

## **Utilities Improve Financial Performance for MRO Inventory, Maintenance, and Procurement**

By Ralph Rio

### **Maintenance Is Mission Critical for Utilities**

Asset-intensive utilities can improve their P&L statements and balance sheets with improved MRO inventory management. Utilities use Oniqua's solution to optimize inventory with a short payback period.

Utilities – electricity, natural gas, water, wastewater, and telecommunications – are asset-intensive. This applies for both generation/production/processing and transmission and distribution (T&D). Maintaining these assets represents a huge expense, often 15 to 20 percent of revenue, which is about equal to pre-tax profits. Why are utilities willing to spend so much on maintenance? Simply because their operational performance requires it. This operational performance includes the ability to deliver to customers in a reliable, safe, and profitable manner despite unpredictable weather events and fluctuating demand. The direct correlation between high uptime and profits is obvious – revenue stops when the equipment stops. For a utility, the key to a good P&L statement and profitability is effective maintenance – including MRO materials management.

### **Utility Maintenance – Extraordinarily Difficult**

For power generation, each utility has assets that are co-located in a site and usually covered by a building. However, far more assets are geographically dispersed and subject to uncontrolled conditions, including weather, earthquakes, and vandalism. In addition, the assets are often old – installed as long as 100 years ago (particularly in the case of water distribution). Environmental conditions and the age of the infrastructure both influence maintenance requirements. Bad weather conditions often occur just when energy capacity needs are the greatest; consider natural gas for heating during a winter storm or electric power for cooling during a summer heat wave.



## Opportunity for Improvement

Given the difficult task of maintaining a diverse set of widely distributed assets, most utilities must pay close attention to their inventories of spare parts and other MRO materials.

Sustaining operational excellence requires a strong focus on finding ways to do the job better. Maintaining financial strength, including asset performance management, has taken on greater importance in this extremely challenging economy. Managers must ferret out cost savings without compromising safety or reliability. Given the difficult task of maintaining a diverse set of widely distributed assets, most utilities must pay close attention to their inventories of spare parts and other MRO materials. MRO inventory analysis and optimization represents a rich opportunity for improvement.

Several factors can result in poor inventory management for utilities:

- Purchasing decisions based on minimizing risk, or “just in case”
- Procurement outside the purchasing system with little governance
- No vendor performance tracking (for on-time delivery and quality)
- Little or no purchasing history records kept for demand analysis
- Obscured visibility of inventory distributed in multiple locations
- No adjustment for changes made to assets or operating procedures

This lack of effective MRO inventory management ripples through the business, creating both maintenance and procurement issues and customer service problems. Also, aging inventory leads to poor turns and obsolescence with write-offs. Of course, more inventory increases warehouse space, equipment, and labor for material handling. The excessive dollars tied up in inventory also has a negative effect on the balance sheet.

The senior executives’ metrics are in the P&L statement and balance sheet. Given the extent of maintenance in a utility, poor MRO inventory management has a noticeable effect on these metrics – not a good thing for a maintenance manager’s career.

## Future Industry Dynamics Compound the Problem

As we move into the future, will inventory management become easier or more difficult for utilities? Several industry drivers appear to exacerbate the issue, leading to growing MRO inventory:

- Increasing upgrades and repairs as infrastructure continues to age; includes traditional generation plants and particularly the T&D linear assets exposed to the weather
- Diversity of renewable and other alternative energy generation technologies – wind, thermal and photovoltaic solar, fuel cell, fossil-fired co-generation, tidal and wave farm, and more – drive a variety of technologies and diversity of MRO materials
- Coming Smart Grid provides more technologies and devices to maintain
- Distributed generation leads to more dispersed, individual assets to maintain (instead of a few big items in one site, many small sites widely distributed)
- Industry consolidation and mergers lead to duplication of inventory with a diversity of naming conventions at the original entities

### **Oniqua's Solution**

Oniqua provides an analytical tool designed for MRO inventory, maintenance, and procurement optimization. It extracts data from an ERP, EAM, and other transactional systems (including IBM Maximo, SAP, Oracle and others), performs the optimization, and then exports the new parameters into the ERP or EAM systems for execution. Oniqua Analytics Suite (OAS) focuses on the strategic aspects of MRO materials management. It supports this with a collection of software capabilities that enable organizations to make the item selection, stock levels, and supplier selection decisions rationally. Oniqua's metrics capability enables organizations to track and control the impact of these decisions. In addition, its analysis tools enable organizations to identify potential improvements with "what if" analysis before they make changes.

Oniqua's expert knowledge for MRO inventory, maintenance, and procurement optimization is deeply embedded in its software solution. This distinguishes OAS from general-purpose inventory optimization solutions. The criteria used to achieve optimum availability and cost are quite different from those used in typical supply chain management or ERP inventory management solutions. Oniqua applies its 20 years of experience in sup-

porting asset intensive organizations to fine-tune the company's fact-based optimization approach.

OAS enables users to rationalize and reduce their MRO inventories by avoiding the restocking of parts not crucial to reliability, while efficiently restocking the replacement parts that are truly critical. Based on a series of criteria defined in the project, the team will stop conducting business with poorly performing vendors and, instead, rely on high-performance vendors. The utility can consolidate purchases, optimize use of vendor-held stock and consignment arrangements, and improve the overall delivery service record levels of its equipment suppliers.

With a utility's sizable and widely distributed MRO inventory, the investment in OAS can provide significant returns. Oniqua's experience indicates that most utilities can achieve payback in three to six months. This particularly applies to those with more than \$10 million in MRO inventory, which would include nearly all medium-to-large utilities.

### **Final Word**

Oniqua Analytics Suite (OAS) provides utilities with a comprehensive solution for optimizing MRO inventory, maintenance, and procurement activities. It uses analytical tools to determine what materials are needed, when they should be ordered, how much stock to maintain, and what suppliers to use. This provides an opportunity to improve asset availability and materials costs — dear to the maintenance manager's role. It also provides an opportunity to improve the P&L statement and balance sheet — dear to the maintenance manager's career.

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