



White Paper

Everything under Control - A Web Enabled Asset Management Approach in the Primaries Industry

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A new business process integration concept with web enabled asset management offers on line and offline tools for information management throughout the whole lifecycle of a plant, gathering and integrating information from the plant into business processes.

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In the various processes of the bulk solids industry there is one common topic which drive the process automation efforts. The main driving force is finding solutions for cost reduction by:

- saving energy and raw material,
- reducing downtime, and
- reducing maintenance.
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Both, the initial costs (Capex: Capital Expenditure) and the cost of running a plant (Opex: Operational Expenditure) are important for the success of an operation, however, Opex costs have so far not been considered that much in the initial phase of many projects. The Opex costs are of significant value and savings can by far exceed the Capex costs, if details to concept design in the very early

stages are treated with the appropriate diligence.

Cost savings can be achieved by optimising industrial workflows and asset-related business processes across the entire lifecycle of the plant, i.e. by implementing an effective Plant Asset Management system.

Plant Asset Management



Fig. 1: With the new asset management system, Boliden handles the information of about 4500 instruments at its Aitik mine in Sweden. (Pictures: Endress+Hauser)

Every phase of the life cycle of a plant and its assets requires information. So data and information concerning a plant and its assets are generated right from the first day of planning: in engineering and sizing, in procurement, in installation and commissioning, in operation and maintenance. By offering a set of plant asset management modules, a total life cycle oriented asset information management is in place. It prevents that small islands of information emerge at different points and integrates information of the different life cycle phases. Plant asset management:

- supports customers, by optimisation of their workflows and process towards their assets, wherein devices are seen as assets,
- provides solutions, services and products to manage the assets and to increase the availability of the plant, and
- offers collections of relevant asset information and guidance how to use it, recognition and monitoring of asset health status, as well as decision making support for maintenance.

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Rather than offering blanket plant asset management packages that provide unnecessary features at unwanted costs, the Endress+Hauser approach focuses on customer needs. The solutions are tailored to user requirements and draw upon a basket of tools selected to fit the task at hand.

By using synergies between the tools, products and services, optimum process support can be provided, e.g.:

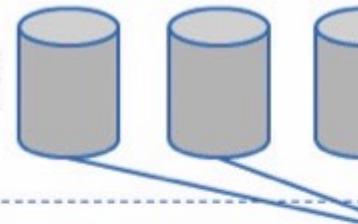
- W@M (Web Enabled Asset Management) collecting/setting of relevant asset information, its storage and provision over the entire lifecycle.
- Fieldcare based on the FDT /DTM standard, manufacturer-independent open configuration.
- Diagnostic tools enabling recognition, monitoring and prediction of asset health status for decision support.

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Operational Phase

During operation, many factors emit pressure on the team operating and supervising a plant. In today's cut throat business environments it is necessary to save money and time wherever possible to be competitive. To support in these efforts, Endress+Hauser can give vital information over the whole life cycle of their instruments to optimise maintenance efforts.

Many different databases
(Product status, spare parts, certificates, etc.)



connected via 1 central database
(Common equipment record)

Available via NetWeaver technology

SAP N

W@M provides direct access to his
Asset information

W@

Existing on-site tools can access these
databases via dynamic hyperlinks or
Web Services

FieldCare

Fig. 2: The W@M portal offers access to all life cycle information.

The W@M Portal is an online platform for asset information management. As a hosted solution all that is necessary for access, is a web browser and a connection to the Internet. Heart of the portal is the Installed Base Assistant. Here the management of the assets is handled in an open and flexible database. Documentation is available automatically for equipment from Endress+Hauser, giving direct assistance without any manual inputs. Furthermore it is possible for users to add additional files of any type which are then stored within the portal. Information is also recorded in the event logbook of the devices, showing tasks such as repair, calibration or maintenance.

With the portal and asset information management platforms the right operating manual, calibration certificate or spare part list is only one mouse click away. With a critical look into the total cost of ownership for measuring equipment it is realistic to estimate approximately 70 percent of the cost to occur during the operation of an instrument. Information is the key to reduce these costs.

Project Example

The Aitik copper mine in Sweden is operated by Boliden, one of Europe's leading mining and metal groups. Ore content at the mine is extraordinarily low, and originally Aitik was to be closed in a few years' time. But Boliden invested around EUR 580 million in mine expansion and upgrading, doubling production capacity to now 36 million tonnes per year. At the same time, the headcount rose only moderately to 550. "It wasn't just a question of expanding production;" underlines Mikael Burck head of the electrical department and in charge of process automation at the site. "We also wanted to boost productivity. But first of all we wanted to safe-guard Aitik's future:" The record investments will initially extend operations until 2029. With this project Aitik has become a kind of model for experts around the world due to an outstanding yield of around 93 percent.

In part, this is also made possible by the process measurement technology provided by Endress+Hauser, who supplied over 1500 instruments. The key targets are to lower their maintenance and service costs. One essential element is the W@M Portal, which provides constant access to relevant information and current data on the measurement instruments in use. In addition, 3000 products made by third party manufacturers have also been included. 'This helps us to keep engineering under control;' explains Boliden employee Michael Sirkka. "If a measurement instrument needs to be replaced, we can read out the parameters and transfer these to the new instrument:"

Everything has been designed to guarantee disruption-free operation. "We have examined every device, instrument and plant component in terms of their importance to the process;" says Mikael Burck. Everything is maintained and serviced according to plan; important pumps and measuring points are designed with redundancy. In case of a failure during maintenance and service work, all that has to be done is to switch over.

The operating personnel have been involved in the planning process right from the start. One outcome is the optimised instrumentation concept with a reduced number of different types and models of devices and instruments to make stock-keeping and maintenance easier.

The Business Process Integration W@M concept by Endress+Hauser offers online and offline tools for information management throughout the whole lifecycle of a plant, gathering and integrating asset information from a plant into the business processes. With this single point of information access, workflows for maintenance tasks can be greatly enhanced.

A Note from the Editor

For all statements in this article that refer – directly or indirectly – to the time of publication (for example “new”, “now”, “present”, but also expressions such as “patent pending”), please keep in mind that this article was originally published in 2012.

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