

### **Identify additional costs beyond the expense of keeping equipment operating.**

Maintenance groups frequently are asked to perform numerous activities in addition to maintaining equipment and facilities. These activities are important to business functions, but often are not recognized by upper management as spending that is in addition to "maintenance spending."

It is important to identify these additional costs, and make management aware of their magnitude and impact on the maintenance function. Maintenance group spending can be separated into three categories: maintenance, improvement efforts, and inefficiencies.

#### **Maintenance**

Equipment maintenance is, by definition, those activities that keep the equipment operating at current capacity and quality levels. "Maintenance spending" is, then, the costs associated with keeping the equipment and facilities in operating condition.

The maintenance function is charged with accomplishing this at the minimum cost. Those costs include preventive maintenance tasks, repair tasks that return the equipment to operating condition, addressing safety issues, predictive activities, and administrative needs that are operational requirements (e.g., costs of employee vacations). The blend of these activities should be monitored and adjusted over time to minimize spending and optimize uptime and asset condition.

#### **Improvement efforts**

Improvement efforts fall into several different categories. Cost-reduction projects are focused on reducing the cost of manufacturing and often involve modifying the equipment or the production process. Upgrades usually are focused on increasing production capacity or product quality, and often are preceded by trials, which can involve spending for temporary installations.

Modifications to the equipment often are aimed at reducing the cost of maintaining or operating the equipment. These may be capitalized or expensed. Major capital projects often have an expense-spending component and usually require support efforts from the maintenance group. There are also some administrative choices made that are designed to impact the business—training, special projects, and communications efforts are examples.

All of these efforts are discretionary by definition and are not "maintenance spending." That is, the funds are not being spent to keep the equipment at its current level of performance. There is an expectation that spending on improvement efforts will improve the results of the operation through increased quantity, improved quality, or lower costs. So these types of spending are an investment in the future of the business.

As such, all modifications, upgrades, trials, cost-reduction projects, and administrative choices should be justified based upon their planned return on investment (ROI). This requires early identification of an improvement effort as such, and a different work approval process that requires detailing the planned benefit as well as the expected cost. A more stringent approval process that focuses more attention on justifying improvement activities, as opposed to in-kind repairs, is recommended.

### **Inefficiencies**

Inefficient use of resources is likely to occur in all aspects of the asset management function. Overmaintaining equipment, waiting and travel time for employees, ineffective use of resources due to lack of planning, modifications and improvement efforts that have no payback, nonproductive meeting time, and many others will lead to poor utilization of resources. Managers should be sensitive to potentially wasteful activities and practices and work to eliminate them.

The potential causes of inefficiencies are, unfortunately, common in many workplaces. Poor work practices are a common cause of wasted resources because work practices, if not consciously reviewed and improved, can evolve into accepted practices that waste time and money on a daily basis. Lack of discipline in reviewing and approving upgrade, modification, and improvement efforts can cause many activities to take place that do not improve results, and sometimes lead to a negative business impact.

Finally, having too many maintenance or engineering resources can lead to inefficient and ineffective spending. These employees are going to stay busy and work to fill their time as usefully as they know how. This often means spending on activities that should not be done or are done more frequently than needed.

### **Management options**

Capturing all asset care activities in a work order system will aid analysis efforts. Most work order systems will support categorizing work orders into work types. Capturing work performed into multiple work types that identify them as maintenance activities or improvement efforts will aid in understanding how the budget is being spent.

When these categories are identified, having approval processes in place based upon work order type and cost can lead to the appropriate scrutiny of the work being anticipated. Predictive, preventive, and administrative activities should be reviewed and approved annually to help establish the baseline for the budget. Repair-in-kind and safety issues are work types that should not require many levels of approval, unless the cost is quite high. All improvement efforts, however, should be subject to a disciplined approval process that ensures the spending will lead to a return.

At the same time, a closeout process should be established for modification work that ensures the equipment databases are updated at the conclusion of the work. Stores information, drawings, bills of material, and equipment histories should be updated when modifications occur to the equipment.

Establishing what is truly "maintenance spending" as opposed to other types can lead to understanding the cost of asset care for a particular production system. When a company has multiple systems that are similar in form and function, understanding these costs can lead to internal benchmarking as an improvement process.

Identifying and controlling discretionary spending can lead to better management of spending and staffing levels. It also can lead to better understanding of the demands on the maintenance group for all the activities that are in addition to equipment maintenance. **MT**

---

[David E. Liddle](#) is president of Liddle & Associates, 18210 Enchanted Rock Trail, Humble, TX 77346; (713) 204-7492

Three Categories Of Spending

### 1 Maintenance

## **Understanding Maintenance Spending - MAINTENANCE TECHNOLOGY**

Written by David E. Liddle, Liddle & Associates  
Tuesday, 01 October 2002 19:49

---

Reason for spending: activities necessary to keep the asset running at its current capacity and quality level

Required or optional: required for continued operations

Types of activities: repair in kind, preventive tasks, predictive tasks, resolving safety issues, administrative needs (vacations, safety meetings, etc.)

Causes: business needs

### **2Improvement efforts**

Reason for spending: activities that provide increased capacity, capability, or quality, or reduce the cost of production

Required or optional: optional discretionary spending (ROI should be calculated)

Types of activities: modifications, trials, upgrades and improvements, support for capital projects, expense portion of capital projects, cost-reduction projects, administrative choices (training, special projects)

Causes: business choices

### **3Inefficiencies**

## Understanding Maintenance Spending - MAINTENANCE TECHNOLOGY

Written by David E. Liddle, Liddle & Associates  
Tuesday, 01 October 2002 19:49

---

Reason for spending: ineffective work practices and activities that have no payback

Required or optional: optional discretionary spending (no ROI)

Types of activities: overmaintaining, modifications and improvements with no payback, unanticipated spending on capital projects, poor planning, travel time and waiting, nonproductive meetings and events

Causes: poor work practices, lack of discipline to calculate ROI, too many maintenance or engineering resources

[Joomla SEO powered by JoomSEF](#)