

INDEX Technology Deep Dive

22 July, 2020

PREPARED BY:
KYM CLEMENTS

INDEXLIMITED.COM

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Welcome



Paul House CEO

Shaun Southwell COO

Michelle Carey GM IMDEX Product Development

Sasha Pontual CEO AusSpec

Paul Evans CFO & Company Secretary

Dave Lawie Chief Geoscientist

Mat Regan CCSS

Paul House CEO

Euroz

Product Offering and Growth Strategy

Drilling Productivity Technologies

Rock Knowledge – Exploration

aiSIRIS

AusSpec Acquisition

Rock Knowledge – Mining

Digital Transformation and New Ways of Working

Summary

Q&A

We are a leading global Mining-Tech company.

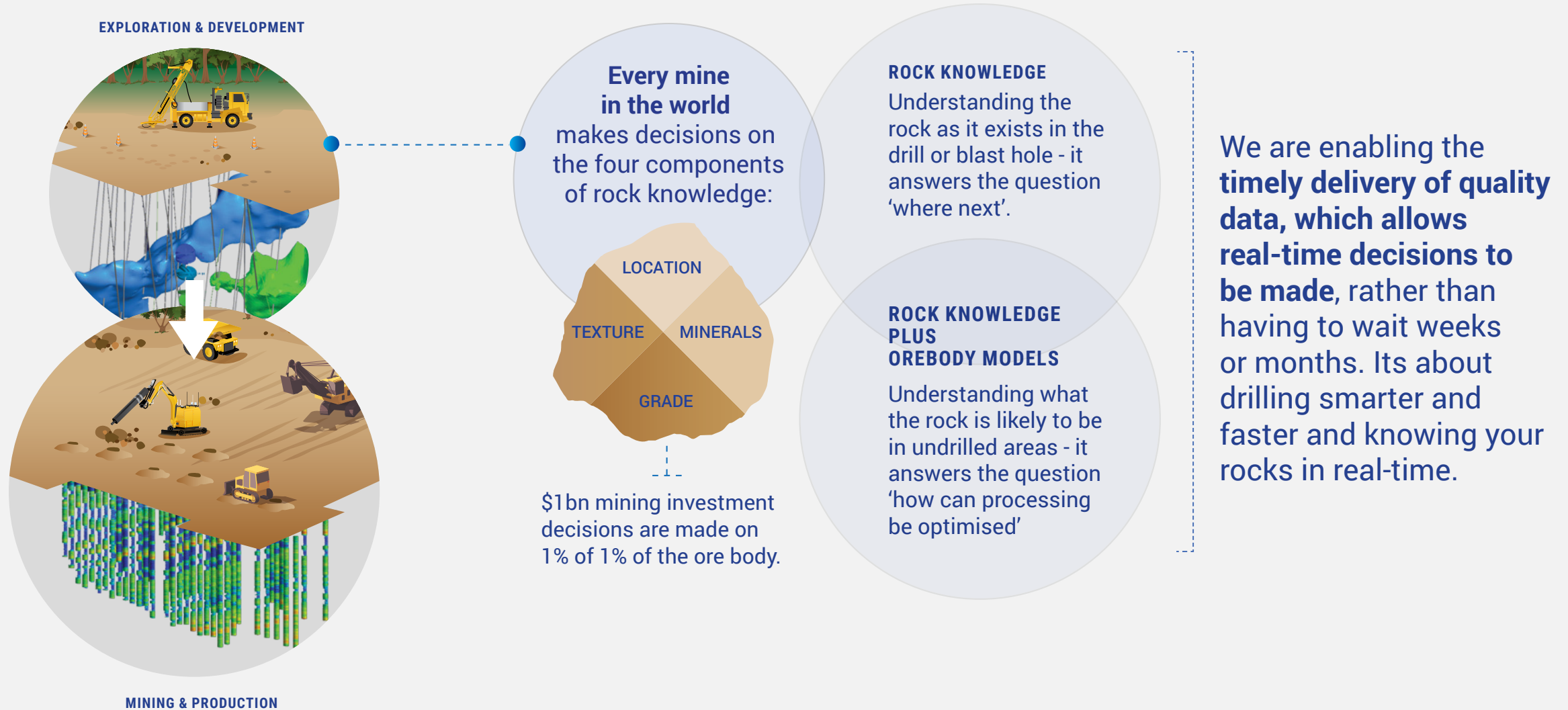


We develop drilling optimisation products and cloud-connected sensors to provide real-time rock knowledge and quality data.

Together they enhance decision making and sustainable operations across the mining value chain – from the drill rig to the core farm and processing plant.

PRODUCT OFFERING & GROWTH STRATEGY

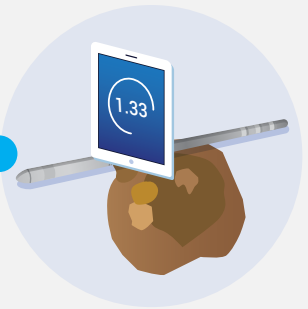
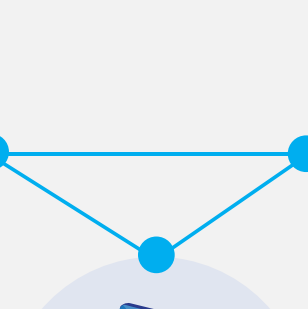
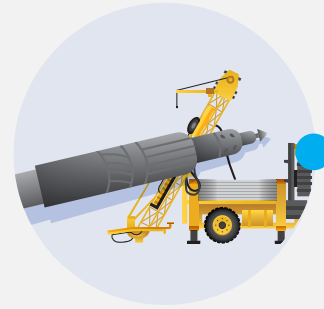
Why is real-time quality data important?



How do we provide real-time rock knowledge and quality data?

- Drilling productivity and rig alignment technologies
- Automated and remote drilling fluid testing technologies
- Data collection and paperless reporting software

Drilling Optimisation

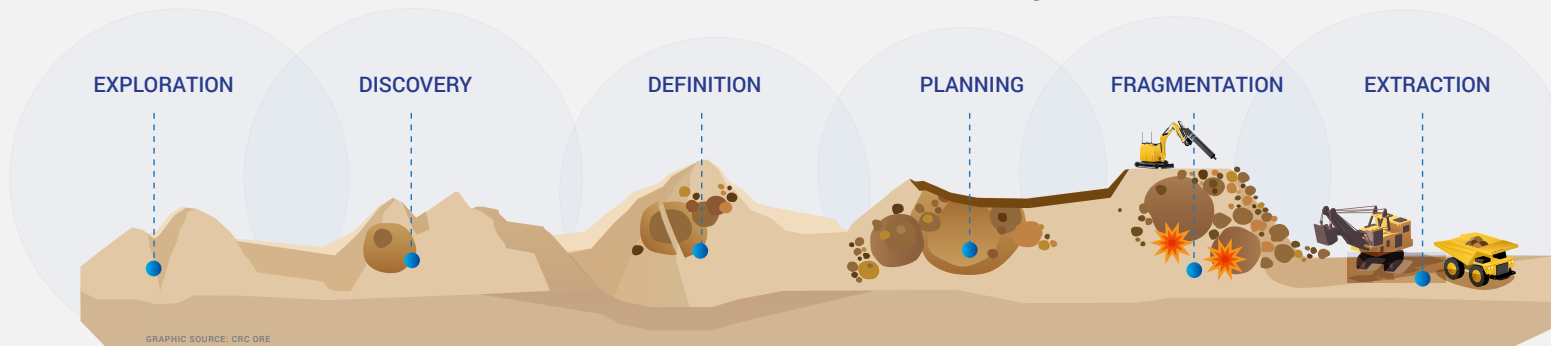


Rock Knowledge Sensors

- Downhole survey sensors
- Core orientation and gamma logging technologies
- In-field sampling and analysis technologies

Real-time Data and Analytics

- Secure cloud-based services
- Real-time subsurface visualization
- Interpretive software – geological data

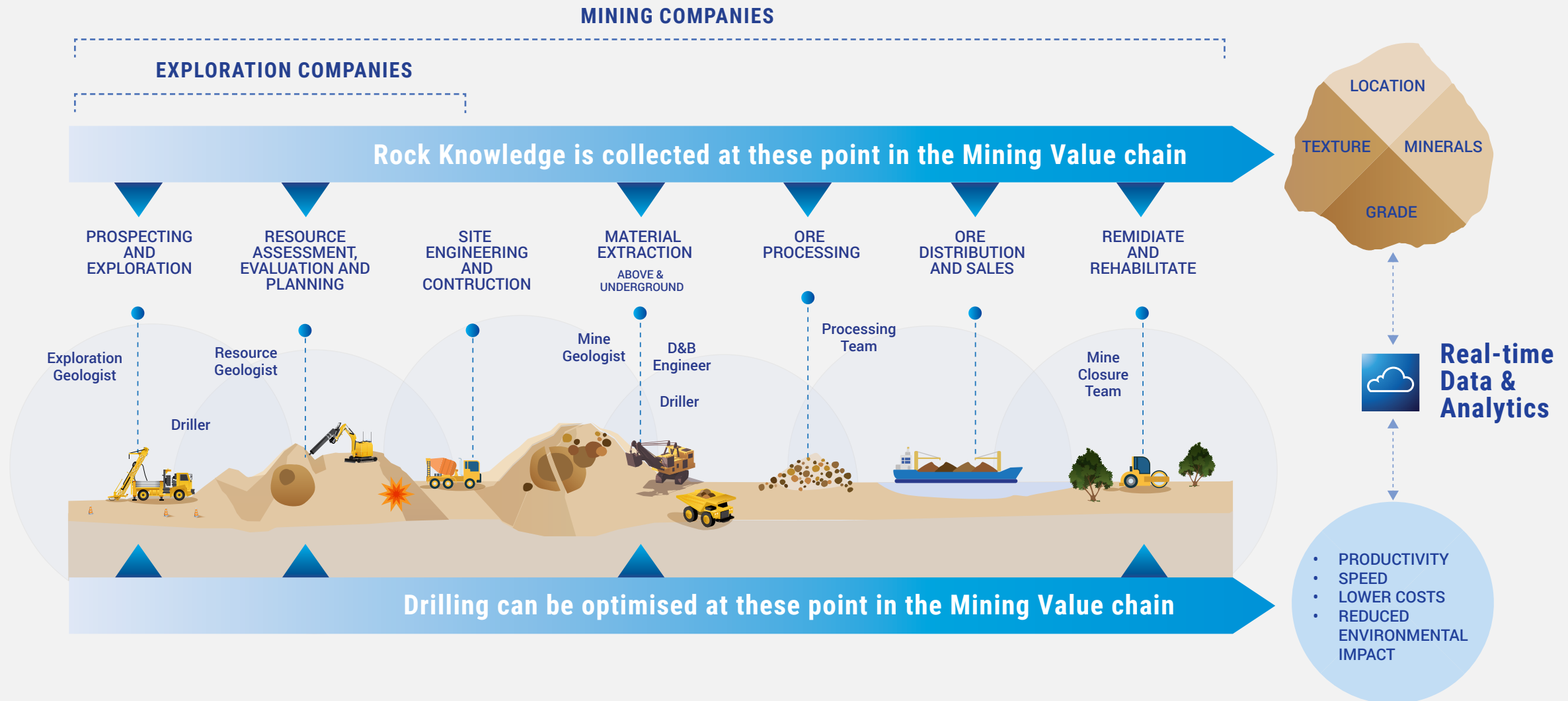


EXPLORATION & DEVELOPMENT

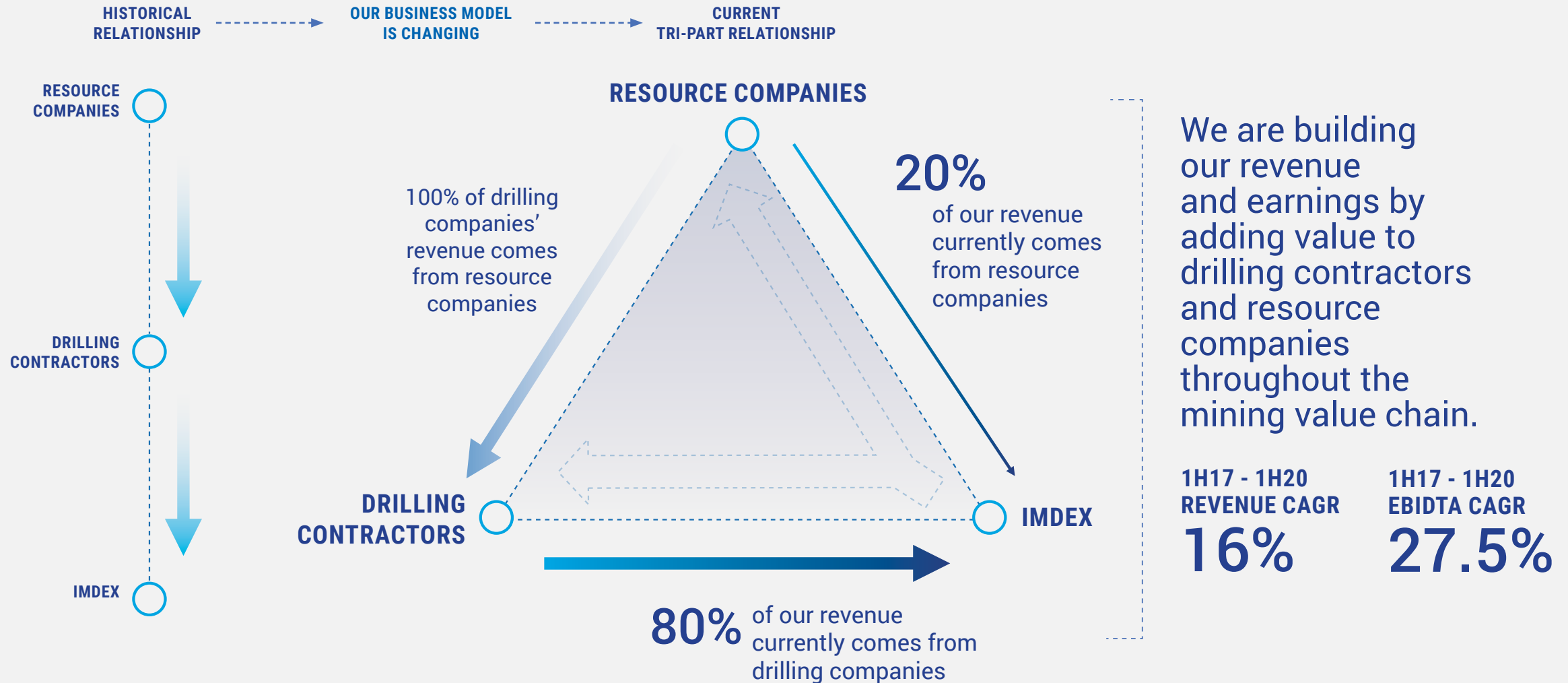
Applicable across whole mining value chain

MINING & PRODUCTION

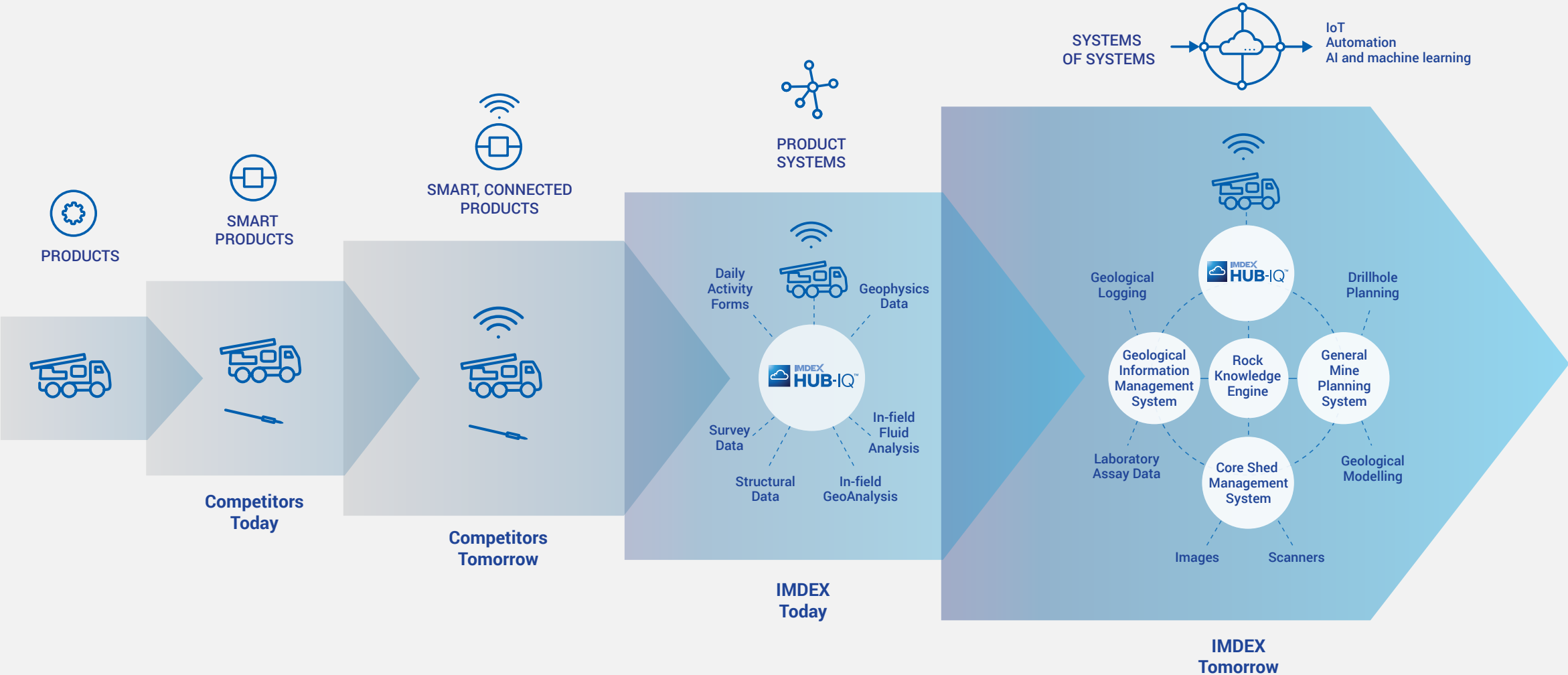
Where do we add value across the mining value chain?



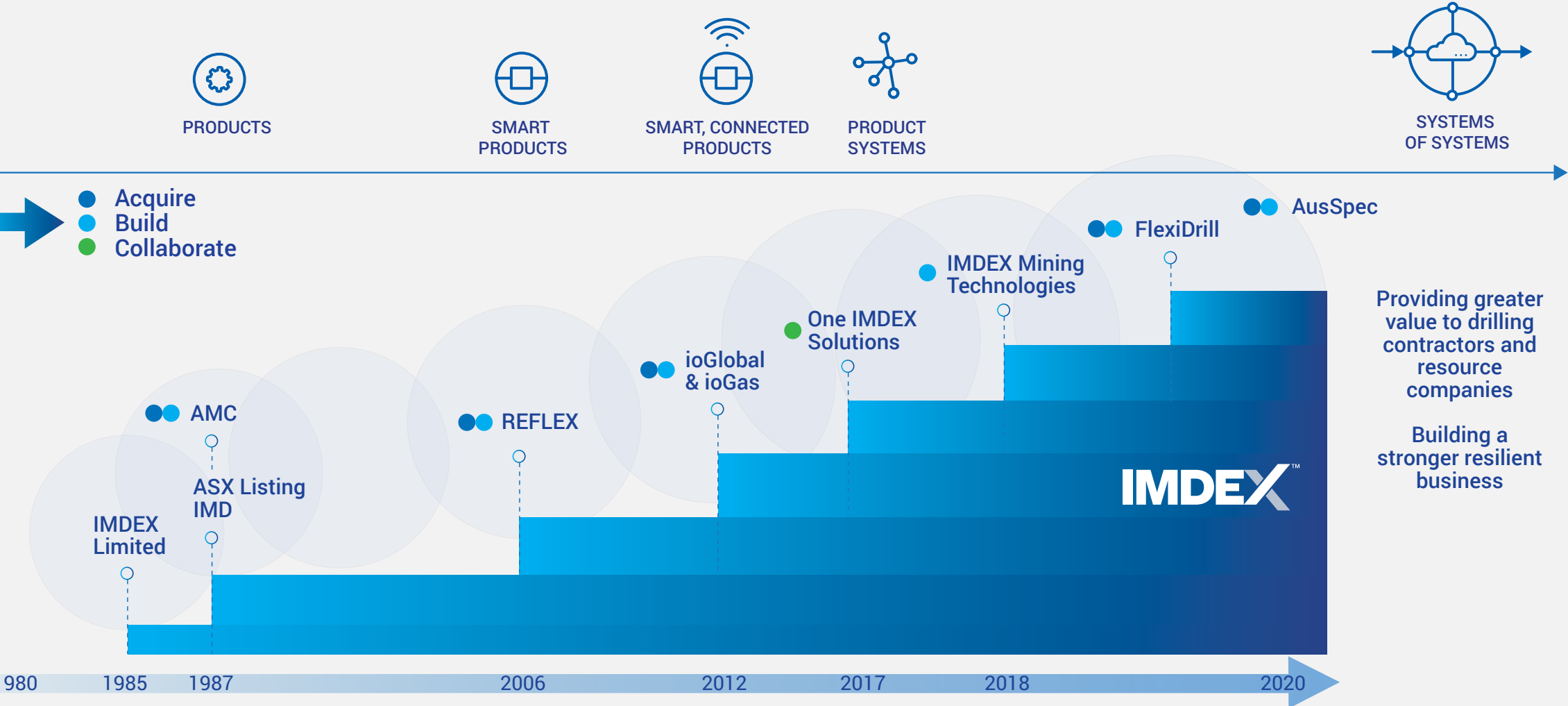
Who do we add value to?



How is our industry and competitive landscape evolving?



How are we evolving to add value and maintain our technology leadership?



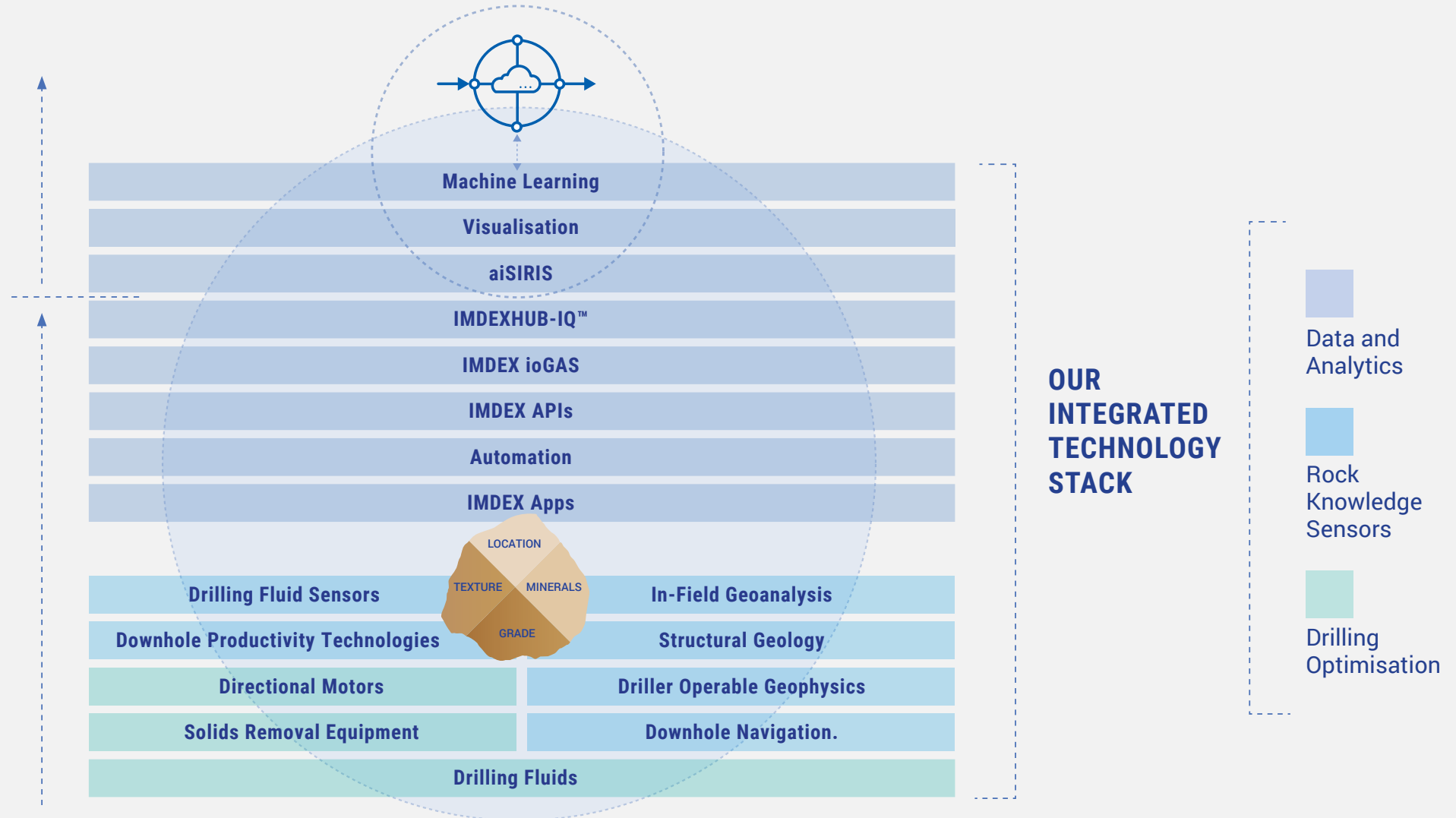
What does our product offering look like?

OUR FUTURE VISION:

Providing rock knowledge and orebody engines that change the minerals industry forever.

TODAY:

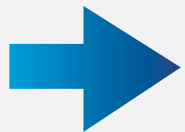
Enhancing decision making across the mining value chain



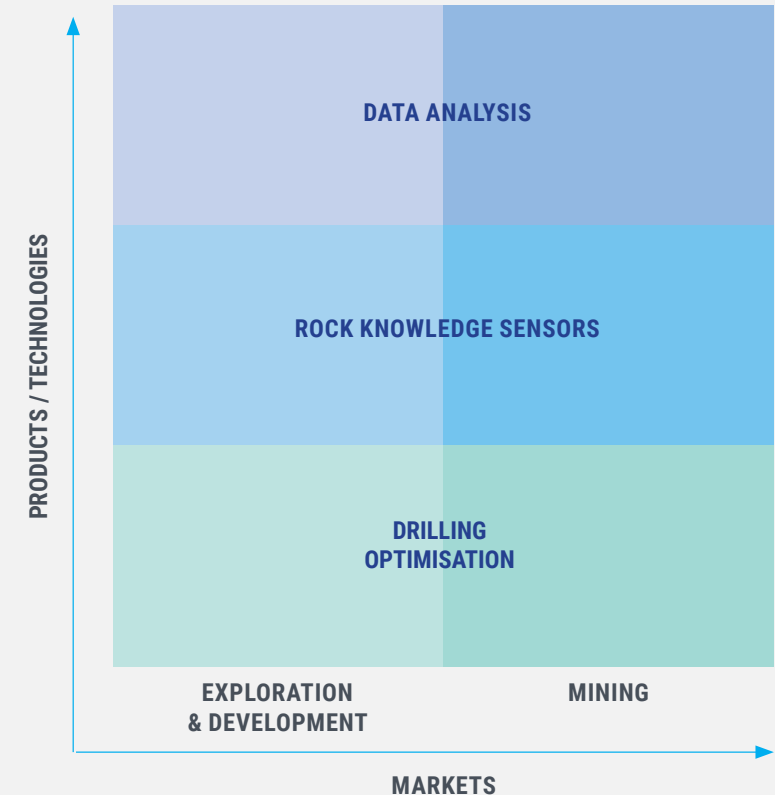
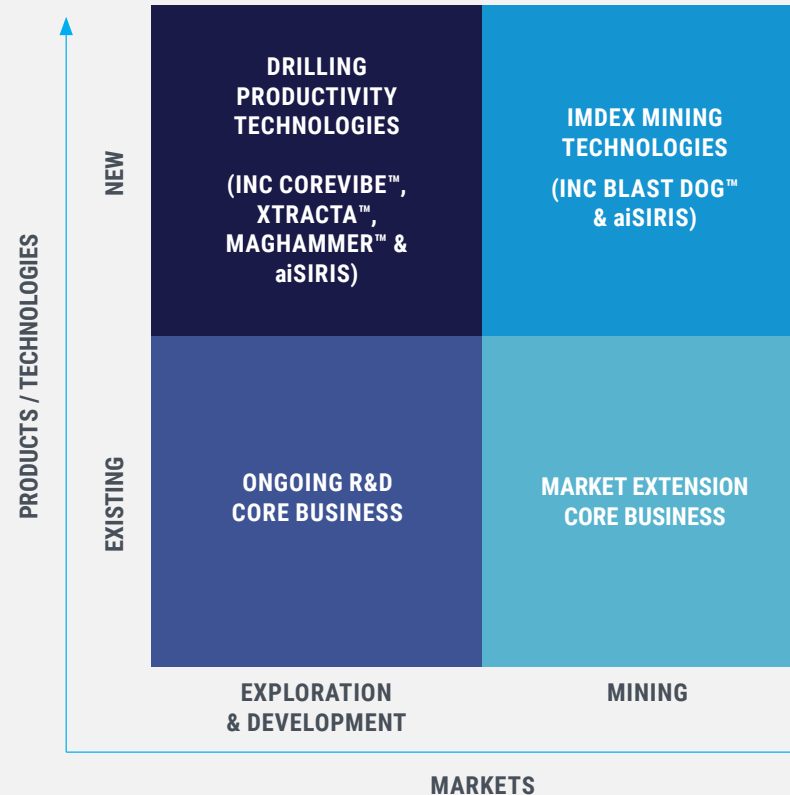
What is our overarching strategy?

Growing our core business by enhancing technical leadership, technical integration and increasing share of client spend

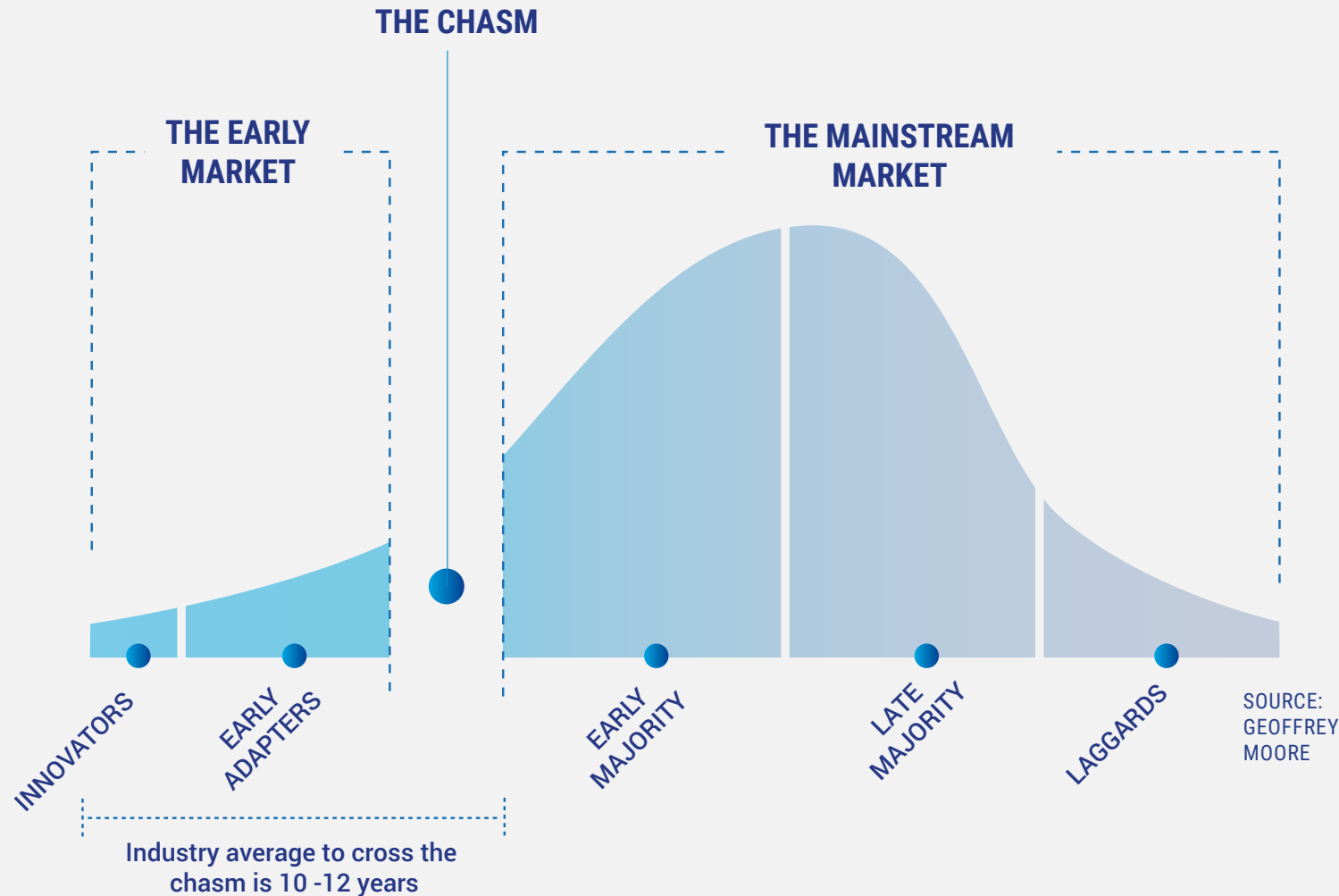
Further extension into larger adjacent mining market to build less-cyclical revenue



Acquire
Build
Collaborate



How quickly will new technologies be adopted?



The Mining Industry is traditionally a slow adopter

How are we crossing the chasm?

IMDEX consistently outperforms average industry adoption rates

What is our bench strength?



**IMDEX
Technology
USA**



**IMDEX
HQ
Australia**



**IMDEX
test site
New Zealand**

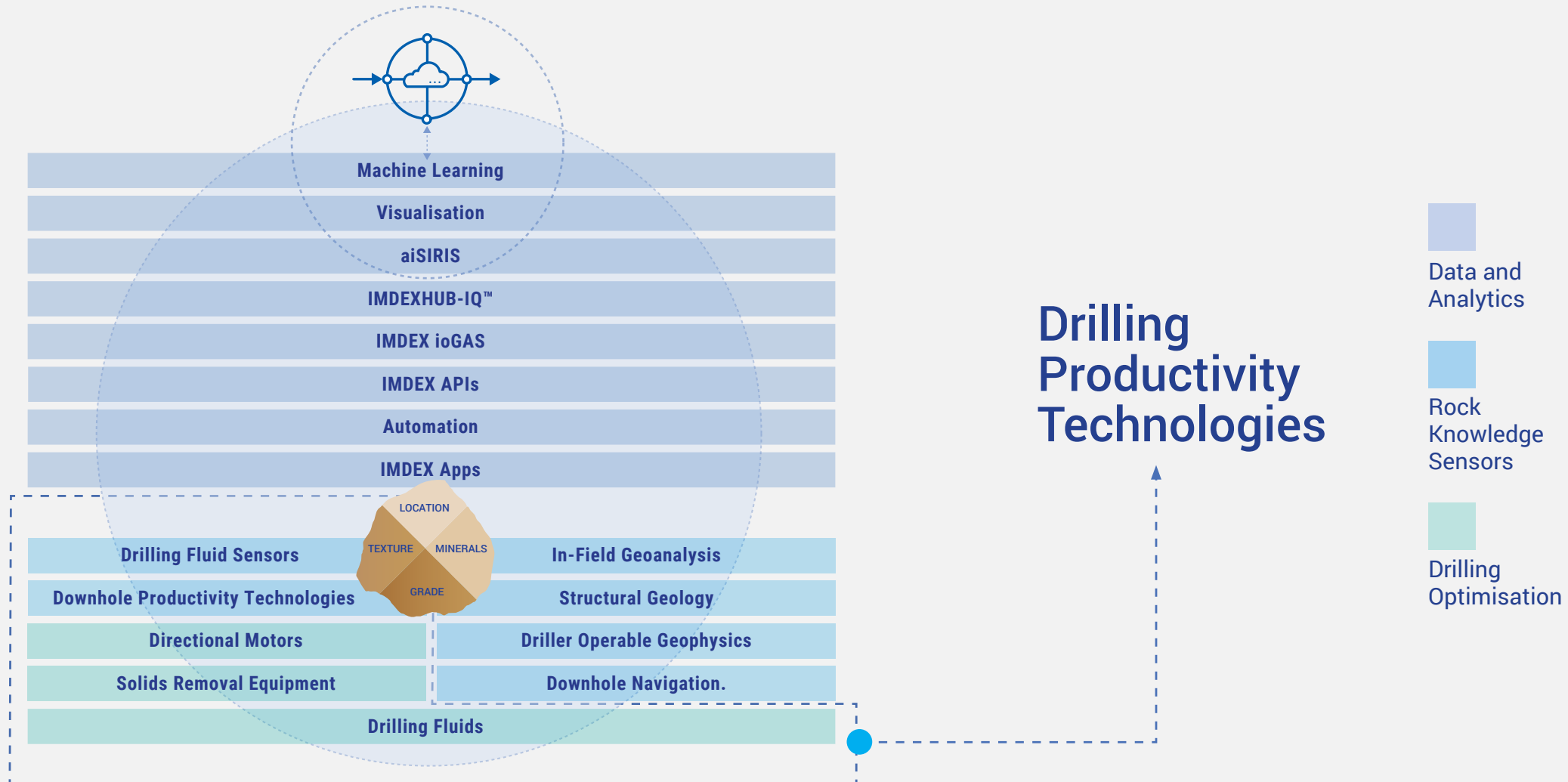


**IMDEX
test bench
Australia**



DRILLING PRODUCTIVITY TECHNOLOGIES

Where do Drilling Productivity Technologies fit in our integrated technology stack?



High frequency pulse assisted drilling for diamond drilling



[VIDEO](#)

Industry Drivers

- New discoveries under cover and at depth
- More drilling and longer development times
- Higher costs

Client Benefits

- Up to 90% increase in penetration rates
- >30% increase in productivity

Progress Update

- Full pipeline of trials
- COVID-19 interruption, discretionary projects and trials on hold to limit external personnel on site
- Trials are starting to resume
- Demand strong – COVID-19 risk remains
- Supply chain remains on track

Allows drillers to inspect or change the bit each time the core is retrieved



[VIDEO](#)

Industry Drivers	Client Benefits	Progress Update
<ul style="list-style-type: none">• New discoveries under cover and at depth• More drilling and longer development times• Higher costs• Safety	<ul style="list-style-type: none">• Allows drillers to change the bit when core is retrieved – no need to pull rods• The hole is always cased, maintaining hole integrity Significant productivity and safety benefits	<ul style="list-style-type: none">• COVID-19 interruption, discretionary projects and trials on hold to limit external personnel on site• Continuing development and IMDEX test site in NZ – including additional sizes

Fluid driven percussive drilling on a diamond drill rig



Industry Drivers

- New discoveries under cover and at depth
- More drilling and longer development times
- Higher costs
- Safety

Client Benefits

- Combines rotary diamond drilling with fluid driven percussive drilling
- Achieves high penetration rates compared to conventional coring
- Significant safety, cost and environmental benefits

Progress Update

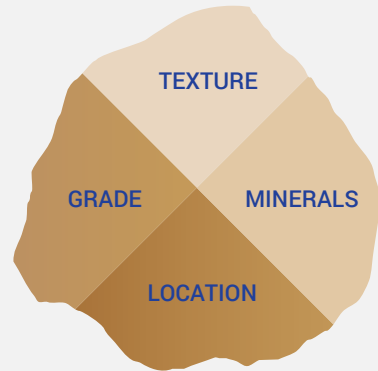
- Continuing development and IMDEX test site in NZ
- Increasing pre-commercial activities
- Acceleration program with global mining company

ROCK KNOWLEDGE

EXPLORATION &
DEVELOPMENT

Why is rock knowledge important?

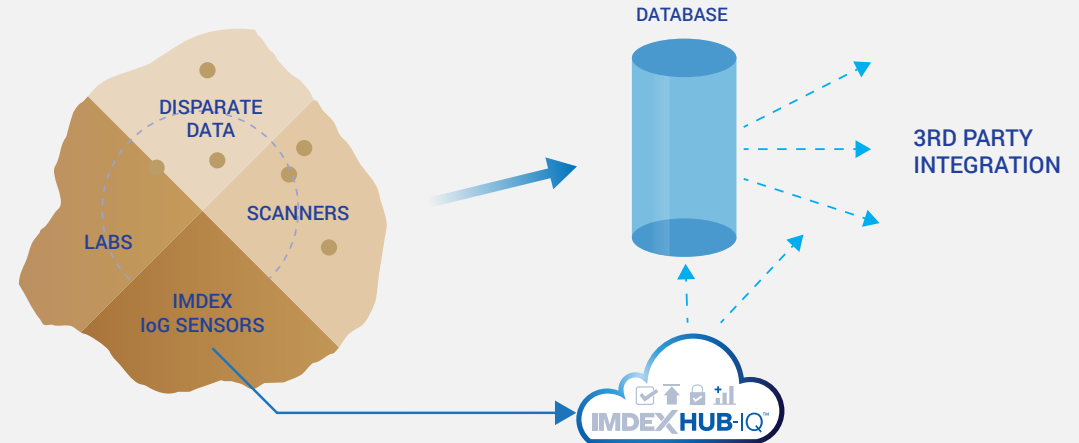
What is rock knowledge?



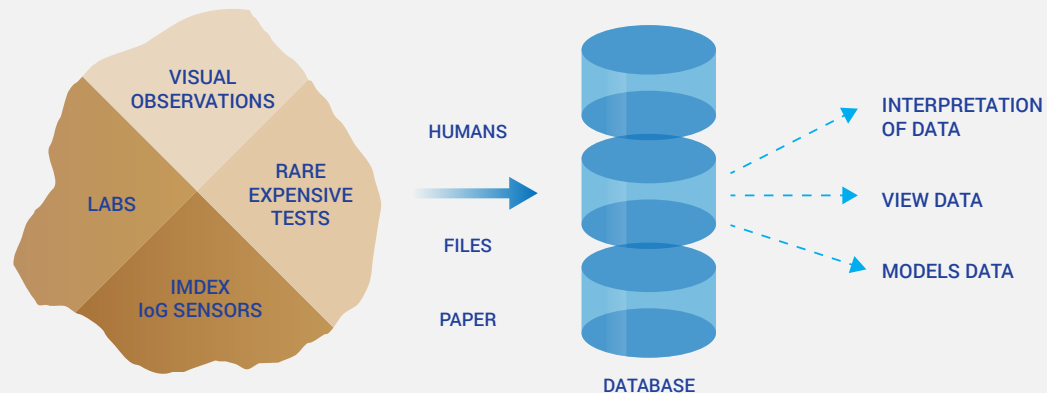
WE USE THESE PROPERTIES FOR:

- MINERALISATION POTENTIAL
- GRADE
- HARDNESS/BLAST-ABILITY
- PROCESSING ORE ETC

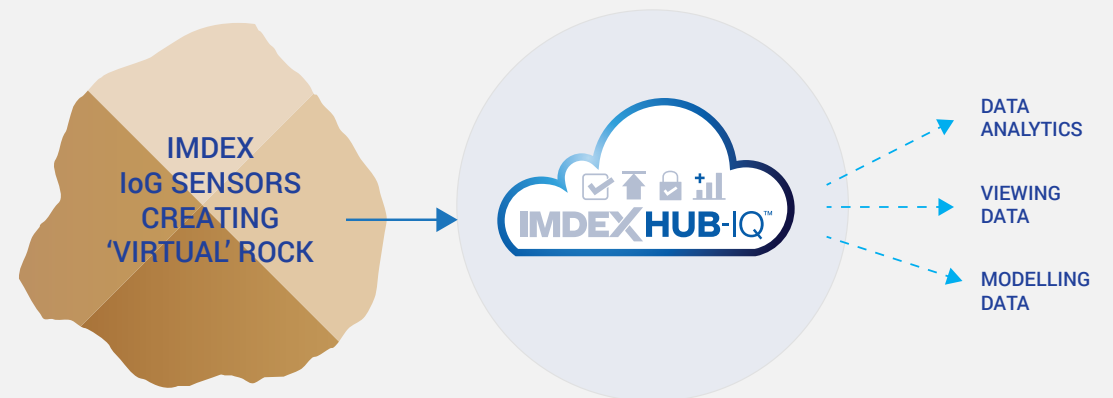
Current world view of rock knowledge



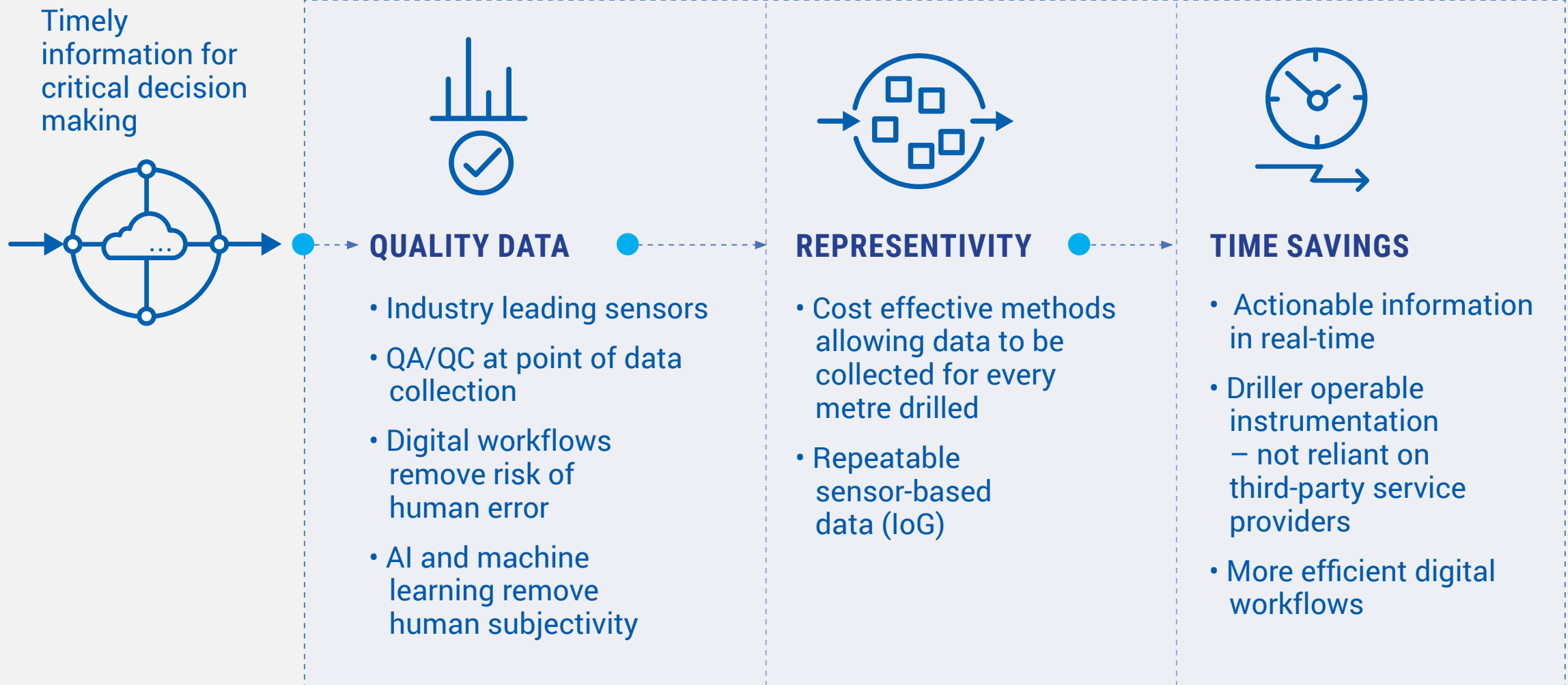
Traditional view of rock knowledge



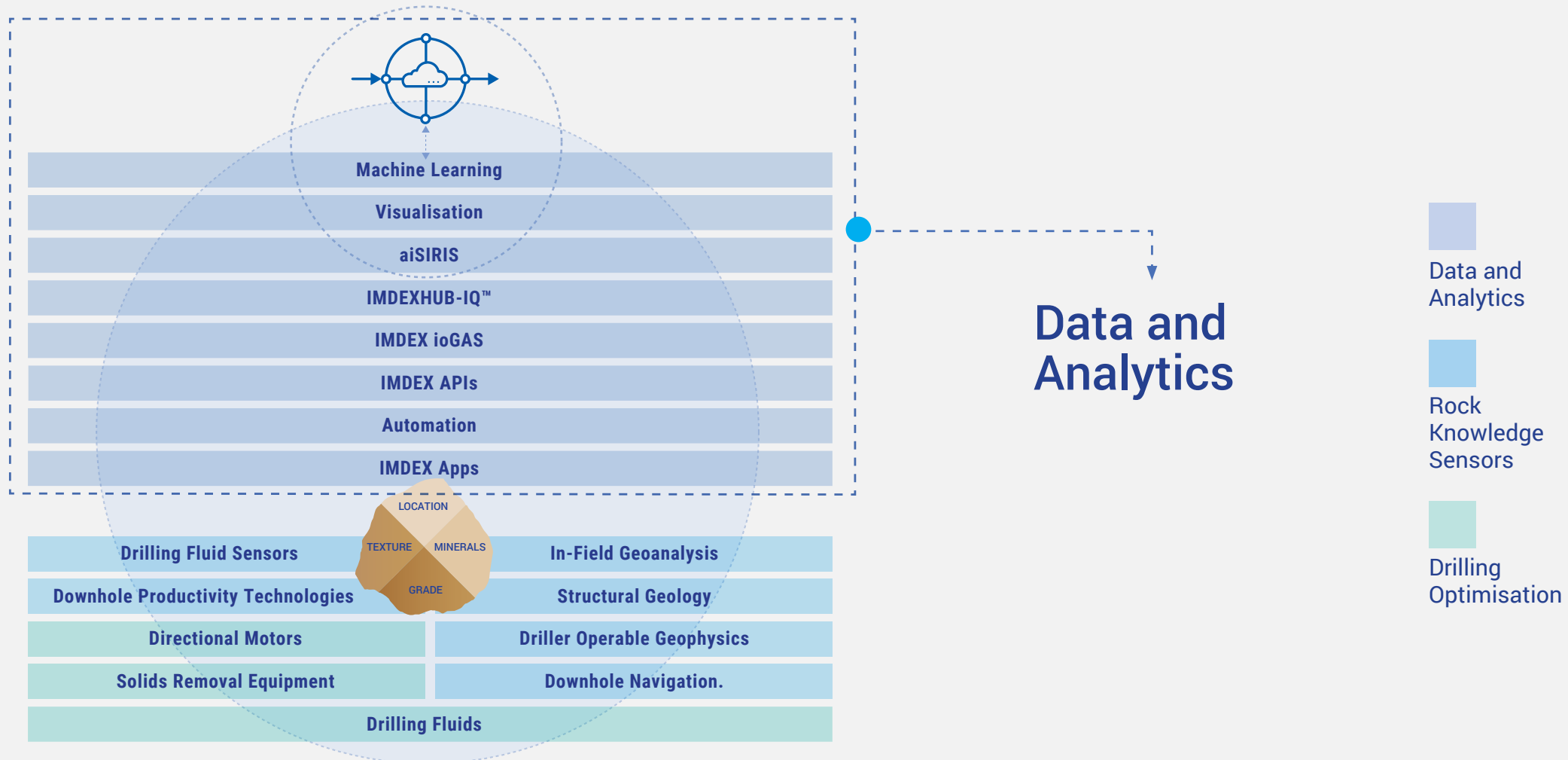
Why IMDEX wants to build rock knowledge



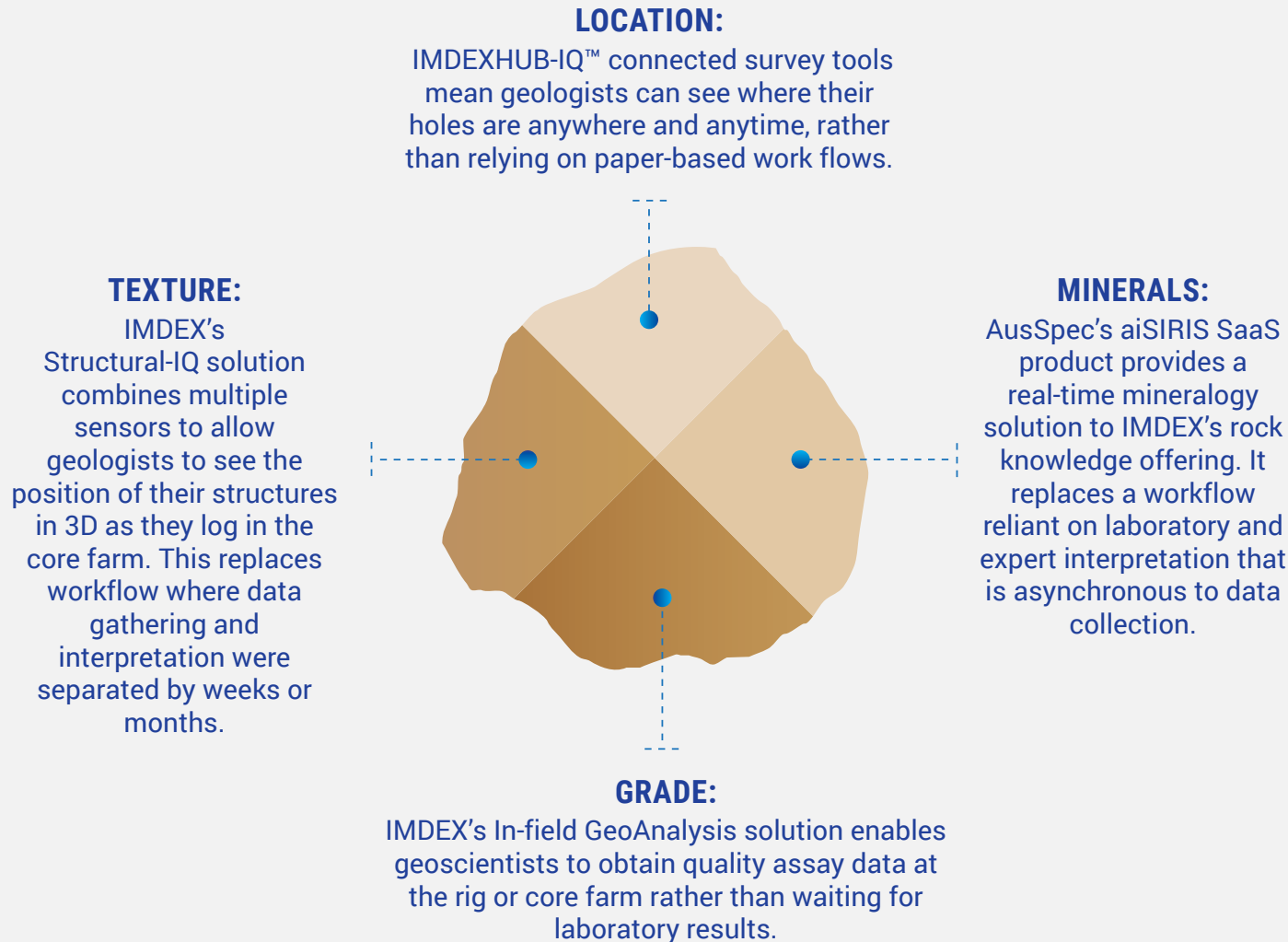
What will our Rock Knowledge Engine provide?



Where does aiSIRIS fit in our integrated technology stack?



Why is AusSpec important?

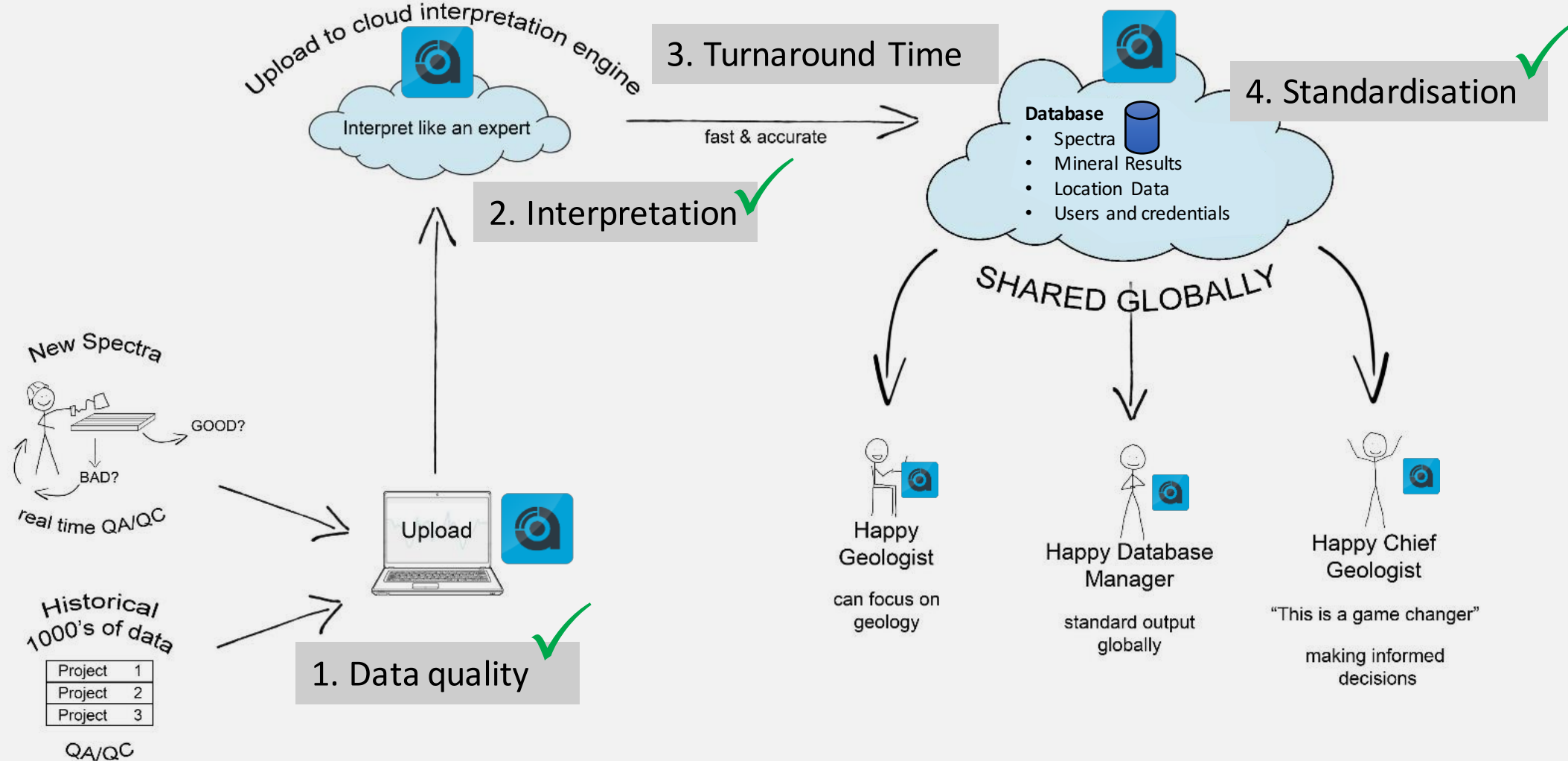


“The acquisition provides a compelling opportunity to build on our total rock knowledge offering for clients – from the rig to the core farm and the mill.”

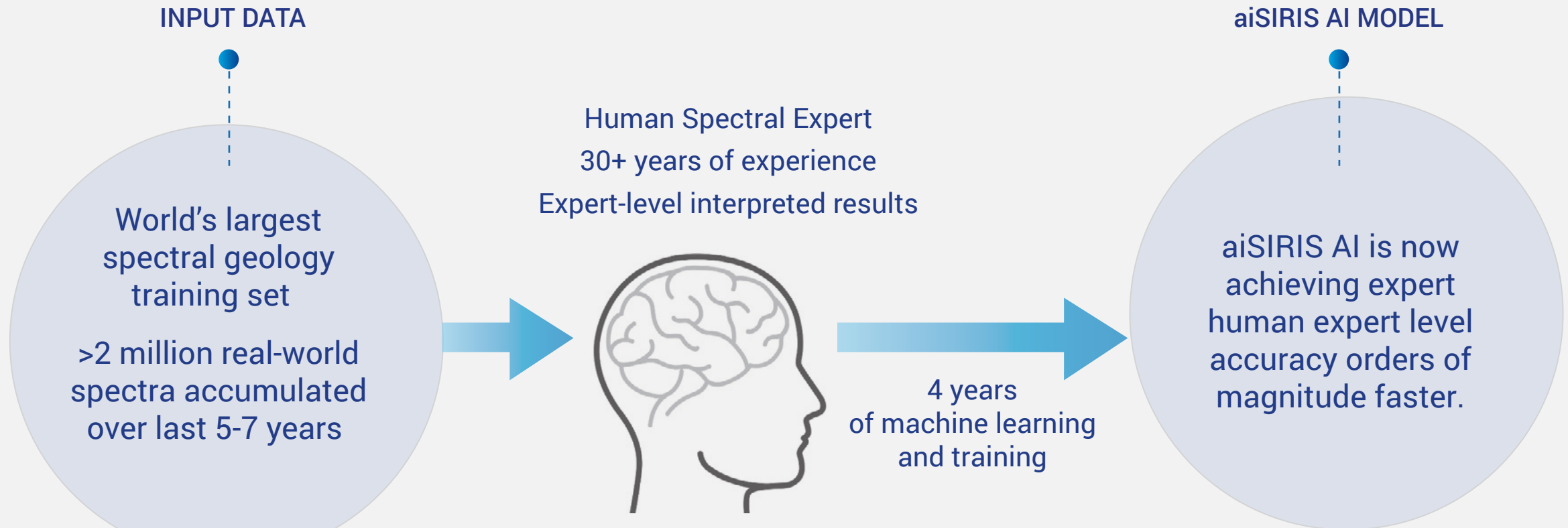
—
“Every mine in the world makes decisions on the four components of rock knowledge – location, texture, grade and mineralogy. Our technology stack currently addresses three of these components and aiSIRIS satisfies the fourth – mineralogy.”

PAUL HOUSE
CEO, IMDEX

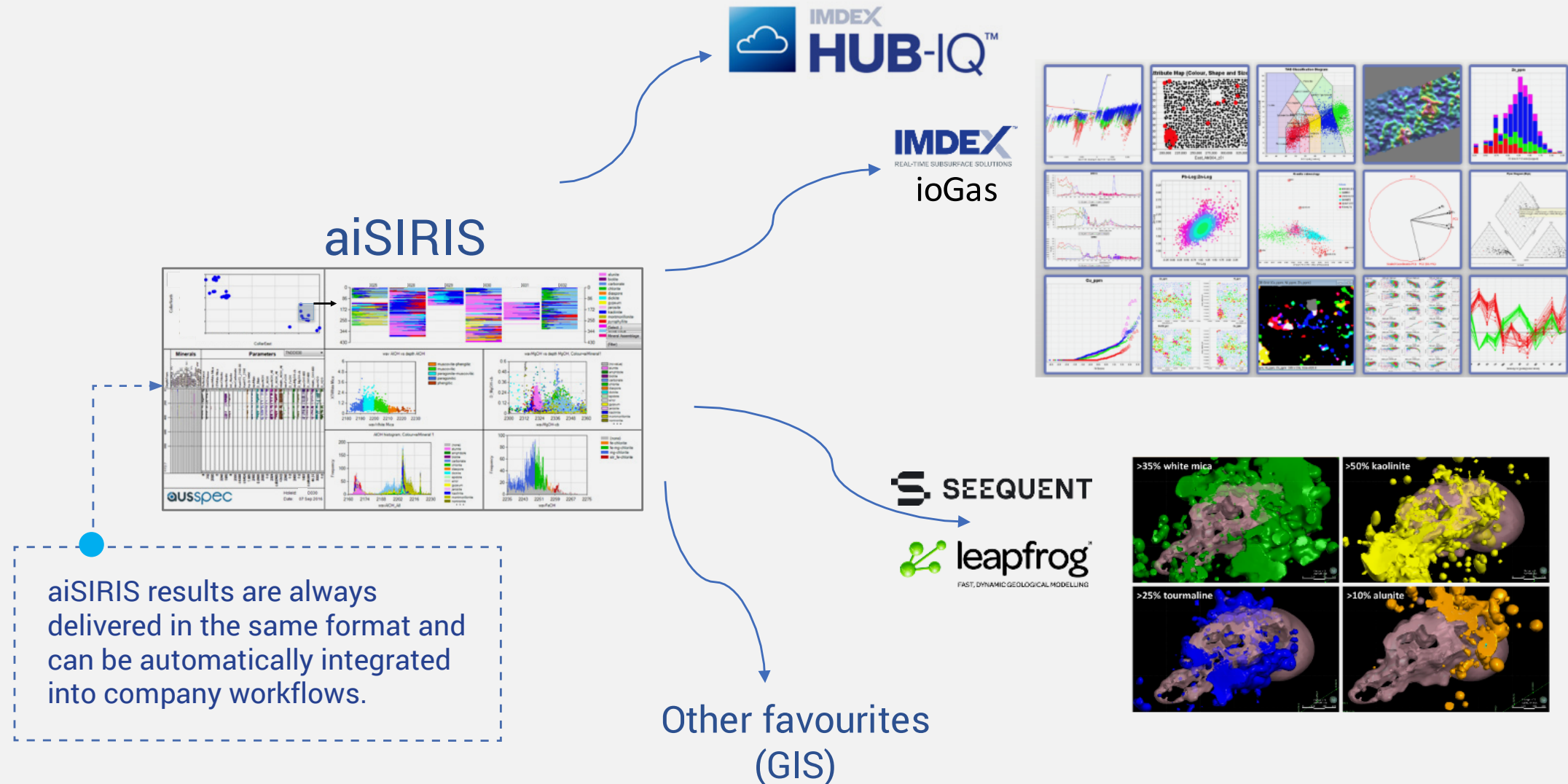
How does aiSIRIS overcome the 4 main problems in spectral mineralogy?



What makes aiSIRIS unique?



How does aiSIRIS deliver standardised and interoperable data?



What is the real-time minerology workflow?



**BEFORE
aiSIRIS**



**WITH
aiSIRIS**



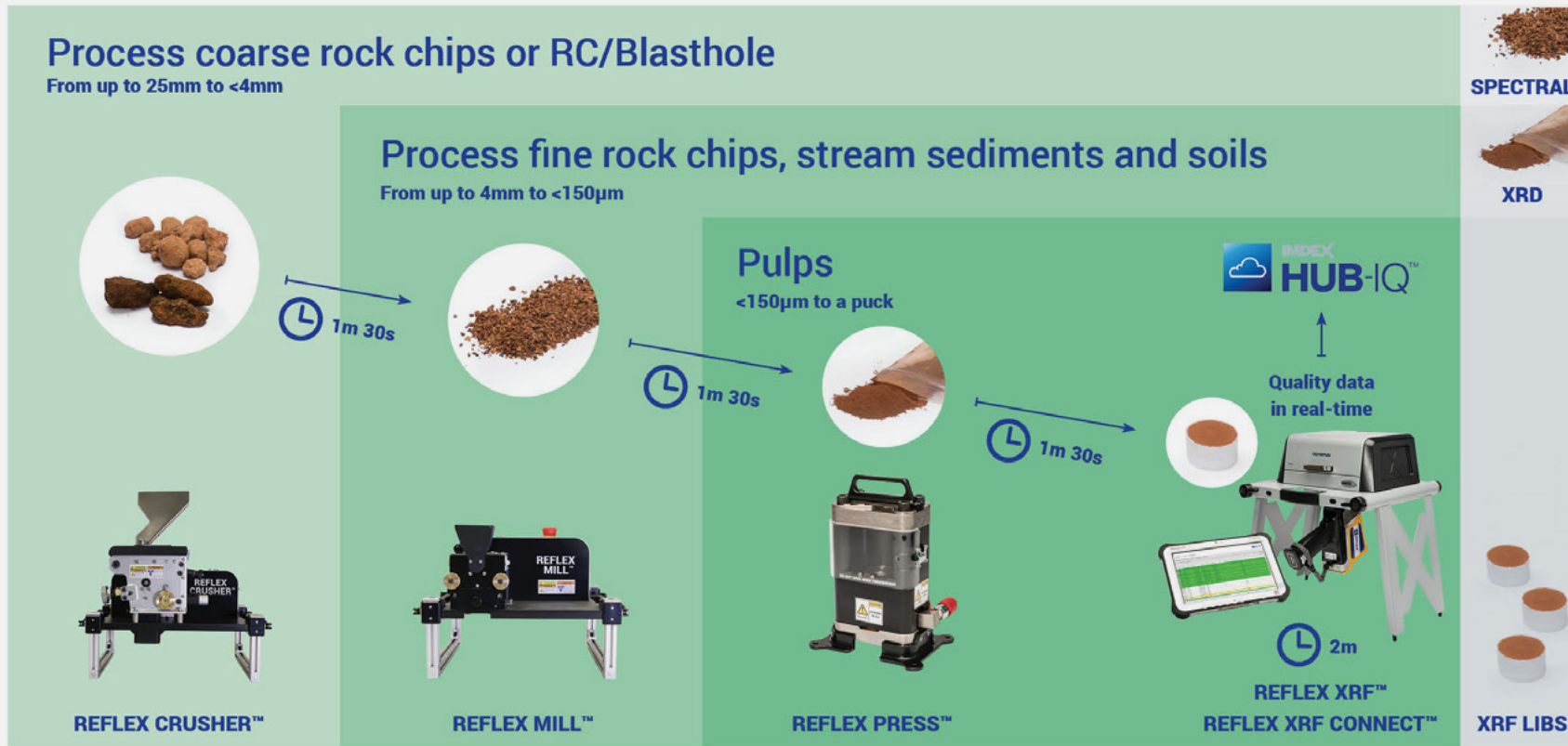
**“aiSIRIS is a
step change.”**

PAUL AGNEW
CHIEF GEOLOGIST, RIO TINTO

What is our current In-Field Geoanalysis solution?



Quality geochemical data in 10 minutes, **where and when you need it**



✓ Save 3 weeks+

✓ QA/QC

✓ Optimise your workflow

✓ 15 mins set up

✓ Field portable

✓ Prioritise samples being sent offsite

Why is AusSpec a great strategic fit?



- ✓ aiSIRIS is a unique industry leading low-touch SaaS product with high barriers to entry
- ✓ As a SaaS product, aiSIRIS delivers premium gross margins consistent with IMDEX's strategy
- ✓ aiSIRIS is a proven product ready to be scaled via IMDEX's global distribution network
- ✓ AusSpec co-founder Dr Sasha Pontual is the world-leading spectral mineralogy expert who has built an extensive spectral library over the past five years. Dr Pontual and other AusSpec personnel will join the IMDEX team
- ✓ AusSpec enhances IMDEX's rock knowledge offering with spectral mineralogy and AI technologies
- ✓ aiSIRIS complements IMDEX's existing In-Field GeoAnalysis solution and integrates with IMDEX geochemistry analysis software (IMDEX ioGAS™)
- ✓ AusSpec has well-established relationships with major resource companies

How was the transaction structured?



Risk-share structure for future technology development

- A\$8.5m – A\$3.0m in cash and A\$5.5m in IMDEX shares over a two year period
- Shares issued at the 10 day VWAP price of each ordinary IMDEX share
- Cash considerations funded from IMDEX's existing cash flows
- Components of the cash and equity considerations conditional on the delivery of next generation aiSIRIS-X and successfully contracting sites with new or existing clients
- In line with capital management and investment framework:
 - Does not place any pressure on the strength of the balance sheet.
 - Allows continuation of a sustainable dividend policy, while continuing to invest in new technologies that have the potential to deliver substantial long-term earnings growth for shareholders.

	Cash	IMDEX Shares
1 July 2020	A\$1.0m	A\$5.0m
1 July 2021	A\$1.0m	-
1 July 2022	A\$1.0m	A\$0.5m
TOTAL	A\$3.0m	A\$5.5m

ROCK KNOWLEDGE

MINING &
PRODUCTION

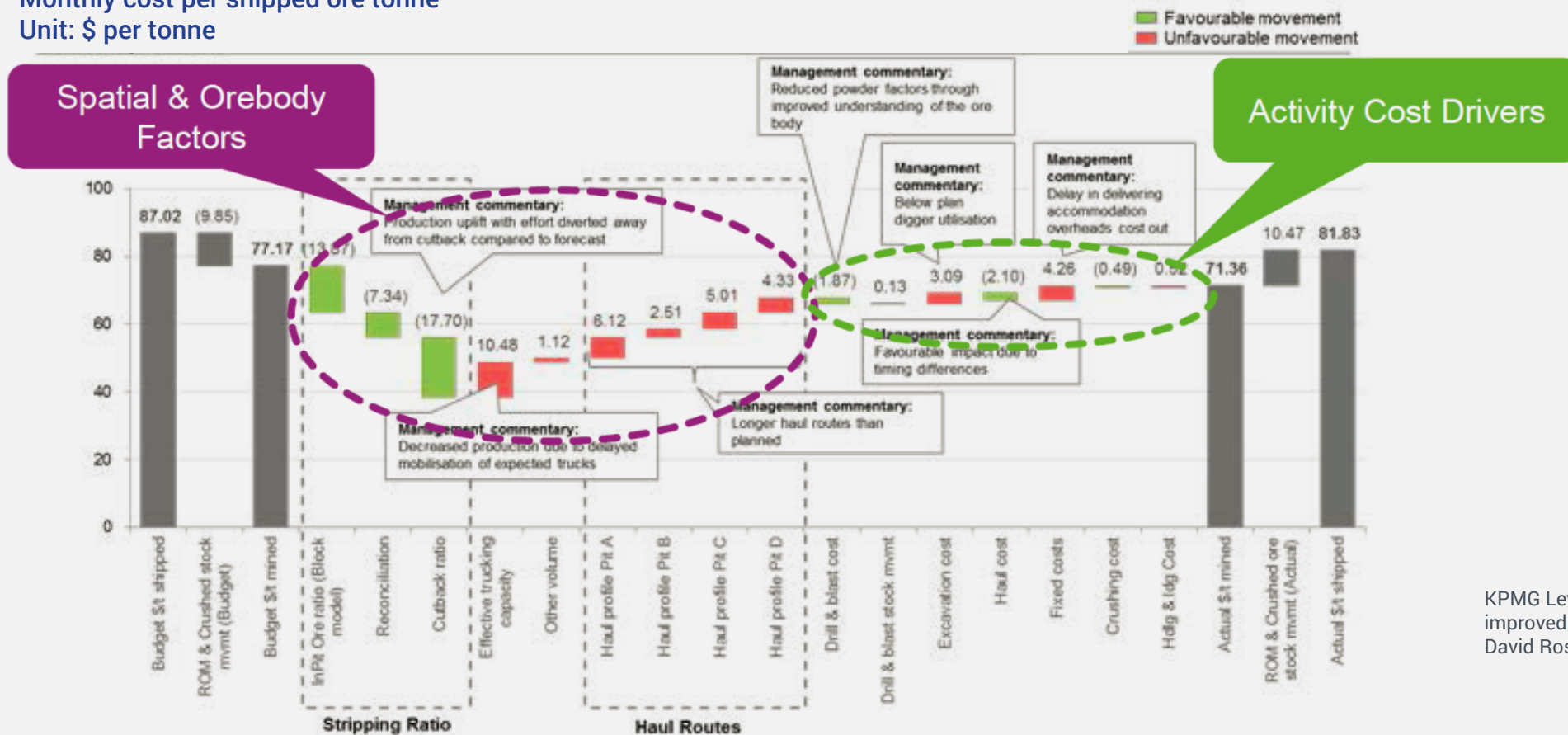
How are we providing high resolution Rock Knowledge for precision mining?



Levers for productivity – IoT?

The big leverage areas are typically related to the spatial and orebody factors

Monthly cost per shipped ore tonne
Unit: \$ per tonne



KPMG Leveraging data for improved productivity
David Rose, 11 November 2015

Levers for productivity – IoG or IoT?

IoG

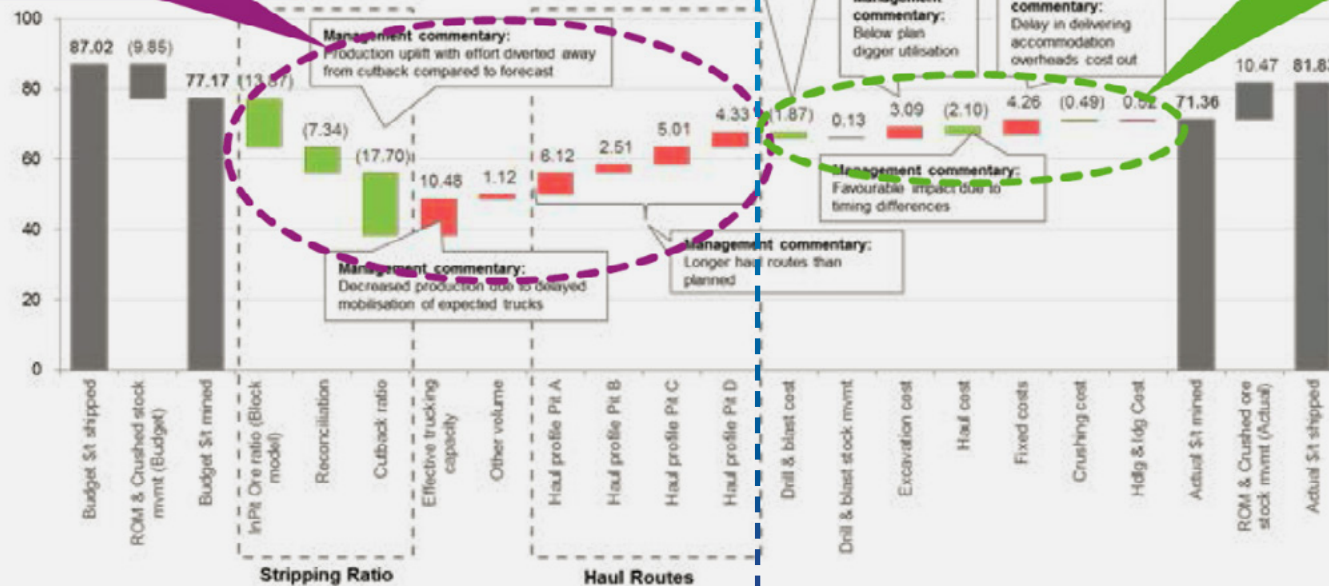
IoT

Monthly cost per shipped ore tonne
Unit: \$ per tonne

■ Favourable movement
■ Unfavourable movement

Spatial & Orebody Factors

Activity Cost Drivers

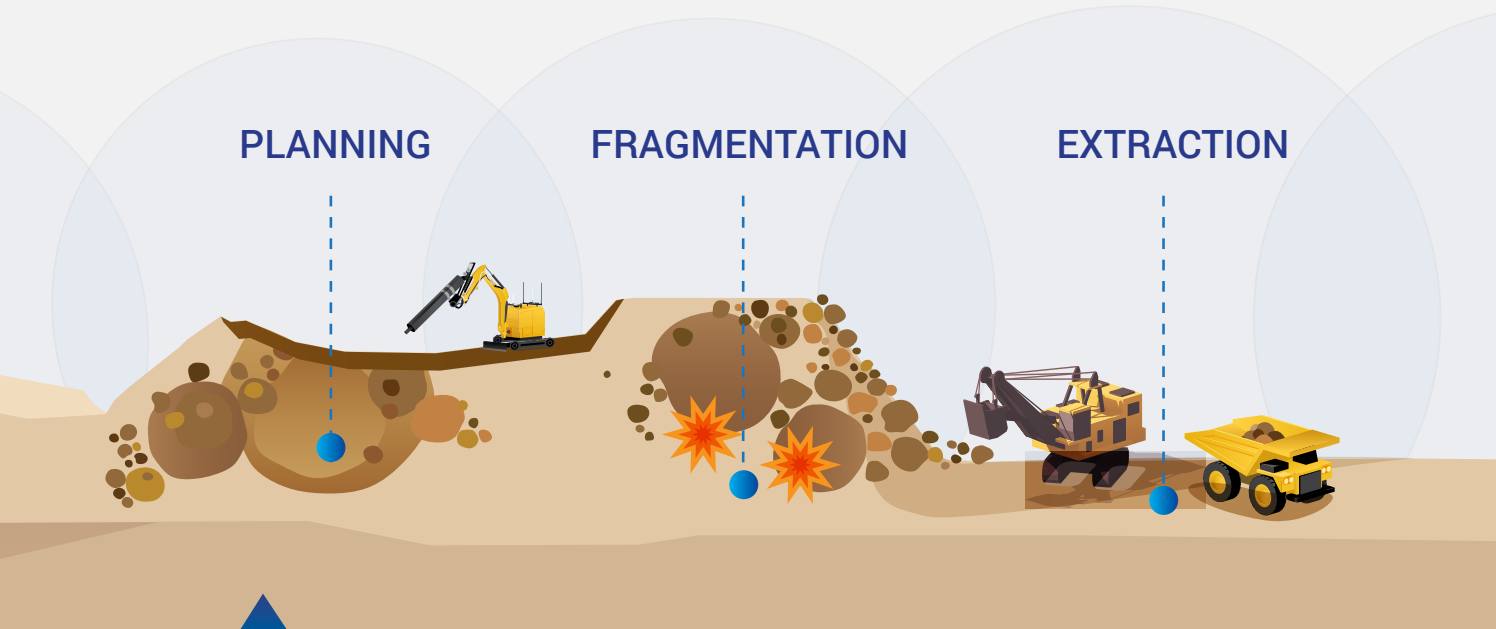


“We are putting geoscience into blasting via the **Internet of Geosensing** by measuring what is important.”

DAVE LAWIE
CHIEF GEOSCIENTIST, INDEX

KPMG Leveraging data for improved productivity
David Rose, 11 November 2015

How is IoG applied in mining for tactical decision making?

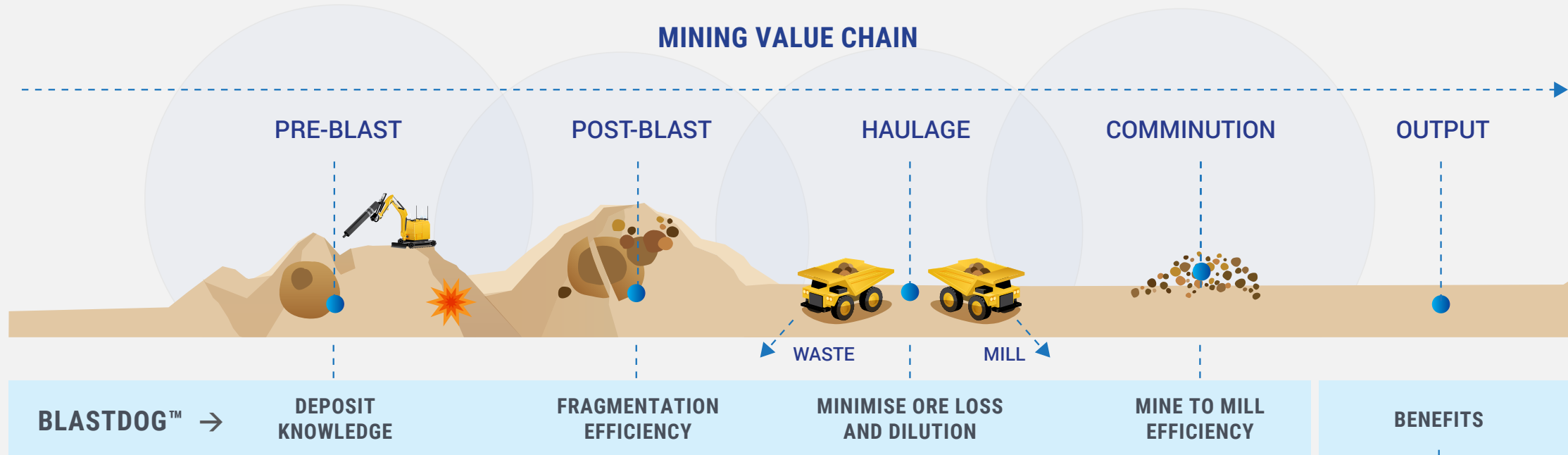


Last in-situ opportunity
for rock knowledge & option analysis

“Every day around the world, engineers design blasts, and those blast outcomes impact as much as 80% of the Total Mine Processing Costs.”

ANGELO LABRIOLA
GLOBAL DIGITAL PRODUCT MANAGER
ORICA

What are the big lever big benefits of IoG?

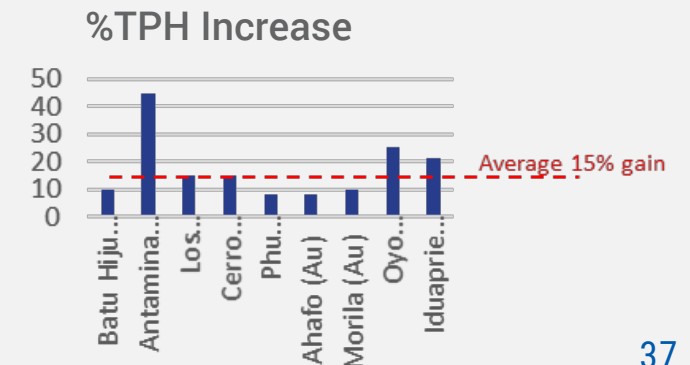


"There have been numerous studies which have demonstrated that AG/SAG mill throughput can be increased by 15–20% as a result of changed blasting practices"

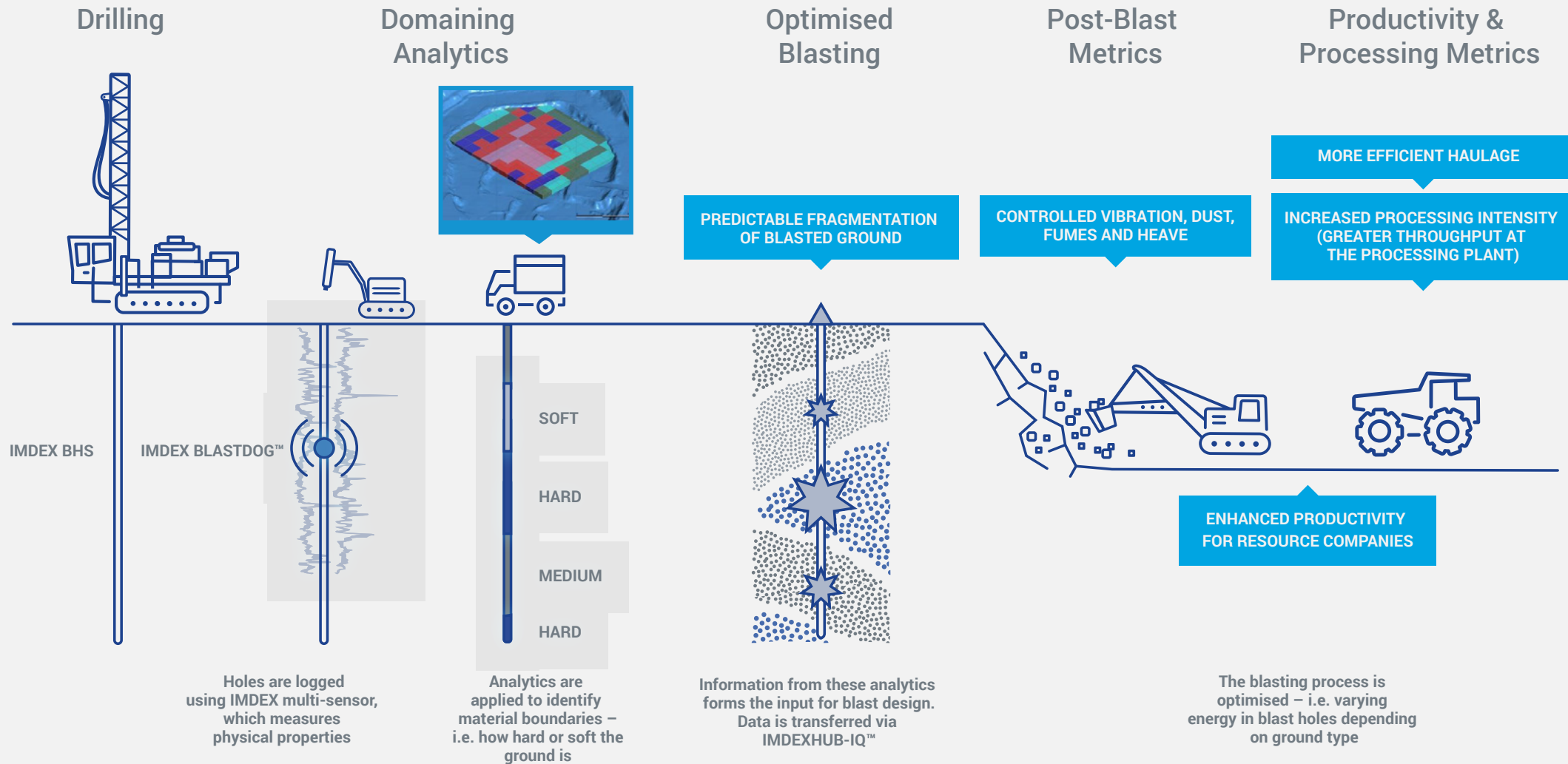
MCKEE 2013, *Understanding Mine to Mill*, CRCORE

SIGNIFICANT PRODUCTIVITY, COST AND SAFETY BENEFITS INCLUDING A

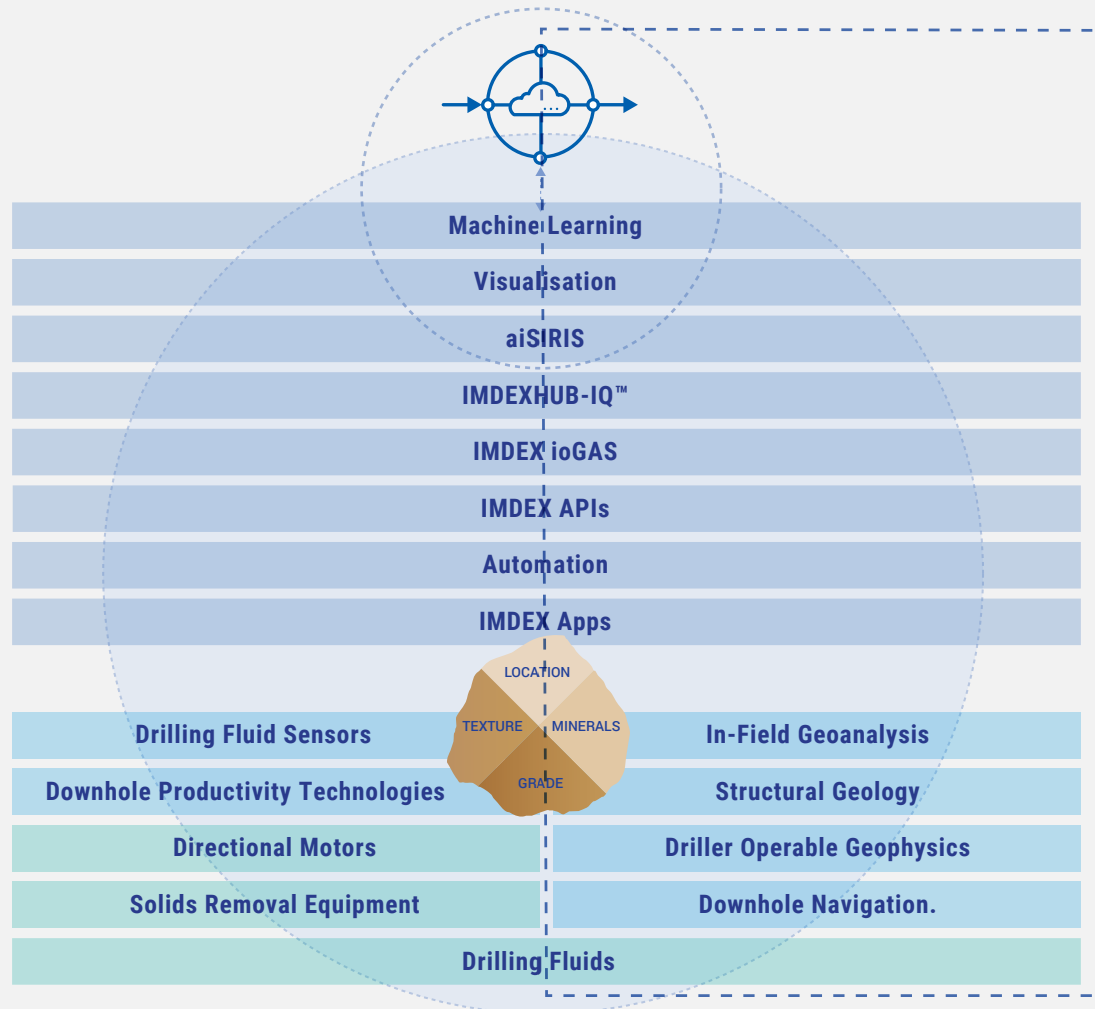
↑ 15 – 20%
GAIN IN MINE TO MILL EFFICIENCY



How does BLASTDOG™ provide rock knowledge?



Where does BLASTDOG™ fit in our integrated technology stack?



Rock Knowledge System

Data and Analytics

Rock Knowledge Sensors

Drilling Optimisation

METS Ignited project - optimising blasting outcomes based on high-resolution 3D material models and material tracking in pit



Client Benefits

- Maximises revenue by increasing mine to mill efficiency
- Predictable fragmentation of blasted ground
- Greater throughput at the processing plant
- Less dilution
- Controlled vibration, dust, fumes and heave
- Enhances safety

Progress Update

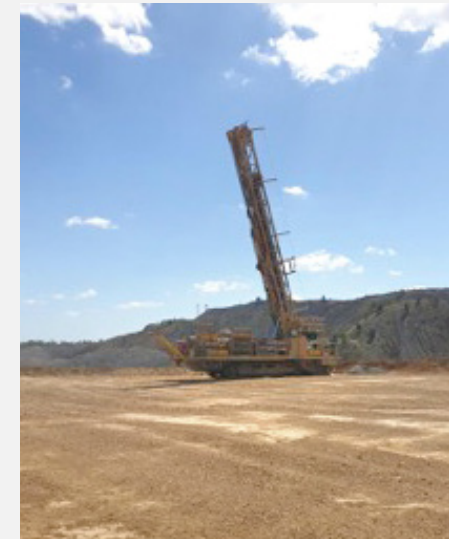
- Set up two test sites near Brisbane
- Continuing to refine sensors and undertake further testing
- Strong progress on automated data integration and visualization
- COVID-19 accelerated demand



IMDEX BLASTDOG™ – where are we at?



IMDEX BLASTDOG™



IMDEX AMC BHS™

- STABILISES BLAST HOLES
- REDUCES COSTLY RE-DRILLS
- REDUCES DUST

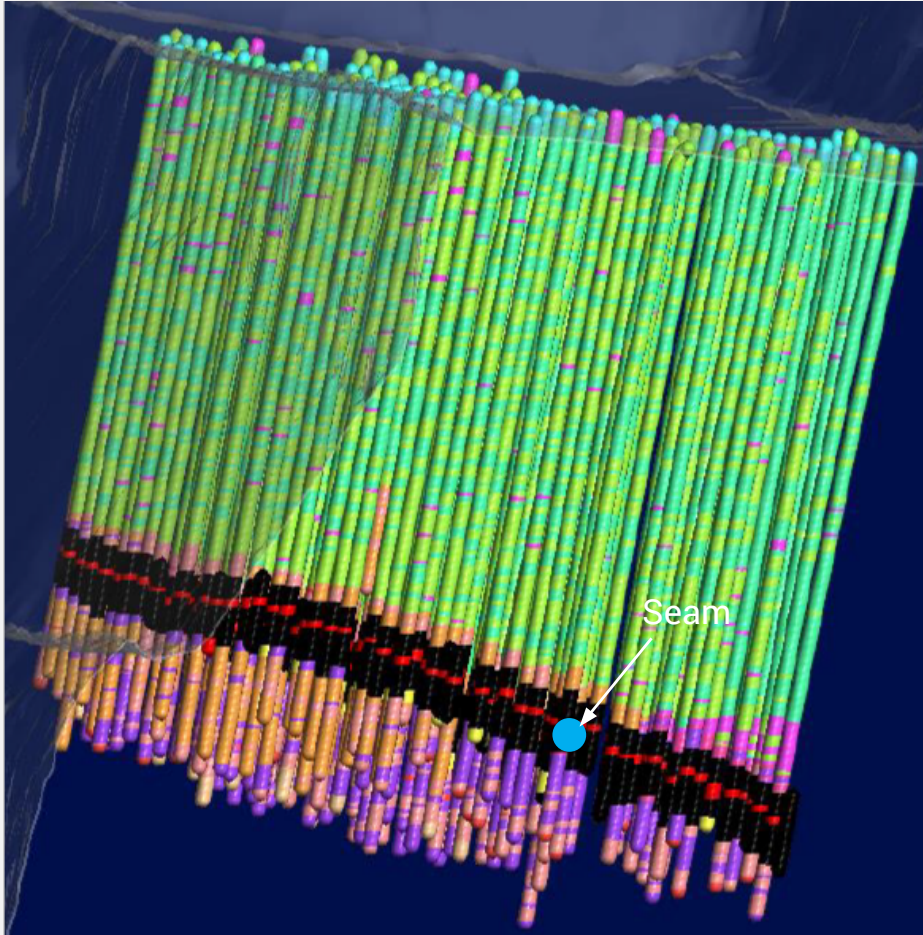
CURRENT TRIAL
WITH IMDEX
AMC BHS™



CURRENT TRIAL
WITHOUT IMDEX
AMC BHS™

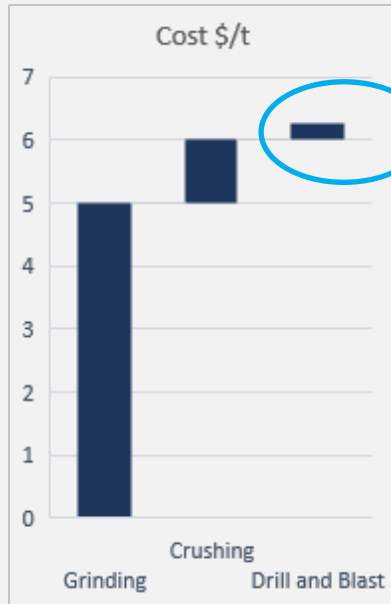
IMDEX AMC BHS™

How are we automating material characterisation with BLASTDOG™?



The output from the multiple sensors on the tool are combined and analysed in an automated manner to characterise material in a way that a single sensor cannot.

What are the economic benefits of optimised fragmentation?



Spend more here and get it right – cater for the variability

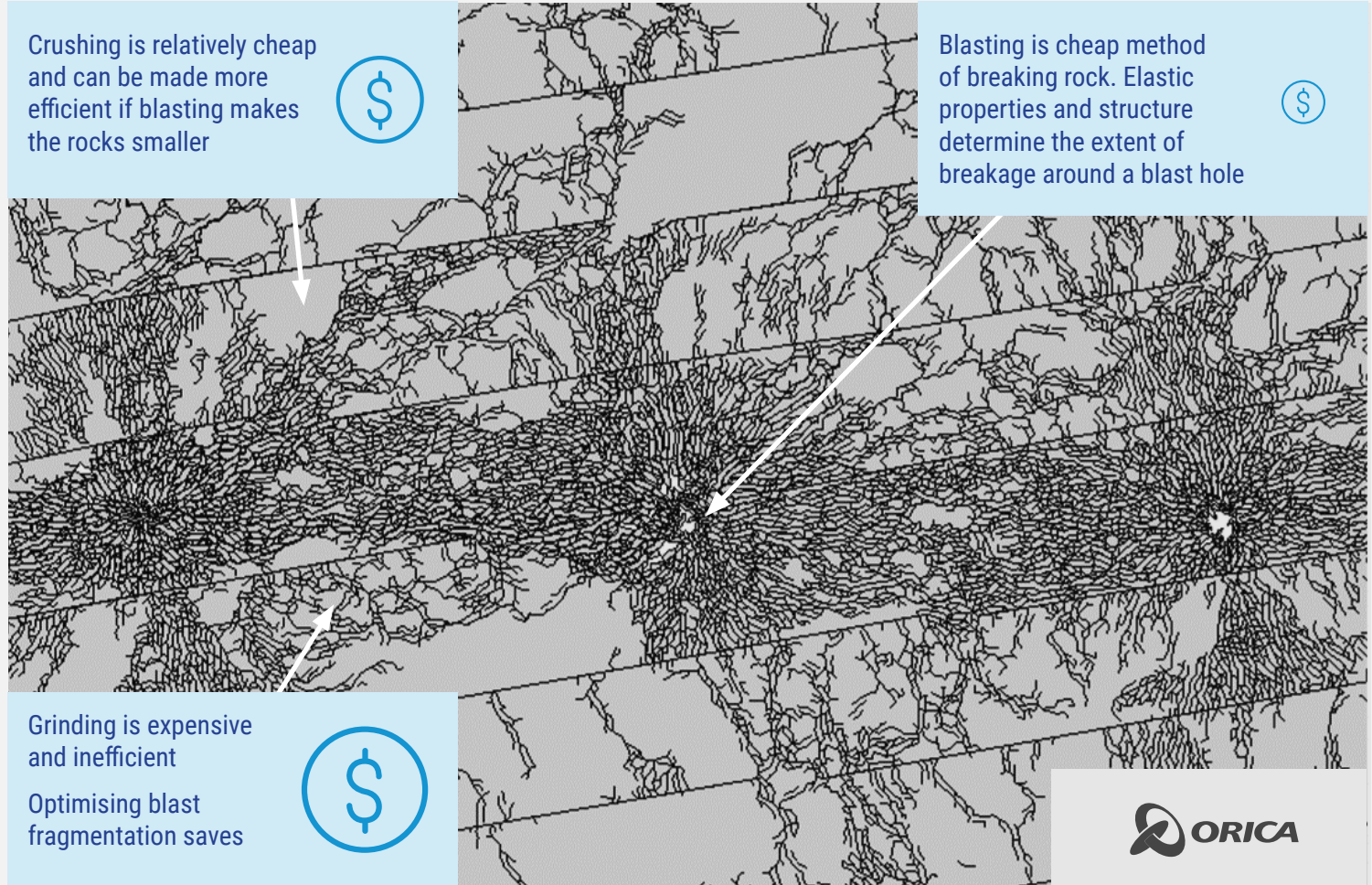
Table 2. Mine to Mill case studies: 2003–2016.

Mine site	Metals produced	Country	Product increase (%)
Batu Hiju	Cu	Indonesia	10-15
Antamina	Cu	Peru	45-60
Los Bronces	Cu	Chile	15-20
Cerro Corona	Au	Peru	15 (hardcore), 6 (overall)
Phu Kham	Cu	Laos	8
Ahafo	Au	Ghana	8
Morila	Au	Mali	10
Oyo Tolgoi	Cu	Mongolia	25
Iduapriem	Au	Ghana	21-32

Crushing is relatively cheap and can be made more efficient if blasting makes the rocks smaller



Blasting is cheap method of breaking rock. Elastic properties and structure determine the extent of breakage around a blast hole



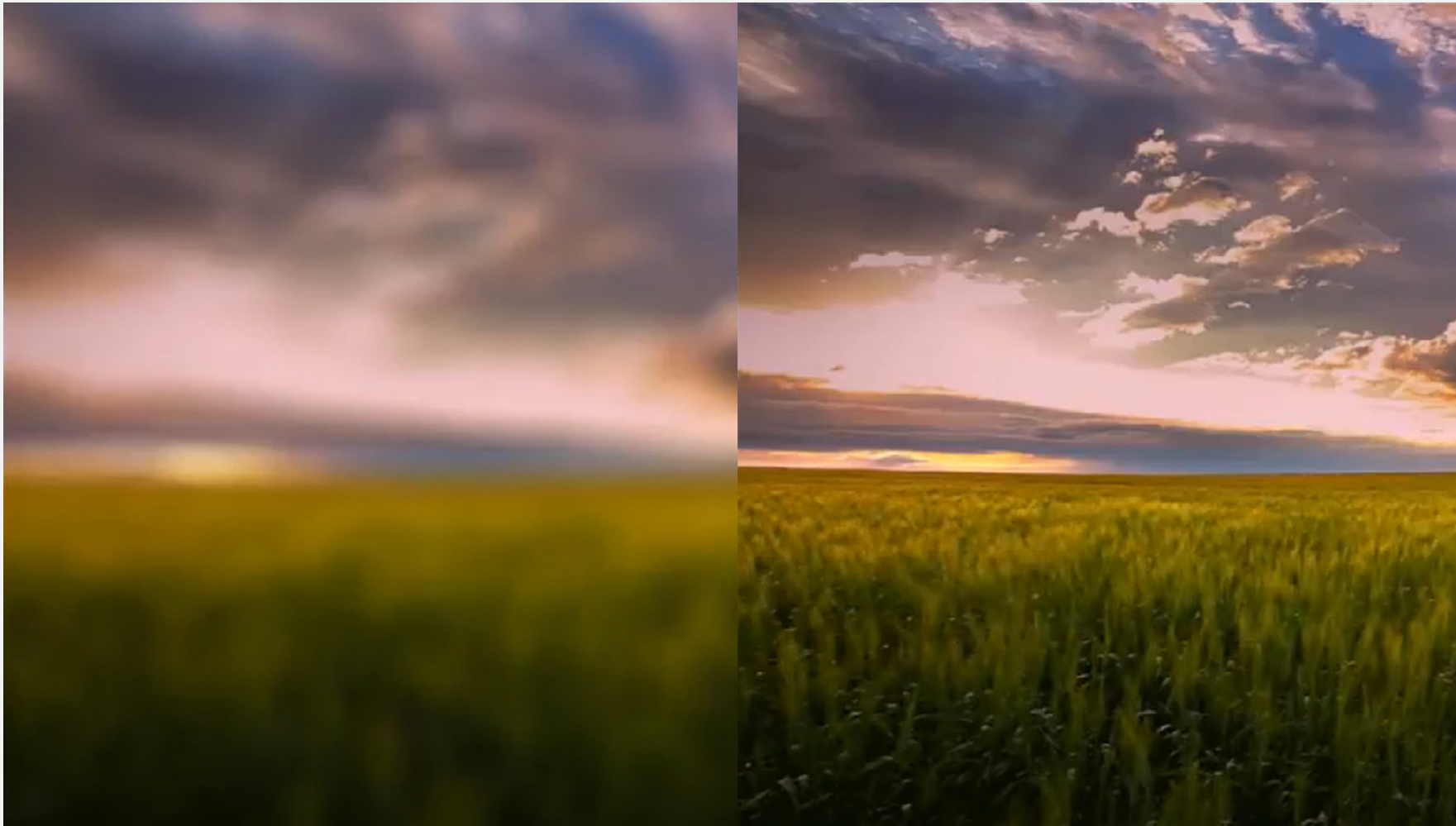
Grinding is expensive and inefficient



Optimising blast fragmentation saves

The Internet of Geosensing

- is there clarity regarding your ore body?



High-fidelity
spatially dense
data to unlock
precision mining

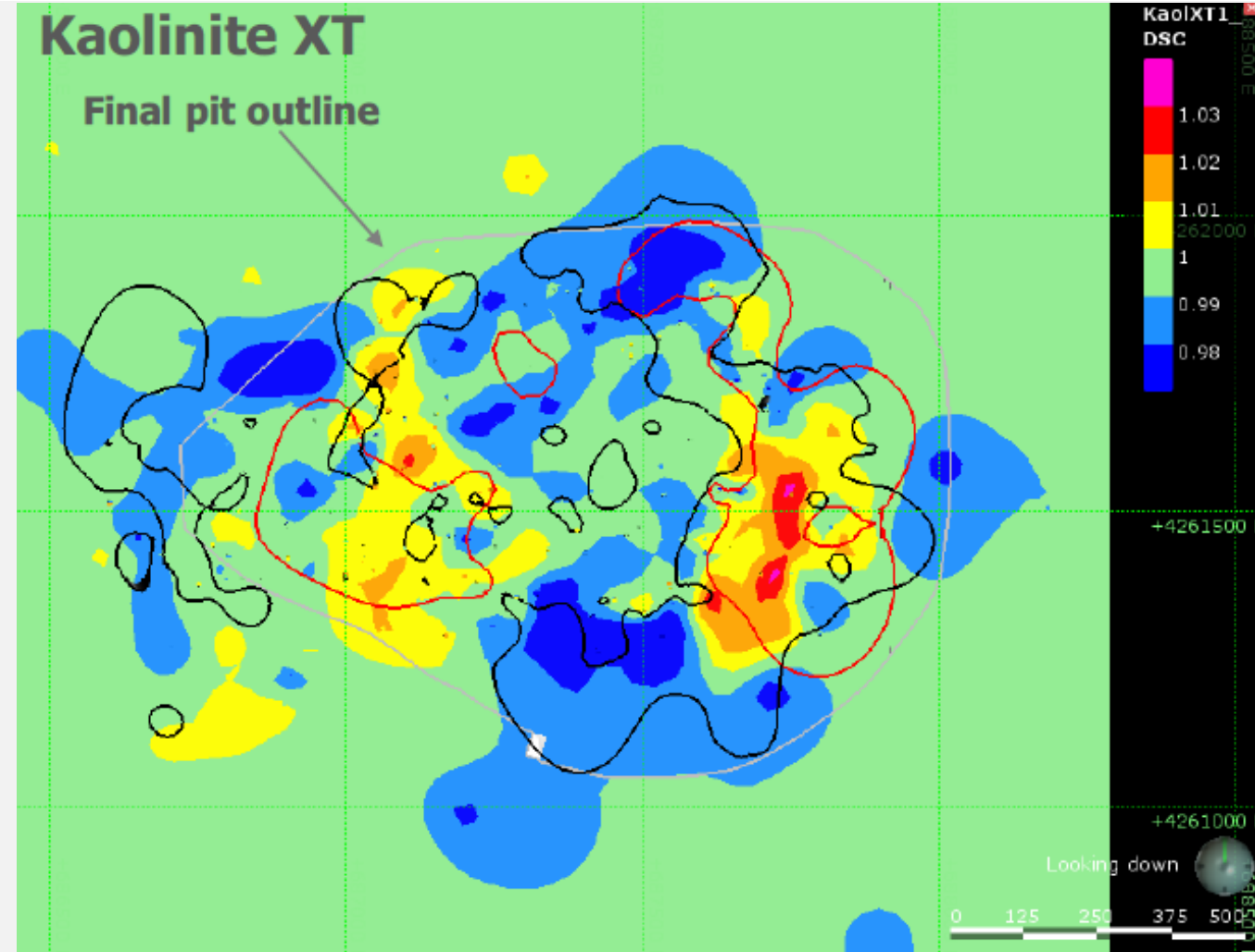
What is the value of avoiding loss and extending gains?

“The primary driver of poor resource company performance is asset impairment, from exploration through to operations.

Technical issues are a key causation of asset impairment.

These arise due to poor risk management due to insufficient Rock Knowledge / Ore Body Knowledge – the size of these losses/impairments provides a strong case for placing a high value on having the right information at the right time.”

DAVE LAWIE
CHIEF GEOSCIENTIST, IMDEX



DIGITAL TRANSFORMATION & NEW WAYS OF WORKING

What are our new ways of working for the long-term?



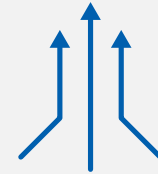
Demand for IMDEXHUB-IQ™ cloud-based technologies and software is increasing



Solutions support clients to work remotely, efficiently, securely and safely – key components of IMDEX's value proposition



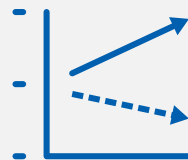
24/7 support via Customer Care Portal



Establishing new efficient ways of working – internally and with clients – beneficial for the long-term



Training via online learning platform IMDEX Academy



Lowering cost to manage business – gross and net margin improvement

SUMMARY

How are we a stronger more resilient business today?



More sophisticated product portfolio - IMDEXHUB-IQ™ connected technologies and software



Increasing revenue from resource companies - directly and indirectly



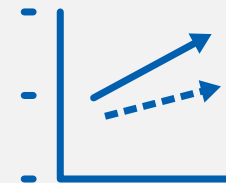
Exciting pipeline of new technologies that enhance value and rock knowledge for clients



Increasing revenue from the production phase - less-cyclical



Digital transformation enabling new efficient ways of working for the long-term



Growing business at above industry rates

How are we delivering attractive returns in the medium and long-term?



Strong balance sheet and platform to delivery recurring revenue
Strong cash flow from operations



Compelling opportunities for revenue and earnings growth
– core business and market extension



Market leading patent protected technologies that act as a barrier to entry and position business for further growth



Established global company
– ability to leverage extensive client network and achieve economies of scale

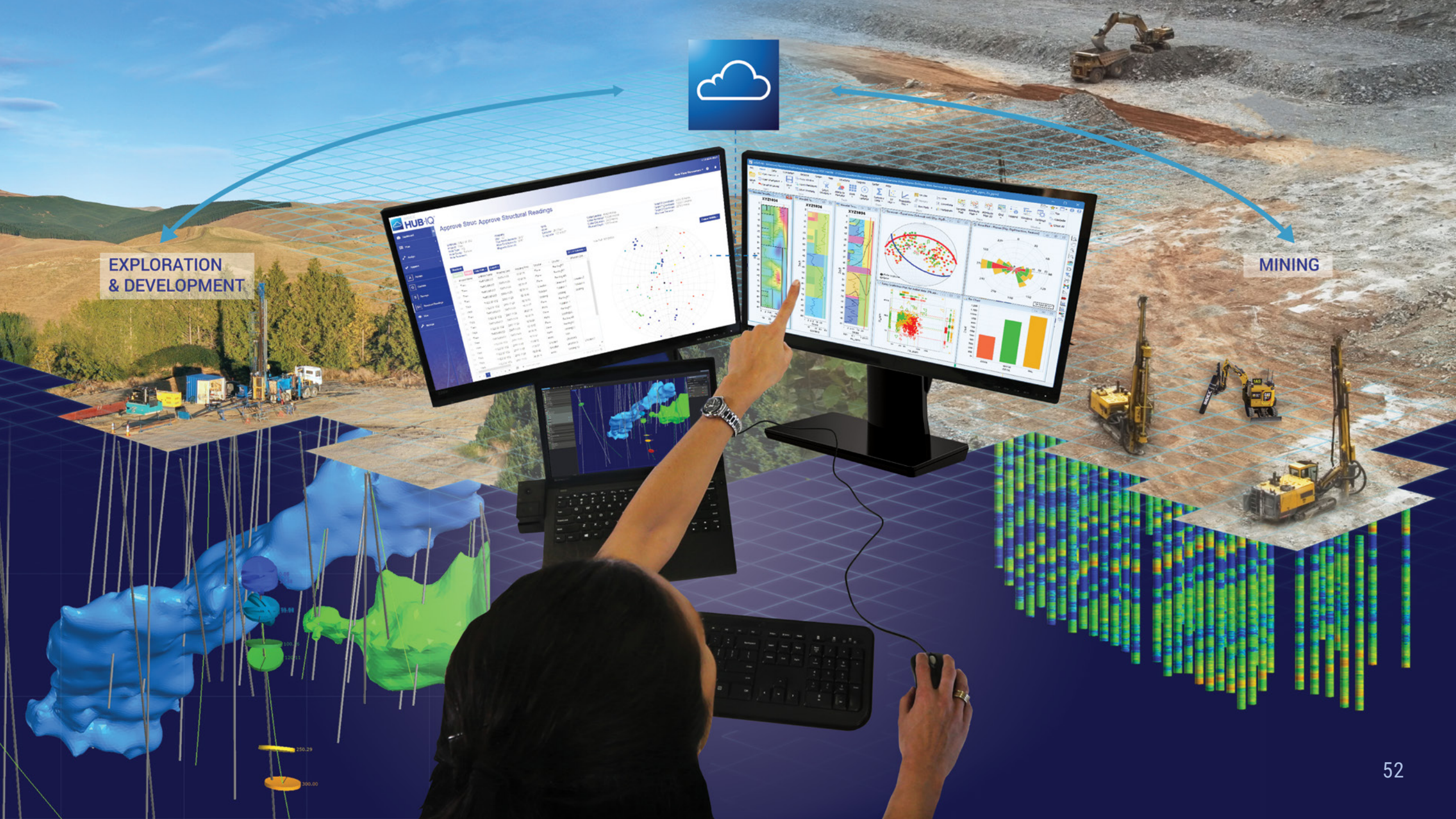


Expanding market share, driven by an unrivalled range of technologies and the benefits of being the first mover to cloud-enabled instruments



Strong leadership team
– successful track record of developing and commercialising technologies in all market conditions

Q&A



EXPLORATION
& DEVELOPMENT

MINING

Thank you

THIS PRESENTATION HAS BEEN PREPARED BY IMDEX LIMITED ("THE COMPANY"). IT CONTAINS GENERAL BACKGROUND INFORMATION ABOUT THE COMPANY'S ACTIVITIES CURRENT AS AT THE DATE OF THE PRESENTATION. IT IS INFORMATION GIVEN IN SUMMARY FORM AND DOES NOT PURPORT TO BE COMPLETE. THE DISTRIBUTION OF THIS PRESENTATION IN JURISDICTIONS OUTSIDE AUSTRALIA MAY BE RESTRICTED BY LAW AND YOU SHOULD OBSERVE ANY SUCH RESTRICTIONS. THIS PRESENTATION IS NOT (AND NOTHING IN IT SHOULD BE CONSTRUED AS) AN OFFER, INVITATION, SOLICITATION OR RECOMMENDATION WITH RESPECT TO THE SUBSCRIPTION FOR, PURCHASE OR SALE OF ANY SECURITY IN ANY JURISDICTION, AND NEITHER THIS DOCUMENT NOR ANYTHING IN IT SHALL FORM THE BASIS OF ANY CONTRACT OR COMMITMENT. THE PRESENTATION IS NOT INTENDED TO BE RELIED UPON AS ADVICE TO INVESTORS OR POTENTIAL INVESTORS AND DOES NOT TAKE INTO ACCOUNT THE INVESTMENT OBJECTIVES, FINANCIAL SITUATION OR NEEDS OF ANY PARTICULAR INVESTOR. THESE SHOULD BE CONSIDERED, WITH OR WITHOUT PROFESSIONAL ADVICE, WHEN DECIDING IF AN INVESTMENT IS APPROPRIATE. THE COMPANY HAS PREPARED THIS PRESENTATION BASED ON INFORMATION AVAILABLE TO IT, INCLUDING INFORMATION DERIVED FROM PUBLICLY AVAILABLE SOURCES THAT HAVE NOT BEEN INDEPENDENTLY VERIFIED. NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, IS MADE AS TO THE FAIRNESS, ACCURACY, COMPLETENESS, CORRECTNESS OR RELIABILITY OF THE INFORMATION, OPINIONS AND CONCLUSIONS EXPRESSED. ANY STATEMENTS OR ASSUMPTIONS IN THIS PRESENTATION AS TO FUTURE MATTERS MAY PROVE TO BE INCORRECT AND DIFFERENCES MAY BE MATERIAL. TO THE MAXIMUM EXTENT PERMITTED BY LAW, NONE OF THE COMPANY, ITS DIRECTORS, EMPLOYEES OR AGENTS, NOR ANY OTHER PERSON ACCEPTS ANY LIABILITY, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY ARISING FROM FAULT OR NEGLIGENCE ON THE PART OF ANY OF THEM OR ANY OTHER PERSON, FOR ANY LOSS ARISING FROM THE USE OF THIS PRESENTATION OR ITS CONTENTS OR OTHERWISE ARISING IN CONNECTION WITH IT.

FOR FURTHER INFORMATION
PLEASE CONTACT:

KYM CLEMENTS
IRO & CORPORATE COMMUNICATIONS
KYM.CLEMENTS@IMDEXLIMITED.COM

IMDEXTM