



Newmont Mining

Founded in 1921, Newmont Mining is one of the world's leading gold companies. Headquartered in Denver, Colorado, the company employs approximately 34,000 employees and contractors, with the majority working at Newmont's mine sites across the globe, including the United States, Australia, Peru, Indonesia, Bolivia, New Zealand and Mexico.

Newmont, not unlike other asset-intensive companies, needed to have a clear understanding of how their business bottom line was being impacted by distributed purchasing, inventory activities and site-specific maintenance planning and operations.

At the same time, Newmont needed to offer field sites the appropriate tools to manage the competing goals and objectives between maintenance and supply functions, i.e. maintaining the right amount of spares without increasing risk to production.

As all companies whose livelihood depends on asset reliability and performance, Newmont's operations groups were faced with small windows of time in which to carry out routine maintenance activities and repair "downed" assets quickly and efficiently without impacting the organization. Given these constraints, maintenance personnel wanted as much inventory on hand as possible to avoid a stock out situation that could interrupt operations and create costly delays in getting equipment back online.

Purchasing departments, on the other hand, were tasked with creating other efficiencies – ordering via standard purchase orders and keeping warehouse and inventory costs down. This caused them to keep just enough spare parts on hand, sometimes not stocking critical pieces or holding too much of the wrong parts. These competing objectives created a balancing act between maintenance and purchasing departments with both groups trying to meet their respective goals. This situation led Newmont to wonder how they could begin to close this gap between management of inventory and purchasing activities, such as those shown below:

Balancing competing functional objectives

With limited dialog between purchasing and maintenance, along with varying levels of experience and skill, Newmont found itself faced with costly processes such as special orders, rush shipments and costly downtimes due to missed maintenance or broken equipment with no replacement parts on hand. Multiplied by several locations, Newmont could easily see it suffered from variety of costly inefficiencies.

The Problem

The need for corporate visibility became clear when Newmont realized that the various site functions were managed very differently. Data collection and analysis were extremely labor intensive, while key



performance indicators were derived differently depending on the background and experience of the individuals occupying certain positions. There was no consistent, standard set of tools to manage these processes across the company, making it difficult for the business to be proactive in managing cash flow, supplier performance and corporate risk. This was not only true at individual sites but at the general corporate level as well.

Realizing they needed help, managers at Newmont's Indonesia site spoke up first. What was initially a site challenge quickly gained global focus, and the Nevada site was selected for a "pilot" installation. While inventory levels were adequate and mostly meeting the requests from maintenance, there was no time to analyze stock on hand, ensure a clean parts catalog or know when obsolete inventory in the warehouse needed to be removed.

Additionally, there was no standard method to research problems and prepare for inventory needs that might arise in the future. Inventory management was being done based on the obvious needs, but could not account for anomalies in demand or go beyond the small percentage of items identified as critical. As expectations for production increased and labor availability decreased, it was recognized that changes needed to be made to improve inventory processes to keep up with demand.

At Yanacocha, Peru, another Newmont location, the inventory planners did the best they could to manage their inventory. Again, however, these jobs were very labor intensive. The team needed consistent, automated processes to standardize their efforts and relieve the planners to allow time for additional analysis and proactive planning. The purchasing department at Yanacocha was also busy, processing 3,700 items monthly (US\$15.3 million) with teams of employees dedicated to Mine, Process and Administration functions. 54 percent of their purchases were processed by direct charge requisition, with the rest acquired through stock orders. The vendor file had 9,279 registered suppliers, but only 800 were identified as active (active supplier was defined as having one purchase order received within the last year).

Decision-making was supported by ad hoc queries and spreadsheets, and collecting and analyzing data was done using various methods, making this function extremely resource intensive and time consuming. Information was also presented in different ways, depending on which planner was doing the analysis, thus making it difficult to compare information from one site to another.

At Newmont's Indonesia site, inventory management was also a time and labor-intensive effort. Again, with no standard tools and consistent processes, the site was on its own to manage maintenance, inventory and purchasing efforts, analyzing information as time permitted, and working in a very reactive, less strategic manner.

With purchasing, maintenance and inventory decisions being made at individual sites using inconsistent processes and disparate tools, Newmont knew they were not maximizing business decisions for the company as a global entity.



The Challenge

Newmont initially determined it needed a point solution to help individual mine sites manage and analyze their inventory. At the prompting of the Nevada site, Newmont went in search of an automated system that would help staff not only carry out daily functions, but would allow them time to analyze, plan and prepare, adding a strategic component to their jobs rather than being highly reactive. The system they were looking for needed to introduce a consistency in daily procedures and ensure information was presented in a consistent manner, allowing for proactive thinking and better management of risk associated with inventory.

The Solution

Newmont's request for help was answered by Oniqua. At that time, Oniqua had developed three specific, analytics-based software applications that provided the tools and feedback mechanism to allow companies to get a handle on their supply chain processes. This software was specifically created for asset-intensive industries. The Oniqua applications allowed companies to not only analyze current operational data, but make that data better by taking past experience and anticipated inventory and procurement requirements into account, *thereby creating a mechanism to adjust and improve operations on a timely, consistent and sustainable basis.*

Newmont's Nevada site wanted to manage routine inventory better and faster to allow inventory managers time to conduct analysis, anticipate maintenance needs and rebalance the inventory mix on hand. Initially, Newmont looked to Oniqua's inventory management tool, Oniqua Inventory Optimizer, as a local solution to solve local problems.

Oniqua's Inventory Optimizer was a tool used to manage inventory activities, analyze historical data and part criticality, and handle cost and compliance issues. This application helped focus resources to improve inventory management, along with the following:

- Apply a consistent inventory management Methodology
- Optimize safety stock levels
- Share critical spares within a geographical region

The key to Oniqua's analytics applications is embedding process standards and rules into the system. With these parameters in place, inventory teams have a better idea of what kind of inventory they are holding: exceptions; obsolete or unmoving stock; high value, slow moving inventory or fast moving, low value parts. All this information is aggregated, analyzed, refined and integrated into the results for planners to incorporate into the inventory plan, continuously improving inventory data and management of the process.

Oniqua and Newmont embarked on the initial pilot, installing Inventory Optimizer at the Nevada site in 2004. The two companies worked together to set up inventory rules and implement the software for a successful pilot project. This new system freed planners' time from daily activities to conduct analysis



and more in-depth planning. Because of the new system and processes, Nevada was able to adjust inventory levels, reducing obsolete and inconsequential items while increasing items of greater importance.

Site productivity quickly increased. With the right inventory available at the right time, maintenance managers spent less time searching for parts and more time preparing schedules and maintaining critical equipment. Shortly after Nevada implemented Oniqua's Inventory Optimizer, the Yanacocha site took delivery of the software. Oniqua worked with Yanacocha staff to configure inventory requirements and parts stock rules while implementing the system.

Yanacocha benefitted almost immediately because they were able to free up inventory controllers and redeploy them to another time-intensive function – Procurement. Shortly after the redeployment of staff, Yanacocha determined they needed to standardize purchasing functions such as supplier management, order processing and vendor performance measurement.

Oniqua was once again on hand, this time to solve Yanacocha's procurement management issues. Oniqua's Procurement Strategizer Module is a powerful tool for procurement professionals to improve spend management, supplier performance and supplier relations. Oniqua Procurement Strategizer automates procurement analysis, so that managers and planners can spend more time working on sourcing projects and managing supplier relationships and less time collecting and manipulating data. The system incorporates modern procurement concepts, such as quadrant analysis and supplier score-carding, to provide a framework which supports a change towards a value-added procurement function. These analytical tools allowed Newmont managers to:

- Track supplier performance using flexible scorecards
- Manage and record supplier interactions
- Identify and eliminate inefficiencies in the supply chain
- Track price movements against external indicators
- Identify opportunities for improved sourcing

Using the system to implement automated standards and measures helped procurement staff measure supplier performance, verify product quality and identify additional cost savings measures.

Procurement activities

At this point in time, other Newmont sites, along with Newmont Corporate, took a deeper interest in Oniqua's offerings and the possibility of developing a system that promoted industry best practices across inventory, procurement and maintenance functions. Newmont management wanted to consolidate purchasing, equipment and materials data on one platform, in one system, worldwide. And they needed a solution to help them not only close the gap between purchasing and equipment management activities, they also wanted a solution to help them:

- **Standardize data**, implement best-practice business processes and analysis



- **Increase visibility and accountability** across the company on a global level
- Incorporate analytics to support **constantly improving processes and measures** based on data and experience

Newmont wanted to move away from disparate systems sourced locally, one-off spreadsheet analyses and incompatible key performance indicators, and they were looking to Oniqua to deliver a solution to help solve these business issues. This request from Newmont sparked the development of the Oniqua Analytics Suite, aggregating all data under one application with consistent, uniform analytic functions that could be incorporated into operations worldwide.

The Oniqua Analytics Suite, or OAS. OAS enables instant answers and strategic guidance by analyzing transaction data and ensuring standard, best practice implementation of processes and procedures. . Procurement teams spend less time collecting information, which allows them more time to analyze purchasing trends and inventory usage and make better decisions about supplier relationships and performance, improving the negotiation process. Maintenance teams are assured they have the right parts at the right time, reducing risk of costly downtime. Inventory teams can ensure they have the right amount of stock without over- or under-purchasing, making full use of warehouse space but not over-holding costly stock items.

With standard reporting, corporate analysts receive data in the same format from all site locations, knowing that decisions were made using best practice methods and all teams were working together toward a common goal.

Benefits

Newmont and Oniqua worked very closely to identify local functional needs, corporate data objectives and global technology requirements. Newmont partnered with Oniqua to become a foundation client for the OAS, with a focus on realizing company benefits worldwide for maintenance, inventory and purchasing functionality, such as minimizing costs at each location and functional area. By incorporating analytics into the decision making process, Newmont was able to:

- reduce risk to production – stopping stock outs and over commitment of capital tied up in excess inventory
- develop and implement standard terminology, processes and technology to ensure all sites apply consistent approaches and diligence to inventory and procurement optimization
- Focus on optimization – not simply stock reduction

Newmont was also able to develop critical performance indicators to measure company health in areas such as total inventory, holding and order costs, and reduced product storage and equipment stoppages due to stock outs and reduction of obsolete inventory.

At the Nevada and Peru sites, Newmont's initial implementation of Inventory Analytics helped to close the gap between equipment management and materials objectives, automating the inventory management process, reducing or eliminating time-intensive manual processes. Nevada realized US



\$1.7M savings in the first Year, whereas Peru realized US \$3M savings in the same timeframe. Peru was also able to reduce and redeploy headcount by two full time employees. The implementation of Oniqua Procurement Analytics at Yanacocha enabled Newmont to develop and implement a corporate policy for the top 50 suppliers. The functional benefits of OAS were many, however other key objectives that Newmont is meeting with the Oniqua Analytic Suite include:

- Bringing all regions to the same level of sophistication for inventory and procurement analysis
- Business process standardization and analytics scalability across multiple sites and functionalities
- Robust, standardized global reporting to track critical performance indicators

Functional compatibility wasn't the only benefit realized by Newmont. With multiple instances of the same software on a standard system configuration, technology benefits were also achieved, such as deploying a centralized operational model that is scalable across all sites, a simplified applications footprint with centralized hardware, support and system administration, and a simplified system that allows Newmont quickly and easily leverage solutions and balance costs, risks, and technical feasibility. With OAS's capability to run on most standard platforms, compatibility with Newmont's technology standards was not an issue.

Next Steps

Newmont is currently upgrading legacy sites with the full analytics suite, and will continue its scheduled rollout, completing company-wide implementation of OAS by the end of 2009. The company is discovering new applications for analytics as well, such as total cost of ownership and downstream contract analysis at both individual site and corporate levels.

The Case for Enterprise Analytics and OAS

Oniqua Analytics are based on sophisticated statistical analytics. The series of proprietary statistical optimization algorithms have been developed by Oniqua over 20 years, and were specifically designed for companies in asset intensive industries such as mining, oil and gas and utilities. OAS's rules-based algorithms have been developed to segment operational data and simulate how assets are operated, and then make specific recommendations for changes that have an economic and/or risk impact.

OAS is designed to receive data input from ERP and EAM transactional systems, perform data manipulations and then, combined with integrated economic and risk models, provide proactive, systematic and automatic feedback upon which to build strategies for equipment utilization and maintenance, procurement costing and inventory planning. OAS also helps organizations implement best practices across the organization, raise visibility and develop a balance between practical operations and corporate mandates.

The Oniqua Analytics Suite can extract data from multiple sources such as Customer Relationship Management (CRM), Supply Chain Management (SRM), and Enterprise Resource Planning (ERP)



systems. By centralizing, organizing, and standardizing information in a central repository, OAS allows timely access, corporate-wide analysis and the analytical tools that allow a broad range of business and technical specialists to run queries against transactional data to uncover patterns and diagnose problems. Most importantly, OAS provides a “feed-back” loop that allows users to upload the recommended and appropriate changes to the host system, which results in significant economic savings.

About Oniqua

Headquartered in Brisbane, Australia, and with offices in North America, Africa and Asia, Oniqua Pty Ltd (www.oniqua.com) provides best-in-class Asset Performance Management (APM) solutions that improve the operational efficiencies and business performance of asset-intensive organizations. With advanced analytics capabilities, cross-functional integration, data cleansing services and seasoned industry expertise, Oniqua helps customers realize tangible benefits faster than any other APM provider. Oniqua’s solutions are used by seven of the world’s top 10 mining companies and two of the top 10 oil and gas companies, saving them millions of dollars each year in improved asset performance.

About Newmont

Newmont Mining Corporation is a leading gold producer with operations on five continents. Newmont is also engaged in the exploration for and acquisition of gold properties in some of the world’s best gold districts. Employing approximately 34,000 employees and contractors worldwide, Newmont operates core assets in North America, South America, Australia, Indonesia, and Ghana, with new mine projects currently being developed. Newmont mines also produce copper and silver. Newmont is committed to high standards and leadership in the areas of environmental management and health and safety for its employees and neighboring communities.