

Predictive Asset Maintenance

Improving availability and reliability whilst reducing the cost of managing your assets



People matter, results count.

The opportunity

For all businesses where plant and equipment are present there is the constant balancing act needed between keeping costs down and reliability / availability up. This is especially true for process, transport, utilities and manufacturing industries. For these, effective asset management and maintenance becomes critical. Plant owners in these sectors need to be assiduous in managing compliance and inspections of assets, but as they do so they must balance risk and efficiency.

They face three main objectives:

- To comply with their regulatory obligations (a must if they are to retain their operating licenses)
- To avoid unnecessary maintenance and inspections and the associated costs
- To be proactive in order to avoid unplanned downtime

Most businesses find these objectives hard to achieve for three main reasons:

- The level/degree of harmonization and integration of process and systems is usually low
- The availability, quality and reliability of data tends to be poor, with large numbers of overlapping and inconsistent documents and databases, and growing volumes of unstructured “big data”
- The level of “control” is low

The Solution

Predictive Asset Maintenance is a methodology that allows you to achieve these objectives by using a combination of good information governance and leading predictive analytical modeling. Through this we can help you systematically identify the maintenance and inspection regime that you need to achieve compliance and to avoid unplanned downtime while avoiding unnecessary work.

In asset-intensive industries, improving the planning of maintenance can bring huge savings. In our experience, avoidable costs can be reduced by up to 10%. For many industries it can also reduce the amount of time plant is down for maintenance. This can be by as much as 5 days per year. For a plant or facility with a revenue of €1m a day that adds up to an additional savings of up to €5m in “saved” production. At the same time it is possible to increase reliability and performance.

How it works

An end-to-end solution

Capgemini tackles Predictive Asset Maintenance with an integrated end-to-end approach that applies best practice to all aspects of the task. We start by helping you create a business case and roadmap. We work with you to implement the right governance, process and technology. We can then help you manage the transition of each plant to the new regime.

We generally take a phased approach, prioritizing the aspects of your operation that cause the most pain, and where the greatest benefits are to be had. Based on these priorities we will then help plan and implement the asset maintenance strategy across the business.

Improving data quality

We always begin by improving data quality. Predictive Asset Maintenance depends on reliable and comprehensive descriptions of every asset. The reality is that a typical business has multiple records for each asset, with duplications, contradictions, and gaps in the data, and a range of different ways of identifying assets. Much of the data tends to be unstructured, and where it is structured the formats of the data often do not match (particularly where maintenance is outsourced).

In each business, there are knowledgeable people who know how to match the records and to identify the most reliable sources of data. However, these in-house people are invariably overstretched, and so we use our own subject matter experts to make the best use of in-house knowledge without taking up too much of their time. Once we have defined the parameters of the task in consultation with your experts, we can use skilled analytics resources in our offshore facilities to clean up the data cost-effectively.

Implementing analytics

We partner with SAS to implement its market-leading Predictive Asset Maintenance software, integrating it with other systems as necessary. This uses best-in-class predictive algorithms to allow us to optimize the asset maintenance process. We have also integrated the SAS Predictive Asset Maintenance solution into our Asset and Inspection Maintenance solution (AIM) which will support “license to operate” compliance.

Governance, Risk and Change management

At the same time as implementing the solution we will address all the surrounding areas of risk, including organization and governance, process, information and data, and infrastructure and security.

A program like this also affects a large number of stakeholder groups: managers, engineers, those responsible for local systems. Many of these are resistant to change: in particular, plant engineers tend to be rightly suspicious of change because they see it as potentially risky. We help you identify key stakeholders at the outset, and then work with them to de-risk the transition and ensure their buy-in.

Managed services

We can provide virtually any aspect of Predictive Asset Maintenance, small or large, as a managed service. For example, we can carry out initial or ongoing data cleaning on your behalf, or host an engineering data warehouse in the cloud. Executing processes such as data clean up and maintenance within our service centers in India can be a particularly cost-effective option.

Our Predictive Asset Maintenance capabilities

To implement Predictive Asset Maintenance, you need a range of disciplines – not just the ability to identify the critical elements of a plant, and the problems to which they are prone, but also an understanding of maintenance processes, of “big data” analytics, of IT, and of change management. We have experts in all of these areas, as well as a global team of subject matter experts in mechanical, electrical and reliability engineering – three of the most important aspects of Predictive Asset Maintenance. Our multidisciplinary teams can work with your in-house experts to achieve a complete solution tailored to your business.

As well as helping with transitional activities such as data cleaning, our offshore facilities can manage and run the new IT applications, or can assume responsibility for entire business processes through Business Process Outsourcing (BPO).

Capgemini Business Analytics

Capgemini’s Business Analytics global practice network is a core unit within the Business Information Management (BIM) global service line and operates in 25 locations across the world, drawing on a database of over 100 analytics client credentials and analytical models. It provides high-function analytics-based solutions to all major industry sectors and business functions.

Capgemini has over 7,000 consultants working in BIM across the world. We work with all the leading big data and analytical technologies, and provide services to support business analytics from high-level strategy to managed outsourced services. We recognize that analytics are specific to industry sector and sub-sector, and have experts and solutions for each one.



Capgemini’s AIM (Asset & Inspection Maintenance) Framework

The Capgemini AIM provides an accredited framework, incorporated by Lloyd’s Register within their quality system. With AIM a plant organization is able to plan, act, register and check all the legal inspection obligations. A strict authorization scheme enables proof of inspection and the ‘freeze’ of all approved inspection findings and a comprehensive tracking and tracing environment. With AIM plant managers have ultimate control over their License to Operate. AIM also incorporates a document management module for storing inspection and maintenance information.



About Capgemini

With around 120,000 people in 40 countries, Capgemini is one of the world's foremost providers of consulting, technology and outsourcing services. The Group reported 2011 global revenues of EUR 9.7 billion.

Together with its clients, Capgemini creates and delivers business and technology solutions that fit their needs and drive the results they want. A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business Experience™, and draws on Rightshore®, its worldwide delivery model.

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