



PERSPECTIVE

Perspective: SAP's Mining and Metals Conference: Is the Transformation Real?

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IN THIS PERSPECTIVE

This IDC Energy Insights Perspective analyzes the discussions held at SAP's International SAP Conference for Mining and Metals, and provides a set of recommendations for mining companies seeking a path forward with their digital transformation (DX) initiatives. On July 13 and 14, 2016, SAP held its International SAP Conference for Mining and Metals in Frankfurt, Germany. The conference brought together mining companies from all over the world — including Australia, Russia, Brazil, the United States, Canada, and South Africa. Discussions at the conference followed a heavy theme around the imperative for digital transformation, in particular, the strategies and actions that mining companies are undertaking or need to undertake to deliver improved operational outcomes through creating operational excellence. In this Perspective, IDC Energy Insights shares the most important discussions at the event and recommendations for the path forward.

SAP's Digital Transformation Agenda in the Mining Sector

SAP is the dominant provider of enterprise resource planning (ERP) systems to mining companies globally. Its offerings to mining clients are built on SAP's core cross-industry ERP capabilities across people, talent, finance/procurement, and IT management, with industry-specific capabilities overlaid. SAP's industry-specific capabilities provided to mining companies include applications within the areas of optimized mining solutions, sales and supply chain management, and operational risk and compliance management. SAP is continuously reviewing and considering new applications based on an ongoing dialogue with and feedback from its customers. The overall objective that SAP has in this sector is to help its mining customers by enabling safe and profitable mineral production.

At a high level, the overall theme of messages was of SAP being a core enabler of digital transformation of mining companies by building out a digital core through which mining companies can transform and simplify their operations. The offerings that SAP provides are built around the software, database, platforms, and associated capabilities such as enterprise mobility applications. The themes raised by SAP executives in its sessions related to the challenges, opportunities, and activities across the industry associated with the drive for IT/OT integration and the steps that mining companies need to take to create a collaborative environment between IT and the business that will deliver a step change in value from technology-led innovation. Outside of discussions relating to digital transformation specifically, SAP shared progress in a number of key new areas of particular importance to the way that mining companies need to be developing their digital capabilities — specifically SAP HANA and the Asset Intelligence Network (AIN).

HANA: Enabling Process Simplicity Through Processing Power

Central to SAP's strategy for enabling its mining customers to drive their digital transformation agenda is SAP's framework of offerings around the HANA platform. HANA featured in just about every presentation made by SAP and even its mining customers at the event — that is, across the HANA platform itself, the HANA cloud platform, S/4HANA and associated IoT and analytics capabilities. These capabilities enable companies to drive modernization and transformation across business processes, and to utilize Big Data across the business. Fundamentally HANA aims to enable far more rapid data processing and extend SAP capabilities to the analysis of structured and unstructured data. The potential of HANA, and particularly S/4HANA, is that it fundamentally changes the way that mining companies can utilize and process data, design processes, and ultimately run their operations.

Mark Leach, Cameco Vice President, Business Technology Services, shared his experiences in Cameco's HANA deployment. Cameco is a Canadian mining company with operations in Saskatchewan. For Cameco, HANA has been a critical part of preparing for future technology innovation — particularly in relation to IoT, it has been important in efforts to integrate the system of record and the system of engagement, and for preparing to enable predictive analytics capabilities. Simplification was also a critical element. In relation to the road map that has been successful for Cameco, Leach spoke about Cameco's deployment of Suite on HANA as a bridge to S/4HANA, which is ultimately the direction the company intends to go. For Cameco, the return of investment from the Suite on HANA deployment was rapid, and the ability to process data more quickly was the key to a positive return on investment (ROI). Just from the savings enabled from one aircraft utilization report, Cameco paid for the entire migration to Suite on HANA." Previously, Cameco could only run the report once per month and now it could be run weekly. This means that Cameco can optimize plane loads and results with savings of US\$3 million per year.

A number of mining companies at the event are at the early stages of their plans for S/4HANA. Questions about mining sector reference cases and the reality of the implementation timing and challenges reflect most of the concerns and thinking that mining companies have right now in relation to S/4HANA. Additionally, concerns relating to understanding with greater clarity how S/4 HANA can help to mitigate the pain mining companies experience in consolidation and simplification of data and reporting processes featured highly. A few of the miners spoke about issues associated with managing software versions across capabilities associated with HANA implementations.

Asset Intelligence Network: Driving Asset Insights

SAP describes its Asset Intelligence Network (AIN) as the Facebook of machines. With the AIN, SAP is seeking to create a cloud-based platform that enables equipment manufacturers and asset owners to come together and create an environment for the management of assets digitally from purchase to end of life. Through AIN, SAP aims to help mining companies digitally enable all the processes associated with the management of equipment. Efforts to build scale across the ecosystem of equipment manufacturers and mining companies are critical to success, and are ultimately required to make the core platform valuable. The AIN will hold manufacturers' equipment information in relation to maintenance instructions, technical documentation, notification framework, and allow for the interchange of this information across the network. The mining companies will share their equipment data, thereby providing the performance data of equipment operating in certain environments. SAP is building a set of applications that will sit across the equipment information and data to drive intelligence and enable improved maintenance practices and asset management.

The AIN holds enormous promise for the management of assets and maintenance for mining companies. It is not surprising that the business model SAP is deploying around the AIN is one of the major concerns expressed by mining companies, particularly that it is priced at a level that enables the scale to be developed. Additionally, a number of miners raised challenges associated with managing activities in cloud-based platforms for operations in remote or less developed locations — again, this is not surprising. Mining companies are interested in the equipment manufacturers that are currently signed up; the early signs of the AIN are very positive.

The ability for the AIN to change business models relating to asset and maintenance for mining companies or any other asset-intensive industry is significant. The AIN has been launched and is in its early days, SAP has undertaken initial successful pilots of pairings of mining and oil and gas companies, and equipment vendors have taken the first steps to building the ecosystem around the platform. The process of building out the scale that will ultimately determine the commercial success of the AIN is under way.

Creating Organizations That Enable Innovation

Discussions at the event indeed related to what mining companies need to do to create organizations that can enable innovation and how SAP can help. There were three major themes within these discussions:

- Enabling technology strategy
- Driving the integration of IT and operational technology
- Creating the right collaborative environment across different business functions to enable the innovation

The maturity of mining companies in their digital initiatives is extremely varied. Examples given consistently demonstrated how real the transformational imperative is for mining companies. The desire to create operational environments enabled by technology, but built about the right organization and culture, is palpable. Few companies exist that are not making changes, yet the stage of the process that individual companies are at considerably varies. Technology initiatives are certainly part of the response, but for many mining companies the challenges that are in place exist across people and processes — looking at how decision making and particularly innovation processes work across operations and IT was a particularly strong theme.

Enabling Technology Strategy

Although there is no question that technology strategy is increasing in its importance within mining operations, few mining companies consider IT and technology at a board level. The only exception perhaps is to do with cybersecurity. Most mining companies are beginning to recognize that technology is not only an enabler of how their operations can be run, but fundamentally should be a designing factor in what those operational processes can be.

The current priority for change that is being driven by mining companies in this area relates to the required governance and decision making around technology strategy. Across the sector there is an increasing number of companies redesigning governance processes relating to technology decision making across IT and operations. This work is aimed at setting cross-functional priorities and budgeting that flows from management levels up to the executive board.

Driving the Integration

The desire to create operational excellence through integrating IT and operational technology software capabilities, and thereby creating the flow of information and data across the business that will create a step change in visibility, was a major theme at the event. This is not a new discussion for the mining sector, and there are many elements. The software integration element relating to creating prebuilt software integration enabling the flow of data from the ERP system right down to the operator and back is not yet there in mining, but there are a number of initiatives placing a focus on it.

The current primary priority of mining companies is to bring together IT and operations organizationally, not so much in terms of converging groups functionally of course, but to start to break down the cultural barriers that have been part of the mining companies for a long time. Across the sector there is enormous variability in the success that companies are having in doing this and the approaches they are taking. In most cases where there is success it is a consequence of well-connected and insightful senior leadership from IT and operations, and from the right vision and leadership flowing from the top of the business. Most of the success stories are among midtier players, the big miners having a level of structural complexity that makes change on the ground a serious challenge even when the right steps and changes are being made at senior levels.

Creating Collaborative Environments to Enable Innovation

The change in mining companies' willingness to drive innovation across their businesses and their willingness to take some level of risk in the last two years are notable. The requirement to create efficiency and productivity savings by enabling technology and data more effectively within operations is the driving force behind that.

It is no longer a question of whether or not there is a requirement to change and transform — at this event, the discussion has been much more often about what organizations are doing and how quickly they can do it. Creating environments that promote collaboration and enable innovation is extremely challenging for most companies. It takes a change in culture, organization, and most importantly, in the personal day-to-day way that executives and managers within the business engage. On the ground, managers must work through how to actually bring together the right people and capabilities to create opportunities for innovation. This is not a question of one side or the other, but of actually recognizing that IT and operations each has a role to play. Being clear about how those teams can come together to create mutually beneficial value is really critical.

In response to a particularly difficult financial year, Anglo American announced a major business strategy reset in early 2016. In this context the focus of IT strategy going forward has been to transform the IT function to drive innovation across the business by establishing a far greater collaborative environment between IT and operations. Doing more with less and delivering the value to the business much faster were an absolute priority, and the role that IT needs to play in innovation delivered across operations a critical consideration. Divesh Kassanje, Global Head of Enterprise Applications, spoke about the challenges and approaches that the company has been taking to create an environment that enables innovation and defines with more clarity the roles that IT and operations need to have. As a large, vertically integrated mining company, the stakeholders that IT needs to serve within Anglo American are vast with more than 120,000 people, including 7 different business units and many different geographies. As an outcome of the transformation exercise, Anglo American has identified four roles for IT:

- **To renovate core systems:** Focus areas being HR metrics and standards, and to align and improve the core master data. In this area IT will be knowledge and content advisors.
- **To modernize interactions:** Focus areas being to launch Fiori, personalized and simplified applications, and integrating workflows. In this area IT's role will be to demonstrate the art of the possible.
- **To integrate and automate:** Focus areas being to build an electronic manning board and build integrated planning systems. The focus of IT's role is to suggest options and be a lobbyist.
- **To modernize processes to unleash information on the business:** Focus areas being to build workforce analytics. In this space IT's role would be to be a researcher — connecting people and joining the dots.

Is the Transformation Real?

Some of the biggest mining companies in the world including Vale, Glencore, Anglo American, and Severstal attended this event. These companies represent operations in a diverse range of commodities: uranium, coal, iron ore, gold, silver, and zinc. Particularly insightful are the questions that the IT executives asked during the course of the event and following presentations from IDC, such as:

- How to do IT/OT integration and what does it actually mean?
- How are vendors moving from IT into operations and vice versa?
- How real is the ability of outsourcing vendors to deliver innovation?
- Are there examples of mining companies that have a technology strategy within board-level decisions?
- What is the relationship between the reporting lines of IT functions and the ability to successfully innovate?
- What is the DX maturity across the industries, by geographical region and commodity?
- If digital transformation is real, then what does that mean if the most senior leadership is not driving it within the business?
- Who are the DX leaders in the mining industry?
- What has changed now with IT/OT integration — after all, this has been a feature of the industry for a long time — so what has changed now?
- Questions about the way that the technology that is available now is changing the art of the possible for mining companies.
- Is the digital transformation real, or is it a ploy on the part of the vendors?

Among the themes of questions that were asked, the one that featured most strongly and was asked by the most people is, "Is the digital transformation real?" Across the board the prevailing message from mining companies, SAP, and other vendor partners of SAP in attendance was the following:

- Digital transformation is real and we are at the beginning of the transformation.
- The transformation is enabled by getting a digital core in place — from the ERP and extending into core operation silos.
- Innovation requires a transformation. The transformation is technology-led, but it is enabled by the right business strategy, the right organization, and bringing together IT and operations in the day to day of business operations.

Essential Guidance

The mining sector is just at the beginning of its transformational journey. Mining companies have an imperative to rethink their operational environment in order to deliver the operational excellence that will ultimately be the foundation of sustainable competitive differentiation. This is not easy, quite obviously; if it was, so many companies would not be struggling with it. There are many elements that drive the success. It requires the right business strategy, in turn enabled and supported by the right technology strategy. A poorly run mine will not become a high-performing mine simply by implementing automation, enabling insights through visualization, and enabling productivity through mobility. Creating a collaborative environment that has the right structure in place to enable innovation is critical, as well as an environment that actively seeks out improvements and has a well-established process for implementing change on an ongoing basis. Enabling data insights to the right person at the right time and leadership from the top is a fundamental characteristic of companies that have been able to do this well so far. Although there are some examples of companies that have done elements of their transformation successfully, there is not a mining company that IDC is aware of that has succeeded across the board.

Working with vendors such as SAP that have capabilities to specifically design for the requirements of the mining sector, and that take a proactive approach to improving these capabilities on an ongoing basis, is a critically important part of being able to transform. Being able to extract the maximum value from those engagements is critical. This event showcased the work that SAP is doing to enable the digital core of their mining customers.

Companies seeking to move toward creating operational excellence within their organizations need to consider the following areas of focus:

- **Consider the right technology governance process.** At an informal level, make sure that an understanding exists across functions between operations and IT. At a formal level, ensure collaboration across stakeholders within IT and operations a key part of building out the IT and operational technology strategy
- **Think about processes and not just technology.** The transformation is technology-enabled, but it is the transformation of decision making, and that in turn is the re-engineering of processes. Look at your processes to ensure that they are built for the technology capability rather than retrofitted with the technology.
- **Understand the value that will be delivered by IT/OT convergence.** The requirement for integration of IT and operational technology systems has been a feature of the mining sector for a long time, but a fully pre-integrated software environment creating insight from the operator right up into the enterprise does not yet exist. The technology capabilities across the 3rd Platform — cloud, mobility, and analytics — and innovation accelerators such as next-generation security, cognitive processing, Internet of Things (IoT), and robotics — fundamentally change the value proposition that IT/OT integration promises to deliver, shifting the art of the possible and potentially reshaping operational models.
- **Look at the fundamentals of LEAN, not just cost savings.** Most companies across the mining sector are placing a focus to varying degrees on approaches such as LEAN, which have been successful in enabling manufacturing companies to deliver competitive differentiating operational excellence. More companies in the mining sector, however, need to place a focus on the fundamentals of those approaches, rather than placing such a heavy focus on cost savings.

- **Look for opportunities to leverage expertise from other industries.** Working with vendors such as SAP with deep experience working with companies across other industries — manufacturing and oil and gas, of course, but also health, retail, and banking — offer the opportunity to gain insights into process transformation that have been successful elsewhere and can be applied in mining.

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Related Research

- *IDC MaturityScape: Digital Transformation in Mining* (IDC #US40829817, July 2016)
- *Perspective: Energy and Mining IT Leaders Must Lead in 3 Dimensions to Create Transformational Change* (IDC #AP41447416, June 2016)
- *Building Mining Operations of the Future* (IDC #US40144015, February 2016)

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