

Maintenance, a Cost-reducing Investment

by Gil Santos June 24, 2018



The Maintenance sector has been traditionally viewed as a cost. Although some organizations no longer see it as such, a good number of them still look at it as a cost centre and year after year either strive to cut down costs incurred by the Maintenance department or do not invest sufficiently to build a focused, committed, well-structured unit with a significant impact on the company's results.

This is still quite a common state of affairs today mainly because a number of businesses do not invest in the implementation of data collection systems, nor do they realistically assess their day-to-day production activity and constraints upon it. Such a lack of information prompts companies to adopt random contingency policies lacking perception and orientation which as a rule bring about unwelcome consequences at a later stage, instead of committing to a culture of continuous improvement in a structured, consistently organized way.

In the framework of this approach the Maintenance department, being as it is considered non-productive, ultimately becomes a necessary evil and is managed on minimal amount of resources in order to respond to daily problems and carry out some volume of preventive

maintenance work. We are looking at a minimalist approach to Maintenance whose goal is reducing direct costs, but as a rule it brings about an increase in indirect costs.

Costs of Maintenance Activities/Maintenance Costs

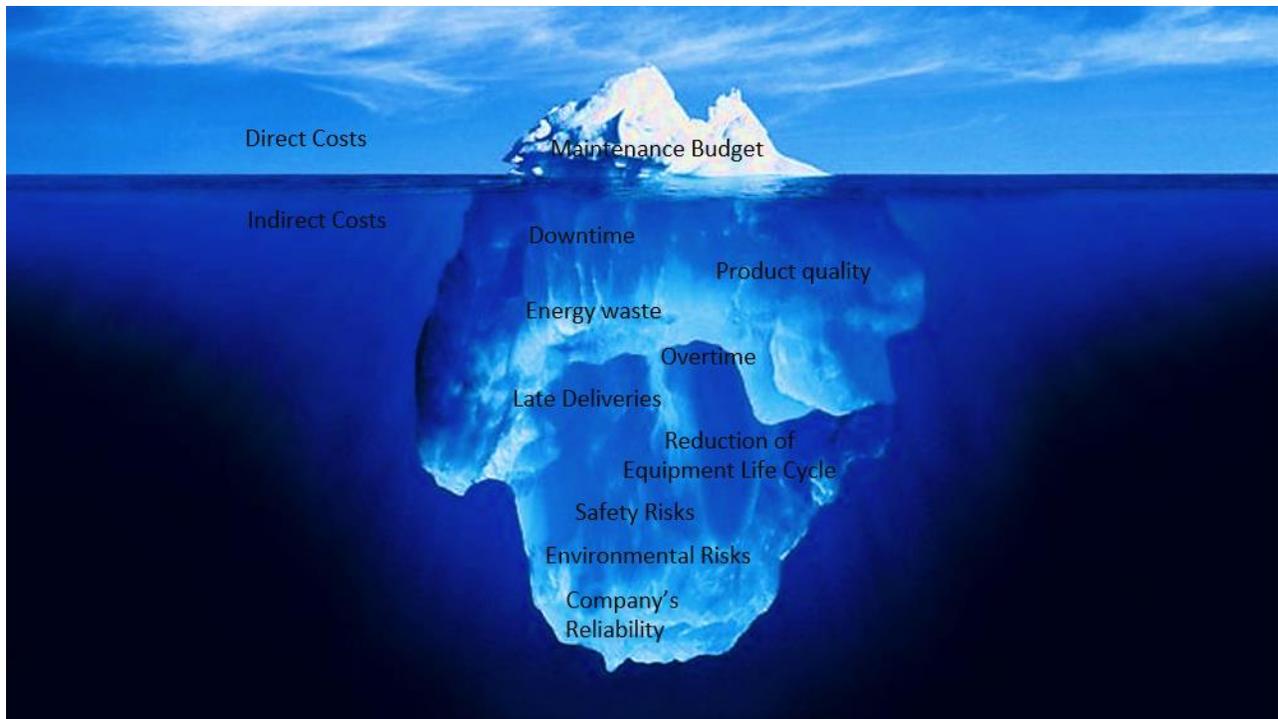
$$\mathbf{Total\ Costs = Direct\ Costs + Indirect\ Costs}$$

Direct costs are costs directly attributable to the maintenance cost centre; all costs which may be incurred by untimely stoppage or malfunctioning of equipment are called indirect costs. When costs of non-working labour, energy (when thermal processes are at stake, whose expense can be quite significant), equipment depreciation, product waste, penalties for late deliveries and non-billable profit margins are added to repair costs (maintenance technicians man-hours and materials), cost figures are generally substantially higher and will have an impact on business results.

This clearly indicates that total costs of unscheduled corrective maintenance as well of production line downtime are much higher, as compared with a scheduled intervention.

Total Costs of Maintenance - the "Iceberg" Model

The iceberg comparison, used in a number of fields, can also be applied to the analysis of maintenance costs. Accordingly, direct costs represent the part of the iceberg visible to the eye while indirect costs, which are usually the result of lack of maintenance, lie below the surface. When an analysis of actual costs is carried out it can easily be concluded that indirect costs greatly exceed the direct ones (usually a 1/5 to 1/10 ratio), depending on the maintenance maturity level the company has reached.



Under this scenario it becomes clear that an injudicious reduction in direct maintenance costs generates an increase in total maintenance costs.

Such an awareness on part of top-level management, based on real data collected from the daily business, triggers a paradigm shift where Maintenance is no longer seen as a cost and turns into a strategic department helping the company achieve its goals.

This paradigm shift will lead to a reflection on the department's current situation as well as to the establishment of a suitable development plan, with the aim of improving its efficiency and reducing global costs incurred by its activity; which generally implies a purposeful, thought-out investment in the department's resources.

Upon the top-level management resolution to build a pro-active maintenance department that adds value to the organization, therefore increasing its productivity, a strategy to achieve this goal should be developed; this process can be implemented by internal resources or by using

outside resources that support strategy definition and implementation. This strategy will vary depending both on the different realities of each company and on the target goals; however, once said goals are clearly defined the goal achievement process should be initiated. The following is an example of how this process might unfold:

1. **Updating all concerned employees on the new company's approach to Maintenance and ensure their involvement.** This should be a transversal type of project cutting across all departments in the organization, since cooperation and involvement of the entire staff is instrumental to the achievement of intended goals.
2. **Initiating a current state assessment and mapping and determining the methodology for monitoring its evolution.** Awareness of current reality is essential to set the desired goals and be in a position to follow up on the evolution of implemented action outcome.
3. **Determining which actions are to be implemented that may contribute to the ultimate goal.** These actions will vary depending on the different realities of each company and the intended objective; however, a few examples are given below:
 1. To determine resources required to enable Maintenance to develop its activities in an effective, structured way. An analysis of the maintenance process flows indicates that approx. 70% of the steps are associated to planning and preparation; however, it often happens that resources required to perform these tasks are scarce if not nonexistent.
 2. To draw out a realistic preventive maintenance plan adjusted to the current reality.
 3. To implement predictive methodologies mainly for critical equipment, thus avoiding unnecessary interventions and costs.
 4. To implement autonomous maintenance, thus getting the various departments to work together towards a common goal, while freeing the maintenance team from

basic tasks and minor adjustments and enabling them to engage in higher-level technical work that brings additional value to the company.

5. To draw out a training programme eliminating technical and human competency gaps that hinder team effectiveness.
 6. To reorganize and optimize spare parts inventory and storage; to reduce intervention times and costs;
 7. To develop a lean culture within your team, with an aim to eliminate waste and improve maintenance performance.
 8. Other.
4. **Selecting the responsible personnel and the completion dates of each action.**
Where long-term tasks are concerned, midway check dates should be scheduled to ensure follow-up of the implementation process, while avoiding any delay.
 5. **Identifying resources required to successfully complete actions.** Upon determining which actions are to be implemented resources required to accomplish your target goals should be identified.
 6. **Conducting follow-up action implementation.** Follow-up metrics are to be used to monitor action implementation in order to identify at the earliest possible stage deviations from expected outcome.
 7. **Investigating the root causes of deviation in implementation and correcting them.** Whenever a deviation occurs its root cause must be identified and corrected, so that discrepancies may be eliminated.
 8. **Standardizing the new methodologies upon implementation completion;** the aim being to integrate them into the maintenance routines, as well as the company's own routines.
 9. **Achieving the target outcomes and sharing the success with all those involved.**

It can therefore be concluded that the right investment in the maintenance department together with the definition of a strategy to improve its effectiveness enable a significant business cost reduction. The cooperation of all involved departments should always be part of the success of this type of projects and top management support is fundamental.

Once outcomes have been met, and taking that a proactive maintenance culture, focused on continuous improvement, was put in place in our work, more ambitious results are set in order to keep the team motivated while constantly working on improving outcomes. Once this threshold is reached in a business organization, there is a growing awareness of the fact that Maintenance – as well as safety - is not the responsibility of one department alone; all should have a hand in this function.