MRO:INDIRECT SUPPLY

DRIVING NEW EFFICIENCIES IN THE INDIRECT SUPPLY CHAIN

Procurement & logistics strategies for maintenance, repair and operations (MRO) supplies

A White Paper from the Americas Leader in Supply Chain Management
In challenging economic times, companies look for new ways to control costs and improve efficiency. To address these issues, manufacturers are taking a hard, strategic look at Maintenance, Repair and Operations (MRO) supply. Commonly known as “indirect materials,” MRO supply includes a vast array of items that support internal operations, ranging from safety gloves and office supplies to spare parts for mission-critical industrial equipment and tooling.

Many companies have focused cost-cutting efforts on direct materials and capital spending rather than MRO supplies, which have traditionally been viewed as low-cost items with little potential for savings. However, there is growing recognition that MRO represents a substantial expense for U.S. manufacturers – about $125 billion annually, according to a 2008 study by Frank Lynn & Associates. For a typical manufacturer MRO expenses represent up to 16 percent of the cost of goods – but 62 percent of total requisitions. MRO supply is also a complex process, with thousands of stock keeping units (SKUs), fluctuating demand and hundreds of individual suppliers, often managed at a local or site level rather than corporate procurement. Given the large volume of transactions, unpredictable demand and de-centralized management, the MRO supply chain has long been ripe for efficiency and cost savings improvements.

Historically, companies have sought to streamline MRO supply since the 1980s by outsourcing purchasing, inventory and other functions to integrated suppliers that provide a solution offering centralized procurement, systems support and a single point of contact. Integrated outsource models provide some advantages compared with traditional MRO supply models that typically operate with limited resources. However, companies are finding that the integrated model’s “bundled” service and pricing structures do not always provide the visibility needed to eliminate waste and inefficiencies while improving the productivity of maintenance teams.

As a result, leading manufacturers are beginning to un-bundle outsourced services to implement lean processes that provide better visibility and promote continuous improvement in every aspect of the MRO supply chain. This enhanced outsource model leverages the expertise of an MRO Supply Chain Manager that works with partner companies offering deep expertise in each area of MRO supply – strategic sourcing, procurement, transaction management, logistics and others. This high-performance team leverages lean principles to deliver greater value and service levels through the supply base, streamline inventories and improve administrative efficiencies.

As shown in Figure 1, the benefits of an efficient MRO supply chain are significant.

This white paper will help decision makers in a wide range of industries understand how expertise-driven MRO outsource models reduce cost and complexity – while putting the control and ability to drive further efficiencies back in the hands of the customer.

**EXECUTIVE SUMMARY**

In challenging economic times, companies look for new ways to control costs and improve efficiency. To address these issues, manufacturers are taking a hard, strategic look at Maintenance, Repair and Operations (MRO) supply. Commonly known as “indirect materials,” MRO supply includes a vast array of items that support internal operations, ranging from safety gloves and office supplies to spare parts for mission-critical industrial equipment and tooling.

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**BENEFITS OF AN EFFICIENT MRO SUPPLY CHAIN**

<table>
<thead>
<tr>
<th></th>
<th>Best in class</th>
<th>Average</th>
<th>Laggard</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRO Savings Over the Last 12 Months</td>
<td>19%</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>MRO Inventory Reduction for the Past 3 Years</td>
<td>14%</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>MRO Supply Base Reduction for the Past 3 Years</td>
<td>17%</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>Administrative Cost Reduction</td>
<td>18%</td>
<td>7%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: Supply Chain Management Review

Figure 1.

Best-in-class companies have reduced MRO costs by 19 percent, according to the Aberdeen Group Study.

The study found a wide gap between “best-in-class,” “average” and “laggard” companies among 150 firms studied.
Historically, MRO supply functions have operated in a silo separate from many companies’ primary strategic purchasing operations. While most purchasing activities have moved to centralized procurement professionals, indirect supplies have continued to be managed at a site level with little or no system support.

Until recently, information management systems could not track the large number of individual indirect supply items required for a manufacturing facility and, more importantly, provide visibility into the demand for any given product. As a result, MRO goods are ordered in bulk and then stored in warehouses until they are needed by end users. This translates into an increased cost of ownership for MRO inventories, high obsolescence rates and low levels of productivity for highly skilled plant personnel who spend too much time looking for critical parts among thousands of other indirect supplies in storage at the same location.

This traditional approach to MRO supply creates five key problems.

1. **End Users Lack a Complete Understanding and Transparency of MRO Costs.**

   MRO supplies represent almost two-thirds of a company’s requisitions yet companies lack comprehensive tracking systems that provide visibility into the total cost of ordering, warehousing, transporting, receiving, payment and other supply chain costs. These expenses typically represent about half the total cost of MRO supplies (Figure 2).

2. **Supply Chains Are Fragmented and Inefficient.**

   Due to the wide variety of MRO materials required by manufacturers, many suppliers are involved. Maintaining numerous business relationships adds cost to the supply chain due to the labor and systems required to order, audit, pay invoices, transport, and provide other essential tasks.

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**Figure 2.**

**TOTAL MRO COST OF OWNERSHIP**

- **Price of Materials**
- **Other Costs**

Costs:
- Warehousing
- Carrying Inventory
- Obsolescence
- Transportation
- Ordering
- Tracking
- Administration
- Duties
- Taxes
- Depreciation

Source: Exel Analysis

The goal: look beyond price to analyze less obvious expenses.
CHALLENGES WITH TRADITIONAL MRO SUPPLY (CONT.)

3. MANUFACTURERS LACK VISIBILITY INTO THE MRO SUPPLY CHAIN.

Product and process manufacturers, alike, may have thousands of MRO items to manage. Without full visibility into supply and demand, companies may over-stock items, resulting in unnecessary inventory carrying costs, or find that key supplies are often out-of-stock, leading to inefficient operations or loss of productivity.

4. SKILLED MAINTENANCE/ENGINEERING STAFF SPEND TOO MUCH TIME ORDERING, FINDING AND PICKING UP PARTS.

Maintenance personnel work in high-intensity environments where uptime is critical. “Pit stop” maintenance is essential to get equipment reconditioned and back into production as quickly as possible while ensuring safety. Maintenance professionals need essential MRO materials delivered where they need them, when they need them.

5. MULTIPLE SUPPLIERS ENTERING THE MANUFACTURING SITE CREATE SAFETY AND SECURITY ISSUES.

Allowing multiple suppliers to make on-site deliveries creates a variety of risks, ranging from accidents and warehouse congestion to potential security threats. By limiting access to trained personnel familiar with the site, manufacturers manage risk more effectively.

MRO OUTSOURCE MODELS

To address these issues, companies have recognized that the strategies that have helped them drive waste and inefficiency out of their operations can be applied to MRO supply. While some decide to tackle these MRO challenges on their own utilizing internal resources and systems, a large number of Fortune 500 organizations have gone outside their organizations to seize the opportunity more quickly.

The primary MRO outsourcing models are:

– Integrated model, where companies outsource the entire MRO supply chain to a single external provider as a service bundle (procurement, logistics, inventory and on-site management); and

– Expertise-driven model, where companies outsource to a lead MRO Supply Chain Partner who unbundles the supply chain functions and manages a limited number of best-in-breed companies with expertise to streamline each phase of the procure-to-pay process.

According to a 2008 study by Frank Lynn & Associates, these outsourcing models currently manage 11 percent, or $14 billion of the $125 billion MRO marketplace spend in the industrial industry alone. Technology, chemical and consumer product manufacturers are also exploring new MRO supply models in an effort to manage costs. MRO outsourcing is expected to continue at annual growth rates of 10 to 25 percent.

INTEGRATED OUTSOURCE MODEL

The integrated supply model, which first emerged in the 1980s, represents a basic outsourcing model of the entire MRO supply chain to an external provider. Common stock inventory items (i.e. safety gloves and glasses) are sourced from an integrator – often a large industrial distributor that has expanded its product catalogue to include these items and developed in-house transaction processing and inventory systems to provide a broader range of services. This model has been used primarily by automotive, aerospace and petrochemical industries, in which companies’ MRO expenses are more than $1.5 million per facility.
About 39 percent of industrial distributors currently manage integrated supply contracts, according to a survey by Industrial Distribution. Frank Lynn & Associates defines an integrated supply program as one which includes:

- On-site management of MRO procurement and inventory;
- Consignment inventory;
- Procurement process re-engineering;
- Sourcing; and
- Procurement management systems.

The integrated supply model offers fast implementation of turnkey IT solutions, a single point of contact for the end customer and better management of high-volume sites, opportunities to improve visibility and cost controls remain. Supply chain management issues and waste may include:

- **Lack of transparency.**
  In this model, the customer receives a single invoice from the integrator at the end of the month for all the services and products provided. Significant administrative expenses, such as transportation, inventory, warehousing, disposal and others are often not detailed in this consolidated invoice. While the end user understands the price, this lack of transparency makes it difficult to identify areas to eliminate inefficiency and reduce the total cost.

- **Overstocking and obsolescence.**
  While integrated supply gives the end user a turnkey solution, the trade-off is less control over inventory levels. MRO items are ordered and distributed to the end user based on historic demand and in support of new product promotions. A push-based supply chain is slower to respond to changes in end user demand, which can result in overstocking, bottlenecks and delays, unacceptable service levels and product obsolescence.

- **Inflexibility in serving smaller facilities.**
  The integrated supply model is cost-effective for serving single plants that typically spend more than $1.5 million in MRO supplies annually. However, larger companies often have many geographically dispersed facilities with lower MRO spends. A solution that delivers more consistent cost and service efficiencies across the network would offer significant value.

### Expertise-Driven Outsource Model

The economic downturn has exacerbated waste and efficiency gaps in the MRO supply chain. When demand is unpredictable and critical suppliers are at risk, ensuring appropriate MRO supply inventories and response times throughout the network is more important – and more challenging – than ever. Efforts to gain control during the short-term crisis and lay the foundation for sustainable MRO supply management over the long-term have created three trends that call for an updated outsourcing model:

- Corporate procurement involvement in MRO product categories is increasing;
- End-user requirements are driving a more responsive, demand-driven MRO supply chain; and
- Process steps that add administrative costs without service value are being scrutinized.

According to Frank Lynn & Associates, MRO supply management at the corporate level is growing. More than 60 percent of large end-users manage MRO spend at the corporate level, up from 40 percent 10 years ago.

From sourcing strategies and supplier selection to detailed process step reviews, today’s MRO supply outsourcing goals are about achieving higher levels of efficiency and control, while reducing total cost.

The critical elements in this enhanced model are the creation of a highly stable team of expert suppliers, led by a strategic MRO Supply Chain Manager and the application of lean principles to the MRO Procure-to-Pay process. (see Figure 3)
CREATING A TEAM OF MRO SUPPLY CHAIN EXPERTS

This outsource model for the MRO Supply Chain offers a single point of contact through the Supply Chain Manager, supported by a team of specialists that each bring best-in-class expertise. Selecting partners that will collaborate with corporate procurement, the MRO Supply Chain Manager and, most importantly, each other, is critical to the success of this enhanced outsource model.

In Deutsche Post DHL’s recent study, Delivering Tomorrow – Customer Needs in 2020 and Beyond, experts predict that the next decade will commence “the Age of Cooperative Efforts.” “Cooperation will be the new buzzword. This will be especially true of logistics companies.”

Choosing an expert in lean processes who has MRO experience as the Supply Chain Manager can play a critical role in helping companies move quickly to streamline the supply chain and implement a solution that responds to changing business needs.

The Supply Chain Manager should offer:

- Analysis tools to uncover all hidden costs and ensure accurate evaluation of total cost of ownership with a comprehensive supply chain assessment of the Procure-to-Pay process.

- Lean expertise to re-engineer the supply chain and evaluate capabilities and technologies of future suppliers and assemble a new supply chain team.

- Transparency of costs and sourcing neutrality with key performance indicators that measure and monitor compliance with proactive management of information.

- A proven track record in project implementation for new process, IT systems and physical infrastructure providing at all times adequate levels of staffing.

- Existing infrastructure such as warehousing and transportation to help reduce or eliminate up-front costs.

- Relationships with relevant specialists that will be needed in the assessment and implementation of a higher efficiency MRO supply chain.
The Supply Chain Manager will first complete a detailed assessment of the processes, people and technologies involved in the entire MRO supply chain. This initial evaluation will help identify, separate and manage the components of total cost of ownership. The goal: look beyond “price” to analyze less-obvious expenses, eliminate waste and ultimately streamline the supply chain to reduce cost.

Driving new efficiencies in the MRO supply chain starts with gaining visibility into total cost by examining the Procure-to-Pay process. As shown in Figure 4, this process includes three key areas:

1. Sourcing (strategic procurement);
2. Purchasing (tactical procurement); and
3. Logistics (design optimization and operations).

Figure 4.
IDENTIFYING AND ELIMINATING INDIRECT SUPPLY CHAIN INEFFICIENCIES (CONT.)

STRATEGIC SOURCING

With a detailed analysis of the MRO spend, supply and demand, companies can better develop a strategic sourcing plan that identifies the optimal supplier base. The goal is to ensure reliable supply while reducing transaction costs and ensuring efficient management of contracts.

This step requires a clear understanding of what is being purchased, by whom, from which suppliers, in what quantity, how frequently, and at what cost. These insights will also help drive process improvements, further reducing costs.

Companies may also look to improve and manage other important sourcing aspects such as:

- Standardizing materials for main MRO categories, which reduces the number of MRO items that must be managed; and
- Streamlining the material master list to minimize SKU proliferation that helps control costs.

The MRO Supply Chain Manager may tap internal procurement experts to bring insights into both the assessment and implementation of sourcing processes that deliver maximum quality with minimum waste.

PURCHASING

The next step is to look at the tactical procurement process, from requisition through delivery, follow up on open orders to invoicing and payment. The goal is to order the right part every time with minimum waste and maximum quality for the end user. Key issues to consider are:

- The procedures for online ordering, use of electronic catalogs, invoicing and payment. Improving invoicing and payment processes can eliminate significant costs from the overall MRO product cost.

- A well-defined purchasing process will ensure that maintenance and requisition histories are up to date to ensure availability of parts for timely preventive maintenance activities.

A higher efficiency indirect supply chain may involve outsourcing purchase transaction management to companies that provide solutions for aggregating orders and streamlining invoicing, payments, and other functions.

TECHNOLOGY

Throughout the procure-to-pay process IT systems play a critical role in optimizing each function, monitoring key performance indicators and enhancing cost controls. Adequate technology will:

- Ensure reliable tracking and visibility of materials in the supply chain. For instance, deliveries can be scanned at several points in the transport process – when it leaves the supplier’s facility, at the cross-dock, when it goes into off-site or on-site storage, and at delivery.

- Enhance inventory management with just-in-time (JIT) and automatic replenishment processes that link with IT systems, such as bar-code scanning in open bins, tool cribs, storerooms and vendor managed inventory to initiate the purchase order process.

- Streamline orders transmitted to MRO suppliers with electronic acknowledgement, exception management, and rapid, 24/7 response to emergency orders.

MRO product manufacturers often offer production and application support services for end-users of their products, making them an important member the MRO supply chain specialist team.
IDENTIFYING AND ELIMINATING INDIRECT SUPPLY CHAIN INEFFICIENCIES (CONT.)

LOGISTICS

Moving to execution, the next step is to look at logistics processes from supplier collection to delivery of MRO materials to the point of storage or use. The goal is ensure the right part at the right place to help key maintenance staff achieve optimal uptime and efficiency while at the same time reducing inventory levels. Efficiency opportunities include:

– Transportation solutions, including supplier sweep runs and dedicated transportation fleets that help optimize costs and reduce the carbon footprint. Effective routing strategies mitigate premium freight and ensure two-way moves are utilized for returns, repairs, samples or outbound shipments.

– Warehousing strategies that include use of cross docks – integration points where orders from suppliers can be consolidated to reduce the number of deliveries. Off-site and on-site storage may also be considered with the focus on plant safety and security to ensure a minimum number of qualified staff enters the premises.

– On-site logistics, an activity-based cost analysis using lean tools for warehousing, tool crib, stores and transportation will ensure the right people are doing the right tasks and will reveal areas for cost savings or opportunities to re-deploy people to more high-value operations.

Inventory management and transportation logistics are critical links between all partners in the expertise-driven MRO outsource model. Third-party logistics providers that offer a full range of supply chain services and demonstrated expertise in leveraging lean processes for continuous improvement can serve as both a specialist and MRO Supply Chain Manager.

CONCLUSION

Once total cost is understood, companies can separate the price of MRO materials from other expenses – and create a team and strategy that will drive inefficiencies out of the MRO supply chain.

The bottom line – an end-to-end approach to your MRO supply chain offers the opportunity to seize an important competitive advantage in today’s challenging economic climate.

Call Exel’s experts to discuss an MRO supply chain needs assessment today.