

Optimize Procurement and Supply Chain Operations with the IBM Smarter Asset Management Solution

IBM Redbooks Solution Guide

The IBM® Smarter Asset Management solution optimizes supply chain operations thanks to advanced contract management, program management, sourcing, and analytics. The solution is modular and scalable and is delivered in a software-as-a-service (SaaS) model, providing rapid set-up and low total cost of ownership for organizations that invest in it.

The solution (see Figure 1) can help a variety of industries meet their critical supply chain needs:

- Purchasing and logistics:
 - Asset and project lifecycle management, including maintenance programs
 - Enterprise-wide material and services procurement, including inventory management
 - Advanced logistics and transportation functions aligned with invoicing and accounts payable
- Strategic supply management:
 - Program management across all supply chain activities
 - Supplier on boarding and performance monitoring
 - Strategic sourcing supporting RFI, RFP, RFQ, and e-auctions
 - Contract management utilizing pre-defined templates, workflows, and e-signatures
 - Spend analysis based on aggregate, cleansed data from multiple systems

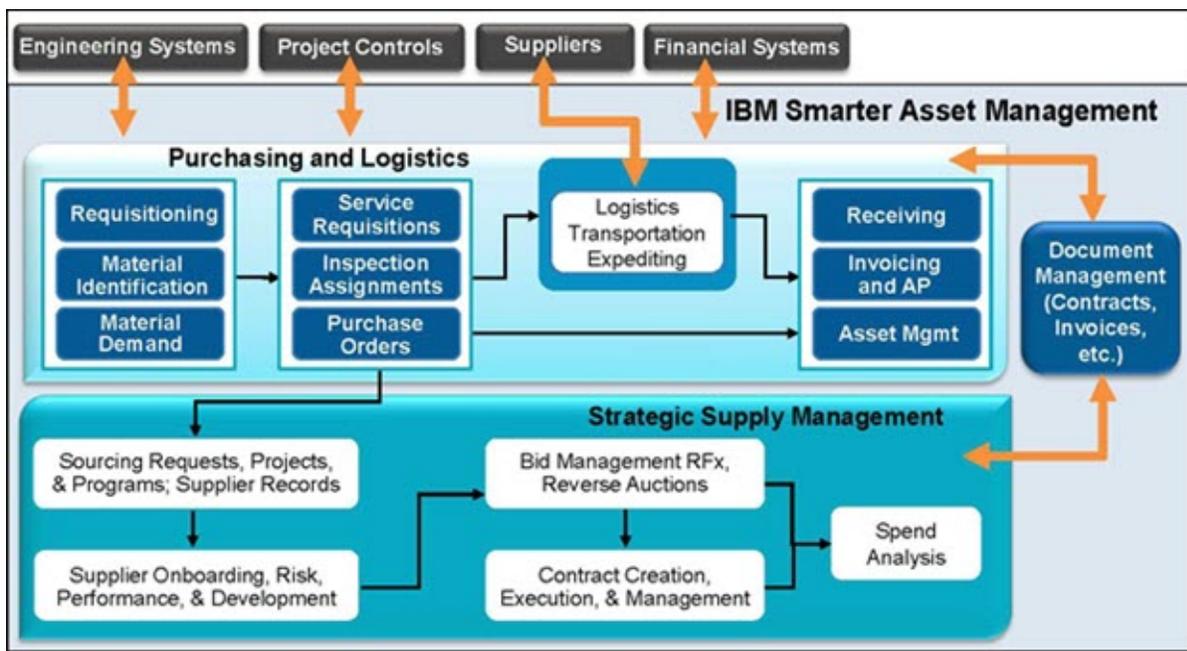


Figure 1 High-level view of the IBM Smarter Asset Management solution

Did you know?

Industry analysts such as Forrester Research and Gartner, Inc., have recognized IBM as a leader in enterprise asset management, supplier management, sourcing and vendor management, business intelligence and analytics, and enterprise content management. Further, the Smarter Asset Management solution fits perfectly within IBM's clearly defined strategy for cloud, analytics, mobile, social engagement, security, and big data, in which critical technology and business processes are increasingly delivered to clients as digital services rather than physical assets.

Business value

As corporations rely more and more on their supply chains to support product innovation and work efficiency and productivity, the role of procurement organizations has evolved from simply delivering cost savings to improving supplier performance, monitoring contracts, and proactively managing supply chain risk.

IBM Smarter Asset Management helps companies meet these specific business objectives:

- Transform the organization with state-of-the-art technologies

Companies want to transform their supply chains with industry-leading practices and improved execution. They need secure and seamless business-to-business integration, including record-keeping transactional systems. They want mechanisms for risk assessment, contract compliance, capital planning, accounts payable controls, spend analytics, and inventory and services management. And they want to use on demand services with reduced implementation costs.

Smarter Asset Management is a secure, cross-functional solution that provides enhanced, automated, end-to-end work processes that can be integrated with related existing systems. The solution uses the latest technologies in social collaboration (such as, supplier Equifax ratings to help identify and mitigate supplier risks) and mobile computing, including the ability to use mobile phone interfaces to review and approve contracts or manage inspection of equipment, facilities, and other assets. And the entire solution is delivered as a cloud-based service in an elastic, scalable, on demand model.

- Enhance the procurement and sales enablement functions

Today's enterprises seek to optimize all phases of procurement, such as direct purchasing and inventory replenishment, and to ensure that accounts payable processes tie back to their associated contracts for auditability.

The IBM Contract Management capability for example, automates procurement contract operations so companies can gain better visibility into contracts, sourcing, and spending. This component can also help eliminate paper revisions and approvals, provide better integration with financial and asset management systems, and drive stricter contract compliance overall.

- Provide a unified solution to manage all supply chain data and processes

Informed decision making is a fundamental requirement for efficient business operations, whether the topic is inventory management, contracts and procurement, or work management. Organizations need the right data in the hands of the right people at the right time to mine new business intelligence. The data needs to be trusted, shareable, and easy to update.

The IBM Enterprise Content Management capabilities provide a content repository for all asset documentation, including contracts, contract attachments, invoices, purchase orders, RFPs,

electronic signatures, and more, linking each item to its corresponding business transactions and serving as the single source of valid information. This unified approach reduces paper usage and ensures that sales people, for example, are viewing the latest contract versions and managing renewals appropriately.

- Provide new insights for better decision management

Companies need to proactively identify and address weak supplier links to make faster decisions and better manage their operational costs. They want tools that provide real-time insights into supplier performance and help to identify and address risks, such as potential supply interruptions, quality issues, or price changes. Further, they want supply chain management solutions that are guided by overarching data governance features to ensure data validity for better and more meaningful analytics.

IBM Watson™ Explorer, provides advanced content analytics and enterprise search capabilities, allowing you to compile and analyze everything from contracts, orders, and shipments to freight payment activities. IBM Cognos® Business Intelligence delivers real-time views into operational data, allowing businesses to make the best use of procurement-related global intelligence, and market research, for strategic and tactical decision making. So a company that is looking to extend its supplier chain in anticipation of higher demand for its products will be better equipped to select a supplier with top-notch quality and flexibility metrics.

- Enable cross-enterprise collaboration

With the globalization of manufacturing, supply chains have become more complex and decentralized and often lack true integration among the partners in the chain. So companies are looking to improve collaboration to connect procurement with planning, manufacturing, and distribution, and to establish strategic partnerships with suppliers and partners. But this requires that business processes and information, such as orders, inventory, contract terms, and so on, are shareable, and easily accessed, updated, and aggregated at an enterprise level.

The IBM solution provides a portal through which customers, vendors, suppliers, and other partners can collaborate on different supply chain functions, exchange information, and execute operations based on their roles. Vendors can use the portal to update and negotiate contracts, create and view awarded purchase orders, and create releases against purchase orders. Internal users can use the portal for purchasing, vendor selection and management, contracts, shipping, and logistics.

- Improve customer satisfaction

Customer satisfaction is always a top organizational goal. Poor supplier performance, such as failing to deliver the raw materials needed to manufacture a popular product, will quickly undermine a manufacturer's credibility with its customers. So organizations want solutions that help them *measure* supplier performance.

The solution's data sharing and analytical capabilities help you work more efficiently with suppliers and to measure, monitor, and control the quality of their services. For example, the system can manage all inbound and outbound shipments and designate appropriate carriers based on their rates and ability to ensure timely delivery, both of which can affect customer satisfaction. It can also use key performance indicators (KPIs) to issue early warnings about potential supply interruptions, quality issues or price fluctuations. Combined, these extended solution capabilities can help a company compete in the marketplace and extend customer loyalty and satisfaction.

Solution overview

The Smarter Asset Management solution addresses two primary functional areas:

- **Strategic supply management** helps companies impose standard processes for evaluating and onboarding suppliers, managing bids, synchronizing master supplier records with ERP systems and other sources, and automating contract preparation.
- **Purchasing and logistics** involves getting the right parts or finished products to the right place at the right time. The challenge lies in coordinating the activities of everyone from global suppliers to transportation providers to customers.

These functional areas are realized through these logical solution components:

- **Visualization:** This component offers user-specific dashboards and reports with the latest consolidated information about work orders, purchase orders, material shortages, inventories, and invoices. The solution's visualization features present supplier data from multiple source systems, providing a 360-degree view of supplier performance.
- **Business intelligence:** This component provides advanced querying, reporting, and analytical tools to derive more value from operational data. For example, users can drill down to learn how much spending is allocated to particular regions, business units, suppliers, and so on. They can even create constrained *what-if* scenarios, such as to identify best-value contract bids, or help answer common shipping performance and freight cost settlement questions.
- **Strategic supply management:** This component automates supplier-related business processes with tools to categorize prospective suppliers, assess their financial, commodity, and geopolitical risks, and initiate their onboarding and approval. It measures supplier performance using scorecards and KPIs and helps ensure that suppliers adhere to relevant regulations and maintain proper certifications.
- **Enterprise asset management:** This component provides control over all types of assets (production, infrastructure, facilities, transportation, communications, and so on) by managing them all on a single software platform. It automates all aspects of material and service requisitioning, including processing electronic invoice data and creating inspection work orders and purchase orders.
- **Transportation management:** This component supports planning and execution of all inbound and outbound transportation activities. It supports merging and distributing shipments from the same or different purchase orders and provides real-time visibility into shipment and order status.
- **Enterprise Content Management (ECM):** This component is used to manage all asset-related documentation, including contracts and attachments, invoices, purchase orders, RFPs, email copy contracts with electronic signatures, and so on. It supports document version control, classification, and audit trails, and enforces compliance with document retention policies.
- **Integration services:** This component enables the secure integration of complex business-to-business processes and can interact with systems from IBM, Oracle, PeopleSoft, SAP, JD Edwards, Salesforce.com, Siebel, Primavera, and more. Supported protocols include SOAP based, and RESTful web services.

These logical components of the Smarter Asset Management solution are depicted in Figure 2.

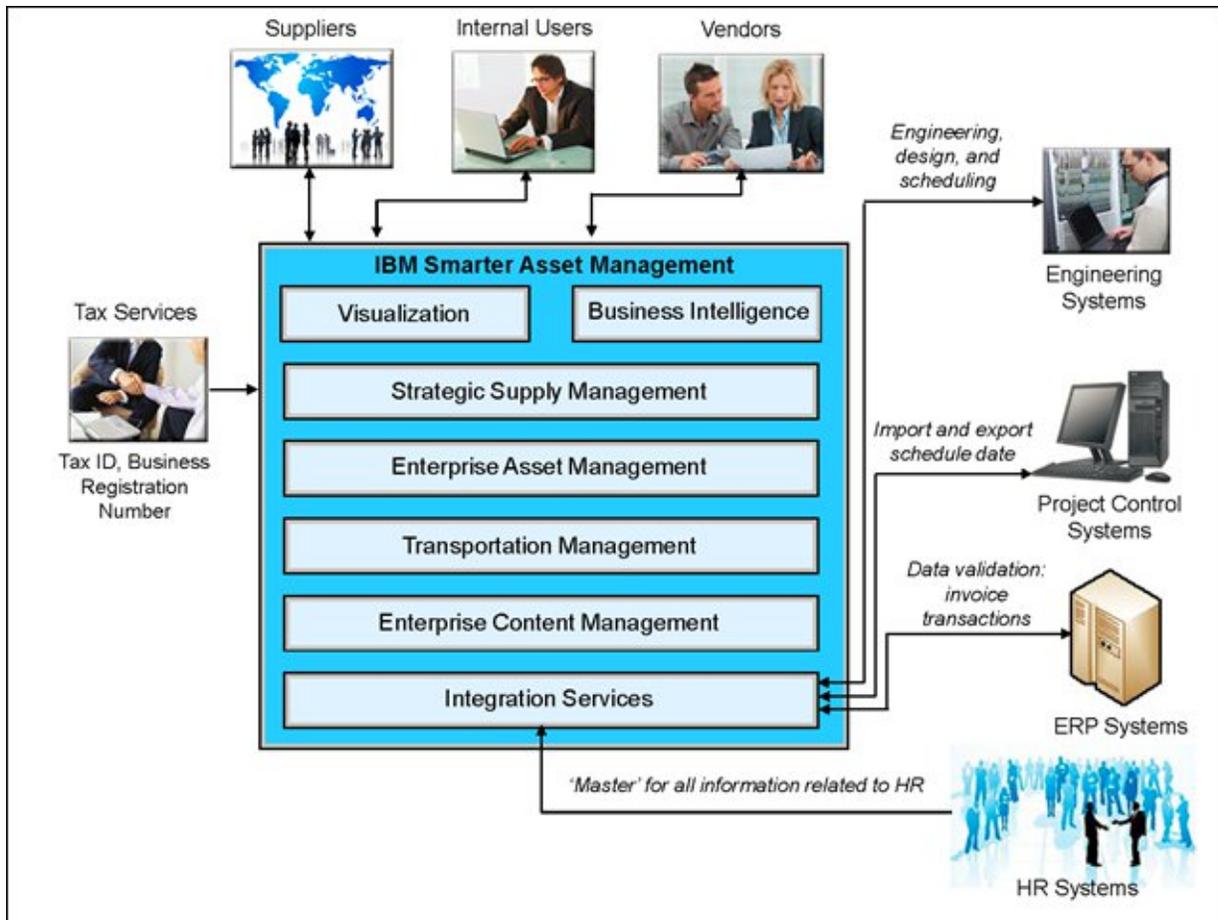


Figure 2 Major logical components of the Smarter Asset Management Procurement solution

Solution architecture

Here are additional, specific details about the IBM products that comprise the Smarter Asset Management solution.

IBM Emptoris

IBM Emptoris® is used for strategic supply, category spend, and contract management. It helps procurement organizations improve performance, capture sustainable cost savings, and mitigate risks.

The solution utilizes these specific Emptoris modules:

- Virtual Supply Master: Provides a global master repository for organizational supplier information, including search capabilities and the ability to build complete supplier profiles.
- Program Management: Establishes a framework in which to manage and monitor all procurement programs. It provides a central workspace for communication and collaboration with pre-defined processes to ensure compliance to corporate standards.
- Supplier Lifecycle Management: Establishes visibility into all aspects of supplier relationships and ensures compliance with corporate policies and regulatory requirements. It provides standard

processes for onboarding and qualifying new suppliers, including a self-service portal and related tools.

- **Sourcing:** Automates sourcing events, ranging from reverse auctions to complex multi-stage negotiations, and provides tasks for documents review, routing, and approval at any stage in the process. To compare results across multiple line items, buyers can use a sourcing decision support feature to factor in non-price information such as on-time delivery, quality, and more.
- **Contract Management:** Automates the contract lifecycle from creation to negotiation to execution, with the capability to manage obligations and enforcement related to regulatory compliance. It also assists with performance monitoring, amendments, renewals, and re-negotiation. The Contract Management Buy Side sub-component automates the contract process, while the Contract Management Sell Side component helps sales organizations optimize revenue opportunities through better sales contracts.
- **Services Procurement:** Enables companies to obtain, control, and manage complex outsourced services. It automates and streamlines the procurement lifecycle for third-party services, including time, materials, and even temporary labor.
- **Spend Analysis:** Enables companies to consolidate, cleanse, and classify spend data from multiple systems and locations. It provides current views into organizational spending so you can examine transaction details, discover ways to maximize purchasing, and prioritize opportunities for savings and risk mitigation.
- **Reporting:** Provides a central, 360-degree view of supply management activities (from program management and supplier performance through contract compliance and spend analysis) to enable deeper intelligence regarding procurement and related opportunities.
- **Integration Framework:** Uses a number of open integration methods (including APIs, user exits, web services, and so on) to exchange data with numerous applications while maintaining high security.

IBM Maximo Asset Management

IBM Maximo® Asset Management supports processes for inventory management, invoice and work order generation, inspection assignments, and accounts payable. It enables multiple assets to be managed on a single software platform, with automated interval-based, meter-based, or event-driven purchasing that helps you order the right parts and services at exactly the right time.

The solution utilizes these specific features of Maximo:

- **Asset Management:** Provides a single point of control to efficiently track and manage asset and location data throughout the asset lifecycle.
- **Procurement Management:** Supports all phases of enterprise-wide procurement, providing users with extensive requisition, quotation, vendor, purchase order, and contract capabilities.
- **Contract Management:** Manages vendor contracts with comprehensive support for purchase, lease, rental, warranty, rate, master, blanket, and even user-defined agreements.
- **Inventory Management:** Provides asset inventory details (what each item is, when it arrived (or must be shipped), where it is located, how many there are, and how valuable each one is) and records all movements and adjustments to manufacturing materials, allowing for real-time material tracking, reporting, and auditing.
- **Work Management:** Covers both planned and unplanned work activities, from initial request through completion and recording of results.

- **Service Management:** Supports tracking and updating open service requests, monitoring service delivery, and implementing escalation procedures. This feature is also used to create and manage service level agreements (SLAs).
- **ERP Adapters:** Pre-configured adapters for Oracle and SAP are available as add-ons and can provide end-to-end integration and real-time information exchange.
- **Reporting:** Analyzes vast amounts of data to fulfill increasing regulatory and asset management reporting requirements for the physical asset management life cycle (including designs, buildings, power plants, water management, supporting equipment and services, and so on).
- **Integration Framework:** Enables synchronization and integration of data and applications within the enterprise or with external systems. The framework architecture includes the data, transport, communication, and security components required to exchange information between separate applications and systems.

IBM FileNet P8

The IBM FileNet® P8 is an enterprise content management platform that is used in the solution to unify and manage the information assets produced by Emptoris and Maximo. The FileNet P8 platform helps you capture, classify, manage, and store business-related digital assets with centralized, secure access and control. It provides the ability to link procurement-related documents (such as invoices, vendor data, and purchase orders, inspection instructions, contract attachments, and so on) to their corresponding business processes.

IBM Sterling

IBM Sterling is a portfolio of commerce solutions and includes IBM Sterling B2B Integrator, a transaction engine and toolkit that allows you to define, create, implement, and manage business processes involving trading partners, including suppliers. It automates the complete buy-sell-ship-pay process, supporting communication with anyone, in any way, and regardless of protocols, data formats, and preferred communication methods.

IBM Cognos Business Intelligence

The solution uses IBM Cognos Business Intelligence to deliver business intelligence capabilities, such as reporting, dashboards, and scorecards. You can analyze shipping and freight payment data, perform program monitoring using dashboards, and prepare contract status reports to track key milestone activities.

IBM Watson Explorer

IBM Watson Explorer is a platform for developing and deploying enterprise information navigation and search applications. For example, to help you prepare for supplier negotiations, Watson Explorer supports custom (federated) searches that can return data on recent supplier activities, news reports about the supplier, credit information, blog entries, and chat messages. Data from multiple reports can be fused into single view to show relationships between the different data points, such as viewing performance data alongside cost savings data.

The solution architecture is depicted in Figure 3.

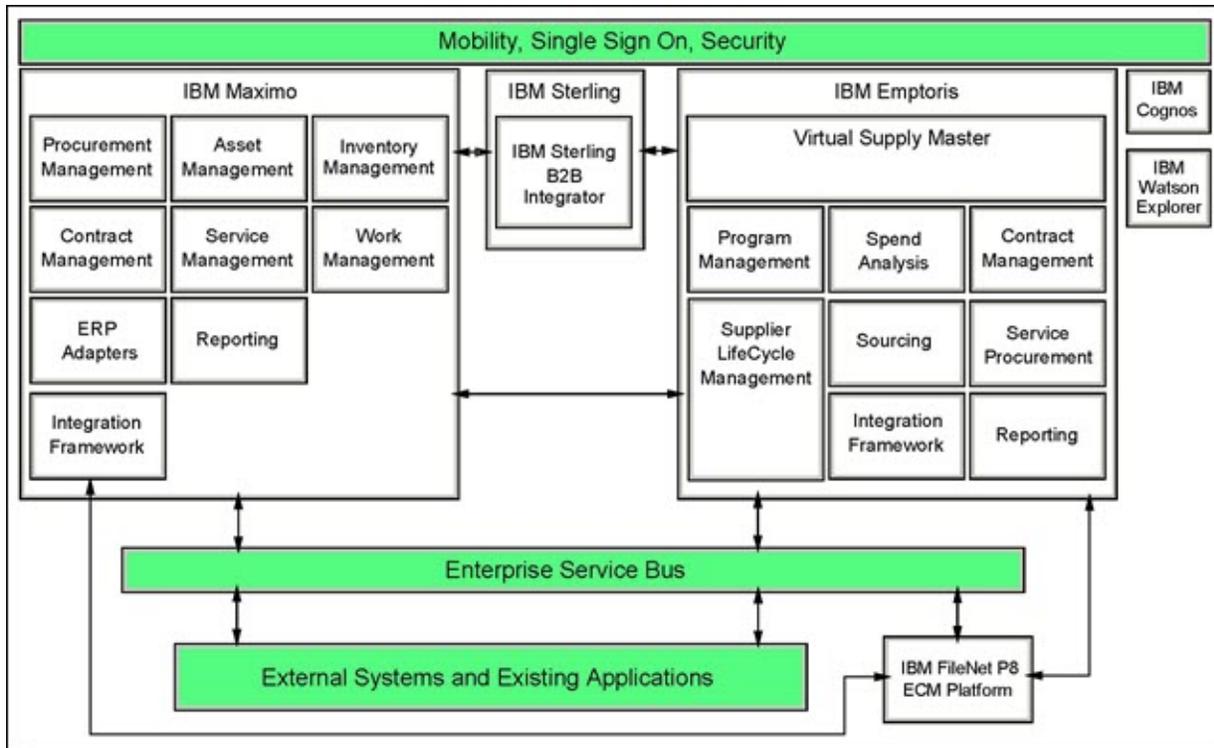


Figure 3 Smarter Asset Management solution architecture

Usage scenarios

Several example use cases (see Figure 4) demonstrate how procurement operations are enhanced with IBM Smarter Asset Management, which optimizes data exchange and makes supplier performance management more efficient.

Supplier lifecycle management

This use case describes the Smarter Asset Management solution's ability to create a 360-degree view of suppliers to enable more effective supplier and risk management.

Typically, new supplier relationships are initiated when the company sends inquiries to potential suppliers and asks them to answer a questionnaire about their services. Suppliers that draw the company's interest are directed to apply (onboard) through a self-registration portal that is part of Emptoris.

Each new supplier is onboarded using the Emptoris qualification workflow, which, among other things, enables a potential new supplier to be compared against others based on established market standards. The company's supplier manager then uses another feature of Emptoris to segment suppliers according to strategic importance or into categories such as preferred, alternate, or no longer in use.

Emptoris supports supplier validation activities by accessing data from third-party providers of business data, tax identification numbers, export privilege authorities, and so on.

The supplier manager can then use Emptoris to evaluate and assess supplier strengths and weaknesses against market standards and their performance in previous transactions under their contract. The supplier manager uses the solution to define a *risk profile* for potential new suppliers based on data such as its number of employees, annual revenue, country location, and products and services provided.

After a new supplier is approved for doing business with the company, updates are passed from Emptoris to Maximo, where a corresponding record is created.

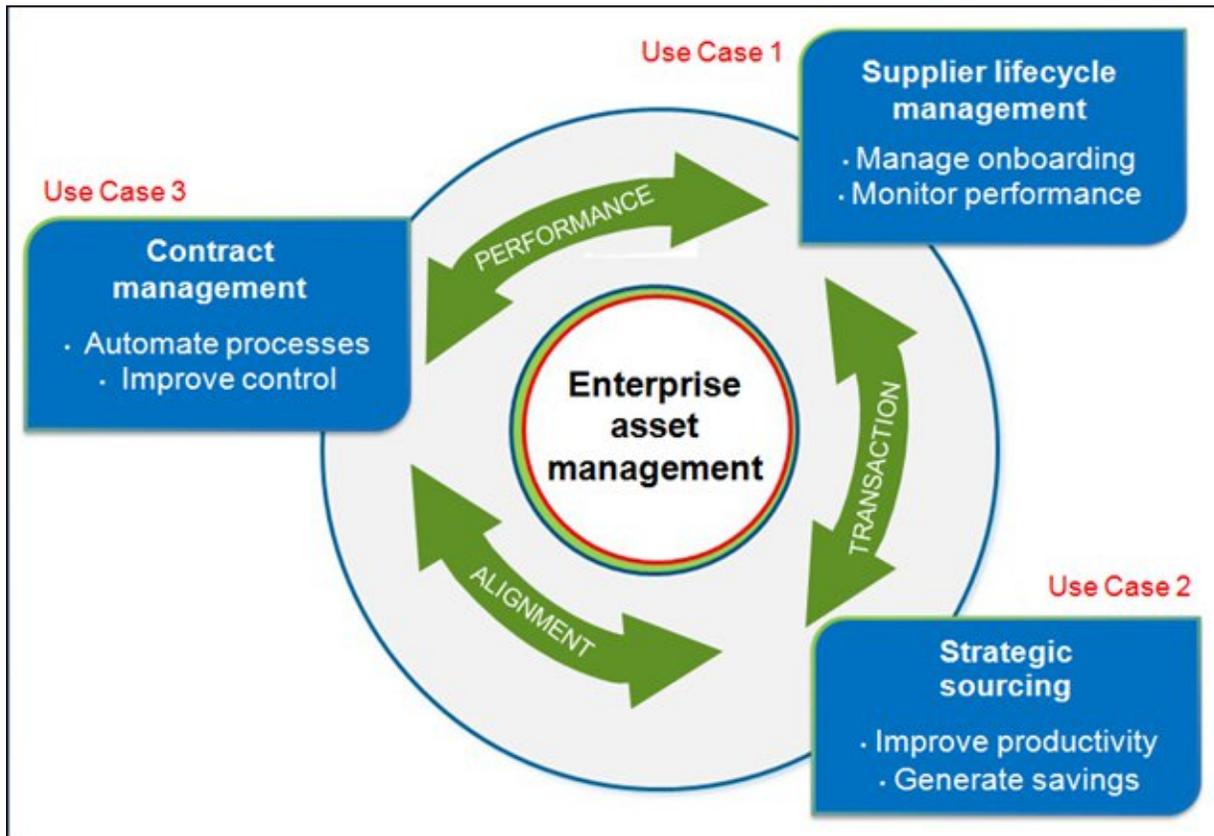


Figure 4 Smarter Asset Management usage scenarios

Strategic sourcing

Today's procurement organizations work with global teams to purchase goods and services for the enterprise. This use case describes the use of the Smarter Asset Management solution's advanced supplier selection and decision support tools to mitigate global sourcing risks and choose the best source for a particular product.

When a sourcing manager receives a purchase requisition for a particular new product, he starts by entering appropriate line items about materials and quantity into Maximo. This action triggers the Emptoris supplier selection workflow and creates a sourcing task in Emptoris. Another sourcing manager (or possibly the same one) then uses Emptoris to prepare an RFP with necessary product specifications, delivery and service requirements, and evaluation criteria. Next, the sourcing manager searches Emptoris for existing suppliers that are already providing similar products to the organization, and can limit the results based on additional criteria such as the supplier performance scorecards that the solution can generate. He then selects potential suppliers to participate in the RFP.

The identified suppliers receive automated email notifications when an RFP opens and submit their bids using the Emptoris public-facing web interface. The sourcing manager can monitor bid submissions based on categories such as the date each bid was requested, acknowledged, declined, received, and so on.

With the bids received, the sourcing manager applies appropriate evaluation criteria, which can include non-price information such as KPIs about quality or on-time delivery. The sourcing optimization capabilities of Emptoris help the sourcing manager understand the impact of different supplier selection

scenarios and initiate any needed discussions with potential suppliers before moving to the contract creation stage.

Using IBM Watson Explorer, the sourcing manager can search for additional information about the supplier such as recent deals with other companies, stock value and credit information, and even recent news articles that could be useful in negotiating the best deal on the wanted product.

Once the preferred supplier is selected, the solution passes pertinent information from the sourcing process to Emptoris Contract Management, where contracts are prepared and executed.

Contract management

Contracts are the foundation of any business enterprise. This use case describes using the Smarter Asset Management solution for an end-to-end contract workflow that eliminates the confusion and additional overhead that comes with building contracts using in-house applications or commercial word processors and spreadsheets. Instead, with the new IBM solution, contract managers utilize pre-defined contract templates with approved legal and business language, and receive automated alerts when critical contract-related reviews are due.

This scenario picks up where the previous one left off, with the transmission of pertinent details about the pending deal being passed from Maximo to Emptoris. At this point, a contract manager enters additional contract specifications into Emptoris and uses the Emptoris contract template library to ensure the ultimate agreement uses approved language and meets the company's legal and business standards. Emptoris then triggers the necessary follow-up actions, such as alerting appropriate solution users in other departments to review and approve the draft contract.

When the contract is finalized and approved in Emptoris, a notification is sent to Maximo, where the contract can now be executed to enable the first purchase of the new product. The contract can also be stored in PDF format in FileNet, which allows appropriate company employees to view it (such as for finding ideas for new, upcoming contracts) without having to be authorized Emptoris or Maximo users.

Integration

The Smarter Asset Management solution has primary interactions with these external systems:

- Vendor management systems: The solution interacts with systems from SAP, Oracle, and other commercial procurement systems that maintain vendor repositories.
- Existing applications: The solution can interact with existing IT applications, including proprietary ones. For example, the solution can copy lists of potential suppliers from a third party provider. It can also exchange purchasing and financial data with systems, such as Oracle ERP, PeopleSoft, SAP ECC, SAP SRM, JD Edwards, Salesforce.com, Siebel, Browz, Coupa, and more.
- Tax services: The solution can interact with tax services for things such as a supplier's tax identification number.
- Human Resources systems: The solution can interact with Human Resources (HR) systems to retrieve HR-related master data, such for granting access to employees in specific job roles.
- Project control systems: The solution can interact with project control systems such as Primavera for import and export schedule dates.
- Engineering systems: The system can interact with engineering systems such as Aveva, Intergraph, and Bentley that are used to exchange engineering, design, and scheduling information.
- Banking Systems: The solution can interact with banking systems to support accounts payable and electronic funds transfer.

Supported platforms

IBM Smarter Asset Management is platform agnostic. To simplify delivery and deployment, the solution is delivered as a service in a cloud infrastructure. This cloud-based approach also streamlines management and maintenance and can result in a lower total cost of ownership.

Ordering information

To initiate a purchase of IBM Smarter Asset Management, or just to learn more about the solution, use the “Email IBM” link on the IBM Enterprise Asset Management web page:

<http://www-03.ibm.com/software/products/en/category/enterprise-asset-management-eam>

Related information

Visit these locations to learn more about the products that comprise the IBM Smarter Asset Management solution:

- IBM Emptoris:
 - General information:
<http://www-01.ibm.com/software/info/emptoris>
 - Strategic Supply Management:
<http://ibmurl.hursley.ibm.com/N2BU>
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 - *IBM Watson Content Analytics: Discovering Actionable Insight from Your Content* (IBM Redbooks® publication):
<http://www.redbooks.ibm.com/abstracts/sg247877.html?Open>
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