

THE IMPORTANCE OF INVENTORY OPTIMIZATION AND MRO

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The mindset of maintenance is evolving; today, waiting for an asset to fail and fixing it no longer suffices. Best-in-Class companies have begun to adopt predictive and condition based maintenance techniques in their operations. However, to succeed in this approach, the necessary spare parts must be available when required.

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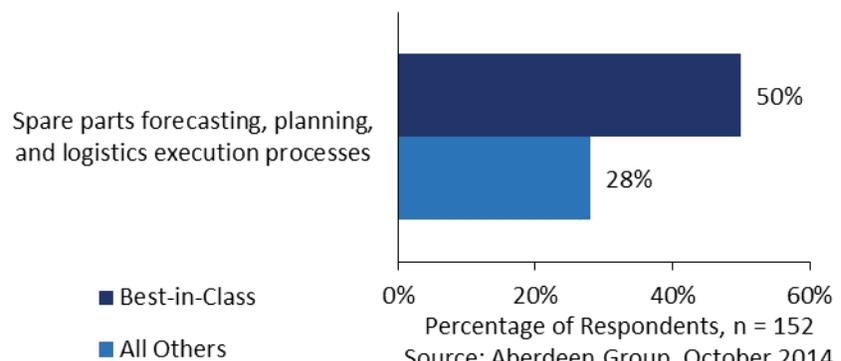
50%

of annual unscheduled asset downtime can be attributed to the lack of spare parts / stock outs.

Proactive Maintenance and Inventory Optimization

Aberdeen's recent report, *Maintenance, Repair, and Operations (MRO): Turning Downtime to Dollars*, showed that Best-in-Class companies have turned to proactive maintenance to improve the availability, reliability, and safety of their operations. Through the combination of real-time asset data, predictive analytics, and continuous improvement, Best-in-Class companies saw 12% less unscheduled asset downtime and +15% higher operating margins compared to Laggards. However, implementing this proactive maintenance approach takes a mastery of inventory levels, something Best-in-Class companies strive for (Figure1).

Figure 1: Best-in-Class Control Inventory Levels



Best-in-Class companies are 79% more likely than All Others to have the ability to predict, maintain, and plan the inventory level of spare parts. In doing so, they are better able to know which parts will become scarce and prevent stock outs. The Best-in-Class understand the importance of having a stocking strategy on spare parts to minimize costs. This means accurately accessing how many spare parts are kept on hand and what agreements are in place with suppliers to keep big ticket items in stock that can ship on an expedited basis. This is critical for capital equipment because there is no way any company can afford to stock everything on site, due to inventory costs and sometimes physical limitations such as space and storage control issues. In doing so, 1.8 % of unscheduled downtime among the Best-in-Class is due to lack of spare parts, unlike their competitors who see up to a 5.1% rate.

To accurately forecast and plan inventory demands, a company must have real-time visibility into their inventory information. Being able to collect and analyze inventory data is not enough; the ability to look at data in real-time is needed to make strategic inventory decisions. Table 1 reveals how manufacturers measure key components of their inventories.

Table 1: Real-Time Measurement of Spare Parts

Metric	Best-in-Class	All Others
Stock out rates	45%	14%
Fill rates	41%	18%
Inventory accuracy	36%	12%
Shelf turns	32%	10%
Lead time in critical parts	32%	11%
Mean time to repair (MTTR)	28%	13%
Mean time between failures (MTBF)	24%	16%

Source: Aberdeen Group, October 2014

What is Best-in-Class?

To define Best-in-Class companies, Aberdeen used four key performance criteria to measure the success of an organization's MRO program, not only in terms of how it has improved plant operations, but also how successful these programs have been for achieving financial goals:

Operating Margin vs. Corporate Plan

- +16% - Best-in-Class
- +3% - All Others

Unscheduled Asset Downtime

- 4.6% - Best-in-Class
- 10.3% - All Others

Change in Maintenance Costs (year-over-year)

- 12% Decrease - Best-in-Class
- 1% Decrease - All Others

Return on Assets vs. Corporate Plan

- +14% - Best-in-Class
- -1% - All Others

When an organization does not have visibility into how long it will take for a critical spare part to arrive, they are at risk of costing the company a lot of money. All it takes is for one critical asset to fail for an entire assembly line to come to a halt. It could take days, or even weeks, for a replacement to be shipped to get the operation back online.

Overall, the Best-in-Class have real-time visibility into key information to better enable inventory decisions, which could translate into significant savings. By having this data available in real-time, these leaders have a better understanding of their stock on hand and are able to predict their ability to meet maintenance demands. One important item, where Industry Average and Laggards do not measure any information, is in the lead time of critical parts. Manufacturers, especially those in asset-intensive industries, cannot afford for their critical asset to stay offline for long periods of time (see sidebar). The Best-in-Class avoid such a scenario by gaining real-time access into their fill-rates, stock out rates, inventory accuracy, and shelf turns. Another key element to this visibility is in understanding who the suppliers are to these spare-parts. Without knowledge of who the suppliers are, how much is spent on them, where and with what items, any MRO program would be fighting in the dark against an invisible enemy. Working collaboratively with the suppliers will enable manufacturers to figure out how to minimize shipping and warehousing costs, but also provide suppliers better lead times.

The drive to manage assets in a more predictive and proactive manner requires a company to rethink the way they approach inventory management. Inventory optimization can be a game changing solution for companies that have never considered it. The Best-in-Class results back up this thinking; not only does inventory optimization drive improvements in traditional inventory KPIs, but it also results in substantially improved asset management and overall business performance.

About Aberdeen Group

Since 1988, Aberdeen Group has published research that helps businesses worldwide improve their performance. Our analysts derive fact-based, vendor-agnostic insights from a proprietary analytical framework, which identifies Best-in-Class organizations from primary research conducted with industry practitioners. The resulting research content is used by hundreds of thousands of business professionals to drive smarter decision-making and improve business strategy. Aberdeen Group is headquartered in Boston, MA.

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