Unified management supports the convergence of healthcare assets

IBM Maximo Asset Management addresses patient care, facilities and technology challenges
Unified management supports the convergence of healthcare assets

Introduction
The instrumentation, integration and intelligence that characterize today’s smarter planet are indispensable in the healthcare industry. Quality patient care depends on the uninterrupted availability and sustained interaction of a multitude of medical and technology devices. Safe, clean and comfortable environments in care facilities depend on constant monitoring and reliable maintenance. Smooth, uninterrupted processes and meaningful clinical and administrative insight depend on a constant flow and coordination of huge volumes of information.

In their efforts to keep up with these varied needs, healthcare organizations are experiencing a proliferation of assets and asset types. But assets themselves are experiencing a convergence. Clinical devices for patient monitoring and care, building systems for cooling and lighting, and technology devices for communications and recordkeeping share a common foundation in IT that blur the lines that once kept them in silos. And as devices converge, opportunities open for new efficiencies and greater effectiveness. Convergence makes it possible to achieve unified management of all assets.

An enterprise asset management system can be at the core of this transformation. It can help improve patient care by providing improved visibility and control across the healthcare organization. It can optimize asset utilization, reducing cost and supporting processes with automated workflows and best practices. To help ensure critical capabilities are always available, alerts can notify technicians when preventive maintenance is due. Asset or patient tracking capabilities can ensure that the place and status of lifesaving equipment is always known and that the patient can be located wherever he or she goes. By gathering, receiving and analyzing data from medical devices and building components throughout the healthcare provider system, an enterprise asset management system can be central to managing the complexity of today’s healthcare environments.

The growing complexity of healthcare assets
A healthcare organization is a world of specialization. From patient-controlled infusion pumps at the bedside to intelligent meters regulating air flow, temperatures and energy use across building zones to electronic medical records putting patient information at a caregiver’s fingertips, each device and system has a unique role. Each helps deliver a quality of care that is increasingly sophisticated and effective.

The growth in specialized or “smart” devices, however, has also added complexity to the healthcare environment. That’s because devices and systems traditionally have been managed independently. Specialized applications, often customized for
the organization’s unique needs, were used to address clinical, facility or IT assets. The silos of capabilities and information that resulted could hamstring cross-organizational operations and efficiencies.

In 24×7 healthcare environments, the challenges of siloed systems and bottlenecks in asset management have created complex new risks that can threaten both patient care and business operations. With medical assets reaching from ambulances to specialized instrumentation and medicine inventory, healthcare providers are looking for ways to better manage the entire system, not just individual devices. As they continue providing quality care, providers need to maximize delivery, reduce costs and ensure compliance with regulations.1

An integrated asset management solution enables the healthcare organization to meet all these goals, because it addresses the full range of asset-related challenges. Proactive maintenance schedules, for example, can both save money and enhance service delivery by extending asset life. Using technology to ensure that devices comply with security standards of the Health Insurance Portability and Accountability Act (HIPAA), or reporting requirements of the Food and Drug Administration (FDA) and that they support accreditation by The Joint Commission can help free the provider to focus on providing quality care without sacrificing regulatory compliance.

**Challenges of equipment, facilities and applications**

- Manage and support all key and critical assets and the sophisticated mix of devices, tools and technologies found in the healthcare organization today, including:
  - Clinical and biomedical equipment
  - Facilities and engineering tools and processes
  - Electronic health records, documents and imaging systems
  - IT infrastructures and networks

- Create sustainable building operations by enabling:
  - Development of smarter processes including safety standards to support all types of assets for buildings or facilities
  - Optimized energy consumption
  - A central repository for storing data about space management and the data center infrastructure for use in optimizing space utilization

- Consolidate operational applications by supporting:
  - Work and asset management for all lines of businesses
  - Management of instruments, tools, measurement and test equipment, facilities, mobile, transportation and IT assets
  - Standard software at all locations, enabling a lower cost of ownership with one version of the truth and enforced best practices
  - A reduction in the acquisition, implementation and maintenance of separate or siloed solutions from different vendors to manage different parts of the asset infrastructure
  - A fully integrated and transparent information management system that enables better visibility and control of all critical business systems and processes

A unified approach to asset management can also support long- and short-term planning—controlling inventory, for example, to reduce over-purchasing. It can enable preventive and condition-based asset maintenance. It can help manage vendor contracts with comprehensive support for a full range of contracts and full support for managing service agreements.

**Critical assets: Ensuring constant reliability**

Assets in a healthcare environment require as much reliability and availability as possible. When lives are on the line, malfunctioning, damaged or misplaced equipment cannot be tolerated. When staff time is limited, misallocated or lost equipment can
be a severe drain on productivity. When budgets are tight, over-procurement/overstock is a waste of funds. In every case, the provider should have complete visibility into all assets—whether clinical or biomedical equipment, electronic health records, or IT applications and systems—to set an optimal utilization rate and achieve the desired result.

A key function of an enterprise asset management solution is to manage and optimize the use of all assets to achieve greater availability, reliability and performance. The result is the ability to extend the asset's life—because assets are better maintained. The ability to gather and analyze data about asset operations allows an organization to move from corrective (repairs made after a problem occurs) to preventive (maintenance dictated by a schedule based on past experience) to predictive maintenance (performed because data for a particular asset indicates that a failure is imminent).

The management of clinical equipment and IT assets becomes still more important when equipment, organizations, business, patient care and regulatory compliance are both necessary and complex. Today, more than ever before, it is important for the healthcare provider to have full visibility into all assets and asset-based service management activities and to standardize business processes across the organization. As assets themselves become increasingly “smart,” gathering and relaying data to system applications for analysis, the need for effective and integrated asset management increases still further. The healthcare provider needs an enterprise asset management solution that can constantly track, manage and, when necessary, adjust the configuration of smart devices to ensure optimal operations.

Management for the asset lifecycle

University Hospital (Academisch Ziekenhuis) in Maastricht, The Netherlands sought to replace an existing asset management system with a solution that would not only register medical instruments and manage maintenance and labor but also would offer integrated purchasing functionality. IBM® Maximo® Asset Management was deployed to manage 14,000 assets—everything from microscopes to magnetic resonance imaging (MRI) machines—with capabilities for:

- Scheduling and reporting preventive maintenance and asset replacement
- Tracing the entire lifecycle of assets with user-friendly visibility
- Managing the approval process for work orders, purchase orders and budgets
- Allowing fast and smooth entry for a growing number of assets into a SQL database

Sustainable buildings: Managing complex facilities

Healthcare facilities can be nearly as complex as the assets IT houses. They range in size from hospitals to clinics, as well as in functionality from ordinary staff offices to specialized laboratories and imaging centers. Ranging in criticality from emergency to operating and patient care rooms, healthcare facility assets present significant challenges for managing disparate uses and environments. What is more, they share concerns for energy efficiency, space planning and safety that offices, manufacturing plants and business facilities of other types also must address.
An enterprise asset management system can help healthcare providers manage and maintain the wide-ranging functions housed in its facilities. By monitoring building assets and analyzing data on facilities use, it can help reduce costs, lower energy and natural resource consumption, increase efficient use of space, and manage inventory purchasing or lease contracts to optimize the entire physical environment. Integrating IT and building management capabilities using automated processes and centralized views of energy, assets and space data can help the organization achieve sustainable building operations.

Optimizing maintenance throughout the lifecycle of building assets can increase usable life and reduce operating costs. By systematically monitoring and benchmarking asset performance, and by improving the condition, performance and reliability of assets, the organization can reduce the chance of an asset failure that can interrupt services, reduce the quality of work and productivity of healthcare professionals, and endanger the health or lives of patients.

**Visibility and control for laboratory safety**

In working with biological agents at the highest level of containment and precaution, the University of Texas Medical Branch, Galveston National Laboratory required management for critical assets such as air-flow handlers, decontaminating showers, and door seals and locks.

IBM Maximo software helps these assets operate safely and efficiently with double- and triple-redundant systems supported by:

- High levels of visibility and control for facility, biomedical and IT assets
- Management by a single system to simplify the use and management of the lab’s equipment
- Automatic triggers for routine, preventive and predictive maintenance on all assets

Consolidated applications: Breaking down silos

The highly focused and technical nature of healthcare organizations has led to a situation where applications have been deployed to meet specific needs of different specialist departments. Departments or even individuals frequently utilize “pop up” applications on local systems that serve niche areas such as laboratory activities, calibration, inventory or ambulance maintenance but that are not available to others in the organization. But while a range of specialized IT assets typically is necessary for the complex needs of the healthcare organization, a wider range of access to them can provide more effective and efficient results.

In fact, in the ideal scenario, an organization manages all its assets, whether patient care, building-related or IT, together within a single technology and management platform, where data, processes and workflows can be seamlessly shared. Such an approach likely will become increasingly important—and increasingly common—as the lines between clinical and technology assets blur. As assets such as portable defibrillators or air purifiers provide capabilities such as integrated diagnostics and performance metrics, the convergence of “smart” and traditional IT assets will provide significant opportunities for enhancing healthcare functions and performance.

The consolidation of operational applications to support management of instruments, equipment, facilities, transportation, information and IT assets across all departments with standard software at all locations will enable healthcare providers to support cross-enterprise reporting, adoption of common best practices, and cross-business sharing of physical and information resources to achieve better quality patient care. Key performance indicators monitor, track and manage asset performance and utilization—and the effectiveness of asset management itself.
A comprehensive, unified solution from IBM

IBM Maximo Asset Management is an integrated solution designed to assist with the procurement, operation, maintenance, repair or service, and disposal of enterprise assets. For healthcare providers, it can be used to manage the full lifecycle of assets, including clinical and biomedical equipment as well as engineering and facilities assets, ambulances and other transportation assets, IT-enabled equipment, and IT infrastructures and networks. Maximo Asset Management also supports the inventory, supply chain and human resources processes associated with maintaining those assets.

Addressing all assets that impact business performance and accountability on a unified, single technology platform, the Maximo solution can eliminate siloed information and enable shared best practices. It supports the development of comprehensive programs for maintenance, regardless of whether maintenance is preventive, predictive, condition-based, routine or unplanned, and it contributes to reducing costs and increasing asset uptime.

Used for work and asset management by healthcare providers worldwide, Maximo Asset Management consists of six key management modules—asset, work, service, contract, materials and procurement management—and targets the needs of provider companies with the following additional components:

- **IBM Maximo Calibration**: Delivering capabilities to calibrate instruments, measurement and test equipment and standards for increased reliability, availability, quality and performance.
- **IBM Maximo Mobile**: Providing mobile device capabilities to support functionality or health professionals making rounds, responding to calls in an ambulance, or working remotely to eliminate paperwork while improving scheduling and quality of reporting data.
- **IBM Maximo Healthcare Accelerator**: Offering a set of services developed with IBM Global Services to streamline interfaces with a management dashboard and key performance indicators (KPIs) for enhancing the precision of asset-related reporting.
- **IBM Real-Time Asset Locator for Healthcare**: Tracking asset location in real time and providing status updates to locate lost or misplaced assets, reduce staff time spent looking for assets, improve asset utilization and reduce the need for high asset inventory levels.
- **IBM Tririga® Workplace Enterprise Management**: Providing facility and real estate management software solutions from Tririga, an IBM company, for further insight into and capabilities for managing energy, heat, water, sewage, electricity and physical assets.
• **IBM Maximo ECRI Integration for Healthcare:** Allowing healthcare facilities to standardize their medical equipment and receive and act on medical equipment alerts for hazards and recalls in a timely and effective manner. This integration with the Emergency Care Research Institute (ECRI) enables Maximo users to align their data with the industry-standard device classification system and ECRI’s comprehensive healthcare product safety alerts system.

**Why IBM?**
In supporting today’s healthcare industry, enterprise asset management provides key opportunities to increase equipment availability, reduce business operation and asset maintenance costs, and maintain higher quality requirements for the full range of assets from patient care to facilities to IT. Leading, standards-based technology from IBM provides a unified solution with the ability to manage the complete lifecycle of all critical assets—beginning with planning and procurement and extending through deployment, tracking, maintenance and disposal.

Unlike departmental or IT-centric service management, IBM Tivoli® software delivers a common foundation for managing, integrating and aligning requirements for assets that support the healthcare organization’s patient care and business functions, its physical facilities and its IT infrastructure.

IBM understands the increased interdependency and convergence of asset classes, the way individual assets impact patient care and business results, and how asset visibility relates to risk management and compliance. As a result, Tivoli software is designed to quickly address the healthcare organization’s most pressing service management needs and help proactively respond to changing demands. IBM is playing a lead role in enterprise asset management implementations and projects worldwide, with solutions validated in successful deployments with industrial companies of all sizes.

**For more information**
To learn more about IBM Maximo Asset Management, contact your IBM representative or IBM Business Partner, or visit: [ibm.com/tivoli/maximo](http://ibm.com/tivoli/maximo)

**About Tivoli software from IBM**
Tivoli software from IBM helps organizations efficiently and effectively manage IT resources, tasks and processes to meet ever-shifting business requirements and deliver flexible and responsive IT service management, while helping to reduce costs. The Tivoli portfolio spans software for security, compliance, storage, performance, availability, configuration, operations and IT lifecycle management, and is backed by world-class IBM services, support and research.

Additionally, IBM Global Financing can help you acquire the IT solutions that your business needs in the most cost-effective and strategic way possible. We’ll partner with credit qualified clients to customize an IT financing solution to suit your business goals, enable effective cash management, and improve your total cost of ownership. IBM Global Financing is your smartest choice to fund critical IT investments and propel your business forward. For more information, visit: [ibm.com/financing](http://ibm.com/financing)