



Asset and service management for municipalities.

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Executive summary

Municipal government agencies are consistently challenged with budget constraints, regulatory requirements and new demands for services. Many cities, towns and counties must cope with declines in state funding and/or tax revenues, while others are forced to expand their services despite inadequate infrastructure. In this environment of doing more with less, achieving greater operational efficiency through improved management of assets and services is imperative.

To manage assets and services effectively, municipal agencies need a solution that not only meets the needs of managers and users, but also fits with their technology strategy. The ideal solution would provide a unified platform that can track and manage the full spectrum of municipal assets and service providers; address compliance, accounting and asset-related challenges across multiple departments; and integrate smoothly with key systems like geographic information systems (GIS), asset monitoring, and enterprise resource planning (ERP). An asset and service management application that meets these critical requirements should streamline operations and improve management decision-making enterprise-wide, while fully supporting budget justification and asset accountability.

Introduction

In today's economic and regulatory climate, municipal government agencies are under intense pressure to manage assets and service providers with the greatest possible efficiency. Yet the assets and services they contend with present particularly complex challenges. Each department within a larger municipality generally manages its own budget and its own diversity of assets – vehicle fleets; facilities such as parks, schools, or water/wastewater treatment plants; and linear assets like electrical, road and sewer systems. Each department must also manage relationships with a wide range of third-party service providers in areas as dissimilar as highway maintenance and IT support. In a smaller municipality there may be fewer departmental and budgetary divisions, but the level of complexity is much the same.

But regardless of size, the majority of municipalities find their efforts to manage assets and services hampered by existing business systems. Municipalities have tended to split asset management into two categories: financially-driven asset tracking, managed by financial or ERP solutions; and operationally-driven asset management, managed by computerized maintenance management systems (CMMS). This split in the asset portfolio makes it difficult to manage the complete life cycle of all assets, often leading to increased cost and complexity.

Highlights

New government regulations are driving demand for better accountability through asset and service management.

Municipal asset management challenges are further exacerbated by the fragmented nature of most asset and service management software in use today. Individual asset types (facilities versus roadway assets, for example) are generally managed by standalone, legacy systems that are often poorly integrated, expensive to operate and difficult to change. These islands of data cannot aggregate information about assets in a way that supports executive-level decisions. Similarly, they make it next to impossible to comply with recent regulations like Governmental Accounting Standards Board (GASB) Statement Numbers 34 and 42, which demand strict asset accountability including asset performance metrics and impairment of capital assets.

In short, municipalities can no longer afford to persist with a legacy approach to asset and service management. The pressure to revamp these systems comes from three directions.

- *The assets themselves are increasingly interdependent, so the systems that manage them cannot remain separate. Water departments, for instance, must manage production assets such as water treatment plants, fleet assets such as service trucks, facilities such as buildings, and IT assets that monitor and support the organization.*
- *To streamline costs it is critical to understand the way individual assets affect service to the business, so that services can be coordinated across assets. By aligning the goals of the maintenance organization with its customers, for example, municipalities can better align with citizen service requests from 311 systems, shorten service delivery cycles and operate more efficiently overall.*
- *Municipal departments are charged as never before with providing the visibility into operations required to address risk and compliance mandates. GASB 34 and 42 are primary examples of this ongoing trend.*

What municipalities generally lack is a unified, enterprise-wide asset management solution capable of managing a large and diverse municipal asset base, along with related services, in a manner that reveals the dynamics between them. Managing assets is challenging enough – the problem should not be complicated by disconnected systems that disrupt business processes, perpetuate organizational “stovepipes,” erode productivity and increase costs.

Municipalities that are ready to adopt a new approach can leverage today’s superior technology to unify asset and service management, helping them to optimize asset life, deliver services more efficiently and stretch shrinking municipal budgets.

This paper outlines solution requirements and technology best practices for municipalities, municipal departments and other organizations that need to manage diverse assets and services (linear, fleet, facility, etc.). It introduces the concept of unified asset and service management and explains the business value of this approach, as well as outlining the specific functional capabilities that municipalities will benefit from most.

Unifying asset management and service management

A unified asset and service management approach embodies a set of processes and practices that enable organizations to optimally manage the performance of their critical assets according to the expectations and requirements of key stakeholders.

Highlights

Unified asset and service management enables better executive decision making.

Effective, unified management of assets and services empowers municipal executives to make more informed decisions about resource allocation and utilization, and improves their ability to track the results of these decisions over time. Better executive decision making is made possible by improving the quality and timeliness of information. In particular, an asset and service management approach enables resource allocation decisions to factor in not only the funding required for major projects, but also the utilization of value-added resources like staff, equipment, materials, real estate and even information. The end result is a pragmatic, systematic process for maintaining, upgrading and operating physical assets and managing services in a highly cost-efficient manner.

Asset and service management capabilities

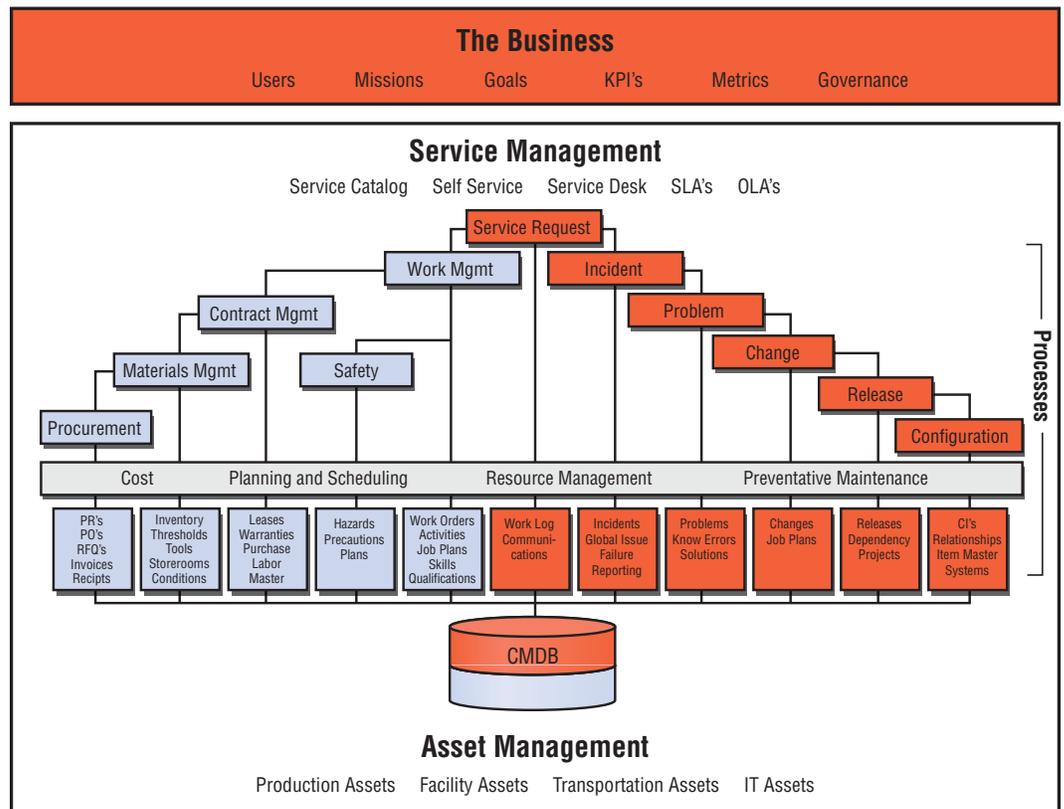
Traditional asset management approaches often employ off-the-shelf, standalone systems that provide basic capabilities like budget planning, preventive maintenance and work order processing. These systems are typically augmented with expensive, consulting-based customization and integration to meet specific requirements. While able to process work orders and manage contracts acceptably well, they fall short in their ability to track individual assets. This often leads to inefficient services, reactive responses to problems and an inability to maximize the useful life of assets.

A unified asset and service management solution, in contrast, provides a strategic view of all essential assets. This gives organizations the right levels of visibility, control and agility to more effectively – and proactively – manage assets and services throughout their life cycle. Such a solution can:

- *Support a wider array of services and assets. Instead of supporting just a single asset class or a subset of services, asset and service management solutions should support a wide variety of services and assets (production, linear, fleet, facilities, etc.), allowing the enterprise to optimize performance by taking into account the interdependencies of assets and services.*
- *Provide more integrated management support. Rather than supporting only customer-facing processes like a help desk or a maintenance technician, the service component of the solution should integrate with back-office processes, such as integrated cost management and life-cycle management, to enable greater cost-efficiency. Municipal executives, for instance, benefit from integration to financial and ERP solutions. This data provides a full view of their alignment to capital and operating budgets, to better manage their funding sources and make decisions based on current cost reporting.*
- *Provide an enterprise-level solution. Unlike an approach where each department needs to implement its own distributed version of the solution due to technical and data-model limitations, an asset and service management solution should support cross-departmental unification. A unified approach can significantly reduce IT costs and complexity by trimming the number of applications IT must manage, while improving the economies of scale of the efficiencies the application supports.*
- *Leverage emerging IT standards. In order to incorporate asset and service management into an evolving IT infrastructure, the solution should be built on the principles of a service-oriented architecture (SOA). Solutions built on this kind of modern, flexible architecture provide the foundation to implement Business Process Management (BPM) because they separate application and business process flows, leverage new industry standards for business process definition and eliminate multiple integration and access challenges. These capabilities are particularly important to municipalities implementing rational consolidation of legacy asset management technology and other IT systems.*
- *Leverage intelligent assets. Municipalities and other organizations are beginning to leverage a growing number of assets with built-in computing technology to support more advanced diagnostics, self-learning, asset health monitoring, and so on. This includes automated vehicle monitoring (AVM), or telematic, systems for tracking the mileage, engine temperature, operating hours, etc., of trucks, cars and buses. An effective asset and service management solution should have the flexibility to accommodate these new technologies.*

The following figure illustrates the scope of a unified asset and service management solution.

Figure 1: Unified asset and service management



Business benefits of asset and service management

A unified approach to asset and service management can drive significant benefits for any enterprise. These benefits strengthen the bottom line directly by better managing budgets and controlling costs, but they also extend to improving the agility of the operation and its ability to better control risks and monitor and manage efforts to comply with regulations. Business benefits of a unified approach to asset and service management include:

- *Better alignment of services with the business. Municipalities can leverage and enforce a governance framework that enables the business to create a link between the services expected and the performance requirements of the assets that are providing the service.*
- *Improved assessment and management of risks and compliance efforts. The right tools can capture in a single repository the condition, state and performance of assets and the relationship of the assets to the business. A central data repository helps facilitate organization-wide visibility of the control activities (assessments, audits, inspections, prevention, detection, reporting), visibility that supports an organization's efforts to assess and manage risks and monitor and manage regulatory requirement efforts.*
- *Operational excellence. A unified asset and service management approach can allow municipalities to apply operational excellence programs founded on the principles of best practices and standardization of business processes to asset and service management activities. This enables measurement of current practices and the ability to compare performance across sites, departments and locations.*

Highlights

To meet the unique requirements of municipal organizations, municipal asset and service management solutions should be highly flexible, configurable and scalable.

Asset and service management requirements for municipalities

While the primary capabilities and associated business benefits of asset and service management apply to any organization, municipalities have additional, unique requirements.

Perhaps most importantly, it is vital that municipal asset and service management solutions be highly flexible and configurable, in order to support the diverse compliance and accounting requirements of individual departments. These can range from water treatment plants, to public works, to education, to transit and airports. It should be possible to configure the application's interface and workflow to better align with each department's specific processes, and to give each decision maker an optimal view on the available data.

An asset and service management solution for municipalities should also scale to manage their great diversity of municipal assets and service provider relationships. Ideally it should also allow for the management of IT assets (servers, networks, desktop and laptop computers, software, telephony, etc.) for municipalities that are ready to move these investments into the category of assets.

In addition to supporting multiple asset classes, the solution should offer built-in features that municipalities will find particularly useful. These include workflow and automated alerts that can be associated with procurement decisions or problem escalations; modules for contract management, warranty management, labor certification and service management; built-in depreciation calculation functions for trucks and repair equipment; and so on.

Also critically important is the solution's ability to integrate with other key municipal systems in order to leverage current IT investments for maximum value. The most important integrations for municipalities include:

- *Asset performance and health monitoring systems, so that assets such as water production equipment or building systems can provide early alerts to problems and component failures.*
- *AVM and telematics systems for cars, trucks and buses, so that operations can be notified prior to a vehicle breakdown, such as when engine temperatures increase dramatically, allowing them to direct the operator to shut down the equipment.*
- *GIS applications. Municipalities need to manage linear assets, such as roadway, water/wastewater systems and power grids, in a manner that supports GASB 34 compliance and facilitates the reporting necessary to obtain state and federal funds. This effectively mandates an asset and service management solution that can integrate with GIS, so that procedures for managing linear assets and related services can incorporate spatial and geographic referents like length, mile markers, and Global Positioning System (GPS) coordinates.*
- *Linear asset modeling and pavement management software. In line with accounting and regulatory changes like GASB 34 and the American Bar Association's 2002 Model Procurement Regulations, there is a growing focus among municipal agencies and Departments of Transportation to manage costs across the linear asset life cycle with an emphasis on timely maintenance and repair over replacement. When integrated with asset and service management capabilities, a linear asset modeling application can better support an optimal balance of cost and service levels for pavement assets.*
- *Other operations systems like document management, computer-aided facility management and fuel/fluids management.*
- *ERP systems, in order to better align with budgets, transfer account information from the current general ledger and update inventory balances.*
- *Customer relationship management (CRM), to enable alignment with 311 and other citizen request systems, and to provide service desk personnel with access to historical and recent repair histories.*
- *Supply chain management (SCM) systems, in order to better manage procurement and provide logistics tracking of inbound goods.*
- *Human resources management (HRM) systems, to provide an enterprise-wide view on employees, their skills and training, and their labor reporting.*
- *Other management systems, such as business intelligence systems and key performance indicator (KPI) dashboards.*

Highlights

IBM Maximo Asset Management is a complete asset and service management solution for municipalities.

Equally important, the asset and service management solution should be built on an advanced, standards-based architecture that can mesh with evolving IT initiatives and reduce infrastructure complexity – not saddle IT with another legacy application to support and integrate.

A complete asset and service management solution for municipalities

Part of the IBM Tivoli® software portfolio, IBM Maximo® Asset Management is a complete asset and service management solution for municipalities, enabling them to monitor and manage their efforts to address regulatory requirements, improve safety and services, maximize asset performance and reduce IT and operational costs.

Maximo Asset Management encompasses all asset classes – production, linear, facilities, fleet and IT. It provides industry-leading asset modeling suited for all infrastructures, including water distribution and sewer collection networks, roadways, municipal fleet and plant and facility assets, allowing a municipality to consolidate all its asset systems onto one platform. Built-in features tailored to municipalities – such as service level agreements, service desk, mobile capabilities, contract management and standard integration adapters – help shorten time-to-value.

Maximo Asset Management streamlines both IT and business operations by unifying not only the various processes for asset tracking and asset management but also the legacy systems used for tracking and management. Maximo Asset Management also enables municipalities to manage the increasing number of service providers, whose performance directly impacts asset accountability and capital and operating budgets.

To further reduce IT complexity and improve reliability and data integrity, Maximo Asset Management manages all assets from a single, central data repository. Built on a standards-based, service-oriented, Internet-ready architecture, Maximo Asset Management supports a centralized implementation across multiple departments and locations, and it integrates with key financial and business systems, including ERP, GIS, AVM and linear asset modeling. Maximo Asset Management can be easily extended to include procurement and supply chain solutions for asset-related materials, and to provide mobile access to asset data via handheld devices like PDAs and mobile phones. This unifying framework brings technology together so that decision makers have the information they need without overburdening IT departments.

A proven solution built on decades of experience in enterprise asset management (EAM), Maximo Asset Management is the leading asset and service management solution for government and is used by over 200 municipal customers. Maximo Asset Management helps municipalities deliver higher service levels with fewer resources, while providing complete budget justification and asset accountability. Part of Maximo's portfolio of asset and service management solutions, IBM Maximo for Transportation and IBM Maximo Asset Management for IT provide additional capabilities to address the unique needs of municipalities.

For municipal governments of all sizes, Maximo Asset Management meets requirements for a pragmatic and cost-effective solution that unifies asset and service management enterprise-wide. Built from the ground up on a modern, service-oriented architecture using Java™, Web services, and other industry standards, Maximo Asset Management offers strong, long-term value with new levels of flexibility.

Summary

The management of assets and services from an enterprise perspective has long been a challenge for municipal governments, because no single solution could span their diverse requirements. The need to manage different classes of assets with different requirements has resulted in a patchwork of poorly integrated systems that cannot provide executive-level information about asset maintenance, replacement, or life-cycle history.

Maximo Asset Management provides a complete solution for asset and service management that addresses the needs of diverse municipal asset classes and the regulatory and accounting concerns of individual departments and bureaus. Now municipalities can begin to replace their disparate legacy asset management systems with a unified solution based on a Web-standard, services-oriented architecture.

For more information

To learn more about IBM Maximo Asset Management, please contact your IBM representative or IBM Business Partner, or visit ibm.com/tivoli or maximo.com

About Tivoli software from IBM

Tivoli software provides a comprehensive set of offerings and capabilities in support of IBM Service Management, a scalable, modular approach used to deliver more efficient and effective services to your business. Meeting the needs of any size business, Tivoli software enables you to deliver service excellence in support of your business objectives through integration and automation of processes, workflows and tasks. The security-rich, open standards-based Tivoli service management platform is complemented by proactive operational management solutions that provide end-to-end visibility and control. It is also backed by world-class IBM Services, IBM Support and an active ecosystem of IBM Business Partners. Tivoli customers and partners can also leverage each other's best practices by participating in independently run IBM Tivoli User Groups around the world – visit www.tivoli-ug.org



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