Asset and service management solutions for the telecommunications industry
White paper

Tivoli software

Adopt a unified approach to address the convergence of IT and operational support systems (OSS).

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Overview

In the very competitive telecommunications industry, the introduction of new technologies and the shrinking of life cycles are leading to convergence along three dimensions: assets, services and processes. The move to the “triple play” service model has made the service provider’s asset infrastructure more complex, pushing the limits of its capabilities. As a result, the traditional approach of managing IT and operational assets separately does not work anymore. All these assets need to be managed as one ecosystem.

Long-term strategies to create a common infrastructure platform are bringing together service providers to plan, design and implement next-generation networks. This trend, along with the move to combine wireline and wireless operating departments, will create the next level of operational excellence and related cost savings. To take advantage of this convergence, service providers need standard, efficient processes to support assets and help deliver seamless services and reliable operations to their customers.

This convergence requires unified processes and practices to optimally manage network performance, helping it meet the expectations and requirements of customers, employees and shareholders. Asset and service management combines a common asset and service repository with a common process model to create the basis for a unified approach that service providers can use to help meet these needs.

This paper focuses on the trends creating the three areas of convergence: assets, services and processes. It shows how a modern, unified approach helps create efficiencies of scale, lower operational costs and retain workforce knowledge. Service providers can leverage asset and service management to take advantage of convergence in a competitive marketplace.

Virtual network operators put new pressures on service providers

Every day, new service provider entrants change the telecommunications landscape. New competitors are found not only from within the industry, but also from cable companies and dot-coms offering VOIP service. Even retail chains, such as supermarkets and coffee shops, are leveraging the Mobile Virtual Network Operator (MVNO) model to enter the market.
These new competitors have the agility to quickly adapt to changing market conditions. They use the infrastructure of traditional carriers like AT&T and Deutsche Telekom to support their operations or leverage existing cutting-edge systems and content of their own. They manage services using systems that are new, outsourced or based on past success in their own spaces. These competitors are great at managing the processes related to transactions, inventory control and replenishment, and customer service that support high retention and satisfaction rates.

**Triple play requires a way to bridge traditional boundaries between asset classes**

With new technologies available and regulatory bodies relaxing some oversight, service providers can sell new products to their traditional customer bases to increase revenue streams. Because service providers need excellent customer service throughout the provisioning life cycle, they need a service-centric approach to provisioning for the triple play – Internet, television and telephone.

This requires a new, unified approach to service levels that have previously been developed across multiple departments and asset types. Service providers with legacy infrastructure and long asset life cycles need to incorporate more advanced assets with comparatively short life cycles. These assets include towers, fiber optic networks, radio dishes and switching stations. Plus, they include the IT infrastructure: monitoring networks, servers, workstations, laptops, software and more. These operational IT assets are critical to deliver triple play service and maintain the uptime that can satisfy customers.

Competition and technology shifts are removing the boundaries between assets. Therefore, service providers not only need a common service repository, but also a common asset repository.

**Legacy systems and infrastructure**

Traditional carriers’ systems are in some instances decades old. In many cases, they have additional systems and patches built on top to address fixes or comply with new regulations. This “stack of bricks” includes network infrastructure assets with long asset cycles, newer technologies with short asset life cycles, as well as in-house and commercial off the shelf (COTS) software.
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What exactly are the relationships and functions of these related systems? If a carrier needs to replace its systems in response to a problem, can it be sure of the cause and accurately predict the effect of the change? If a specific system is pulled or a process removed, will it negatively affect a process or asset that generates revenue?

To answer questions like these, organizations recognizing that the boundaries between asset classes are fading can bridge the multiple asset management systems to create a common asset repository or configuration management database (CMDB). With a “single version of the truth,” an organization can capture essential information about the configuration of each asset (its condition, history, ownership and so on) and its relationship to other assets around it.

Network convergence

Service providers are undergoing a long-term process of combining their wireline and wireless assets with a common IP multimedia subsystem (IMS) framework. With the convergence of these networks, service providers will be able to provide the next-generation services required to compete.

Traditionally, the wireless and wireline businesses — with separate assets and processes — were treated separately. But network convergence requires service providers to coordinate the maintenance of networks across divisions, regions and partners. This cannot be done efficiently with disparate systems; companies need to standardize on scalable, modern systems to manage the asset and service management requirements of the combined (or shared) network. In particular, service providers require a common approach to the asset repository, the service repository, and the process model and business process engine.

Both service innovation and service delivery are critical

Operators must develop attractive, value-added services that drive revenue, and they must have impeccable delivery capabilities. There is no room for failure; customers are loyal only as long as new service options are continually added and the services work.
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The ability to attract and hold customers is a critical issue made even more important by the interplay of high subscriber acquisition costs (SAC), constant service evolution and the fight to retain customers in highly saturated markets. To maximize revenue, operators must do even more to minimize customer churn rates, which can be as high as 10 to 20 percent in some markets.

Without a functioning network, a provider has no service use and, therefore, no revenue. The following figure illustrates how network availability is the cornerstone of an operator’s revenue stream:

![Network Availability Pyramid](image)

**Network availability forms the foundation for service.**

**Capture and consistently execute best practices to drive workforce productivity and operational excellence**

The continuing adoption of new, more complex technology increases a service provider’s workload. This is occurring at a time when the average age of the service provider workforce is reaching more than 50 years old, which means workers will soon begin to retire. Employee knowledge of legacy infrastructure and the benefits of training for new technology implementations can and will be lost unless service providers implement the proper business processes to capture knowledge.
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If companies are able to handle anticipated workloads without significant increase in human resources, they must also improve productivity. The need for productivity improvements goes hand-in-hand with the need for more efficient asset and service processes. Maintenance plays a major role in this productivity improvement plan.

Leading service providers focus on the introduction of best practices and performance management all around their operations. New ISO 9000 standards (known as TL 9000) have been designed specifically for the telecommunications industry by service providers to deliver improvements in performance and productivity. These improvements seek to deliver operational consistency and quantifiable performance results.

To support these initiatives, providers deploy systems that help them plan, track and measure activities and programs in terms of asset reliability, cost of operation and risk management. Initiatives such as knowledge transfer and benchmarking are intimate parts of these programs. They require a systems foundation that can carry data and information to the users.

**Applying ITIL principles across all critical assets**

The IT industry has led the way toward consistent execution of best practices by developing a standard process framework for service management: IT Infrastructure Library® (ITIL®). The ITIL philosophy adopts a process-driven approach that centers on a number of closely related and highly integrated processes that comprise service management. To realize the key objectives of service management, these processes must use people and products effectively, efficiently and economically.

ITIL is focused on IT only, but these principles should not be applied to IT in isolation. The business demands that this be done across all critical assets. In particular, the provisioning of triple play services requires assets across traditional asset classes to work together.

The key is to account for the interdependencies between collections of assets (systems of systems). Because service delivery depends on the availability of
underlying assets, asset and service management are inextricably connected — and should never be treated separately.

**Telecommunications industry standards and groups**

Service providers seek to create systems that replace their “stacks of bricks” through open-standard products and processes and look to vendors to support these initiatives. They also leverage industry groups like:

- Telemanagement Forum, which creates best-practice business processes using eTOM (Enhanced Telecommunications Operations Map).
- Operational support system (OSS) through Java™ Initiative, which integrates open standards using Java-OSS/j.

Organizations such as these help sort out the issues and provide best practices to bring systems and business processes up to date. They help give service providers the edge they need to compete with new entrants. These groups recognize the need to address industry issues with practical ideas and help guide vendors to incorporate these technologies and process solutions into their offerings.

Service provider companies can leverage these organizations and work with their vendors to implement modern, standards-based systems and processes that help service providers compete in the years to come.

**Asset and service management for the telecommunications industry represents a unified approach**

Asset and service management is a set of processes and practices used to optimally manage the performance of critical assets, helping service providers meet the expectations and requirements of key stakeholders associated with the organization.
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What exactly does this mean and how can it help organizations looking to improve the management of technology? There are three key components to a complete asset and service management solution:

- **Common asset repository** — The asset management repository (for example, a CMDB) provides the “single version of the truth” and captures information that relates the configuration of the assets (condition, location, history, ownership and so on).

- **Common service repository** — The service management repository (for example, the service catalog) provides a unified view of the services that the business provides and their components. It includes service level agreements (SLAs) that define delivery performance and maps the relationships between services and assets.
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- **Common process model and business process engine** — The common process model represents the shared best practices described in the form of standard business processes. The business process engine is the technology used to execute the shared processes.

In essence, asset and service management provides a view of assets that gives the organization the levels of visibility, control and agility needed to more effectively manage its assets and services throughout their life cycles.

**Achieve substantial benefits with asset and service management**

An advanced approach to asset and service management can drive significant benefits for service providers. These benefits include improvements to the bottom line and also extend into improving operational agility, risk management and compliance efforts that are all associated with asset and service management activity. The key benefits of asset and service management include the following:

- **Align with the business** — Leverage and enforce a governance framework that enables the business to link the services expected with the performance requirements of the assets that provide the service.
- **Improve risk management and support compliance efforts** — Capture in a single repository the condition, state and performance of assets as well as the relationship of the assets to the business. As a result, facilitate organization-wide visibility into the control activities (assessments, audits, inspections, detection, reporting and so on) that are generally required to meet risk management and regulatory requirements.
- **Maximize operational excellence** — Implement the principles of best practices and help standardize business processes across the enterprise. Operational excellence enables an organization to measure current practice and compare performance across sites, companies, countries and more.
- **Reduce the cost of infrastructure support services** — Minimize the fragmentation of the application portfolio to drive standardization, help reduce the number of applications that require management and investment, and use a modern standards-based architecture.
- **Use business process management concepts** — Standardize, enforce and improve the business processes that drive asset and service management activities.
- **Leverage intelligent assets** — Stand ready to leverage the growing number of assets with built-in computing technology to support more advanced diagnostics, self-learning and health monitoring.
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IBM solutions offer a step-by-step approach to implementing asset and service management

IBM Maximo® Asset Management can enable most carriers to replace their existing legacy systems and business processes in a step-by-step process that leverages the standards of eTOM and OSS/j. The solution replaces the “bricks” with a configurable, open standards–based and Java-based architecture. (The Java is the same as in OSS/j.) Maximo Asset Management enables service providers to replace existing “bricks” with new eTOM “bricks” and join them together with OSS/j adapters (such as trouble tickets, SLAs, inventory management, work orders and change management), which serve as the “mortar” that solidifies the approach to service, asset and process convergence.

Conclusions and recommendations

An asset and service management approach can give service providers critical assistance in addressing the three areas of convergence facing their industry while improving business drivers that can help them remain competitive. All organizations recognize the importance of their financial, human resource and production systems. With the convergence of legacy assets and systems with newer technologies, it is now important to recognize critical IT asset infrastructure and the services they provide with that same sense of urgency.

Telecommunications and IT industry standards help service providers replace legacy systems and processes with new standards-based systems and processes. Competition, technology shifts and improving customer retention will drive these requirements. Applying industry-designed processes will be paramount to support the industry best practices. These processes can help service providers excel in operational excellence, which can lead to greater profitability and customer retention and could speed new services to market. Asset and service management provides a view of key assets and gives the organization the right levels of visibility, control and agility to more effectively manage its assets and services throughout their life cycles.
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Maximo Asset Management provides the common asset repository, common repository and the common process model/business process engine required for the telecommunications industry. Whether a service provider is implementing a corporate system for facilities management or IT service management, or replacing "bricks and mortar" in their OSS, Maximo Asset Management unifies, under a single platform, the business processes and common repositories to provide operational efficiencies and improve customer satisfaction with new services.
Maximo Asset Management — the IBM asset and service management solution that addresses the needs of the telecommunication industry — unifies under a single platform the business processes that are core to a service provider’s operations. The ability of Maximo software to manage traditional telecommunication facilities, fleets and IT assets and processes in a single Web-based platform provides a bridge between different functional areas that previously operated as islands.

Maximo Asset Management enables service providers to replace their legacy systems and processes in a step-by-step process, leveraging the standards of eTOM and OSS/j. This approach allows service providers to address the three areas of convergence that will help create efficiencies of scale, lower operating costs and retain workforce knowledge needed to succeed in a competitive marketplace.

For more information
To learn more about how Maximo Asset Management can help your telecommunications organization address the challenges of convergence, contact your IBM representative or IBM Business Partner, or visit www.mro.com

About Tivoli software from IBM
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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