

Bridging a gap

Value Driven Maintenance builds a bridge between traditional maintenance philosophies and managing by shareholder value. Mick Saltzer of Mainnovation UK, explains

A frequently heard question in boardrooms the world over is: 'What is actually the added value of maintenance?' Even though maintenance is critically important, few maintenance managers are able to answer the question convincingly. Especially when they are asked to express the benefits in terms of economic value added or shareholder value.

What is value?

Before you can manage by shareholder value, you have to understand what exactly value is. In theory, value is defined as 'the sum of all future free cash flows, discounted to today'. Sounds impressive, but what precisely does it mean? A cash flow is the difference between income and expenditure. This is not the same as the difference between revenues and costs, because that's an item that can be greatly influenced by accounting practices. The second part of the definition stems from the knowledge that the value of a cash flow is related to time. One euro is worth more today than one euro next year. This is because you can deposit a euro at the bank today and use it to generate income over a period of one year. Therefore, we have to adjust future cash flows.

Value of maintenance

A maintenance manager is likely to say: 'This theoretical approach is all very well, but what good is it to me in practice? 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 you have to prioritise: do you want to reduce costs or increase uptime? Is a 1% increase in uptime as valuable as a 1% reduction in costs? How do you determine the value of safety? Value Driven Maintenance or VDM provides answers by identifying the value potential of the four value drivers in maintenance and

enabling you to manage by those drivers (see figure 1).

Figure 1 shows what maintenance is all about. Today's maintenance managers are constantly balancing between 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).

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. Smarter inventory management of spare parts can enormously increase value for a company.

Similarly, the safety, health and environment (SHE) factor affects value. SHE accidents tend to necessitate substantial expenditure, with resulting negative cash

flows. Damage caused to personnel, environment and image, for example, will increase expenditure. An even greater danger is loss of the license to operate because of inability to comply with SHE legislation. No license to operate means no production and no income.

Value potential

Maintenance managers must show where there is potential for value within their maintenance organisation. VDM provides calculation models and tools for this purpose. For example, in the bulk chemical industry there is currently less demand than supply and worldwide prices are under considerable pressure. The value potential here lies mainly in controlling costs and the smarter deployment of people and resources.

Value and time

The next example shows that value depends not only on the industry concerned, but also on time and the market dynamics. In the aviation industry, traditionally the focus was on increasing fleet availability and meeting the regulations of the Aviation Authorities. As a result of 9/11, there was a reduction in the demand for air travel. Thus, the focus shifted from fleet availability to cost control and required a complete change of thinking. The economic climate, external factors and market conditions will all impact on determining which is the dominant value drivers at any point in time – and the VDM methodology will help guide the way.

Value and competences

Once the value potential has been identified, the maintenance function must be organised accordingly. Which competences are, and are

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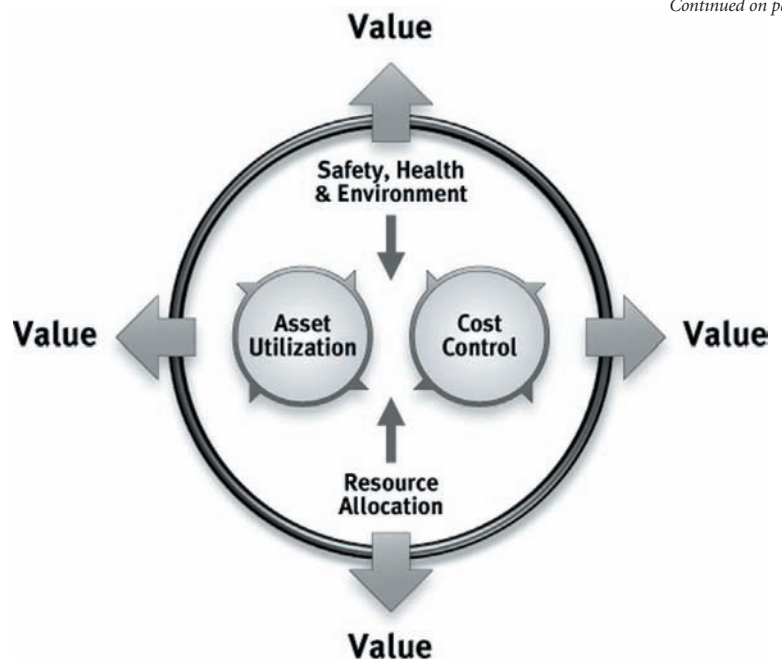


Figure 1

KEY FACTS:

- A growing number of multinationals think managing by value is the only way to discover the true cost of maintenance
- VDM makes maintenance more than just a cost centre

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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. Unfortunately, we all too often see that these decisions are not made by the maintenance department. VDM does do this, however, and it makes a link between value drivers and core competences (see figure 2).

Maintenance Core Competences

Take again the example of bulk chemicals. The market situation means that most value is currently 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 & preparation and maintenance execution. These competences are the link between the four value drivers and thus form the heart of VDM.

Value and best practices

Now that we know the important competences, 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

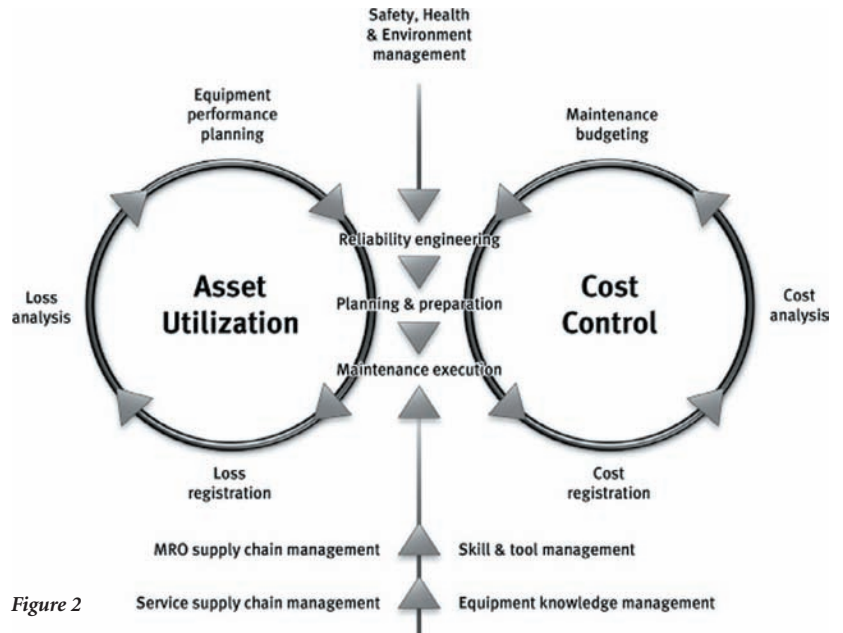


Figure 2

discrete production. In 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.

Valuable?

Is VDM valuable? A growing number of multinationals in Europe and the United

States think it is. 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, Value Driven Maintenance confirms what we already thought, but now we have the proof!

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IR inspection key to loss control

Infrared inspection is integral to the loss control evaluation service that Chubb Insurance provides its commercial customers. The company employs about 70 certified thermographers worldwide, who it assigns to check the health of customers' electrical and mechanical assets to minimise fire risk and costly downtime and ensure personnel safety.

Since the UK inception of this service in 1997 Chubb has maintained a database of every hotspot detected. Against each of these surveys it attributes a cost of potential property loss and business interruption should the defect have been allowed to develop. The company estimates that averted losses to date are in excess of £3.5m and rising.

In the UK, Chubb maintains its own arsenal of thermal imaging cameras and recently added two FLIR P-Series top-of-the-range infrared models to its inventory. These were chosen to complement existing Flir models which, despite being more than 10 years old, still work well.



The cameras allow IR services to be provided across all industry sectors from factories, warehouses, and utility sites to municipal, medical and leisure establishments. Predominantly the role of the cameras is the condition monitoring of capital equipment and associated electrical systems but they are also increasingly being used to check the integrity of insulation to contain overheads.

The cameras allow Chubb to spot the vital signs of a developing fault without the need to interrupt the production or business process. Neil MacLeod, risk engineer and Level 2 certified thermographer, says "As well as preventing catastrophic failure it also allows us to help the customer minimise downtime and use maintenance resources more effectively."

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24/7 protection

The latest efactor octavis product from ifm electronic is designed to make it easy and cost effective to monitor vibration on more moving parts. Self-contained, the efactor octavis VKV vibration monitor has built-in switching output and a transmitter function. Suitable for attaching to almost any machine, it monitors overall condition of equipment by analysing the severity of the vibration.

Small and easy to set up, the device is firmly attached to the machine, then the rms (vibration in mm/s or even inches/s) is set on the first ring, followed by the time delay on the second. Once the setting is in and locked, the VKV will monitor that plant 24/7.

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