International Journal on Recent and Innovation Trends in Computing and Communication ISSN: 2321-8169
Volume: 3 Issue: 2 356– 358

ERP Application for Limestone Mining Industry

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Abstract: In mining industries there are number of entities and departments are present. If these all departments are not maintained then it is very difficult to handle the mining organization. For maintaining mining industry (ERP) solution can help, make your mining company more profitable, mining companies can strengthen collaboration within the organization and increase efficiency and adaptability. The ERP solution lays a solid foundation for mining companies to continuously review, benchmark, and optimize their business processes based on and in line with their corporate business strategy. Making the right business decisions for management becomes easier. A comprehensive ERP solution also makes it easier for a mining organization's business partners to engage productively with the company. The main objective of this project is that there are number of mining organizations where this system is must to be use because with the help of this system mining companies can provide outstanding service to customers, maximize their return on investments in assets, optimize enterprise processes, mitigate operational risks, facilitate environmental compliance, and streamline the merger and acquisitions process.

Keywords-*ERP,LimeStone,mining.*

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I. INTRODUCTION

The software systems used in today's corporate world create and gather data in many forms. The data originates from multiple input points and multiple inputs, it has many sources and consists for example of orders, invoices, purchases, manufacturing data, measurements and anything else that is linked to running the business of a company. This information is stored in massive databases but is mostly used in day to day operations without largely analyzing the data and finding additional value from it. This stems from the fact that finding useful information is challenging due to the large volume of the data or the nature of the data might make basic statistical analysis impossible.

In mining industries there are number of entities and departments are present. If these all departments are not maintained then it is very difficult to handle the mining organization. For maintaining mining industry ERP solution can help to make your mining company more profitable .Mining companies can strengthen collaboration within the organization and increase efficiency and adaptability. They can streamline operations throughout the enterprise, including customer contract management, project management, mining and processing, plant maintenance, transportation, sales and marketing, and procurement. Organizations can embed risk and compliance management into core business processes while gaining better insights into costs and profitability organization-wide [2]. The ERP solution lays a solid foundation for mining companies to continuously review, benchmark, and optimize their business processes based on and in line with their corporate business strategy. Making the right business decisions for management becomes easier. A comprehensive ERP solution also makes it easier for a mining organization's business partners to engage productively with the company. Enterprise Resource Planning (ERP) software is often one of the extensive information gatherers in a company. It can be used as a managing system for various parts of business, including product or production planning, parts purchasing, inventory tracking, supply chain and order management (Uusi-Rauva et al., 1994). Some commonly known examples of ERP systems are SAP, Baan, MFG/Pro, Oracle E-Business Suite and Microsoft Dynamics. ERP systems always store their data in a database which makes it a viable target for data mining activities, but many times companies use diverse systems together to form complete ERP functionality and their data is scattered across multiple databases. In these cases, it is sometimes necessary to gather the scattered data into a single database called a Data Warehouse (DW), before submitting it to data mining activity.

II. RELATED WORK

Enterprise Resource Planning (ERP) is a solution, which facilitates company-wide integrated information systems covering all functional areas and performs core corporate activities and increases customer service augmenting Corporate Image.ERP is used for better management so that it is known what is happening inside the company. It is the one solution for managing company resources. ERP is also used to achieve cost control and low working capital. ERP is used to satisfy customer's high expectations. It is a web based and a live project implementing for the company located at Wani, district Yavatmal. This ERP application covers all basic and advance features of an inventory, production and account departments. In this application there

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are various advance features like Automation, calculation. Using this feature there may be less chances of misinterpretation and error cause. There is a better searching and sorting technique, one can search the data using any attributes. This software is fully customizable, user friendly and easy to use. In allocation process the number of quantities of raw material allocated to each individual (employee) are calculated and displayed as an opening stock to the employee in the stock table. The remaining stock will be added to each employee's allocation in the next day. The admin and the employee directly interact with the software. The employee will be provided a familiar background to use the overall software. He will be provided a user guide so that he should not face any difficulties while handling the software.

SYSTEM ARCHITECTURE:

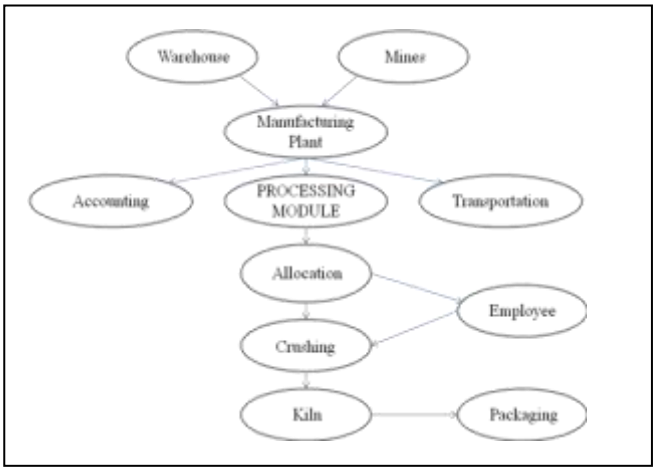

Fig. Data flow diagram processing module

The above Data flow diagram, describe the scenario of the project in which there are four modules.

- Processing module
- Accounting module
- Transportation module
- Maintenance module

i. Processing module:

The flow describe how the raw material is directly brought from the Warehouse and from Mines on Processing site.After that this raw material is send to the Allocation site. Allocation department deals with distribution of materials to each Supervisor of team .This Team deals with the process of separating the coal and the limestone from the whole material and crushing the material which is obtained from the mine. This Crushed material is then pour into Kiln which is nothing but a furnace and the out product is send to the packaging site. Processing also consists of information about how to pack the material for distribution to the customers, traders and end users.

The next three module will be implemented in the future scope are Accounting, Maintenance and Transportation.

ii. Account module:

An account module that module is the module that consist of records of all the customers like regular customer (daily customer), Monthly customer, this module also consisting the record of the workers payment that involves their salary and also dues of them.

iii. Transporting module:

This module indicates the various transportation medium like, through the organization vehicle or by the customer's vehicle or any other, that also estimates the transportation cost.

iv. Maintenance module:

Maintenance module is the module , in an organization there are thousands working tools and the machineries are used ,each and every machines are having their life time once that limit is completed then these machines will requires the servicing and proper replacements that will all be done in maintenance module.

III. IMPLEMENTATION:

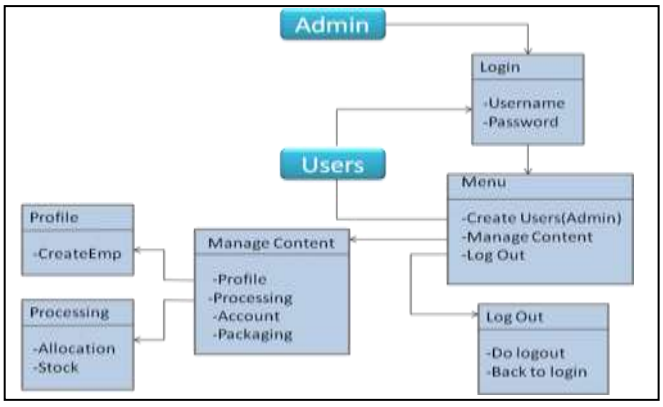

Fig. Class diagram of admin and user

IV. RESULTS AND DISCUSSIONS:

The snapshot of above implementation design is given below. The module is design for the web page

implementation of Fig. Snapshot of login page for Admin mining industry. As our application is web based. It is tested on multiple browsers such as Firefox, Opera, Chrome etc and the result is matched with the predicated one. From testing it is clear that this Application run smoothly on multiple browsers and it gives the better results and accuracy and our validations are working properly.

V. CONCLUSION:

There are number of mining organizations where this system is must to be use because with the help of this system mining companies can provide outstanding service to customers, maximize their return on investments in assets, optimize enterprise processes, mitigate operational risks, facilitate environmental compliance, and streamline the merger and acquisitions process. This system helps mining companies meet changing market requirements, achieve operational excellence, and drive sustainable growth.

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