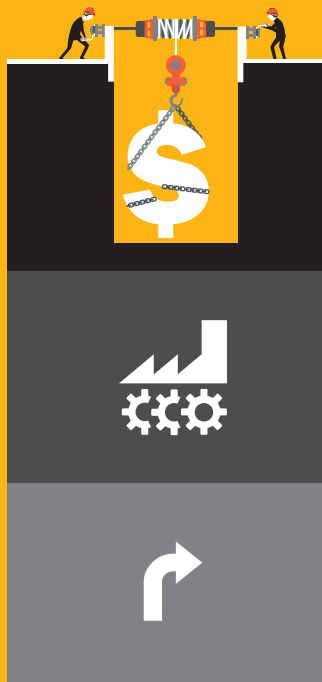




MINE-TO-MARKET



ABOUT THE INDUSTRY



The **USD 470 billion** mining and natural resources industry is characterized by variable growth patterns due to economic conditions and government regulations. Long-standing attributes are reflected in a range of challenges and opportunities that are faced by the industry's established players and by those contemplating entering the market.

Technology to Substitute Labor - The quest for smaller and more profitable footprints will lead to higher reliance on IT for cost cutting and Tech support.

The technology implementations of these business dynamics require the development of the next generation platforms that will help mining organizations to switch gears from a '**Bigger is Better**' to a '**Leaner is greener**' philosophy.

FROM A 'BIGGER IS BETTER' STRATEGY TO A 'LEANER AND GREENER' PHILOSOPHY

INEFFECTIVE CONTROL

- ▶ Poor synchronization across the value chain
- ▶ Mis-alignment between strategy and operational execution – compliance to plan
- ▶ High variability in production
- ▶ High levels of uncertainty in the value chain

THROTTLED RETURNS

- ▶ Volatility in commodity prices and demand
- ▶ Lower grade and difficult reserves
- ▶ Continuous cost escalation – reactive cost cutting
- ▶ Falling revenues and profits

INEFFICIENT DEPLOYMENT

- ▶ Asset efficiency deployment problematic
- ▶ Labour inefficiencies due to “Mining Boom” demand
- ▶ High levels of uncertainty and risks in operations
- ▶ Alignment of strategy with operational outcomes

LOW
PRODUCTIVITY
AND ASSET
UTILISATION

DECREASED
COST
EFFICIENCY

BELOW PAR
SHAREHOLDER
RETURNS

LACK OF
SUSTAINABLE
MANAGEMENT
CONTROL



WHY SHOULD YOU CONSIDER HCL?



HCL's vision is to enable the mining and natural resources industry to adopt a 'Synchronized Digital Mining' information strategy, which supports a dramatic improvement in mining efficiencies, and reliable production to overcome the challenges of fluctuating commodity prices, escalating costs, and diminishing shareholder return.



USD **6.5** Bn



105,000 Minds



31 Countries

HCL'S CAPABILITIES



MINE-TO-MARKET (M-TO-M) HCL'S TOTAL MINING SOLUTION



Customer
Advocacy
Model and
aaS Model



BI/Analytics
Across Product
Value Chain



Production
Value Chain
and System
Optimization



IT/OT
Conversion:
Effectiveness
Through IT
Enabled
Automation



COLLABORATION WITH CLIENTS ACROSS THE VALUE CHAIN



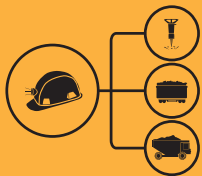
Mine-to-Market: HCL's Mine-to-market proposition, powered by 'Mineral Resource Throughput Management', helps establish a systematic and reliable solution deployment that analyzes and manages the impact of variable quality of raw materials on the performance of the mining value chain.



Three core principles:



The usage of the three core principles not only simplifies but also significantly "improves" mine performance.



Synchronized Digital Mining speaks about synchronizing the mining operations in the new digital era. It is also based on the proven **Mineral Resource Throughput principles and methodology**, while being supported by real-time or near-time information for improved proactive management control and creating a sustainable platform for reliable and materially improved productivity and profitability.

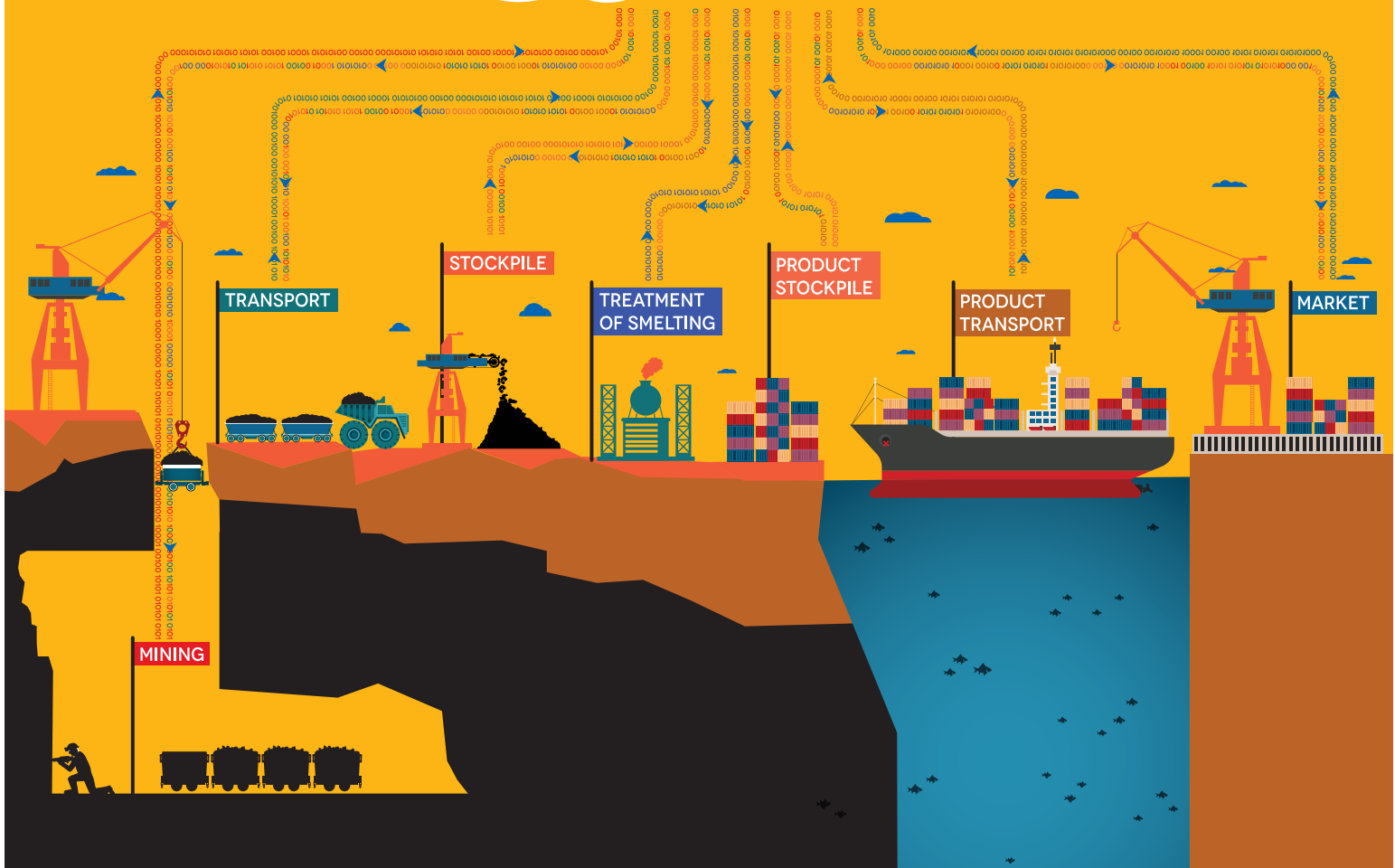
PARTNERING TO DELIVER ACROSS THE VALUE CHAIN



MineRP

barnstone

exxpleo



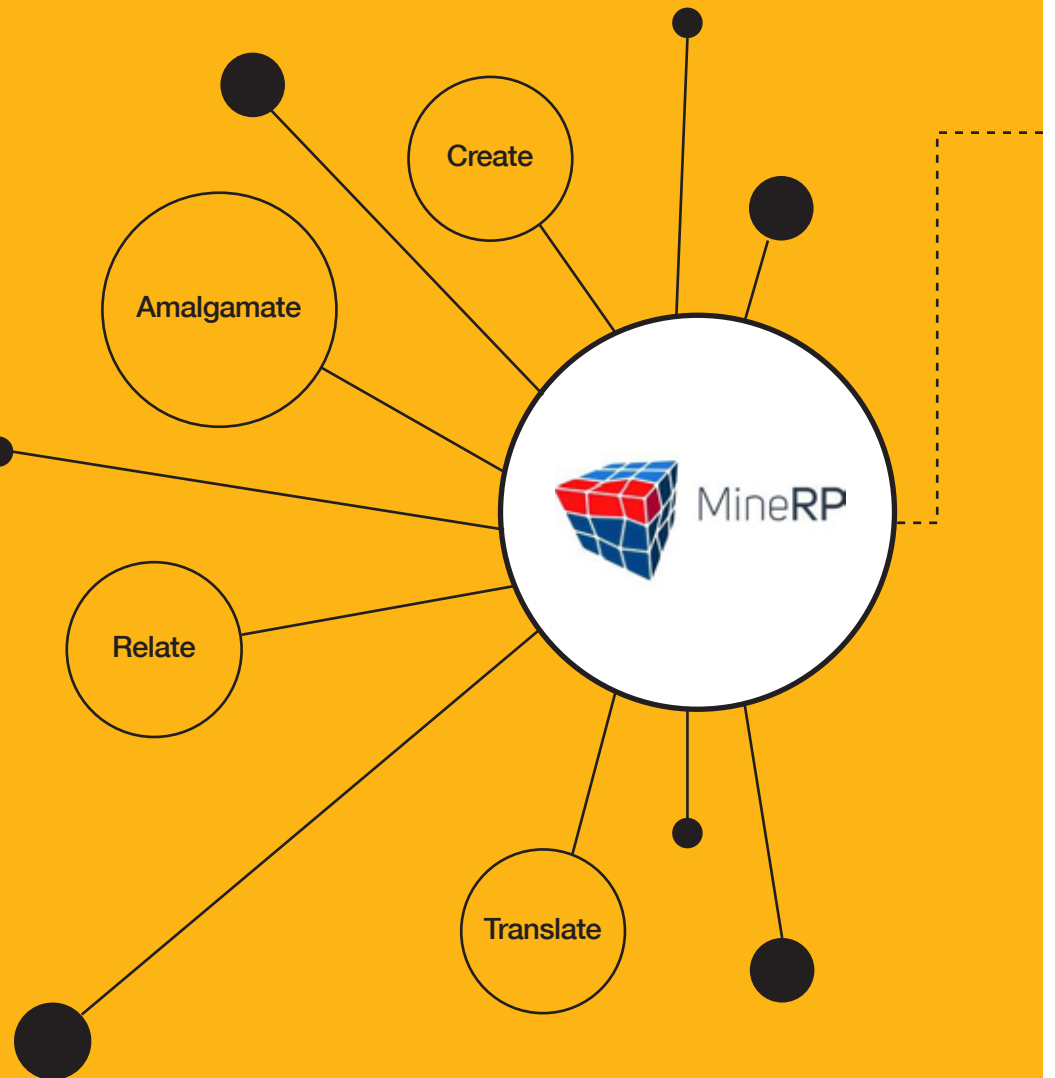
HCL HOLISTICALLY TACKLES PROBLEMS STEP-BY-STEP FOR A STREAMLINED DELIVERY SOLUTION IN COLLABORATION WITH OUR PARTNERS

HCL in collaboration with Mine RP develops a Universal Mining template to solve challenges such as:

All data is in localized systems and in silos which make it difficult to use in the information value chain

This data is critical to optimize and synchronize the mine core production value chain for optimal profitability

Major issue lies in the integration of end to end primary value chain data





HCL in collaboration with Exxpleo powered by MRTM deploys a reliable solution to solve challenges such as:

Mine Planning does not cater to production efficiencies within specific conditions and context. Mines optimize the scheduling of products best when simulation optimization takes place.

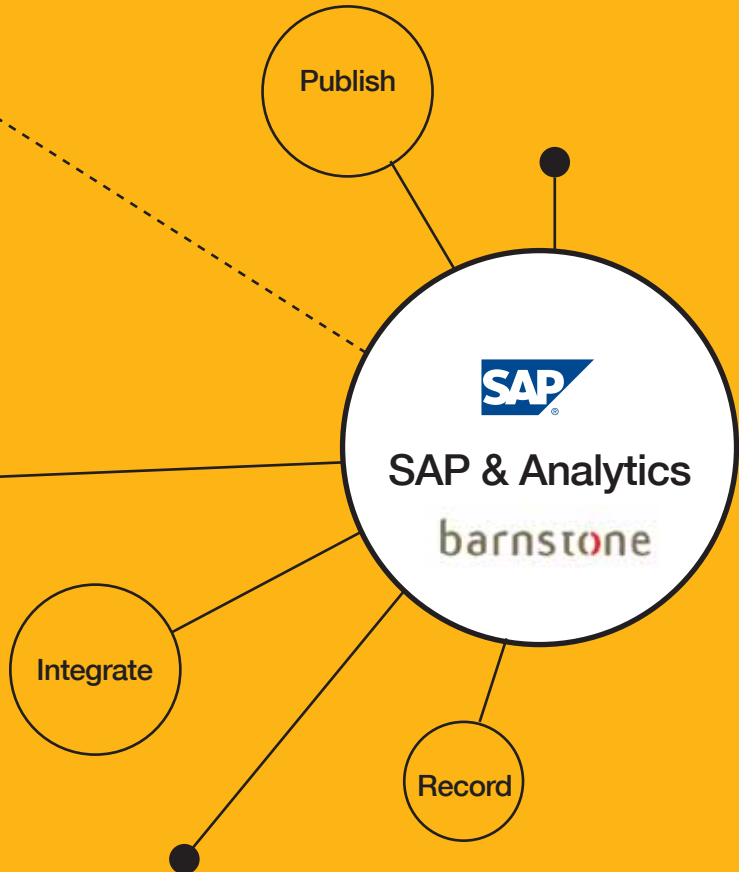
No product exists in this space – neither MTS nor ERP systems can deliver this functionality

HCL in collaboration with Barnstone establishes a Universal SAP template to solve challenges such as:

Production processes are managed outside ERP which handles only production inventory

The issue here is that there is no context to the concept of location, and time for the data that limits its usage in management decision making.

Due to silos of information, very little real-time/integrated analytics are used to drive pro-active decision making



MINE-TO-MARKET IN THE MINING ECO-SYSTEM

Value chain productivity -

The mining system updates the performance status of the mining value chain from resource and reserve to the market, enabling miners to focus on bottlenecks.



Sustainable Management control -

The system enables multiple optimization options for management and control, enabling effective decision-making that helps stabilize and improve production rates (flow) and product grades/values

Cost efficiency –

HCL's solution generates cost reduction by yield improvement (= less ROM), material flow optimisation (= optimal/less assets required), rapid response to operational deviations, value extraction from ERP systems and other benefits.



KEY SOLUTIONS OFFERED

HCL is an integrator, accelerator and value creator across the mining eco-system and is known for its NextGen solutions such as :

SOLUTIONS	
Product Value Chain	Controls unreliable production across product value chain and maximize value and flow with a sustainable SDM system
Reserve Management	Delivers automation, integration and standardization of mine technical system data into the value chain optimization and reserve economics aspect of the business in partnership with MineRP and Exxpleo,
Mining Solution on SAP	Makes affordable the leading ERP system, SAP, with HCL's functionally rich mining solution in partnership with Barnstone
Mining Analytics	Bridges digital integration and Big Data gaps, using ready-to-use the Mining Analytics service platform
Mobility	Enables organizations to be highly productive by providing information at the right time to the right person
Mining Solution in a Box	Accelerates mining operations into the 21st century with a world class ready-to-use solution
As-a-Service 'Delivery' Model	Consumes the HCL Mining solution and / or its components in a cost effective and reliable as-a-service model



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Relationship[™]
BEYOND THE CONTRACT

HCL