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The Convergence of IT and OSS Requires a Unified Approach

Executive Summary

The Telecommunications industry is a very competitive market, where 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. These assets need to be merged and 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, along with Service Providers 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 services to ensure seamless delivery and operations to their customers.

This convergence requires a unified approach, a set of processes and practices, to optimally manage the performance of a network according to the expectations and requirements of all customers, employees and shareholders. Asset and Service Management is a unified approach that is used to meet these needs. It was developed from the combination of a Common Asset and Service Repository and a Common Process Model.

This paper will focus on the trends creating the three areas of convergence; assets, services and processes. A unified approach requires a modern solution to create efficiencies of scale, lower operational costs and retain workforce knowledge. Service Providers can leverage a unified approach to take advantage of convergence in a competitive marketplace.

Service Convergence:
Time to Market is Critical for Customer Acquisition and Retention

Virtual Network Operators

New Service Provider entrants are changing the telecommunications landscape daily. This new competition is found not only from within the industry, but from competition that only five years ago no one would have even imagined. This competition includes cable companies with VOIP service, Dot-coms such as Ebay with their acquisition of Skype, and even retail chains such as supermarkets and coffee shops which are leveraging the MVNO (Mobile Virtual Network Operator) model.

These new competitors have the agility to quickly adapt to changing market conditions. They use the infrastructure of the traditional carriers like AT&T and Deutche Telekom to support their operations or leverage existing cutting-edge systems and content of their own. The competition’s existing systems to manage services are new, outsourced or based on past success in their own space. These competitors are great at managing the processes related to transactions, inventory control/replenishment, and the customer service required to achieve high retention and satisfaction rates.
Triple Play
The provisioning for the industry Triple Play—Internet, television and telephone—requires a service-centric approach. With new technologies available and regulatory bodies relaxing some oversight, the opportunity to increase revenue streams with new products to a Service Provider’s traditional customer base has become a business driver. Service Providers need excellent customer service throughout the provisioning life cycle. This requires a unified approach to service levels that now need to be developed across multiple departments, an approach that has not been done before by Service Providers.

Provisioning of services requires many departments and asset types to be involved simultaneously. Service Providers are faced with legacy infrastructure and that includes long asset life cycles, while at the same time they need to incorporate more advanced assets with comparatively short life cycles. These assets include not only the towers, fiber optic networks, radio dishes and switching stations, they also include the IT infrastructure, monitoring networks, servers, workstations, laptops, software, etc. These operational IT assets are critical to deliver Triple Play service and maintain the uptime to ensure customer satisfaction. Therefore Service Providers not only need a common service repository, but a common asset repository.

Asset Convergence:
The Boundaries of Traditional Assets Classes are Changing

Working with Legacy Systems and Infrastructure
Traditional carriers’ systems are in some instances decades old, and in many cases, they have additional systems built on top to address fixes, patches 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 COTS software products. If a carrier needs to replace its systems, can they be sure of the cause and affect associated with the change? What are the relationships and functions of these related systems? If a specific system is pulled, or a process removed, does it affect a process or asset that generates revenue?

Competition and technology shifts are removing the boundaries between assets. Application servers, gateways and softswitches are viewed as IT assets. Cell towers, facilities and vehicles are operational assets. The boundaries between these asset classes are fading. Organizations that recognize this can remove the multiple systems managing these assets and create a common Asset Repository/Configuration Management Database to provide a “single version of the truth.” This single view captures all required information about the configuration of the asset (condition, history, ownership, etc.) 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. Traditionally the wireless and wireline businesses were treated separately with separate assets and processes. With the convergence of these wireline and wireless networks, Service Providers will be able to provide the next-generation services required to compete.
This convergence will culminate in a requirement to coordinate the maintenance of networks between divisions, regions and partners. This cannot be coordinated with disparate systems; companies will need to standardize on scalable, modern systems to manage the Asset and Service Management requirements of the combined/shared network. This requires a common approach to the Asset Repository, Service Repository and Process Model/Business Process Engine.

**Process Convergence: Today’s Service Provider Requires Standard Processes Throughout the Asset and Service Life Cycle**

**Service Innovation and Delivery**

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 their services are working and new service options are added. No network equals no service usage which equals no revenue. Figure 1 illustrates how network availability is the cornerstone of an operator’s revenue stream:

![Figure 1 — Network Availability Forms the Foundation for Service](image)

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. Operators must do even more to minimize customer churn rates, which can be as high as 10% to 20% in some markets, in order to maximize revenue.

**Higher Workforce Productivity**

The continuing adoption of new, more complex technology causes a workload increase. This is occurring at a time when the average age of the Service Provider workforce is reaching more than 50 years old, which means they will soon begin to retire. This employee knowledge of legacy infrastructure, plus the training they receive for new technology implementations can and will be lost without implementing the proper knowledge capture business processes.

The need for productivity improvements goes hand-in-hand with the need for more efficient asset and service processes, and maintenance plays a major role in this productivity improvement plan. Companies must improve if they are to handle anticipated workloads without significant increase in human resources.
Improving Operational Excellence

Leading Service Providers are focused on the introduction of best practices and performance management all around their operation. The ISO 9000 new standards are known as TL 9000, and are designed specifically for the Telecommunications industry by Service Providers to deliver improvements in performance and productivity. These improvements ensure operational consistency and quantifiable performance results. In order to support these initiatives, the providers are looking to deploy systems that can help them plan, track and measure activities and programs. Initiatives such as benchmarking and knowledge transfer are an intimate part of these programs and require a systems foundation that can be used to carry data and information to the users. Operational excellence is expressed in terms of asset reliability, cost of operation, and risk management.

ITIL – A Focus on IT, But Principles Should Not be Applied in Isolation

The IT industry has been leading the way by developing a standard process framework for Service Management, called the IT Infrastructure Library (ITIL). The ITIL philosophy adopts a process-driven approach. It considers service management to consist of a number of closely related and highly integrated processes. To realize the key objectives of Service Management, these processes must use the people and products effectively, efficiently and economically.

ITIL is focused on IT only, but the fact of the matter is that the principles should not be applied to IT in isolation. The business demands that this be done across all critical assets, not just IT. The provisioning of Triple Play services requires a collection of assets that work together.

When doing this, the key is to take into account the interdependencies between collections of assets (systems of systems). Because service delivery is dependent on the availability of the underlying assets, Asset and Service Management are inextricably connected—and should never be treated separately.

Telecommunication Industry Standards and Groups

Service Providers that are in the process of untangling their “stack of bricks” can leverage industry groups like the Telemanagement Forum that create best practice business processes using the eTOM (Enhanced Telecommunications Operations Map) and integration open standards using Java-OSS/j through the group OSS through Java Initiative. The Service Providers seek to create systems that replace their “bricks” through open standard products and processes and look to vendors to support these initiatives.

Organizations such as the Telemanagement Forum and OSS through Java Initiative are in place to help sort out the issues and provide best practices to bring systems and business processes up to date and provide the edge needed for Service Providers to compete with new entrants. These organizations recognize the need to address the 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 to compete in the years to come.
A Service Provider has multiple systems to manage the Operational Support System to manage assets and deliver services. This Telecommunications Ecosystem is being overburdened by Triple Play services and the infrastructure required to deliver them. The Operational Support System now requires a common, unified approach.

A Unified Approach

Asset and Service Management for the Telecommunications Industry

Asset and Service Management is a set of processes and practices used to optimally manage the performance of all critical assets according to the expectations and requirements of all stakeholders associated with the organization.

What exactly does this mean and how can it help organizations looking to improve the management of technology? There are three key components to an Asset and Service Management Solution:

Common Asset Repository – The asset management repository (e.g., Configuration Management Database) provides the “single version of the truth” and captures all information that relates the configuration of the assets (condition, location, history, ownership, etc.);

Common Service Repository – The service management repository (e.g., Service Catalog) provides a unified view of the services that are provided by the business and the make-up of these services. It includes the definition of the delivery performance (Service Level Agreements) as well as the relationship between services and assets;

Common Process Model/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 common processes.
In essence, Asset and Service Management enables a strategic view of all assets and provides the organization with the right levels of visibility, control and agility to effectively manage their assets and services throughout their life cycle.

The Benefits of Asset and Service Management

A strategic approach to Asset and Service Management can drive significant benefits for Service Providers. These benefits include improvements to the bottom line, but also extend into improving the agility of the operation and the ability to better control risks and compliance requirements associated with Asset and Service Management activity. The key benefits of Asset and Service Management are:

**Align Better With the Business** – 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.

**Improve Risk and Compliance Management** – Capture in a single repository the condition, state and performance of assets and the relationship of the assets to the business to facilitate organization-wide visibility of the control activities (assessments, audits, inspections, prevention, detection, reporting) that are required to meet risk management and regulatory requirements.

**Improve Operational Excellence** – Operational excellence is a program founded on the principles of best practices and standardization of business processes across the enterprise. Operational excellence enables measurement of current practice and the ability to compare performance across sites, companies, countries, etc.
Reduce the Cost of Infrastructure Support Services – Reduce the fragmentation of the application portfolio to drive standardization, reduce the number of applications requiring management and investment, and utilize a modern standards-based architecture.

Utilize Business Process Management Concepts – Standardize, enforce and improve the business processes driving 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.

A Step-by-Step Approach
Maximo Enterprise Suite (MXES) enables 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” using configurable open standards, Java-based architecture—the same Java as OSS/j. The MRO Software Asset and Service Management solution enables Service Providers to replace existing “bricks” with new eTOM “bricks” and join them together with OSS/j adapters; the “mortar” which solidifies the approach to Service, Asset and Process convergence. This solution leverages OSS/j, enables eTOM on an architecture, making the OSS/j adapters such as Trouble Tickets, SLAs, Inventory Management, Work Orders and Change Management easier to use.

Figure 4 —Maximo Enterprise Suite

Maximo Enterprise Suite 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 Operations Support System (OSS), Maximo Enterprise Suite unifies, under a single platform, the business processes and common repositories to provide operational efficiencies and improve customer satisfaction with new services.
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 the business drivers to 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 more important to recognize critical IT asset infrastructure and the services they provide with that same sense of urgency.

Telecommunication and IT Industry standards will 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 will lead to profitability, retention of customers, and speed to market of new services. Using solutions such as Asset and Service management will enable a strategic view of all assets and provide the organization with the right levels of visibility, control and agility to effectively manage their assets and services throughout their life cycle.

MRO Software’s Asset and Service Management solution, Maximo Enterprise Suite, unifies under a single platform the business processes core to the operations of a Service Provider. The Company’s unique capability to manage traditional Telecommunication facilities, fleets and information technology assets and processes in a single Web-based platform provides a bridge between different functional areas, which previously operated as islands.

MXES will enable 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 create efficiencies of scale, lower operating costs, and retain work force knowledge to succeed in an competitive marketplace.
About MRO Software, Inc.

MRO Software is the leading provider of asset and service management solutions. Maximo Enterprise Suite, the Company’s flagship solution, is delivered on a web-architected platform and increases productivity, optimizes asset performance and service levels, reduces costs, and enables asset-related sourcing and procurement across the entire spectrum of strategic assets.

The Company’s asset management solutions allow customers to manage the complete life cycle of strategic assets, including: planning, procurement, deployment, tracking, maintenance and retirement. Using MRO Software’s solutions, customers maximize asset retention, lower labor and resource costs, deliver high asset reliability and align asset and service management with the business goals across the asset base.

MRO Software (Nasdaq: MROI) is a global company based in Bedford, MA, with approximately 900 employees, and more than 300,000 end-users. The Company markets its products through a direct sales organization in combination with a network of international distributors. MRO Software has sales offices throughout North America, Europe, Asia/Pacific and Latin America. Additional information on MRO Software can be found at www.mro.com.