

Hindustan Zinc Limited

Category: Process Manufacturing
Enterprise

Background:

Hindustan Zinc wanted to improve its equipment availability and ensure reduced downtime through better production, management and preventive maintenance. Incorrect entries in the PM Module of SAP about the equipment arose due to manual errors as well as data being entered without actual inspection, this in turn led to negative impact on equipment availability and uptime. The objective of the company was to:

- Enhance decision making with real time data and analytics
- Improve health of equipment and reduce down time
- To create effective production plans
- Drive operational excellence
- Align business strategy with IT execution

IT initiative/Project: Mobile Asset Management

- The project was initiated in October 2010 and got completed in April 2011
- Integration of SAP PM Module with handheld devices for maintenance team on the field.
- The plant staff working on Shopfloor did not have access to SAP while attending maintenance of equipment, taking observations, etc., that led to delays and errors while entering data into SAP at a later stage. To overcome this problem, each maintenance and plant engineer has been given a mobile SAP on a handheld device, which is now a part of their maintenance tool kit. The aim of the project was to ensure that field engineers really go to field and record real data, rather than manipulating it with the last day's data. Unless they pair the device with RFID tags placed on the equipment, they cannot feed data and by pairing with RFID tags most of the data about the equipment is picked up automatically, and it takes only few seconds for the person to enter the rest of the data.
- 16 handheld devices are being used to track 100 critical equipment in the organization, which are inspected thrice every day (300 transactions across 3 shifts).
- Implemented a backend system called MAM (mobile asset management) -The SAP Mobile Asset Management is a full offline mobile application that assists the field service and the field maintenance technicians to perform their daily activities at maintenance and process site and within plants with all the needed data related to an equipment synchronized onto their handheld devices using RFID; the field technicians are enabled to capture additional data on their devices and simultaneously synchronize with the backend system.
- Technology Involved:-
 - Front End:
 - Pocket PC 2003 /(SE), Win CE, and Win 32 based devices with 128MB RAM needed
 - MI Client:
 - MI 2.5 (w/ WebAS 6.40)

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- MAM client application (w/ RFID, Mobile Alert, and Signature Capture client components)
- Light DB (Only light DB will be supported as a data persistency layer with MAM 3.0 going forward.)
- Middleware:
 - MI Server:
 - WebAS 6.40 (MI 2.5), part of NW 04
 - MAM Middleware component (Sync BO definition)
- Backend:-
 - ERP 2005
 - R/3 4.6 C, R/3 Enterprise, ERP 2004
 - Support Package PI2004.1
- Following are the key steps involved in the project implementation:
 - Load JVM, Mobile Engine, and the Java coding from Mobile Asset Management to the mobile device.
 - Necessary customization setting done in SAP ECC server.
 - Configure authorization profiles using the Administrator and User roles.
 - Download the required data onto the mobile device.
 - Data Entry into the SAP system.
 - Working offline with uninterrupted connectivity.
 - RFID sensing capabilities figure out the actual and real-time inspection on the field.
 - Handle SAP notifications, measuring points and measurement documents from out of the office (mainly in field area)

Impact:

- Monitor and Improve Maintenance measures of performance.
- Cultivate data ownership among Maintenance users.
- Cost efficiency by reducing equipment failures and breakdowns.
- Reduce stand-alone systems and manual interfaces.
- RFID facilitates actual task confirmation on site.
- Utilize various resources and available manpower effectively.
- Populating the technical History of the Critical Assets/Equipment.
- Standardize PM business processes across Organization.
- Helps field technicians to capture data where SAP connectivity is not available in the plant
- Enhanced interaction between field technicians and backend office.
- Getting actual data and summary report generated from the system.
- Everyone can improve basic awareness regarding SAP system and its feature by using Mobile system.

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- Field technicians can resolve problems faster and better.
- Significant financial impact on the business due to:
 - Higher availability of equipment and reduced data error.
 - Assurance of data captured and inspection of equipment by the staff.
 - Equipment history and cost captured in the system.
 - Approximate saving of Rs 4.24 Crore per quarter for Hydro-1
 - Approximate saving of Rs 5.46 Crore per quarter for Hydro-2

About the company:

Hindustan Zinc Ltd. is a subsidiary of Vedanta, which is a globally diversified natural resources group with wide-ranging interests in aluminium, copper, zinc, lead, silver, iron ore, oil and gas and power. Hindustan Zinc offers products ranging across Zinc, Lead, Cadmium and Sulphuric acid.

Vedanta was the first Indian Manufacturing company to be listed on the London Stock Exchange and it continues to be a part of the FTSE 100 Index. The company serves mainly Steel companies, Battery Companies and the Fertilizer industry. It has offices spread across 10 locations in India and an employee strength of over 6365.