

**AUSTRALIA**

# What is driving next generation mining in Africa!

3 June 2021



Australian Government

Australian Trade and Investment Commission

# Housekeeping



All microphones will be muted during the webinar, apart from the person speaking.

- We will be recording the webinar and will provide a link to the recording following the session.
- At the end of the session, there will be time for Q&As. To ask a question, log into [www.slido.com](http://www.slido.com)

# How to ask Questions

Login – [www.slido.com](https://www.slido.com)

Event Code – #AfricaMining

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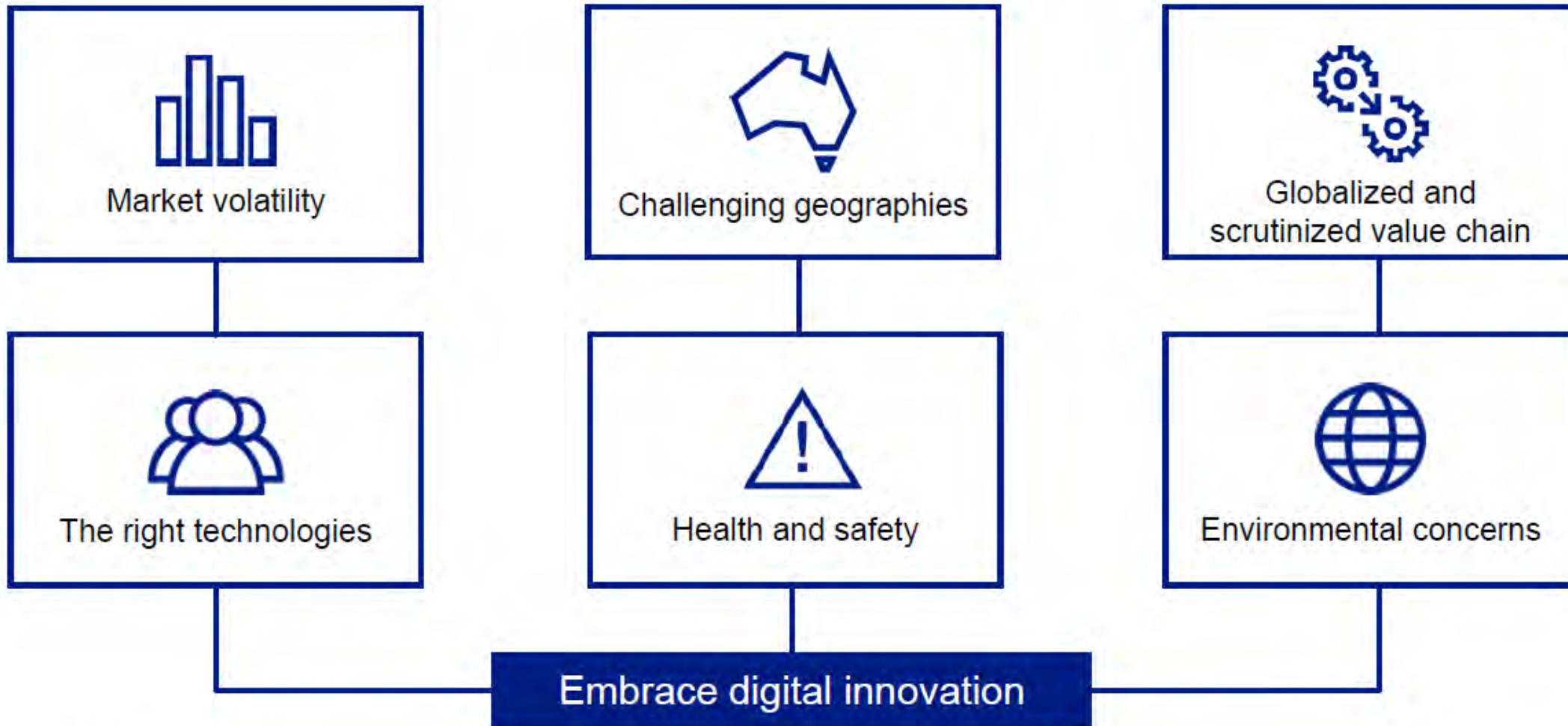
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## What is driving next generation mining in Africa?

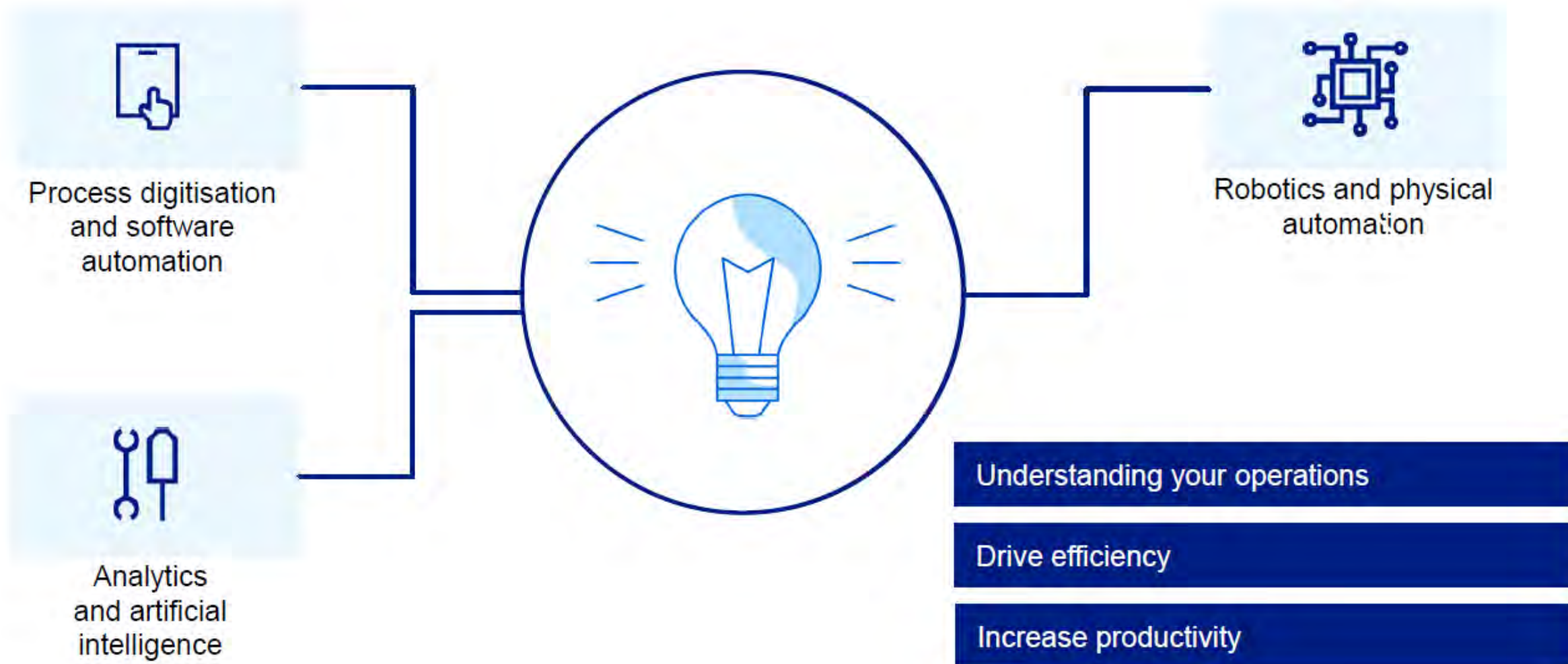
Connected | Automated | Smarter



# The mining industry is changing



# With change comes opportunity



# What could a smart mine look like?



Alternative and renewable power



Automation



Ore sorting



Ventilation on demand



High accuracy GPS



Drone technology



3D printing and modular equipment



Alternative powered vehicles



3D imaging



Equipment management



Data optimisation and machine learning

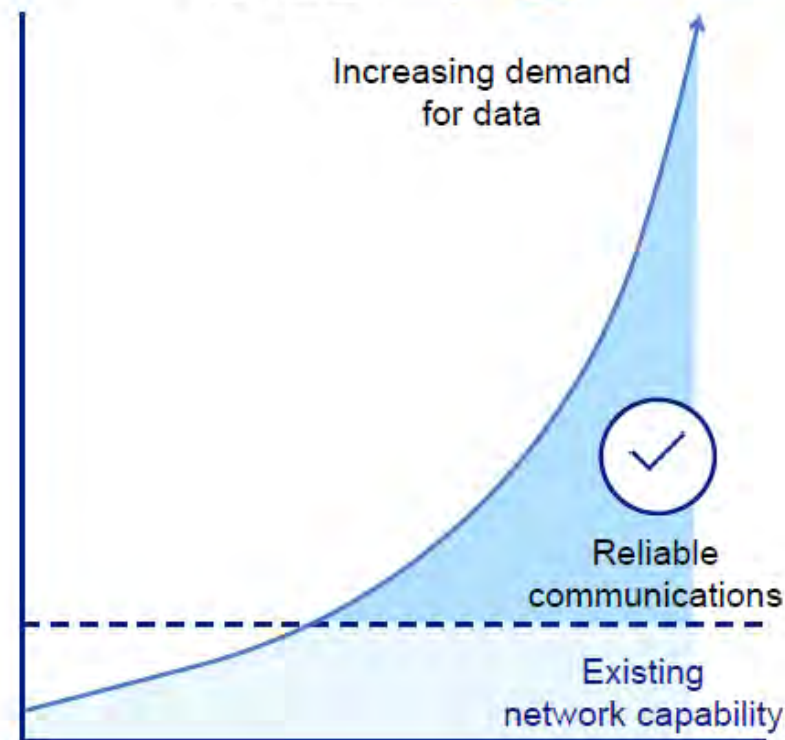


Wearables on workers



# Embracing innovation

## Drive for information



Go digital

Be competitive

Increase profits



# Enabling a new era of mining innovation

- Enabling Digital Mining
- *Without Compromise*



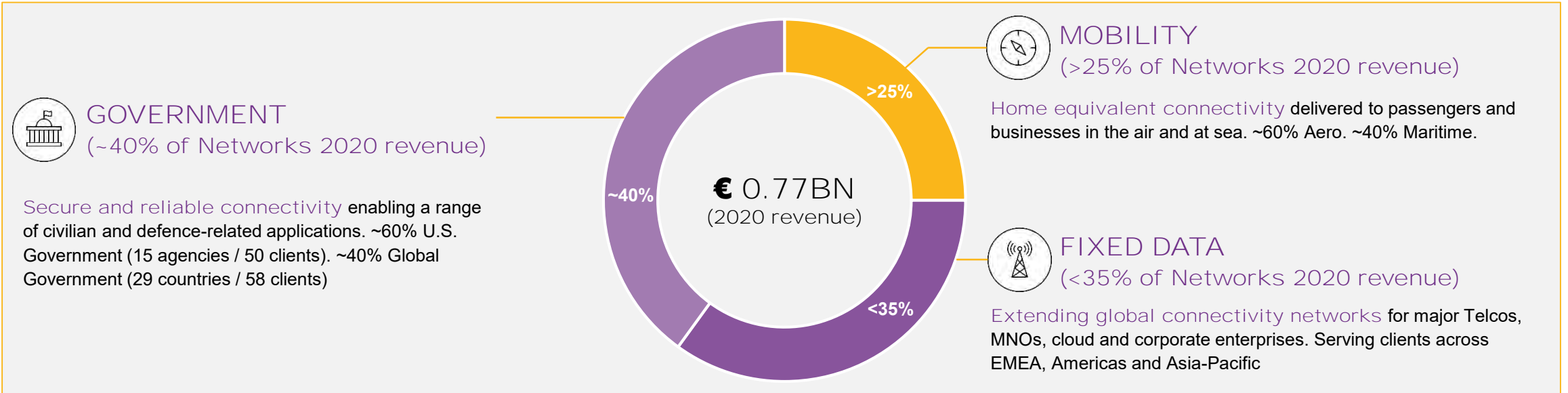
O3b **mPOWER**



# A Data Networking Company in Space

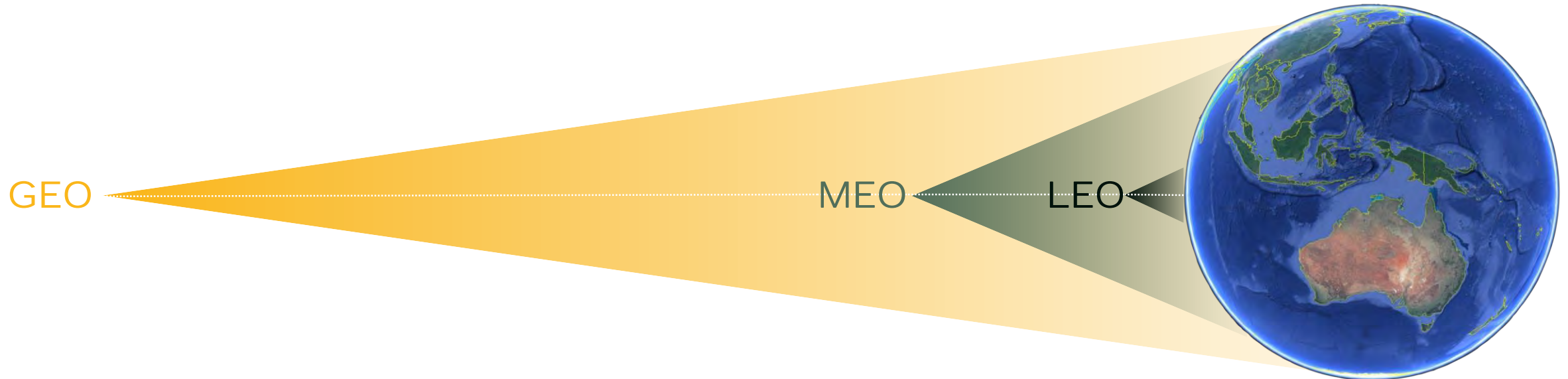
 <p><b>+27% Growth</b> in revenue (last 4 years)</p>	 <p>Unique <b>GEO-MEO</b> and terrestrial network</p>	 <p><b>MEF CE 2.0</b> telco-grade certification</p>	 <p><b>€2.2bn</b> contract backlog</p>	 <p><b>3-5 YEARS</b> typical contract length</p>
				

<p><b>Innovative Solutions</b> to deliver scalable, low latency services via multi-orbit network</p>	<p><b>Fully Managed Services</b> with seamless cloud and telco integration</p>	<p><b>Building Trusted Partnerships</b> to strengthen our value proposition to customers</p>
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# Comparing orbits



GEO – 36,000km	NGSO MEO ~ 8,000km	NGSO LEO ~ 1,000km
High latency (~700 msec)	Low latency (~150 msec)	Very low latency (~50 msec)*
Very large Earth view	Large Earth view	Small Earth view
Continental gateways (HTS for data)	Regional gateways (high throughput)	Many local gateways (low throughput)
Stationary antennas (3 satellites for global coverage)	1-hour tracking (6 satellites for coverage)	10-minute tracking <b>(100's-1,000's needed for coverage)</b>
100s Mbps per terminal	Multiple Gbps per terminal	100s Mbps per terminal <i>* Gateway distance, SL &amp; ground network dependent</i>

## 03b mPOWER



The next generation of MEO built on a legacy of performance

- ▲ Fully digitised payload
- ▲ Electrically steered beam-forming
- ▲ High throughput (10Mbps+ to 10Gbps+) per end user
- ▲ Terabit per second scalable system
- ▲ Flexible forward-to-return throughput ratio
- ▲ Low latency MEO (<150msec)
- ▲ Inherently secure & flexible

- Currently being manufactured by Boeing
- First SpaceX launch - 2021
- Full operational readiness - 2H 2022





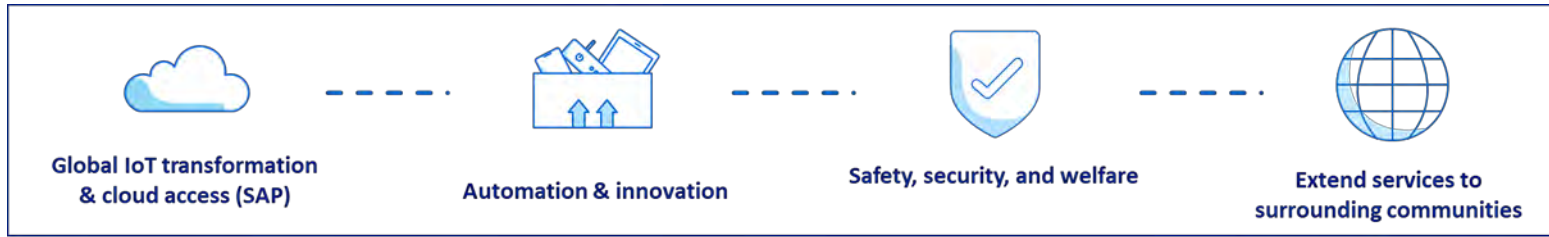
Simple , Scalable and Secure



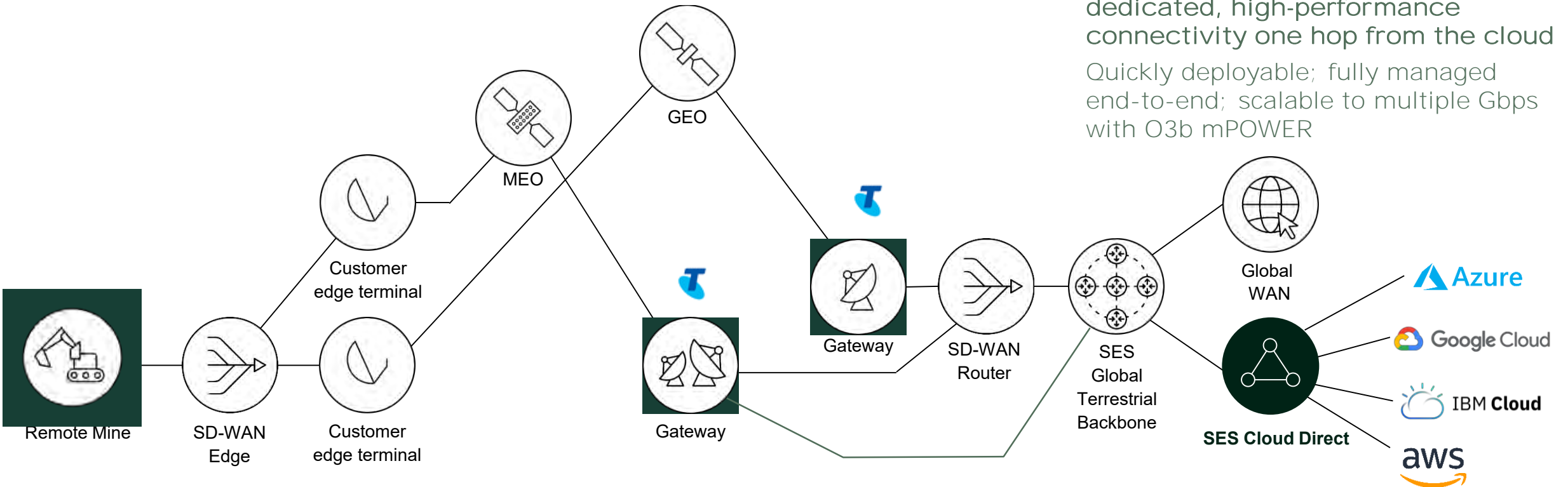


# Connect any site directly to the cloud through our intelligent, resilient, multi-orbit platform.

- Accelerate Digital Adoption – Application Assurance - Anytime Any Place Any Where



Core/Aggregation sites: Enable dedicated, high-performance connectivity one hop from the cloud  
Quickly deployable; fully managed end-to-end; scalable to multiple Gbps with O3b mPOWER

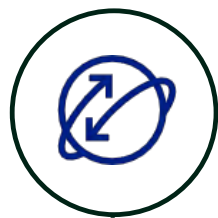




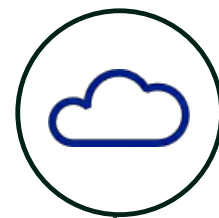
Fibre-equivalent connectivity to support real-time data sharing  
**for you?**



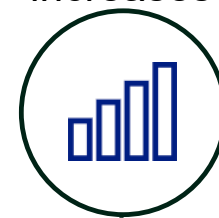
Comprehensive coverage, anywhere your operations are located



Optimised cloud connectivity



Managed services model for cost-effective bandwidth scaling as usage increases



**Make smart operations a reality**



- Thankyou
- We look forward to helping you accelerate your Digital Transformation.



- Opportunity
- Resolute's Syama Mine – Mali

## Situation

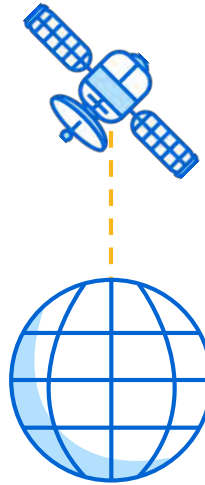
Need for high-bandwidth, low-latency communications for full automation



Fibre optics within mine site, no connectivity out of site

## Solution

O3b MEO satellites



High-capacity fibre network extended globally

## Result



Automated machinery



Data connectivity



High-speed communications



Enterprise cloud applications



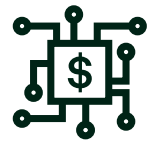
Enhanced safety and productivity

# Outcome:

## Resolute's Syama Mine – Mali

'This SES Networks solution is a game-changer, as it allows us an unprecedented level of digitalisation... bringing the same high speeds as if it was via fibre'

– Jodie Hatch, CTO



Automation investment:  
**\$15,000,000**



Ounces in ground:  
**2.9m**



ROI:  
**26 X**



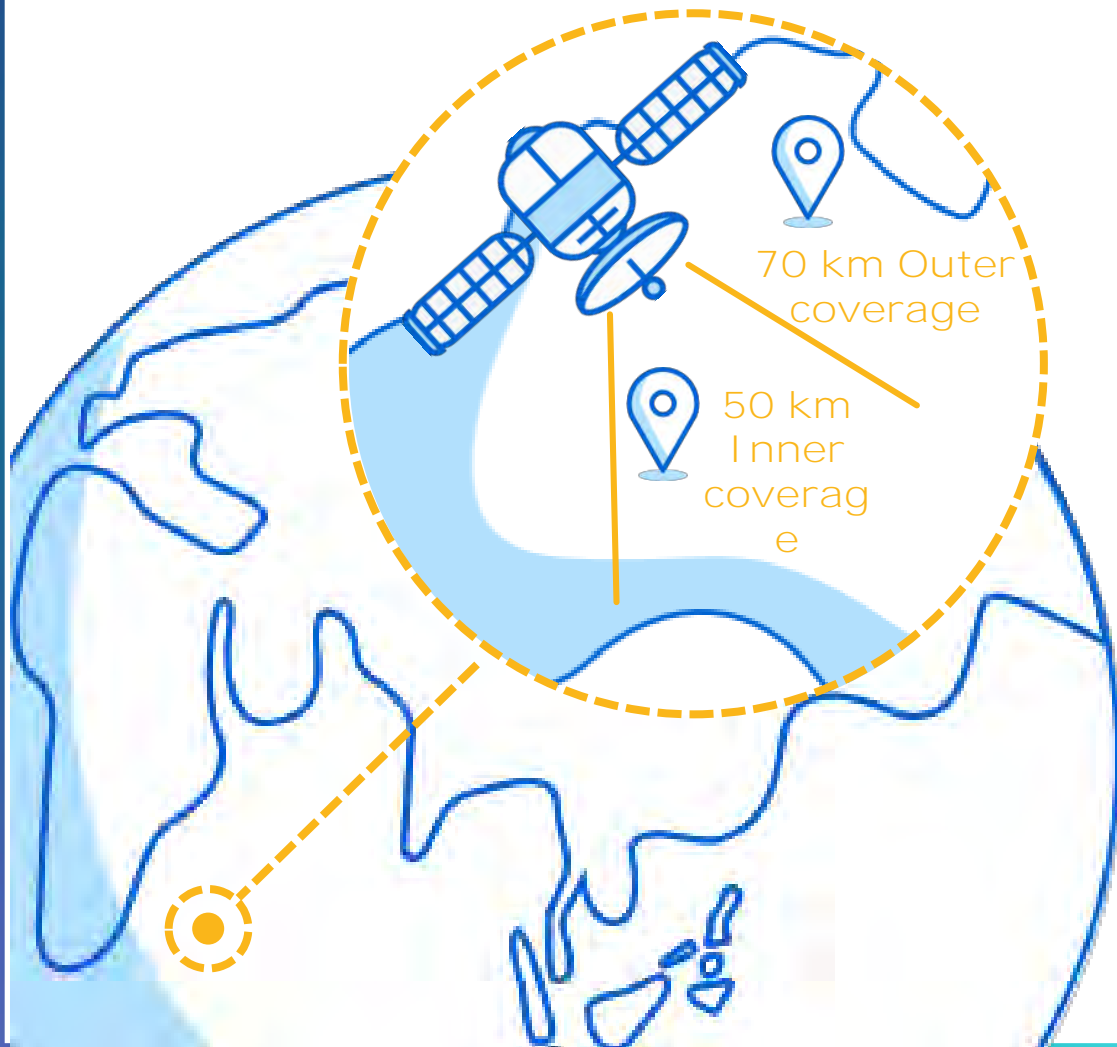
Reduction in cost  
of production:  
**\$135 per oz**



Savings:  
**\$391,518,225**



- O3b MEO today



## Capabilities

- MEO low latency (~150msec)
- 20-satellite constellation
- 10 x 700km user beams per satellite
- Up to 1.6Gbps per beam throughput
- SES TT&C/data gateways interlinked globally
- Ongoing support and evolution to O3b mPOWER



# Topic: Digital Transformation in Mining

Conor Murdock  
Director of Growth  
[www.ionyx.com.au](http://www.ionyx.com.au)





At **IONYX** we are dedicated to challenging the way businesses operate

- Australian software & technology company
- Software focused on **safety, travel, procurement**
  - Servicing the mining and heavy industries
    - Offices in Brisbane, Philippines & UK



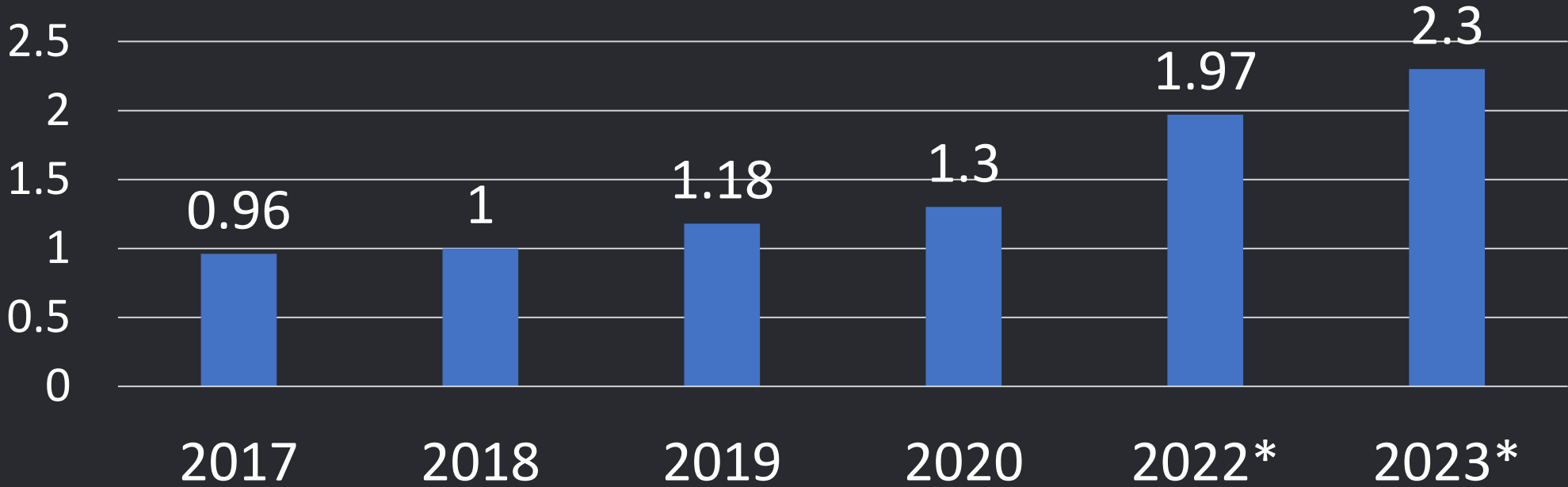


# AGENDA

- Digital Transformation
  - Global Spending
  - Trends in Mining
- Impact of Covid-19 – Australian Mining Sector
  
- Product Focus : JMS Journey Management System
  - Client challenges
  - JMS Overview
- Customer Case Study – South Africa



# Global spend: digital transformation technologies and services 2017 to 2023 (US Trillion dollars)



Source: Statista May 2020

# DIGITAL TRANSFORMATION TRENDS

## Mining Sector

- Data analytics & Machine Learning
- AI & Automation
- Mobility and apps
- Telematics & Wearables
- The “connected worker”
- Human-centred digitalization
- End user self-serve
- Custom off-the-shelf (COTS)
- Buy it... don't build it

**“The next step in enhancing BHP’s productivity will be through automation technology”**

Brandon Craig  
BHP - Western Australia Asset President  
Austmine Conference - May 2021



**Journey  
Management  
System**



**Online  
Procurement  
Services**



**Site Pandemic  
Response**







## Journey Management: What are the Challenges?

- More staff on the road than ever before
- Longer shifts/rosters – more fatigue
- Road deaths up 11% in QLD during COVID 2020
- People have been more stressed/distracted during COVID
- Paper-based documents still in use
- Inefficient & manual processes
- Inconsistency across different sites/regions
- Inaccurate fatigue management procedures
- No visibility of safe arrival
- Lack of emergency response protocol





# JMS - JOURNEY MANAGEMENT SYSTEM

- Safety software
- Mobile app
- Reduces road travel risk
- Manages driver fatigue
- Digitizes manual procedures
- Provides a duty of care
- Covers staff in personal & hire cars





## CASE STUDY: ANGLO AMERICAN PLATINUM



### CHALLENGES

- High risk road travel
- Varied JM processes between regions
- No real-time visibility of staff
- No simplified expense claims processes
- No communications tool for duress/ emergency
- Building a solution in-house too expensive and would take a year+

### SOLUTION

- Customized/branded “Anglo Road Travel App”
- Developed/delivered in approx. 80 days
- Global contract - available in multiple languages
- Approx. 9,000 user accounts so far
- 20,000+ users once global roll out complete
- 100% of users are self-booking travel
- Hosted in Anglo American’s own Azure environment
- Fully supported by IONYX



**THANK YOU**

Conor Murdock  
Director of Growth  
IONYX

[www.ionyx.com.au](http://www.ionyx.com.au)





**RUSSELL**  
MINERAL EQUIPMENT

# RUSSELL MINERAL EQUIPMENT

What is driving next generation mining in Africa

**Scott Gibson – Key Account Manager**

DATE: 3 June 2021



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RME is the global leader in the design, manufacture and supply of grinding mill relining technologies and services.

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THUNDERBOLT  
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Sold

**490+**  
RUSSELL MRMs  
Sold

**380+**  
Mine sites around  
the world with RME  
equipment

**160+**  
Equipment aged 15  
years or  
older still in operation

**64 +**  
Countries with mine  
sites that own RME  
equipment







## RME emerging technologies



RME Eye Visibility Camera System



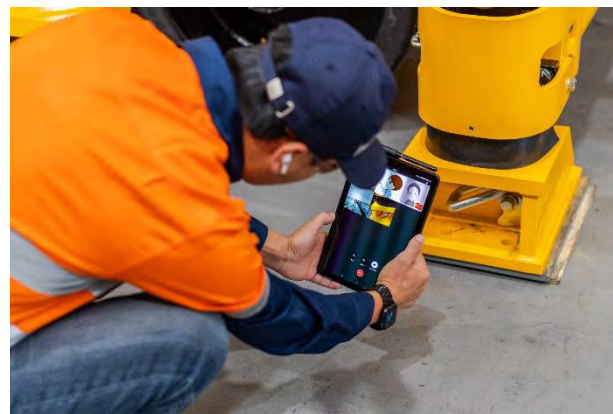
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- Virtual equipment commissioning, services and maintenance
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## Do you want to know more?

For further information, contact [Nico.Venter@rmeGlobal.com](mailto:Nico.Venter@rmeGlobal.com)

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Q & A

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