

Indian Bureau of Mines was set up on 1st March, 1948. Initially IBM functioned purely as an advisory body and with passage of time, the activities of IBM grew in depth and extent like Technical Consultancy and preparation of mineral maps leading to complete inventory of mineral resources. In the last decade, with the change in the policy of Government, IBM undertook two very important activities. The first being the processing and approval of mining plans and schemes of mining for all the mines in the country and second one being the implementation of rules for the protection of environment. IBM accepted this challenge and has been successful in promoting the awareness about protection of environment in the mines through the “Mines Environment & Conservation Week”.

IBM handles a large number of monthly and annual returns from their registered Mine owners throughout the year. To facilitate the monitoring and the management activities pertaining to all these process effectively, it became necessary to have a consolidated and online computerized system.

## **The Challenge**

IBM had adhoc applications systems developed, which were predominately an offline mode of operations. IBM used to capture all data related to production of each mine, which are submitted as the monthly and annual returns based on a set of standard forms. This data were captured centrally at IBM HQ for reporting, publishing and accessing information. These systems were developed in Forms 6.0 and Oracle 10g as the database.

IBM had set of standard forms to capture the mine data. The monthly returns and annual returns are submitted thru ‘F Series & N form’ and ‘H Series & O form’ respectively. Registered mine owners have to submit their mine production as per the forms as hard copies and sent it to IBM HQ for data processing.

Every mine owners / agent / engineer / manager or any person or company engaged in trading or storage or end-use or export of minerals mined in the country need to be registered with IBM. This is done by using ‘Form-M’ where specific information relating to the industry is captured online by another application system.

The above process of registration and data submission was leading to delay in submission of data, inconsistency of data, clarifications on data, which all was resulting in delay in processing the data capturing, publishing and generation of statistical reports.

- ✓ Time delay in receiving the returns at IBM end, non-submission of returns in specified format, delay in obtaining scrutiny / clarifications on inconsistent data
- ✓ The current system is offline, so the data entry of monthly and annual returns has to be done at IBM HQ.
- ✓ Since the existing system is client server based, the application has to be installed on every client.
- ✓ The data security was a concern.
- ✓ Any new mine code assigned by RO offline system, the relevant details has to be transferred to IBM HQ for further usage in various existing applications.

In brief the system had limitation and timely information was not produced by IBM users, which was the main objective.

## **The Solution**

UBICS helped IBM in architecting; developing and deploying a web based application solution by removing the shortcomings and in the process included additional modules, features for online submission of returns with proper data validations, data security and seamless integration with other applications where necessary was provided.

The basic features of the solution provided are

- ✓ The solution provided has facility for online submission of monthly and annual returns by Mine owners/ agent / engineer / manager or any person or company engaged in trading or storage or end-use or export of minerals mined in the country.
- ✓ The “F Series Forms” and “N Form” are for submitting monthly returns and the “H Series Forms” and “O Form” are for submitting the annual returns.
- ✓ The monthly returns are to be submitted on or before 10th of every month for the preceding month and annual returns need to be submitted before the 1st July of every year for the preceding year.
- ✓ Proper data validation while submitting online
- ✓ Reminders and mails are sent as and when required for escalation purpose.
- ✓ Seamless data integration and extraction for generation of statistical reports and publishing it on the web site.
- ✓ Dynamic dashboards to display information according to each viewer's access level.
- ✓ Module and reports for Mineral And Metal Trading Corporation of India.
- ✓ Tool to estimate yearly Production Proposal (As per Mining Plan etc.).
- ✓ Consumption of data through web-services.
- ✓ Data Extraction (Merging Oracle and MySQL data to Oracle data) for internal reports.

## **The Result**

The online application is live and at the time of deployment there were 4,573 registered mine owners across the country. The outcome of the solution has greatly improved the process of timely data collection with no data inconsistency and thereby improving the productivity of respective departments of IBM in generating reports and statistics.

The other major benefits are,

- ✓ Weekly internal reports from consolidated data.
- ✓ Robust and secure application for data & assets.