

Dynamic transportation fleets require integrated asset management

IBM Maximo solutions address the entire fleet asset lifecycle



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Introduction

Transportation is a part of many industries and businesses. You don't have to be a railway, bus company, airline or marine shipping firm. You can be a retail chain with trucks delivering inventory to stores, a hospital with ambulances on call, or a city utility with meter readers and repair crews out in neighborhoods. The focus of your business may lie elsewhere, but your fleet of vehicles is one of your core assets—and your ability to optimize its operations is central to your success.

On today's smarter planet, where vehicles and their component parts are instrumented, integrated and intelligent to provide operational data for analysis or action, optimizing your fleet assets can be more achievable and more effective than ever before. It also can have more business impact.

An enterprise asset management system can be at the core of this capability. It can provide the visibility, control and automation you need to address both the overarching business issues and the daily operational tasks associated with your vehicle fleet.

With capabilities such as alerts that notify technicians when preventive maintenance is due, tracking that supports warranty management and recovery, and lifecycle costing to determine when replacements are needed, an effective enterprise asset management system can help optimize processes to reduce fleet downtime, enable end-to-end management of the fleet lifecycle, and reduce operational expenses and asset maintenance budgets.

A management approach with far-reaching impact

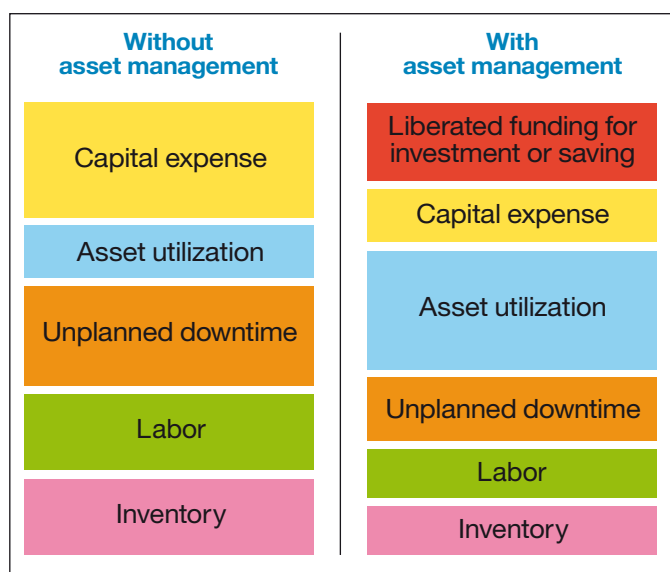
Transportation assets can be large or small, mobile or stationary, and each presents its own challenges. Moving assets such as cars for the sales force or trucks for landscaping—even the security department's golf carts for patrolling a campus—need to extend their useful life and reduce their cost to operate. Facility assets such as depots and repair stations require maintenance for their mechanical, HVAC and lighting systems. Production assets, such as the shop equipment for repairing engines or transmissions must be kept safe and reliable. Linear assets such as roads, railways and pipelines all impact the delivery of goods and services that a fleet may be responsible for.

Managing such a range of assets is a complex undertaking. But when a company implements a comprehensive asset management program, it can achieve real benefits. Always knowing where a vehicle is located can enable dispatchers to predict when it will arrive at the customer's stop, while allowing service technicians to track the vehicle's condition. Making sure employees have well-maintained and safe equipment improves company health and morale.

Fleet asset management, in other words, can have a far-reaching impact on the organization. But management processes themselves do not have to be as complex as the assets they govern. The most effective asset management systems, in fact, provide a simplified, unified approach that addresses the full range of assets from a single platform.

An effective asset management solution can collect, consolidate and analyze information on all of an organization's assets—from identifying excess spare parts inventory to scheduling vehicle repair labor and capturing driver-identified problems. Unifying processes is a critical step to dealing with frequently changing corporate fleets. On a smarter planet, the insight provided by a unified asset management solution can help standardize processes, manage complexity of mobile and stationary assets, and align resources and capacity with the requirements of the fleet and the company as a whole.

Realigning fleet asset spending



An enterprise asset management solution provides tools for realigning spending so that some areas such as inventory, labor, unplanned downtime and capital expense cost less, freeing up funds for better utilizing assets to build the business and even making funds available for additional initiatives, all within the same total budget.

Addressing fleet processes, lifecycle and cost

Companies today don't have budgets simply to replace assets rather than repair them—and companies cannot risk the liability or regulatory non-compliance of dangerous and improperly maintained equipment. To meet the operational requirements and reap the business benefits of their fleet assets, companies need to take steps to:

- Optimize processes to improve the reliability and availability of fleet assets, reducing downtime by:
 - Implementing industry-specific transportation solutions with capabilities for managing campaigns, contracts, depreciation, inventory, asset configuration, meter history and adjustments, and service level agreements.
 - Supporting all transportation assets from tractor trailers to standard cars and trucks to more specialized vehicles such as fire engines.
- Enable end-to-end asset lifecycle management by:
 - Automating work management processes
 - Capturing staff knowledge, especially as long-term employees approach retirement
 - Enabling ongoing depreciation and replacement analysis, while recovering warranties on assets, components and spare parts
- Reduce operational expenses and maintenance budgets by:
 - Optimizing asset up-time during utilization peaks by strategically scheduling preventive maintenance
 - Improve productivity using industry-specific capabilities such as industry-standard codes, labor certification, and automated alerts
 - Providing visibility into compliance and auditable history to avoid regulatory penalties
 - Implementing best practices to extend asset life, optimize parts management, reduce road repair calls and increase planned maintenance

A unified approach to asset management can help companies of all kinds overcome challenges rooted in their asset-related processes, lifecycle and expenses. By breaking down silos that perpetuate unreliability, inefficiency and high cost, asset management can align operations with the overall business objectives.

A unified approach can also support long- and short-term planning to help control processes such as spare parts inventory. It can enable preventive, condition-based asset maintenance and help manage vendor contracts and service level agreements.

Optimized processes: Delivering reliability and availability

Why use an enterprise asset management solution to maintain your fleet? In most cases, it's the best way to ensure the reliability and availability of assets. Proper asset management can control and avoid problems such as breakdowns or road calls while the vehicles are in operation and can ensure that a vehicle is quickly back in service when problems occur.

The benefits of a fleet asset management solution are closely aligned with management processes, from depot and warehouse management to vehicle assignment and routing. Having the right number of assets available is vital. For deliveries to be arranged and work hours for yard personnel, crews and drivers to be assigned, repairs and maintenance must be carried out on a timetable that does not disrupt critical operations.

Every company's processes are different, however. Postal delivery trucks or school buses may operate on a workday schedule that allows regular maintenance on evenings and weekends. A retail chain or consumer products company may have long-haul trucks traveling constantly, requiring maintenance on the road or when the truck returns to the depot. Other companies may run 24x7 operations or have vehicles on long term assignment, creating a challenge for coordinating preventive maintenance.

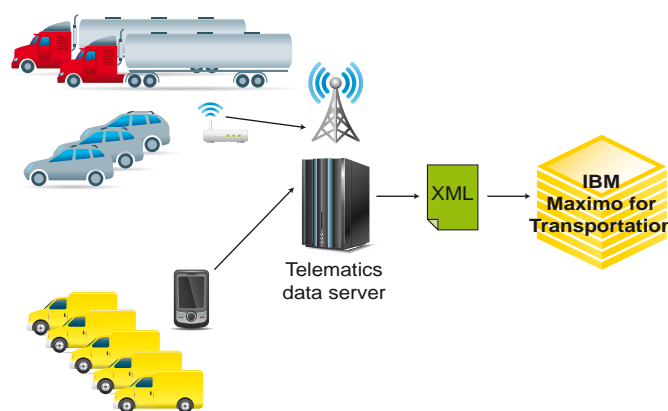
A fleet asset management solution can provide the necessary flexibility to support these varied processes. The ability to schedule preventive maintenance when it will least impact other schedules can significantly reduce downtime and provide more resources for operations. Other capabilities of a fleet asset management system that help support flexibility, reliability and availability—and ultimately the organization's success, include:

- **Automated alerts:** Notifying technicians that preventive or deferred maintenance is due or a warranty is expiring
- **Campaign management:** Tracking recalls or other campaigns across the organization's multiple assets
- **Fuel transactions management:** Tracking the consumption and cost of fuel by integrating with a fuel and fluid management system, or with an external fuel card service
- **Industry-standard code support:** Providing reporting on events such as failures and repairs, with details for making industry comparisons
- **Motor pool:** Managing equipment requests, dispatcher assignments, billing and check-in upon vehicle return

Telematics capabilities can use satellite, cellular or radio frequency identification (RFID) technology to track equipment as well as monitor and collect information from within an asset—fuel consumption, engine temperature, tire pressure or miles traveled, for example—and then relay data to a management application for analysis. The process provides intelligent visibility that can make repair and maintenance more efficient.

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 usage, such as mileage, or a schedule based on past experience) to predictive maintenance (performed because data for a particular asset or component indicates that a failure is imminent).

Fleet optimization with telematics



A telematics system based on RFID technology provides advantages for both vehicle operators and operations and maintenance staff. For operators, it can gather information non-intrusively, reducing administrative tasks for areas such as mileage reporting and enhancing areas such as maintenance scheduling. For operations and maintenance, it can bring together real-time vehicle diagnostic data and emergency alert information to ensure safe and reliable fleet operations.

Lifecycle management: Keeping on top of change

The repair and maintenance processes that optimize fleet operations help extend an asset's life. But fleet assets seldom grow truly old. Wear and tear begins on the day of acquisition, and depreciation continues in an ongoing lifecycle that also requires management.

The dynamic nature of fleet assets requires end-to-end management to control spending, adjust to volatility in fuel pricing, recover benefits from warranties and accurately assess depreciation. Understanding and managing the lifecycle can determine the optimal time to replace an asset and cease repairing it. Lifecycle management even extends to personnel, especially

as older employees near retirement. To cover these and other needs, an effective fleet asset management solution includes capabilities such as:

- **Lifecycle costing of assets:** Using expected life, depreciation schedule, current condition and repair expense to determine the value of an asset over time to manage equipment retirement and replacement
- **Vehicle data collection:** Gathering and utilizing asset information such as specifications and configurations that may change with the asset's age, condition or use
- **Meter history and adjustment:** For assets or components that gather data, recording information such as out-of-sequence meter readings, adjusting for meter change out and tracking meter history
- **Warranty management and recovery:** Automating alerts and simplifying management to track warranties and help ensure the company receives benefits to which it is entitled.

Whether for a manufacturer's warranty, extended warranty or another warranty the company may have in place to cover the assets, its components and spare parts, a fleet asset management system can reap financial rewards by helping recover costs in a timely manner. It can be a valuable tool for reminding users of the impending expiration of a warranty—so known problems can be repaired or assets checked for undiagnosed problems before coverage ends. It can track the progress of a submitted claim, providing information on when reimbursements, discounts or replacement parts are received.

Human assets provide another lifecycle that also requires managing. Today's trend for employees to change jobs more frequently than previous generations—taking knowledge and skills with them—can be a challenge to smooth fleet operations. As workers leave for new opportunities or retirement, companies lose specialized skills and knowledge that can require significant training to replace.

A fleet asset management system can help fill these gaps by capturing best practices, policies, procedures and lessons learned. By incorporating into business processes and applications the information that long-time employees have been carrying in their heads, organizations can help ensure that capabilities are not lost, and can provide a top-to-bottom alignment of functions to support ongoing operations.

Asset management produces real results

An effective enterprise asset management solution can provide quantifiable results for companies with transportation fleets. Here are some IBM customer examples:

- A fleet management company saved US \$9.5 million through labor optimization while meeting 100 percent availability with fewer equipment purchases.
- A consumer products company with a medium-size fleet increased warranty recovery by 50 percent.
- A transit and rail company reduced the size of its purchasing staff by 20 percent.

Reduced expenses: Better utilization at lower cost

A fleet does not exist to serve itself. It enables a process that moves products to stores, repair technicians to a job site or sales people to customer presentations—and by doing so, it helps build the business. But if fleet operations and maintenance are too expensive, they can be a drain instead.

The connection between improving utilization and decreasing expense is therefore a key element of an effective asset management system. Such a system can help decrease direct costs: support for predictive maintenance can help avoid expensive repairs later; effective warranty tracking can help recoup expenses the organization might otherwise carry itself.

An asset management system can optimize utilization by scheduling maintenance so an asset is not offline when it would be most effective in generating revenue. The system can even help the organization properly calculate the number of assets it should purchase, “right-sizing” the fleet to match the company’s resources and needs.

Is it more efficient to hire extra staff or to pay overtime? Is it more efficient to run one truck for long hours or two trucks for shorter periods? Will longer hours mean more frequent, more expensive maintenance? What about the cost of fuel—when will the company reach the point when it should start running larger shipments or delivering less frequently? Advanced mathematical programming, optimization tools and engines built into an asset management system can help answer these questions. Other capabilities that help reduce expenses include:

- **Asset configuration management:** Supporting efficient operations for complex or specialized equipment in highly regulated and safety-driven environments
- **Dynamic inventory optimization:** Enabling more effective inventory management
- **Business intelligence reporting:** Enabling a rich set of self-service reports for business requirements
- **Service provider management:** Supporting contract management, service level agreements and billing

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. Built-in best practices support a service-centric business model that encourages partnerships between the maintenance organization and its internal customers. Maximo Asset Management can manage the facilities and depots in which assets are housed or serviced, and the drivers, technicians, warehouse staff and others who support fleet operations and maintenance.

IBM Maximo for Transportation is an industry-specific solution that manages the full fleet asset lifecycle, ranging from vehicles themselves to the equipment and inventory used for repairs and maintenance. It adds key fleet management capabilities to Maximo Asset Management, such as automated alerts, campaigns, contract management, lifecycle accounting, inventory enhancements, labor certification, meter history and adjustments, service level agreements, warranty processing support and equipment disposal. It is designed to help manage, monitor and document efforts to comply with regulatory requirements, while also adhering to industry-standard transportation coding structures. Best practices built into the solution help extend asset life, optimize spare parts management, reduce road calls and incidents, and increase planned maintenance.

Together, the Maximo solutions provide three key capabilities for optimizing processes, supporting the asset lifecycle and lowering costs for fleet assets:

- **Visibility:** Insights based on real-time metrics support a clear service strategy with real-time, actionable intelligence on the health and performance of assets and processes
- **Control:** The ability to monitor key process indicators based on thresholds and historical models to enforce policies and procedures, secure assets and information, and improve compliance reporting
- **Automation:** Proactive asset management based on accurate, real-time data to improve workflow integration across silos, tools, technologies, information and processes

Why IBM?

In supporting today's fleet assets, IBM understands the dynamic, changing nature of fleets, the increased interdependency of assets, the way assets impact customer service, and how asset visibility relates to effective operations. IBM is playing a lead role in enterprise asset management implementations and projects worldwide, with solutions validated in successful deployments with companies of all sizes.

Maximo for Transportation provides a complete feature set for managing all types of transportation assets built on industry-leading, standards-based technology. Consolidating the capabilities of asset management point solutions into a unified offering, these solutions are designed to meet core business imperatives to preserve capital, reduce operating expenses and lower maintenance costs.

For more information

To learn more about IBM Maximo solutions, contact your IBM representative or IBM Business Partner, or visit:

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



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