

Case study:

Creating value with maintenance

"What is the added value of maintenance?" is a frequently heard question in boardrooms the world over. Here, **Mick Saltzer**, managing consultant for Mainnovation UK, discusses how Volvo in Europe adopted Value Driven Maintenance to help it answer the question.

With five manufacturing sites across Europe – four in Sweden and one in Belgium – Volvo is, as everyone will recognise, a major force in automotive manufacturing. The company's acquisition by Ford in 1999 represented an opportunity to bring together the maintenance philosophies of the different organisations and also to rationalise the operations at the five sites. Charged with this process and aligning the business plan with the maintenance operation in 2004/05 was Peter Decaigny, formerly of Volvo, now executive consultant for Mainnovation.

The first step Peter took, working alongside Mainnovation as a neutral partner, was to visit each manufacturing site in turn and to run

workshops in order to identify the important issues that needed to be addressed.

When asked, a maintenance manager is likely to say: "The value of maintenance comes from delivering maximum availability at minimum cost". While this is true in theory, it's little help in the day-to-day operation. This is because it is vital to prioritise: is it better to reduce costs or increase uptime? Is a 1 per cent increase of uptime just as valuable as a 1 per cent reduction of costs? And how is the value of safety determined? Value Driven Maintenance (VDM) provides answers by identifying the value potential of four value drivers – safety, health and environment; cost control; resource allocation and asset utilisation – in maintenance and then enables management by those drivers.

The value of maintenance

The workshops, which were run at the Volvo sites, were structured around the Value Driven Maintenance model that enables those involved in the maintenance operation to identify which of the maintenance value drivers is most important to their operation.

Today's maintenance managers are constantly balancing higher machine availability (asset utilisation) and lower maintenance costs (cost control). In doing so, they must take into account safety, health and environment regulations. To make everything work, they need to use the right technicians, spare parts, knowledge and contractors (resource allocation, in other words).

For all four value drivers, maintenance can help to increase a company's economic value. In a market where there is more demand than supply, greater machine availability results in more products, more income and thus higher value. On the other hand, lower maintenance costs produce higher value by avoiding expenditure. The same applies to resource allocation. One example is a technical storeroom, where smarter inventory management of spare parts can increase value enormously for a company.

Similarly, the safety, health and environment (SHE) factor affects value. SHE accidents tend to necessitate substantial expenditure, resulting in negative cash flows. Damage caused to personnel, environment and image, for example, will increase expenditure. An even greater danger is loss of the licence to operate because of an inability to comply with SHE legislation. No licence to operate means no production and no income.

For Volvo, at the time, global over-capacity in the automotive market was a major factor to consider and so, closer to home, was the

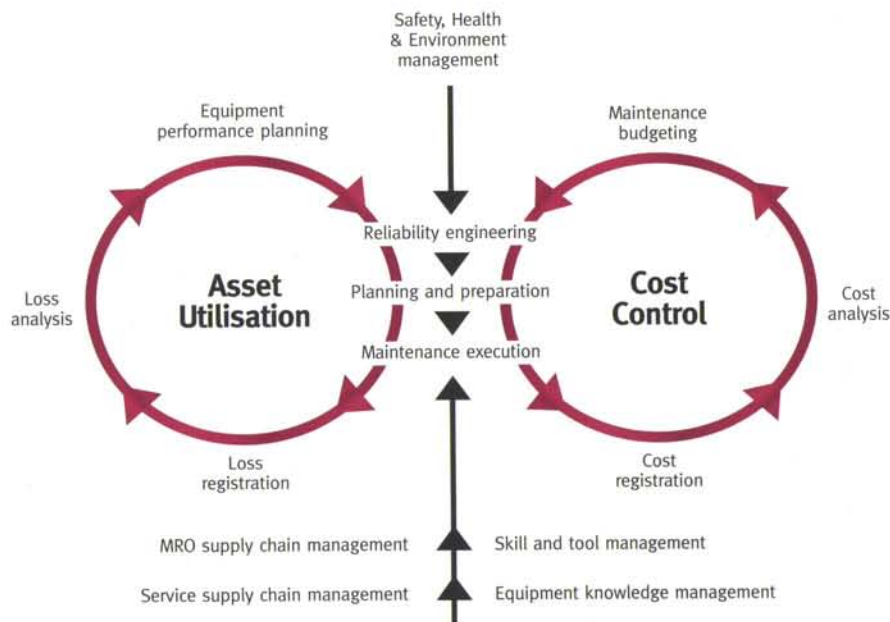


Figure 1: Maintenance Core Competences



introduction of new models at the different Volvo plants. The economic climate, external factors and market conditions all impact on determining which is the dominant value driver at any point in time – and the VDM methodology helps guide the way.

Once the value potential has been identified, the maintenance function must be organised accordingly. Which competences are, and are not, important? There will be little point in giving priority to reducing the stock of spare parts if the value potential lies in more uptime. VDM makes a link between value drivers and core competences (see figure 1).

Take again the example of Volvo. The market situation at the time meant that most value was achievable by controlling costs. So the right-hand value circle must be configured from maintenance budgeting to cost analysis. Interestingly, both value circles include the competences of reliability engineering, planning and preparation and maintenance execution. These competences are the link between the four value drivers and thus form the heart of VDM.

Now that the important competences have been identified, the next step is to organise and control them in the right way. For this purpose VDM puts forward best practices from leading maintenance philosophies. Total Productive

Maintenance (TPM) enjoys a reputation as the best practice for registering, analysing and improving production losses (asset utilisation) in discrete production. By contrast, Asset Based Costing (ABC) is a proven best practice for properly controlling maintenance costs. Using these, a technical department can quickly become a professional maintenance organisation that adds value to the overall business performance. For Volvo's five plants, according to Peter Decaigny, "The biggest change was to get rid of diversity and to establish a common way of working where, for example, there was one way of ordering a spare part."

Part of this process involved installing some new rules and making maintenance less complex. To ensure this common way of working, a gatekeeper rule was put in place whereby all modifications coming from the production side and the maintenance side were overseen. The gatekeeper communicated all proposed changes to all parties – including different shifts and across different departments – for common agreement that could then be enacted.

"There was a lot of small things that helped us," Peter recalls. "One example was the further professionalisation of the preparation process for planned maintenance activities. The new

common process was a mix of internal best practices and some best practices from Mainnovation."

The result was what was called a 'blue box' system in which spare parts, work orders, permits and risk assessments were collected before a task was actioned, a process that has increased the efficiency of the technicians.

VDM: the proof

Is VDM valuable? A growing number of multinationals in Europe and the United States think it is. Bengt Svensson, Maintenance Manager at Volvo, says the results speak for themselves at the factory in Torslanda, Sweden. "In 2003, the maintenance cost per car was SEK 684 (£62)," he points out. "In 2009, it was down to SEK 344 (£31) per car, a 50% reduction in cost, representing a saving of SEK 70 million (£6.35 million) per year."

Managing by value is not just a must, it is the only way to discover the true significance of maintenance. VDM makes maintenance more than a cost centre because it contributes in various ways to a company's economic prosperity.

In fact, VDM confirms what we already thought, but now we have the proof.



For more information about Value Driven Maintenance visit: www.mainnovation.com