – Sept 2007)
  - Globally #1 – 16.7% Market Share
  - Manufacturing #2 – 12.4%
  - Facilities Management #1 – 13.7%

- Life Sciences & Healthcare Customers include:
  - 14 of the 15 major Pharmaceutical companies
  - More than 350 medium – large (university) hospitals worldwide including:
    - New York University Hospital
    - Johns Hopkins Hospital
    - US Veteran’s Admin Hospital
    - Vancouver General Hospital
    - Rush Presbyterians
    - Royal Liverpool Children’s Hospital (UK)
    - University Hospital Leuven (Belgium)
    - University Hospital Nijmegen (Netherlands)
    - Hospital La Riboissiere Paris (France)
    - International Hospital Istanbul (Turkey)
    - Hospital Son Dureta Mallorca (Spain)
Maximo supports the Healthcare Ecosystem:

Pharmaceutical

Bristol-Myers Squibb
Johnson & Johnson
Novartis
AstraZeneca
Wyeth-Ayerst Laboratories

Device and Diagnostics

Ortho-Clinical Diagnostics
GE Healthcare
Baxter
Stryker

Healthcare

American Red Cross
The University of Chicago Hospitals
NSW Health
SUMMA Health System

Beaumont Health
Children’s Hospital of St. Louis
Massachusetts General Hospital

Landstinget Dalarna
Atlanta Medical Center
Johns Hopkins University

PeaceHealth
### Value Proposition – Healthcare Case Study

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<tr>
<th>The Company</th>
<th>Beaumont Services Company</th>
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<tbody>
<tr>
<td></td>
<td>• Manages technology, facilities and fleet assets for two hospitals</td>
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<tr>
<th>The Challenge</th>
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<tr>
<td></td>
<td>• Increase operational efficiency and reduce costs</td>
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<tr>
<td></td>
<td>• Manage multiple types of asset with a single solution</td>
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<tr>
<td></td>
<td>• Integrate with existing financial system</td>
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<tr>
<th>The Solution</th>
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<tbody>
<tr>
<td></td>
<td>• Maximo for technology, facilities &amp; fleet assets</td>
</tr>
<tr>
<td></td>
<td>• Preventive maintenance, warranty &amp; life cycle costing</td>
</tr>
<tr>
<td></td>
<td>• Standard integration to Oracle Financials</td>
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<table>
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<tr>
<th>The Benefits</th>
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<td></td>
<td>• Supported improvement initiative, saving $19.6 million over four years</td>
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<tr>
<td></td>
<td>• Asset based costing system savings - $50K-$100K /yr.</td>
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What You Get from Maximo Asset Management

- Increased asset availability and reliability
- Improved asset & service productivity – tracking ALL assets and services and performance
- Increased OEE (operational equipment efficiency)
- Improved ROA (return on assets)
- Many integrated capabilities for low total cost of ownership
- Extended life of plant assets and equipment
- Reduced capital expenditures
- Standardized asset management processes across all plants, fleet, etc…
- Improved supply chain efficiency – get the right material/labor at the right time and place,
- “Do more with less” - increased pressure to reduce costs –
- Reduced inventory (spare parts), labor, materials costs
- Lower IT & IT infrastructure cost
- Achieving higher asset & service performance and “mission readiness”
Value Proposition for Healthcare (Provider)

- **Capabilities for multi-site, multi-organization structures:**
  - global implementations and roll-out, running Maximo Asset Management on a single instance

- **Full capabilities to support all types of assets including IT assets (IT-enabled or IT-embedded)**
  - Convergence of Assets & Services, Technologies.

- **Support Corrective and Preventive Action (CAPA) processes and other FDA or JACHO regulation requirements (Compliance)**

- **Fully integrated Calibration capabilities**

- **Full IT Service Management capabilities**

- **Full support of Asset Lifecycle, Service Lifecycle and completes Product Lifecycle Management. Also leverage the value of Six Sigma projects.**

- **Cost reduction in Maintenance, Engineering & Facility Management Operations**
  - Track & trend critical asset information to increase visibility, utilization and performance

- **Risk & Compliance Management**
  - JACHO, FDA, ISO, ROHS, IEEE, OSHA, SOX

- **Many years proven experience in life sciences & healthcare as “regulated” environments**

- **Business Alignment:** Supporting Services Management capabilities and all Asset Classes
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## Why IBM - ?

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<th>Description</th>
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<tbody>
<tr>
<td><strong>Ease of Configuration</strong></td>
<td>Built-in configuration tools allow for easy, on the fly changes to UI, workflows, processes, reports.</td>
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<tr>
<td><strong>Upgradeability</strong></td>
<td>Configuration information is stored in meta data to readily upgrade from one version to the next.</td>
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<td><strong>Unified Platform</strong></td>
<td>Tivoli unified platform combines asset management and service desk function in one environment.</td>
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<tr>
<td><strong>IT and Corporate Asset Mgmt / Service Desk</strong></td>
<td>All critical assets that drive the business (IT and non-IT) are managed through the same asset mgmt &amp; service desk.</td>
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<tr>
<td><strong>Leading, standards-based technology</strong></td>
<td>Web-architected platform built on J2EE with advanced business process management; based on SOA, web services and XML.</td>
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<tr>
<td><strong>Built ground up on the ITIL framework</strong></td>
<td>Supports 7 ITIL processes out of the box: Incident, Problem, Change, Release, SLA, Configuration, Availability.</td>
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<tr>
<td><strong>Breadth of IT Service Management offering</strong></td>
<td>IBM offers full breadth of end-to-end asset and service management solutions that operate on a common web services infrastructure.</td>
</tr>
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</table>
Why Maximo Asset Management from IBM?

- Only provider of Asset & Service Management solutions for all asset classes
- Industry Best Practices built in
- Business Agility
- Application Configurability and Flexibility
- Standards-based, Service Oriented Architecture
- Proven Solution – From A Long Term Partner

We Will Help Your Organization To...

- Increase Asset Performance and Reliability
- Reduce IT and Operational Costs
- Drive logical Business System & Application Consolidation
- Improve Risk Management and Regulatory Compliance
- Achieve Higher Service Levels
Thank you!

Questions...

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