SMART
Mining
solution

Natural Resources

wipro

Wipro's SMART Mining solution (WSM)

A recent survey conducted by Wipro across the mining sector has found that digital transformation in mining is now part of the mainstream business. While the top operating priority is to reduce costs, the key technology challenge remains **integration** of new solutions and the top benefits of technology are to deliver **greater efficiency through real time controls, optimize production management and improve decision-making.** However, there are still key challenges such as integrating new technologies, demonstrating return on investments and exploiting new age digital technologies with a well-defined approach.

Approximately 75% of executives surveyed felt that a **wholesale strategic change** in the way mines are operated, managed, monitored and manned is needed. At Wipro we believe that digital mining and its success is largely dependent on crafting a comprehensive vision statement for the business and IT landscape. In addition, the operating model of the organization needs to change in terms of planning, safety, operations and maintenance and use of technology. See Figure 1

Today's Mine	Silo ed planning and scheduling, lack of an integrated view	Reactive approach	Workforce intensive operations	On Premise and manually intensive
	Planning & Scheduling	**Safety & Security**	**Operations**	**Technology**
Digital Mine	Holistic vertically and horizontally integrated dynamic planning	Proactive and predictive approach	Fully automated operations & predictive maintenance	Digital and fully automated

Figure 1: Key benefits with digital mining

Wipro's experience in digital mining

Wipro's digital comprises over 400 digital strategists, domain specialists, creative technologists, service designers, UX consultants, tech leads, user research and engineers with a strong partner ecosystem of mining domain specialists and technology organizations. Our 'Digital start' methodology assesses your value drivers for costs and safety and based upon the mining method delivers a digital canvas and roadmap for a digital journey. This helps you with an actionable strategy and a digital solution that can be adopted to accelerate your digital journey. In other words, we look beyond the digital technologies of web, mobile, robotics and cognitive technologies - our Digital multipliers of design led thinking, cloudifcation and disruptive digitalization, connected devices and transformative architecture helps organizations towards a truly digital impact.

Wipro's SMART Mining solution (WSM)

Wipro's SMART **(specific enough, measurable, achievable, realistic, and time bound)** Mining Solution uses a 'platform' approach, which looks holistically at the mining business and comprises of the architectural components and digital use cases. The solution considers the use of Cloud for processes that need a high latency and criticality. Latency refers to real time versus transactional events (for example - fleet visibility and machine alerts). Criticality refers to low impact versus high impact, including safety considerations, financial considerations (for example - exposure to financial risk because of loss of revenue or a break in production because of mining equipment failure)

Wipro SMART Mining solution

(Specific enough, Measurable, Achievable, Realistic and Time bound)

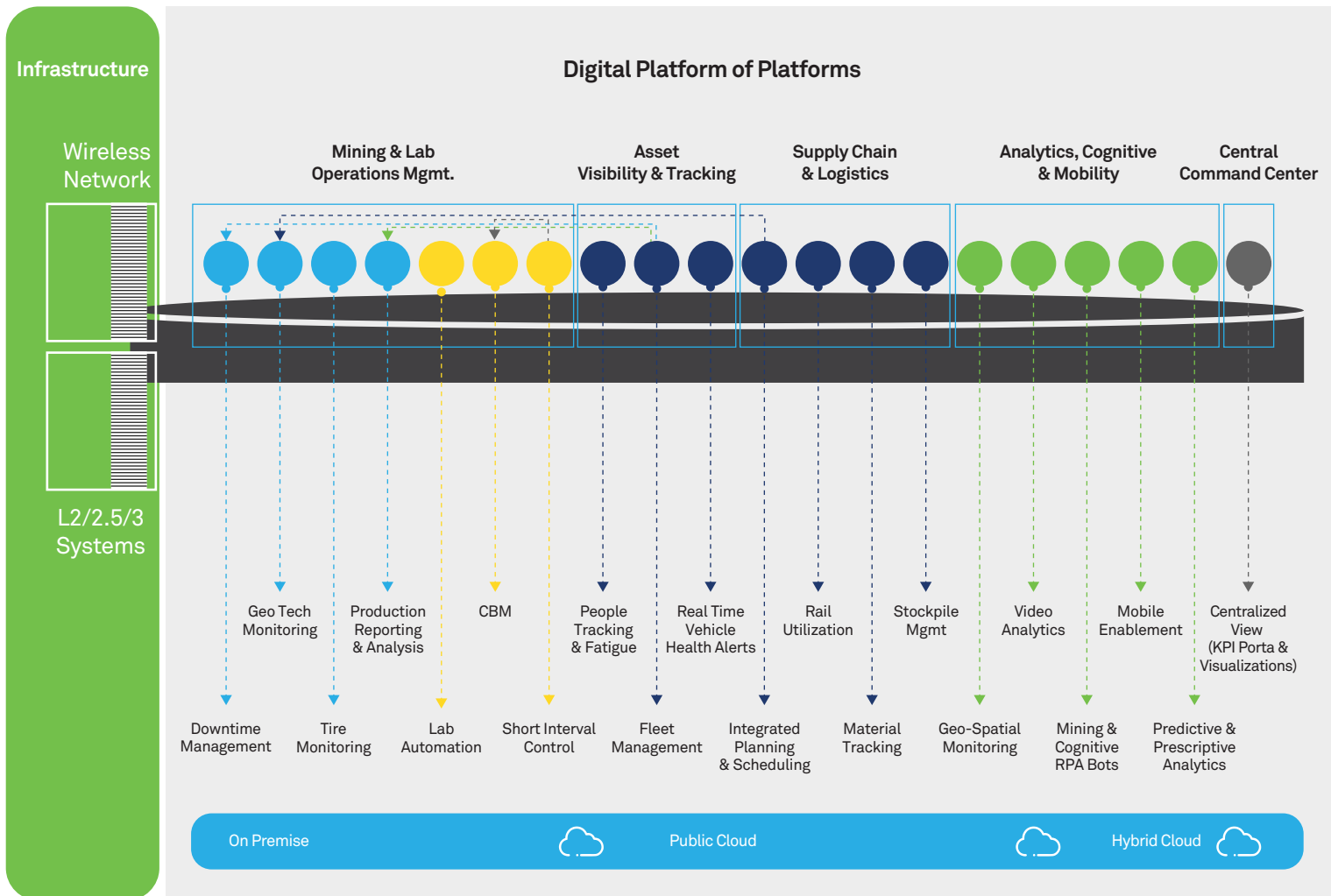A "Digital Platform" of platforms with individual platforms based on premise and on the cloud

Figure 2: Solution components

Solution components

• Mining and Lab Operations Management comprises of historians and MES applications (downtime, production, KPI management, inventory/metal accounting, logbooks, and energy analysis). Digital work management and short interval control for semi-automated feedback in between shifts along with solutions for lab data management and operational process workflows

• Logistics management comprises of an integrated planning and scheduling solution to optimize logistics costs, port usage, revenue, minimizing penalties, maximizing inventory grades etc. Considering planned grades, tons from mining, transportation capacities, port and stockpile capacities and downtime schedules or during the ramp-up phase for managing shaft logistics considering capital work requirements as well as meeting production goals

• Mobile asset visibility and tracking for visualization of assets such as mobile equipment, rail and personnel assets and tracking of materials comprising Wipro's Minetrack and partner solutions including

historians and using Internet of Things platforms for sensor data aggregation from dust monitors, vehicle interfaces, fatigue, wearables, tires, geotechnical sensors and drones etc.

• Advanced Analytics, Cognitive and Mobility platform using Wipro's Data Discovery Platform for predictive analytics on the Cloud such as operator analysis, predictive maintenance, safety analytics, social sentiment analysis, road condition analytics, alerts for anomaly detection etc. Wipro Holmes AI platform for business bots such as anomaly cause prediction, conversational interfaces for worker assistance and third party mobility middle ware for worker mobility such as maintenance and work capture and status visualization

• Remote Operations Centers using Wipro's Collaborative Decisions environment to identify problem areas providing management and process managers with an objective understanding of how key business processes function on the ground to improve efficiency of integrated operations

Key benefits

We help our clients realize digital business value and accelerate their digital roadmap. The key aspects in realizing business value include:

Achieve and accelerate digital journey

Reduce direct cost from assets and operations

Enable competitive edge with real time decision making

Facilitate faster response with mobility

Minimize waste using Lean principles

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading global information technology, consulting and business process services company. We harness the power of cognitive computing, hyper-automation, robotics, cloud, analytics and emerging technologies to help our clients adapt to the digital world and make them successful. A company recognized globally for its comprehensive portfolio of services, strong commitment to sustainability and good corporate citizenship, we have a dedicated workforce of over 170,000, serving clients across six continents. Together, we discover ideas and connect the dots to build a better and a bold new future.

For more information, please write to us at **info@wipro.com**

wipro