



Freeport-McMoRan CIO Bert Odinet is no longer between a rock and a hard place

How one mining company is innovating with reference architectures, wireless mesh, and collaboration tools to drive global common processes.



It started with an acquisition. It continued with a major SAP implementation. And it led to the implementation of a flexible, scalable foundation for global common processes. It is Freeport-McMoRan's story of innovation—from internal IT to mine operations to process governance.

In 2007, Freeport-McMoRan acquired Phelps Dodge, an Arizona-based mining operation. That acquisition prompted a series of strategic technology choices that drove Freeport-McMoRan CIO Bert Odinet's ultimate vision—a strong central services organization supported by global common processes.

A significant SAP implementation was the first step. Odinet recounts the rationale behind the decision: "As a company, we had a strong

central services concept and we wanted to apply it globally and consistently across all of our properties. The vision was to integrate processes and standardize globally, but our HR, supply chain, and commercial footprints were spread across four or five different systems. Internal analysis highlighted that global common processes were critical to drive additional synergies from the acquisition beyond the inherent operational value."

Most CIOs would probably not contemplate a new IT infrastructure during such a large-scale application implementation. But Odinet knew that implementation timelines put consulting dollars at stake. And making a long-term investment in global standardization could reap benefits for years to come. So when he engaged Cisco and its Advanced Services team to prove the





Bert Odinet of Freeport-McMoRan and Al Starzinski of Cisco review Indonesian mining operations from afar

value of its FlexPod reference architecture, which comprises Cisco® Unified Computing System™ (UCS) based on Intel® Xeon® processors, NetApp storage, and VMware for virtualization, he was prepared for the risk associated with the possible reward.

Cisco mocked up the SAP environment in its Phoenix lab in less than two weeks. It took some of the more challenging SAP development and test processes and accelerated them. In the end, Odinet was able to reduce the SAP migration engagement by months, reducing costs and risk by speeding time to SAP benefits. With the reference architecture in place, Odinet could begin contemplating how to drive the reference architecture to individual mine sites, providing standardization, security, and enhanced capabilities.

“Our goal is to create standards that we can apply once and roll out globally,” says Odinet. “For most organizations, the footprint supporting services is the biggest inhibitor to global standardization. With a common reference architecture, we can provision services rapidly and have a single pane of glass for monitoring and management. It sets us up to be more proactive, strategic, and cost-effective when delivering services to our remote sites.”

Mesh innovates mining

In addition to innovating its internal IT, Freeport-McMoRan is also leveraging Cisco wireless mesh technologies for mining innovation. Throughput advances have

improved critical communications between mining machinery and the data center considerably. As a result, the company has developed custom applications that use real-time data to improve field operations in areas including drilling, haulage, crushing, and process control.

“The more information you can reap from the field in real time, the better you can react in your management systems,” says Odinet. “With more than 30 percent of costs in energy utilization and asset maintenance in any mining operation, it all comes down to asset efficiency. And it is always more cost-effective to get the design right up front and operate within the tolerance of the design. Mesh technologies have enabled us to get the information from the field, so we can operate to plan and minimize variance.”

Odinet points to the analysis of ore fragmentation post-blast as it is being loaded onto a truck. With a camera installed on the shovels supported by custom applications, engineers can determine whether the ore fragmentation meets the tolerance outlined in the blast design, or whether the ore reacted differently. With this information, design teams can adjust drilling plans to the actual reaction of the ore, or processing teams can adjust downstream to accommodate the variances in fragmentation.

Improved field insight is also refining truck efficiency. Haul trucks are multi-million dollar pieces of machinery, which are expensive

to operate and maintain. Freeport-McMoRan wants to ensure their trucks are loaded to optimum capacity each time they depart. With the capabilities of mesh technologies, the company developed an operational improvement program to enable real-time insight into loaded materials and shovel operator performance. Now, field teams can analyze, load by load, whether operators are performing within tolerance and make adjustments if necessary.

“Before mesh technologies, it was common to wait weeks to gather field insight to analyze operator performance,” says Odinet. “Now we can do it load by load, shift by shift. It keeps us looking forward and being proactive rather than looking backward and missing optimization opportunities.”

Unifying communications for process governance

Unified Communications (UC) is the third area where Freeport-McMoRan is innovating with Cisco technology. Adopted as the standard more than two years ago, Odinet and his team are in the process of rolling UC out globally to fulfill a multi-faceted vision. First, Odinet wants to enable better collaboration across operational sites so subject matter experts in engineering, geology, safety, and health can work with their counterparts facing similar challenges.

Secondly, he wants to extend collaboration



tools to enable controls and governance at lower levels of the organization. Odinet cites the capital projects currently underway: “We are leveraging some of the collaboration capabilities with our Enterprise Project Control and Management (EPCM) partners. It’s one thing to execute governance at a high level by reporting cost and schedule. But it’s another thing entirely to be able to operationalize that down to the level of drawing approvals, engineering changes, and procurement. We intend to use these UC tools to bring our organization and our partners closer together.”

With all of this innovation evolving Freeport-McMoRan’s mining business, what does Odinet see for the future? “Companies that will win in the mining industry will have the foresight and capabilities to integrate with the best partners,” he says. “IT will become an integrator, an architecture selector, a partner with key vendors, a partner with its own users around business analytics to understand key services and priorities for investment. The focus will shift from minimizing costs to creating operational differentiation by leveraging industry or vendor-specific centers of excellence and tying those into your business processes. With our

investments in innovation, I feel we are well positioned to do just that.”

Application assessment offer

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Application migration – why the experience matters

Realizing application migration benefits requires consistency in the migration experience that can only come from the rigor of defined methodology.

The benefits of migrating mission-critical applications to a next-generation data center or to the cloud have been well documented: a modernized IT environment, improved manageability, increased agility, and reduced costs. But there is less documentation about the experience of application migration and its critical requirements. It is here that methodology mandates planning and analysis to reduce risk, delivering the consistency and visibility needed to drive speed to market and minimize business operations and productivity impacts.

It is important to understand that not every company is ready for application migration. Data center transformation spans five key levels including consolidation, virtualization, automation, private cloud, and public cloud. It is typically at the virtualization level that companies start considering application migration.

Parvesh Sethi, Senior Vice President for Cisco Services, has some advice for those considering migration: “Analysis and planning, underpinned by a defined methodology are mandatory. Services expertise will help to ensure that an understanding of the total data center environment and application interdependencies are integral components of the planning process.”

The Cisco Services approach to gaining that critical, foundational understanding focuses on the Cisco Domain Ten™ framework for data center transformation. This framework includes:

- Facilities and Infrastructure: What is the standard for servers, storage, and network?
- Virtualization and Abstraction: Is there a standard for virtualization?
- Automation and Orchestration: What tools are in use?
- User Portal: How do users request services today and how will this evolve in the future?
- Service Catalog and Management: Is there a service management plan in place?
- Service Financial Management: Is there a pay-per-use model in place or will there be in the future?
- Security and Compliance: How will the environment be secured, and how will the changes affect compliance?
- Process and Governance: Are there defined target operating models for the environment?
- Platform: Is platform automation (Platform-as-a-Service) a key priority?
- Applications: Is software automation

(Software-as-a-Service) or running applications in a virtualized environment the core priority?

The Cisco Domain Ten framework provides a holistic view of the data center and cloud infrastructure. When considered in totality, companies gain accurate insights into their environments to determine the probability of migration success, whether in a virtualized, highly automated, or full cloud environment.

“There are myriad data center and application interdependencies,” says Sethi. “Unless you identify them and understand their behaviors, migrations can fail and applications can go down. The right services approach will integrate best practices, proven methodologies, and interdependency mapping to help to ensure a successful migration.”

Valuable resources

For more on migrating mission-critical applications and a complimentary book, “The Economics of Cloud Computing: An Overview for Decision Makers,” by Bill Williams, see Offers at: www.UnleashingIT.com

