



Tivoli software

IBM Service Management and MRO Software Maximo—synergies, convergence and roadmap.



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Executive summary

Today’s enterprises are faced with the management of increasingly complex IT environments, an issue that IBM addresses with IBM Service Management solutions from Tivoli®. These industry-leading service management solutions enable customers to better understand their IT environments by discovering business critical application components and their inter-relationships. This capability, together with out-of-box best practice service management processes and tasks, provides customers with a more effective and efficient way to manage their IT environment, while controlling cost and mitigating compliance risk. IBM’s recent acquisition of MRO Software provides us with the opportunity to strengthen our solutions and extend them beyond IT for solving these types of enterprise-wide service management problems.

As more types of corporate assets are touched by technology, companies are also looking for ways to consolidate how they manage these assets—both operational and IT-related. IBM’s acquisition of MRO Software addresses this need by providing customers with a consistent, comprehensive set of asset management solutions. IBM will integrate MRO Software’s product portfolio, which provides clients with a single approach to managing all industrial and IT assets, into the IBM Service Management strategy. As a result, IBM will be the only company to provide such a comprehensive solution to managing this convergence of IT and industrial assets. Since MRO Software’s offerings are built on a modern standards-based architecture, they can be easily integrated into IBM’s service-oriented architecture (SOA)-based capabilities, including business process management and IT service management.

Consider a customer in the package delivery and logistics industry. Their business services include not only IT systems for ordering, managing and tracking, but also other assets such as trucks, planes and conveyor belts for delivering the packages. For this customer, business services are delivered not with IT assets alone, but a combination of IT and industrial assets, brought together in a way that provides critical, timely and competitive business services. Having an integrated set of management tools for handling assets and processes and automating repetitive tasks across the entire enterprise would be a significant step toward realizing true service management.

In addition, they would be well prepared for the convergence of IT and non-IT assets. In order to improve manageability, many non-IT assets have become “IT-enabled assets,” by taking on IT attributes such as network IP addresses. It is becoming more common to see generators, power meters, hospital instruments and other industrial assets networked and managed by systems management software tools.

As part of managing both enterprise-wide IT and non-IT assets, service management applies to many common processes and methods, including human collaboration, work management, chargeback, notification and escalation, process automation and business service management. Therefore, even though there may be multiple classes of assets and other resources being managed, there are clear advantages in providing a consolidated best-in-class platform that can be shared across a set of service management solutions.

Highlights

IBM's presence in the service management marketplace aligns strongly with MRO Software's solutions and applications

MRO Software has nearly 10,000 customers across vertical industries such as utilities, oil and gas, pharmaceuticals, manufacturing, healthcare, government and telecom. The organization has long been on the service management path, offering a single platform and incorporating their expertise in Enterprise Asset Management (EAM) and IT service management. IBM's strategy to aggressively expand its presence in the service management marketplace aligns strongly with MRO Software's rich out-of-box solutions and applications based on its Maximo® platform.

IBM will accelerate its strategy by incorporating Maximo's best-in-class capabilities into an enhanced service management platform that includes advanced tooling, work management and standards-based interfaces. These enhancements will be carefully orchestrated to provide:

- *Accelerated value to EAM and IT service management marketplaces through rapid delivery of critical features and new market-leading solutions.*
- *Delivery of product enhancements and continued alignment with customer-validated strategic initiatives and platform guidelines.*
- *Preservation of existing customer investments, enabling non-disruptive adoption of existing and new capabilities while increasing value to the customer.*

In addition to leveraging the MRO Software capabilities within the IBM Service Management portfolio of products, we plan to increase the investment on existing MRO Software EAM products in addition to delivering the roadmap outlined in this paper. The specific areas of increased investment in EAM are expected to include:

- *A Nuclear Industry Solution for the nuclear power industry.*
- *A Transmission and Distribution Industry Solution for the utility industry.*
- *A Service Provider Solution for outsource service providers who manage the assets of other organizations.*
- *A new Government Industry Solution.*

We will also increase investment in the base Maximo product, which will enable accelerated deliveries of capabilities such as support for linear assets.

Highlights

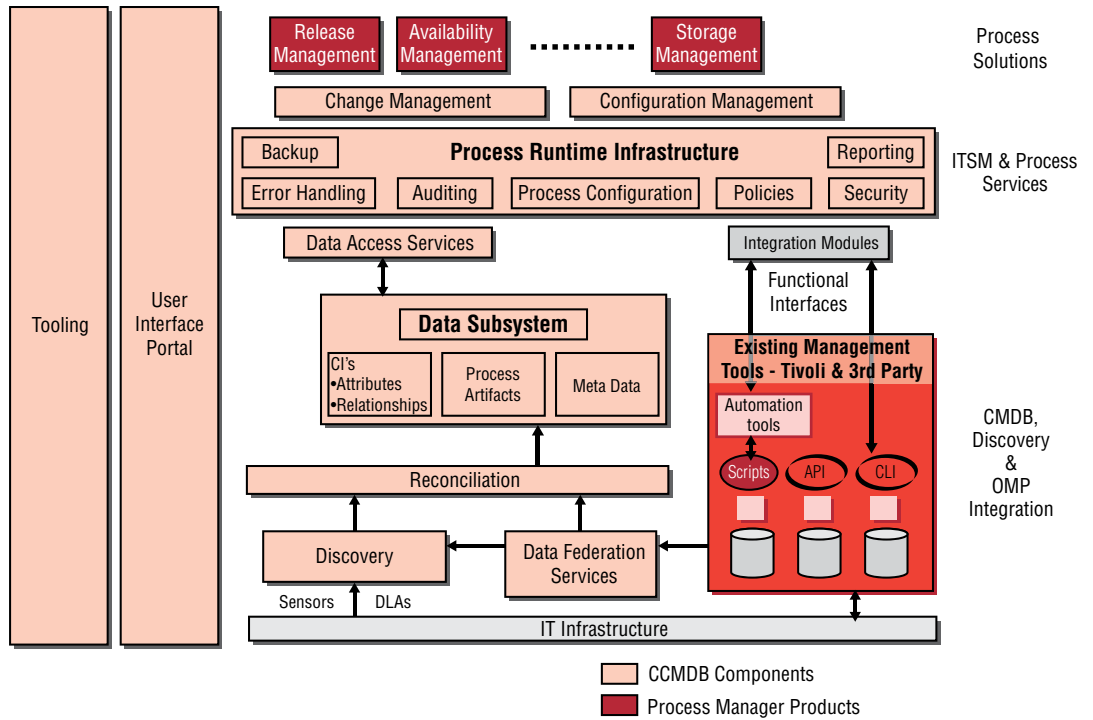
**IBM Service Management strategy supports
ITIL-defined processes****Converging industry-proven platforms and processes**

Faced with issues such as compliance, cost pressures and complexity of the IT infrastructure, customers today are making immediate decisions on process platforms to support IT service management. Many customers have accepted IT Infrastructure Library® (ITIL®)-defined processes as best practices for IT service management and are looking for vendor solutions that demonstrate ITIL alignment with out-of-box processes, workflows and task templates, as well as maximum flexibility and configurability of data, processes and user interfaces (UIs). To address these needs, the IBM Service Management strategy outlines a set of platform guidelines that have been validated by customers worldwide. Continued adherence to these guidelines is a key requirement for the IBM Service Management portfolio.

The platform guidelines are designed to:

- *Improve effectiveness and efficiency of processes by integrating people, processes, data and technology.*
- *Provide a robust, open, standards-based platform by leveraging industry-proven IBM middleware components.*
- *Provide a single, federated configuration management database (CMDB) with powerful configuration and change management processes to manage its content.*
- *Enable auto-discovery of business critical resources and provide capabilities to visualize their interdependencies.*
- *Provide tooling to rapidly develop process managers within and outside of IBM.*
- *Provide consistency and plug-n-play of process managers, including UIs.*
- *Enable configurability of UIs and policy and process workflows.*
- *Enable processes to seamlessly integrate with operational management products (OMPs) to drive automation tasks.*
- *Preserve customer-specific configurations during migration and upgrades.*
- *Enable rapid time-to-value by minimizing the impact of deployment.*
- *Provide out-of-box capability to measure and report on service management process performance.*

Figure 1: IBM Service Management Platform Version 1.1 Architecture

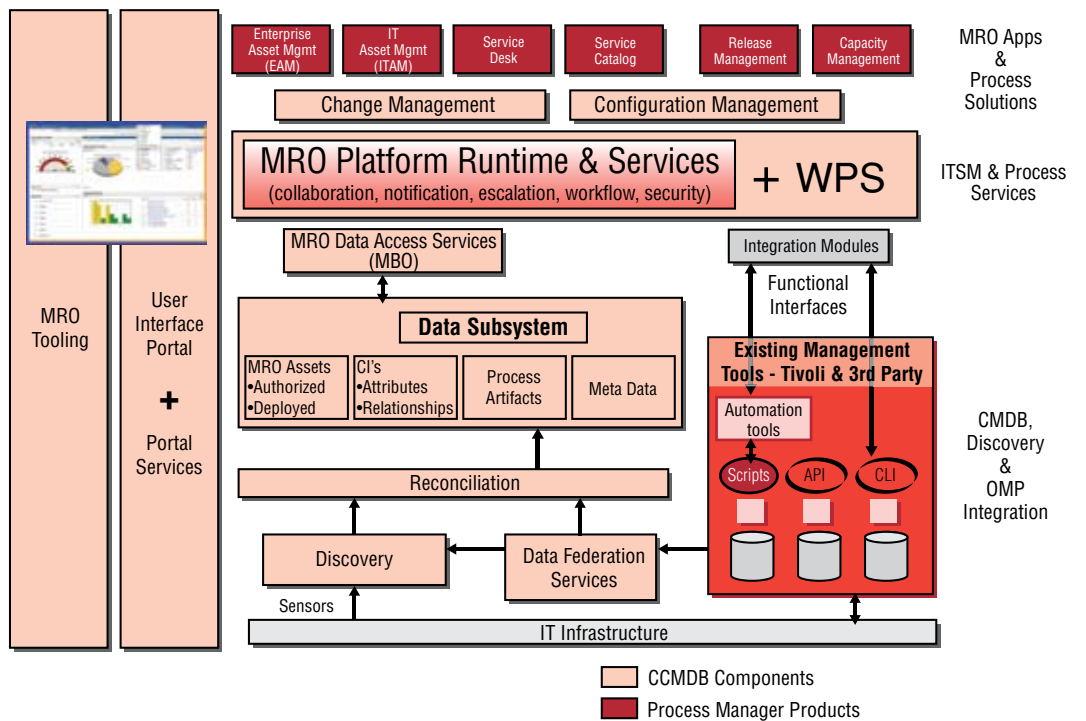


The IBM Service Management Platform Version 1.1 architecture, shown in Figure 1, implements many of the guidelines listed above. It does so by leveraging best-in-class technologies, industry standards and proven best practices such as:

- A Common Information Model (CIM)-based data model that has been extended to support additional object types and attributes.
- WebSphere® Process Server software to implement and execute process workflows.
- WebSphere Portal Server software to consolidate and enable plug-n-play process UIs.
- WebSphere Information Integrator to federate data from multiple source types.
- SOA-based OMP integration to drive automation tasks from processes.
- Rich out-of-box process templates based on industry-proven IBM Global Services best practices.
- Common services such as Common Base Event (CBE), Lightweight Directory Access Protocol (LDAP) and Web Services.

The acquisition of MRO Software provides a significant opportunity to further accelerate the implementation of the IBM Service Management platform guidelines without compromising the strategic choices that were already made for the Version 1.1 platform. This acceleration is mainly possible due to the rich functionality that Maximo provides out-of-box to not only enhance existing solutions but also build new ones rapidly to address immediate market needs. Further, once a solution is built and delivered, it can be easily configured by the end user to meet specific customer needs and preserved during migration or upgrades with minimal impact to the customer.

Figure 2: IBM Service Management Platform Version 2 Architecture



Some of the key areas where Maximo accelerates IBM Service Management are:

- *Consolidated platform to manage all asset classes throughout the life cycle.*
- *Rapid development of new solutions using Maximo's built-in 'code-free' tools such as Application Designer, Workflow Designer and Data Configurator.*
- *Configurability of workflows, data and UIs, allowing customers to tune service management to meet their specific needs.*
- *Ease of database configuration and extension to meet custom requirements.*
- *Preservation of customer-specific changes across migrations and upgrades.*
- *Ease of collaboration within applications and processes and across operational domains.*
- *Out-of-box integration of service management and asset management functions to seamlessly execute cross-domain process activities.*
- *Ease of deployment and rapid time-to-value.*
- *Core services to configure and use escalation, notification and task management.*
- *Well-integrated security administration and single sign-on authentication with the ability to implement location- or organization-specific security.*

The Maximo Version 6.1 platform broadly aligns with the IBM Service Management platform guidelines and as such blends easily with the platform architecture.

Highlights

Integrating IBM and MRO Software augments solutions for existing and emerging markets

Both IBM and MRO Software have built their platforms using industry-proven technologies that focus on ease-of-use, standards and interoperability. MRO Software's strengths in integrated tooling and mature collaboration are complementary to the service management strengths of Tivoli in using standards-based process runtime (WebSphere Process Server), federated CMDB, discovery and OMP task automation. Integrating the two provides the combined strength required to augment solutions for existing markets and rapidly develop new solutions for emerging markets.

Directions for preserving and evolving key capabilities

IBM plans to preserve and evolve existing service management capabilities in eight key areas.

Process tooling

Tivoli process management solutions will incorporate MRO Software's application tooling and be delivered on the enhanced IBM Service Management platform. This allows professional services and end users to easily customize and deploy extensions to the best practice process management solutions. Further, new applications such as the Service Catalog, Service Level Management and Financial Management Processes will be built and integrated with other process management solutions.

User interface

Maximo's rich UI framework and tooling for configurability of forms, menus and fields will be preserved in the enhanced platform. In addition, it will be enhanced to support Java Specification Request (JSR) 168 standards and run within the WebSphere Portal Server and IBM Integrated Solutions Console framework, thus enabling customers to create industry-standard IT portals that centralize access to all their IT applications. In a separate initiative, Integrated Solutions Console is being adopted across IBM products as a way to provide consistency of design and common UI operations.

Workflow and work management

Maximo's out-of-box workflow and work management capabilities will be preserved to support existing customers and also implement new service management solutions. In addition, the strengths of our existing WebSphere Process Server platform for defining, executing and monitoring workflows will be preserved to enable Maximo to execute Business Process Execution Language (BPEL)-based workflows. This approach allows the coordination of Maximo applications to go through a WebSphere Process Server process which can therefore be defined and monitored using the WebSphere portfolio of products, including WebSphere Business Modeler and WebSphere Business Monitor. In addition, WebSphere Process Server capabilities can be used to provide cross-domain integration capabilities including integration with business systems, service desks, project management systems, and others. Strategically this will leverage the Enterprise Service Bus (ESB) middleware capabilities and SOA platforms to integrate across business and IT domains.

Discovery

Our current discovery capabilities will be preserved along with the Discovery Library Adaptor (DLA) methodologies to import data into the IBM Tivoli Change and Configuration Management Database (CCMDB). We will continue to build new sensors and DLAs using this technology. The enhanced platform will support a consistent approach for discovering both IT and non-IT assets using this tooling.

CCMDB

The enhanced CCMDB will preserve a single federated CMDB leveraging the data model resident in the current Tivoli CCMDB and also incorporate the data extensibility tooling available in Maximo. It will continue to provide a broad set of relationships across multiple disciplines of service management. Further, to leverage the adjacency between IT asset management and IT service management, the data subsystem within the CCMDB will be enhanced to enable cross-domain functions such as asset reconciliation and invoice validation.

The enhanced platform will preserve our goals to improve the quality of data stored in the CCMDB by leveraging best-in-class methods such as user input constraints, identity reconciliation, data normalization, data prioritization and scheduled synchronization from both current IBM Service Management and Maximo platforms. Improving the quality and accuracy of the information in the CCMDB, regardless of where it came from or how it was input, enables customers to quickly realize significant value from their service management solutions.

Federation

The enhanced CCMDB will continue to leverage current CCMDB core capabilities like WebSphere Information Integrator to facilitate the creation of federated views. These views will continue to be available to multiple PMPs and OMPs. Further, to rapidly improve consumability and field configurability of this feature across all IBM Service Management solutions, federation will be incorporated as a core service in the enhanced platform using Maximo's application tooling capabilities.

Task automation

The current architecture for automating tasks through OMPs will be preserved. This will leverage the current SOA-based definition of the Integration Module interface, allowing both humans and workflows to seamlessly drive automation through the OMPs.

Integration

The enhanced IBM Service Management platform will continue to preserve IBM's commitment to open standards. Integration with IBM as well as third-party products such as service desk, auto-discovery and asset solutions will be possible using standard mechanisms such as Extensible Markup Language (XML), Web Services, SOA and BPEL.

Extending asset and service management

The strength of Tivoli in software asset management combined with MRO Software's IT asset management capabilities delivers a comprehensive IT asset management solution that covers end-to-end platforms for both hardware and software. The combined IBM and Maximo Asset Management for IT portfolio consists of the Tivoli License Compliance Manager for z/OS, which discovers mainframe inventory, software use and license use and links to license entitlements; Tivoli License Compliance Manager, which discovers distributed inventory, software use and license use and links to license entitlements; and IBM Maximo Asset Management for IT, which provides contract management, procurement, and asset management lifecycle tracking.

The extended IBM Maximo Asset Management for IT product portfolio yields the following benefits.

- *Control the cost and financial impact of your IT assets and service management initiatives*
 - Identify software inventory with no or low use to redeploy these assets or reduce unnecessary license fees
 - Monitor software use and related growth to plan cost-effectively for future capacity needs
 - Help make funds available for key business services
 - Help catch vendor invoice errors by comparing bills against negotiated prices, terms and conditions
 - Reduce penalties for unreturned leased assets
 - Reduce software and hardware purchasing, maintenance and support costs
- *Mitigate the risks associated with software licenses and help address regulatory compliance*
 - Help manage and verify software license compliance by automatically identifying mainframe and distributed license use activity and comparing this use to license entitlements
 - Minimize maverick software and hardware purchasing through centralization
 - Reconcile actual deployed assets with authorized assets (those purchased and under contract)
- *Better align IT operations with business priorities through a comprehensive view of all critical IT business processes*
 - Increase return on assets through the ability to manage all asset classes throughout their life cycle from procurement to retirement
 - Conveniently store and manage IT contract details for hardware and software purchases, leases and maintenance agreements, within a central repository
 - Receive notifications, access scanned contracts and view comparisons of key terms and conditions to prepare more effectively for contract negotiations
 - Provide a streamlined process for procurement and receiving of IT assets

Highlights

Maximo's asset management capabilities will seamlessly integrate with IBM Service Management through the CCMDB. This gives asset management and service management process managers access to critical data in each other's domains. For example, users of the change and release management processes will be able to check license entitlements before approving a change request to roll out a new version of software. Configuration managers will be able to identify hardware and software that is discovered by asset discovery tools. Capacity managers can utilize software usage information when determining future configurations. Financial managers can use asset costs with chargeback and resource cost allocation processes. In turn, asset managers will be able to utilize configuration management data to validate the usage of assets, and change management data can be used when relocating assets.

In today's volatile, ever-changing IT environment, the service desk delivers critical support to the entire organization by keeping key business systems and services available and reliable. IBM Tivoli Service Desk, formerly known as Maximo Service Desk, is a core component of the Maximo platform and seamlessly integrates with Maximo asset management products to enhance asset management practices.

Service desks are critical for keeping business systems and services available and reliable

Tivoli Service Desk significantly strengthens the IBM Service Management strategy. MRO Software designed Service Desk from the ground up on ITIL best practices for service support and delivery.

IBM Tivoli Service Desk offers the following benefits.

- Automate incident and problem management processes for more rapid service restoration at an appropriate cost
- Increase availability of critical IT services and reduce disruptions
- Streamline service desk operations and increase service support efficiencies
- Align IT operations and business requirements with service level management, workflow and escalation capabilities
- Support the entire enterprise by managing IT and non-IT related service requests such as HR, facilities and finance
- Help leverage ITIL guidelines and other best practices

The road ahead

IBM will continue to offer and enhance the Maximo product suite. Figure 3 shows our plans for migration of Maximo products into the Tivoli portfolio.

Figure 3: Maximo Product Suite Migration

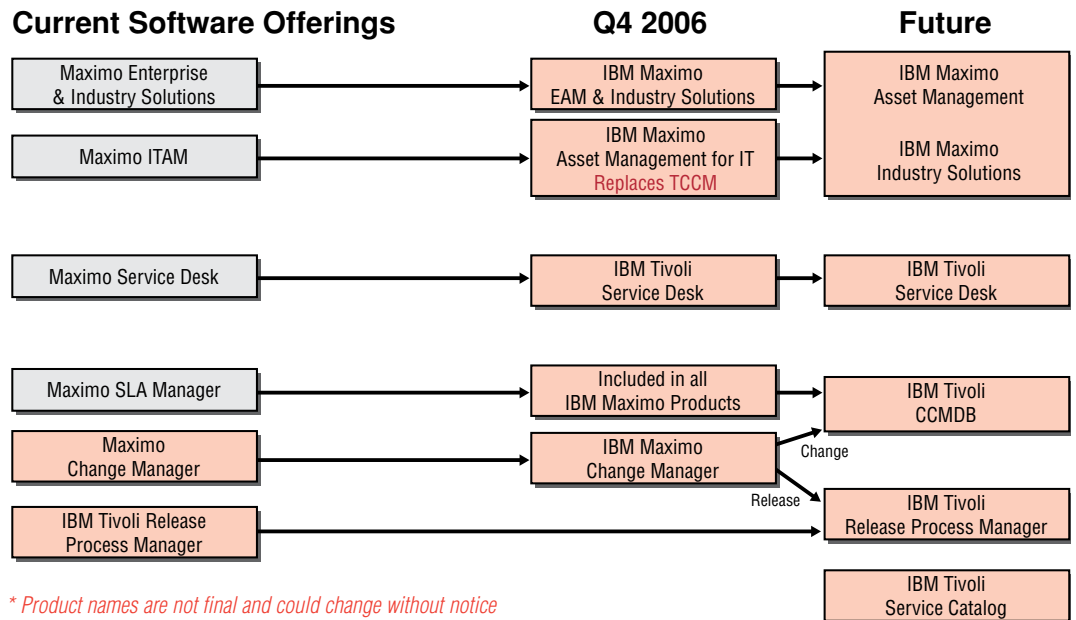
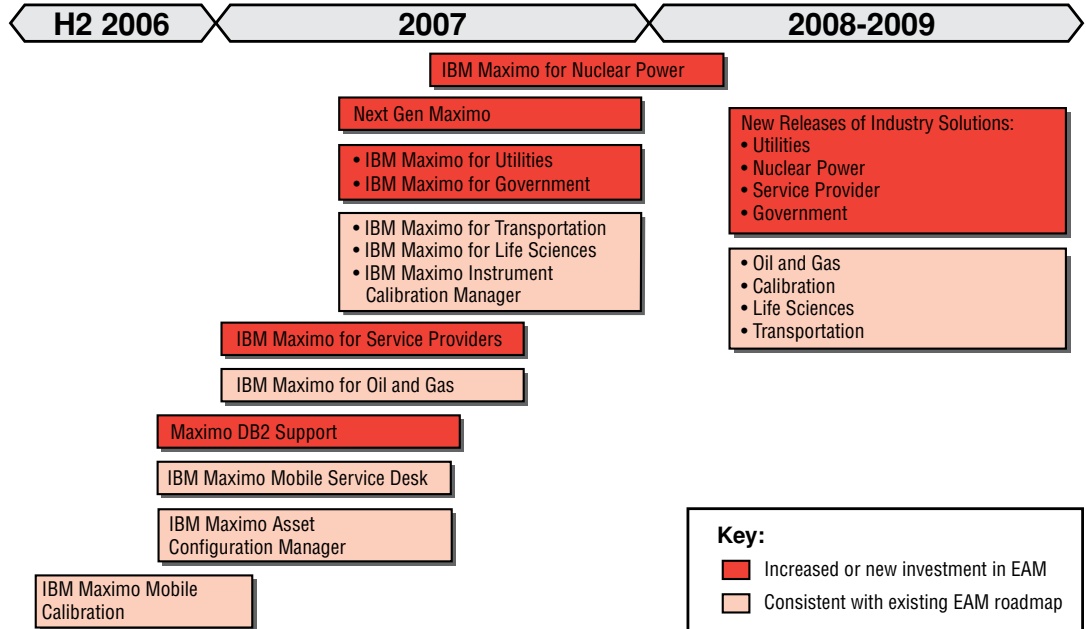


Figure 4: Enterprise Asset Management Roadmap



MRO's Maximo tooling will deliver a significant set of enhancements to the Tivoli CCMDB. To ensure we maintain our focus on rapid customer value, we will deliver these enhancements in phases. These phases are designed to accelerate value to our customers while protecting customer investment to both the EAM and the IT service management marketplaces.

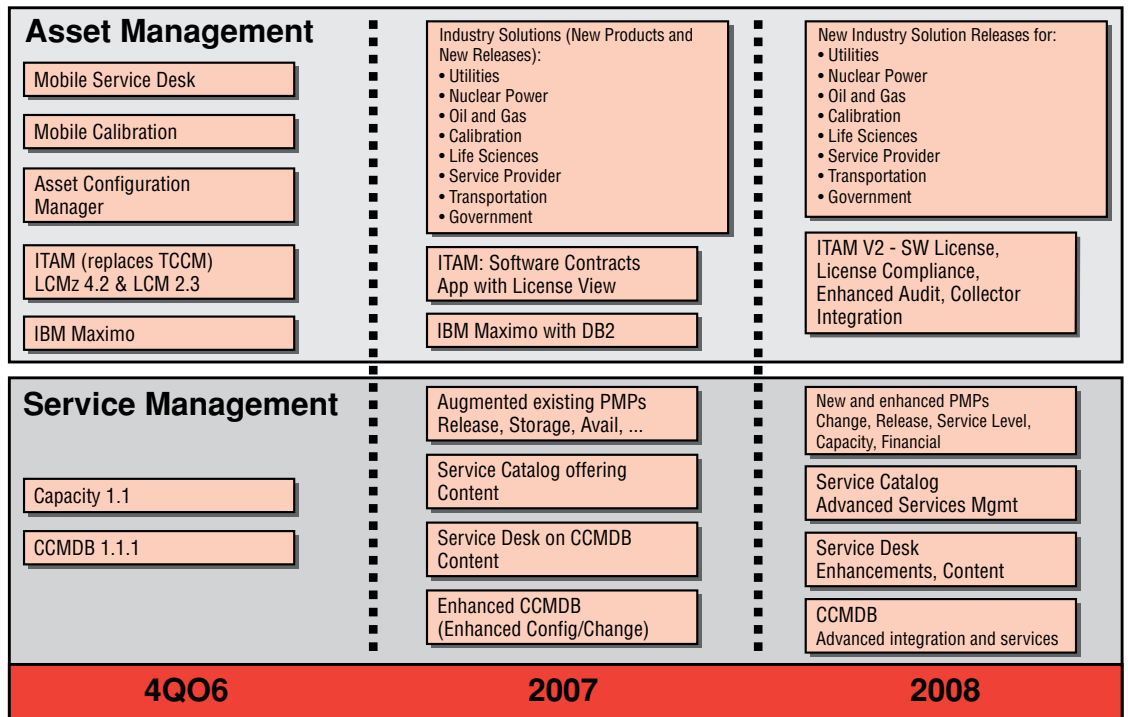
The roadmap for integrating Maximo into the Tivoli portfolio includes integration of the asset data model with the CCMDB, leveraging the MRO capabilities around process customization and management as well as leveraging the asset management capabilities and industry-specific solutions. Further, emphasis will be placed on integration with evolving solutions such as the Service Request Process and Service Catalog, which are being built on the same platform.

Conclusion

The integration of MRO Software and Tivoli is a blending of the strengths of the two technologies to deliver a one-of-a-kind integration platform for asset management and service management, while still preserving existing customer investments. This platform for service management will provide:

- Consolidated infrastructure for EAM, IT asset management and service management.
- An “enterprise asset aware” platform and processes.
- Integration with a federated CCMDB with rich discovery and application mapping capabilities, reconciliation and extensibility.
- Integrated configuration and change management processes on a process runtime infrastructure.
- Comprehensive and easy to use tooling to customize and configure user screens and processes, integrated with system management tools for automated execution of processes and tasks.

Figure 5: IBM Service Management and Asset Management Roadmap



Highlights

IBM and MRO will create accelerated solutions while simplifying and supporting IT and asset management practices

IBM will look to protect and enhance client investments, while increasing the investment in EAM development. Customers will see accelerated solutions, while experiencing rapid and painless integration of platforms and products across both companies. We will continue with our ongoing commitment to open standards, as well as our commitment to ensuring that the tools customers use continue to work with our solutions, including third-party products for asset management, auto-discovery and service desk.

IBM and MRO Software customers will see a joining of two leaders, a joining that will help clients simplify and support their IT and asset management practices today through:

- *A comprehensive view of all critical IT business processes, enabling clients to better align IT operations with business priorities.*
- *Streamlined asset management practices through the ability to manage all asset classes throughout the asset life cycle with one single solution.*
- *Stronger integration with the CCMDDB for better change and configuration management control of key assets.*
- *Focus on existing investment via single industry standard, service-oriented architecture/platform built around J2EE and SOA, for the broadest and most comprehensive asset and service management solution.*
- *An integrated, ITIL-based Service Desk for world-class incident and problem management capabilities.*
- *Ability to reduce cost of service support while ensuring optimal service availability.*
- *Higher service levels through enhanced visibility, dynamic workflow and automatic routing and escalation.*
- *Greater ability to handle risk management, with support for applicable regulations as well as software licensing compliance challenges.*
- *Ability to proactively manage contracts, licensing, asset purchasing and asset maintenance costs.*

For more information

To learn more about the Tivoli Service Management and Maximo Asset Management for IT portfolio, please contact your IBM representative or IBM Business Partner or visit ibm.com/tivoli

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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