

The path to world-class maintenance - aligning strategy and data

Corrective maintenance, preventive maintenance, predictive maintenance, total productive maintenance... The list of maintenance strategies goes on and on, with solutions ranging from fixing the breakdown once it occurs to involving the entire organisation. So how are companies supposed to know which strategy suits them the best? And with their huge amounts of collected data, how do they know whether their choice of strategy is working or not?

Achieving successful maintenance can save companies a lot of money, but it is easier said than done. There is a plethora of different maintenance strategies out there, and just as many models for choosing the right one. While most models are too complex for firms to use, some can guide the selection based on organisational values in simpler ways. Applying the Analytical Hierarchy Process to strategy selection allows employees to prioritise what matters most, for example, having spare parts easily available or identifying the cause of a breakdown quickly. At Tetra Pak, the process showed that a predictive maintenance strategy suits the researched machine best.

While choosing the right strategy is a step in the right direction, the quest for successful maintenance does not end there. Selecting the right performance measurements is just as important, as they can help detect problems and identify opportunities for improvement. Most companies collect an abundance of data but have no idea what to do with it or if it is even usable. By ensuring that the measurements are connected to the maintenance strategy and that the data is of the required quality, these problems can be addressed.

For all maintenance strategies, there are two types of performance measurements to track. First, to assess how the strategy is working, we have maintenance performance indicators. These indicators can be drawn from improvements the strategy should bring, such as less downtime and longer intervals between failures for a predictive strategy. Most of these indicators are measured automatically at Tetra Pak, so the quality is generally high. Second, we have event data, which is information about breakdowns, such as how and where they occurred, and how they were fixed. Event data is collected manually at Tetra Pak, which makes the quality varied.

There is also a third type of measurement specific to predictive maintenance called condition monitoring. Conditions can be monitored by sensors that track vibration, pressure, temperature, etc., on the machine. Whenever a condition steps outside its normal interval, it tells the operator that something needs to be checked and potentially restored or replaced. Together, these performance measurements paint an exhaustive picture of how the machine is doing and if the strategy is working.

All in all, with the combination of the right strategy and the right measurements to back it up, the path to world-class maintenance is clear.