

Gold Mining Company Lowers Costs and Improves Productivity



Barrick Gold Corporation selected Cisco Outdoor Mesh Access Points to cut costs and improve efficiency of mining operations.

EXECUTIVE SUMMARY

Customer Name: Barrick Gold Corporation
Industry: Gold mining and production
Headquarters location: Toronto, Canada
Number of Employees: 26,000 employees

BUSINESS CHALLENGE

- Increase mine productivity, efficiency, and safety
- Provide continuous access and updates to Caterpillar Minestar software for fleet management and other applications
- Reduce costs

NETWORK SOLUTION

- Created outdoor mesh wireless network, deployed on solar-powered trailers across mine and inside pit
- Relocate network communication resources to suit mobile fleet patterns
- Monitor and manage dispatch process from central control room

BUSINESS RESULTS

- Closely monitored dispatch process and managed operational efficiency
- Improved productivity and safety
- Cut costs by implementing single network for communications and data sharing of new applications

Business Challenge

Barrick Gold Corporation is the gold industry leader in production, reserves, and market capitalization. The company operates globally, with a portfolio of 26 operating mines and advanced exploration and development projects and large land positions on some of the most prolific and prospective mineral stores.

As a progressive mining company dedicated to continuous improvement, Barrick Gold commenced the upgrade of Caterpillar MineStar dispatch system from a legacy 900 Mhz to Cisco Mesh technology. This program has a flow-on effect to the disparate networks being consolidated for fleet management, loading, hauling, bulldozing, dispatch: all in real-time, without manual uploads or legacy two-way radios. The overall goals included lowering day-to-day costs across mines, and improving efficiency and safety. To accomplish this, data and updates needed to be transmitted in real-time to the centralized control room to help management and dispatchers alike make smart decisions about the mine's efficiency, productivity, asset maintenance, and safety.

Despite a growing need for an 802.11 wireless network with coverage supplied wherever required among operations, over time the company had acquired several unmanaged, wireless networks, including the legacy 900-Mhz system.

Network Solution

Better mining operations through on-the-spot connectivity

To manage the company's mining dispatch operations with the Cat MineStar software, Barrick operators have screens in their vehicles that allow them to enter information into a visual, graphical interface. To take full advantage of the software solution, Barrick required mobile wireless network coverage that could provide continuous connectivity across the mine, wherever and whenever it was needed, as mining operations progressed from one location to another.

Barrick needed a wireless network that could be relocated quickly to anywhere within the mines, regardless of pit depth or geographical distance, yet still provide continuous, reliable connectivity. Barrick chose CBO Telecommunications as the Premier Certified Cisco Partner to deploy and design the solution, comprising Cisco Aironet® 1524SB Outdoor Mesh Access Points, managed by Cisco® Prime NCS and deployed on CBO-designed and -supplied solar-powered mobility trailers that can be readily moved within the mining operations.

Rugged flexibility

The Cisco Aironet Outdoor 1524SB Mesh Access Points were chosen because they provide a flexible, highly secure, and scalable mesh platform for demanding outdoor environments. Designed for deployments across large geographical areas, the Cisco mesh solution is part of the Cisco Unified Wireless Network.

"Our mobile wireless network may change from week to week as the topology and depth of the mine change. For mobility, we simply move the CBO solar mobility trailer and point the solar panels north, supplying connectivity where it is needed to help work at the mines progress safely and efficiently," says Mark McGregor, managing director of CBO Telecommunications. "We can finish in one part of the mine, then move over to another part and start operations right away."

"The rollout of Cisco Mesh Access Points has been brilliant. With both fixed points and CBO solar mobility trailers deployed and managed by Cisco Prime NCS, the solution delivers a robust and scalable platform for the mine to grow its connectivity assets."

— Mark McGregor, Managing Director, CBO Telecommunications

Ease of management

In addition to improving overall coverage and enabling instant network mobility, Barrick is using Cisco Prime Network Control System (NCS) to speed troubleshooting and run comprehensive reports that provide visibility into the wireless network. With Cisco Prime NCS, the staff can now proactively monitor network usage patterns to optimize the user experience. For overall wireless network management, the Cisco 5508 Series Wireless Controller provides real-time communication between the access points and the Cisco Wireless Control System (WCS) to provide reliability, versatility, and a high-quality mobile experience.

Business Results

Reduced costs

Although use of the new MineStar system and Cisco Wireless Network is still in its infancy, Barrick expects to reduce operational costs. Contributing factors include reducing the time that trucks do not sit idle waiting for loads from loading units. Even small changes in operational awareness and responsiveness, says McGregor, result in big changes in mining productivity and efficiency.

Increased network reliability

“Whether field operators are digging mining pits in new directions or to new depths, the Cisco Aironet Outdoor 1524SB Mesh Access Points provide exceptional coverage and reliability,” says Mik Madden, pre sales executive for CBO. “The trucks can drive wherever they need to without losing data or connectivity. We’ve even tested the Cisco Mesh solution at a pit depth over 400 m with no connectivity degradation or packet loss.”

PRODUCT LIST

Routing and Switching

- Cisco Aironet 1524 Outdoor Mesh Access Points
- Cisco Aironet 1142 Wireless Access Points

Network Management

- Cisco Prime Network Control System
- Cisco 5508 Series Wireless Controllers

Foundation for the future

The Cisco wireless network is also able to support new solutions such as video surveillance cameras that monitor suspicious activity within the mine, and secure voice communications, carried over the wireless network. To improve safety, the Cisco solution can also support headset monitors that can alert the control room if a driver becomes tired and starts nodding off.

The first deployment of the new Cisco mesh wireless network within Barrick is in a mine in New South Wales, Australia. McGregor says,

“The rollout of Cisco Mesh Access Points has been brilliant. With both fixed points and CBO solar mobility trailers deployed and managed by Cisco Prime NCS, the solution delivers a robust and scalable platform for the mine to grow its connectivity assets.”

For More Information

To find out more about Cisco Wireless, go to: <http://www.cisco.com/go/wireless>.



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