

Mine Software Solutions

The new age enterprises are leveraging digital technologies to innovate and remodel their business operations in their quest for increased productivity and growth.

African Mining Brief (AMB) speaks to Empie Strydom, MineRP's Vice President, Marketing, regarding the opportunities and challenges provided by the mine software solutions such as Enterprise Resource Planning (ERP). The majority of mining organisations the world over are now embracing digital mining initiatives in an effort to create an integrated technology application landscape of seamless information flow. This has resulted in a number of vendors and organisations providing software solutions tailored-made to improve the mine's performance.

Mining software solutions covers the entire mining process from geological exploration, 3D mine design to production management and control including data management solutions. The solutions enable faster, more holistic strategic and operational decision for mine planning & scheduling (including open pit and underground), mine-to-port logistics (including rail, stockpile, and port planning and scheduling), concentrator, smelter and refinery planning and scheduling.

In addition, the software solutions for mines help increase the efficiency of capital projects associated with the design, procurement, and construction of mines and processing plants, as well as operation and maintenance of the mining fleet and production equipment.

Latest trends in ERP Solutions: the Mobile ERP, Cloud ERP, Social ERP as well as Two-Tier ERP

Mobile ERP Solution

Mobile devices such as smartphones, androids, laptops, PDAs, and tablets have made it possible to work on the road, and

now workers can use their ERP applications on their mobile devices to take advantage of business capabilities and insights. Mobile ERP applications allow companies to benefit from improved quality of service, greater productivity, deeper business relationships, competitive advantage, and more accurate data capture.

Cloud ERP Solution

This is an approach to enterprise resource planning (ERP) that makes use of cloud computing platforms and services to provide a business with more flexible business process transformation. Cloud ERP software is delivered purely through a Web browser via an internet connection. The software vendor houses and manages the software and the company will pay a subscription price for the software, on a monthly or annual basis. This removes the need for the business to host and maintain the software and data on their own servers.

Web-based ERPs have number of key benefits over locally installed systems such as ease-of-use, and reduced IT costs including reduced hardware costs, however connectivity requirements as well as customization difficulties are some of the drawbacks.

Social ERP Solution

There has been much hype around social media and how important- or not- it is to add to ERP systems. Certainly, the vendors have been quick to seize the opportunity, adding social media packages to their ERP systems with much fanfare. A social ERP can track real and potential connections and automatically connect the organization when collaboration is needed. For instance,

LinkedIn, Facebook, Twitter, Google and other social sites have proved really effective in increasing discussion and involvement with customers and providing them with unique insights into ERP. In addition social ERP will help in finding the connections and use them- reducing time and space between persons sitting in different two organisations and locations.

Two-Tier ERP Solution

Enterprise once attempted to build an all-encompassing ERP system to take care of every aspect of organizational systems. But some expensive failures have gradually brought about a change in strategy- adopting two tiers of ERP. For instance, using SAP or Oracle as the primary system with other systems used for tier two. The second tier is often used as a platform for the latest features. Such as mobile ERP. Some vendors also straddle both camps, offering one system for tier one and another for the lower tier.

Enterprise Mining Technical Integration- Challenges facing Mining Industry the regarding the ERP Solutions

As the new age enterprises are leveraging digital technologies to innovate and remodel their business operations in their quest for increased productivity and growth- the challenges encountered by many mine CFOs, COOs, and CEOs is that most of these ERP solutions are only aimed at the general and commercial support of the mine excluding the technical support, explains EmpieStrydom, Vice President, Marketing for MineRP. Most mine executives want a system that is capable of enabling the enterprise view of the entire mining operation through the provision of a platform for the integration of

the Mining Technical Solutions (MTS) domain with all other information domains in the business. The system that is able to provide a descriptive analysis, a predictive analysis as well as the prescriptive analysis.

MineRP simplifies complexity in the Mining Technical Domain. With MineRP solutions, you can use what works best and still work in an integrated domain without buying new for each team, states EmpieStrydom. The solutions provided by Mine RP takes care of all your data management requirements, and this means that all your teams always work with a single version of the mining data set, and is always aware of the status of your operation, adds EmpieStrydom. Through the use of SpatialAnalyzer and SpatialDash, one is able to carry out an online and offline reporting and spatial analysis through-out the life of a mine- from discovery, establishment, exploitation, beneficiation, and selling as well as rehabilitation process.

The Mine RP Double Bowtie allows for the seamless interoperability between mining disciplines; amalgamating source data; standards- based information management; spatial dashboards, three dimensional analysis, visualization and animation of the entire mining technical dataset; mining information ready to model, analyse and simulate; unlimited analysis combining MTS, ERP and other inputs. end-to-end simulation for optimization at any level and any point; as well as enabling workflow at any level and any point. In addition, the Mining Technical Solutions landscape can be integrated into a single environment through the MineRP Enterprise Integration Platform.

MineRP Planner Template Aided Design (TAD) and MineRPGeoInventory

MineRP Planner TAD solution allows you to create the entire mine design scenarios for immediate evaluation and optimization in minutes rather than weeks. While the MineRPGeoInventory solution allows you to demonstrate the real value of your mineral assets at each stage of its development and lifecycle, states EmpieStrydom. Mining stakeholders want consistent, predictability and reliable returns, hence the solution chosen should allow for enterprise optimization, for instance bringing

the management of mineral inventory into the world of ERP solutions, mines are able to verify strategic plans via scenario planning and simulation, and effectively re-evaluate strategies in the face of ever changing external factors such as exchange rate and commodity price fluctuations, concludes EmpieStrydom.

EduAction Geographical Information System (GIS) Software Solutions

EduAction GIS Solutions have recently developed a GIS-based environmental monitoring system using open source technology. It enables mines to store their environmental data in a secure, multi-user database and to view monitoring results using an interactive map. The data is stored in a cloud-based MySQL database and displayed using MapServer software. Developer Frank Sokolic commented: 'many mines experience difficulty organising their environmental data and with compliance reporting - their data sits in multiple spreadsheets and is often tricky to keep track of and analyse coherently. Monitoring data is ideally suited to visualisation - a map conveys a rapid overview of environmental trends and can alert environmental managers to potential problems more rapidly.'

The Environmental Monitoring System (EMS)

The Environmental Monitoring System (EMS) allows users to manage water and air quality monitoring sites, capture water and air measurement data, query results and visualize measurements using an interactive map. EMS can be employed at one or multiple mine sites - once the coordinates of water and air monitoring sites have been entered using the dashboard, they appear in the mine site map and can be symbolized according to measurement data, allowing a rapid overview of environmental conditions. A data dashboard provides shortcuts for adding, viewing and editing water and air quality measurement data and for managing monitoring locations. Sampling data can be manually entered or imported from a spreadsheet, and compliance limits are easily defined to assist with reporting.

SHAPING SMART CHANGE WITH A LIFE OF MINE SOLUTION

Mines are increasingly applying software solutions to stay productive. Software has an important role to play in re-evaluating efficiency and productivity. MineSight is a leader in mine planning software, with offices around the world, including Johannesburg. Now the company is part of Hexagon Mining, which unites MineSight with the mine operations product suites of Leica Jigsaw and SmartMine UG, plus the mine safety suite, SAFEmine. By connecting these technologies, Hexagon Mining offers a life-of-mine solution, based on a vision of smart change.

This spring, Hexagon Mining will introduce HxM Blast, a drill and blast management utility that will allow you to design and execute drill and blast plans from within MineSight 3D. Within a single interface, you will be able to design drill patterns, apply blasting parameters to holes, and do the tie-in of a shot. HxM Blast will bring precision and dependability to one of mining's most challenging steps. Hexagon Mining will also soon release HxM Athena, a business intelligence/business analytics tool. It's

a unique solution based on the attractive synergies between MineSight and its Hexagon Mining partner companies. HxM Athena will import, validate, analyze, and store data from multiple input sources to a single data repository.

It will then present the data in dashboard views that are easy to use and understand. Tempted by technology such as laser scanners or HPGPS tracking, some companies are embracing data capture without the means to actually make good use of the data. HxM Athena is different because it offers both business intelligence and business analytics, thereby transforming data into knowledge. By integrating mine planning, mine operations, and mine safety, Hexagon Mining is connecting people. When that happens, companies become stronger, safer, and more productive. That's more important than ever for the mining industry.

SHAPING SMART CHANGE

Productive mines know technology drives their success.
Their future depends on it.

MineSight is built for your future. Now a part of Hexagon Mining, MineSight delivers comprehensive modeling and mine planning solutions for exploration, modeling, design, scheduling, and operation.

FOR THE LIFE OF YOUR MINE

Hexagon Mining is the only company to solve surface and underground challenges by integrating design, planning, and operations technologies for safer, more productive mines.

Hexagon Mining unites MineSight, SmartMine UG, Leica Jigsaw, and SAFEmine, and is a global network of talented mining professionals, delivering technology, service, and support.

Hexagon Mining: Smart change for the life of your mine

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