



JULY 2018

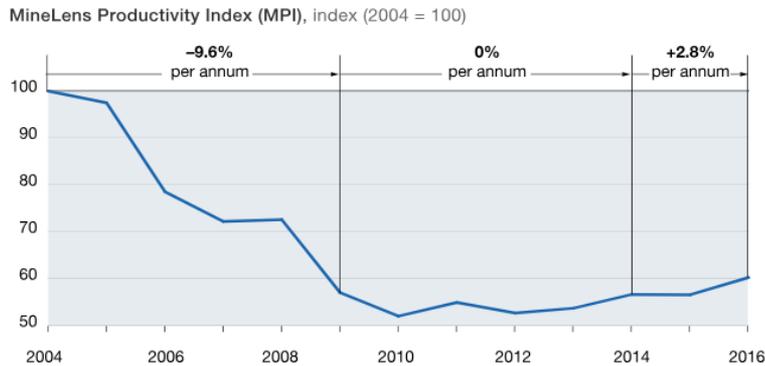
# TECHNOLOGY INVESTMENT



ANGUS MELBOURNE – CHIEF COMMERCIAL OFFICER

# Mining productivity has suffered greatly in recent years

Since 2014, mining productivity has begun to reverse course with a gradual increase by limiting spending and improving labour productivity



McKinsey&Company | Source: Company reports and websites; MineLens by McKinsey; McKinsey analysis



<sup>1</sup>Compound annual growth rate (2014-16).

<sup>2</sup>Capital expenditures and operating expenditures have been adjusted for mine cost inflation. Capital expenditures include book value of plant and equipment.

<sup>3</sup>Not including labor costs.

McKinsey&Company | Source: MineLens by McKinsey

Significant room for improvement in the mining industry

# Technology led productivity improvement

Digital technologies can improve mining profits by 20 to 45 percent within two to three years.

*AT Kearney, Using Digital Technologies to Uncover Value in Mining, 2018*

## Value at stake: Autonomous Operations and Robotics

(All figures cumulative, 2016-2025.)

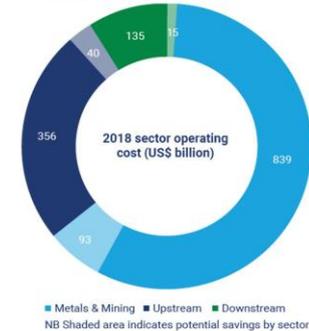


*World Economic Forum, White Paper: Digital Transformation Initiative – Mining and Metals Industry, 2017*

Adopting digital technology could mean as much as **US\$150 billion per annum** in potential operating cost savings

Source: Wood Mackenzie

The "size of the prize" in operating cost



*Wood Mackenzie, Thought Leadership – Digitalisation in the Energy and Natural Resource Sectors*

▶ **82%**

expect to increase investments in digital technology over the next three years

*Interview of mining executives: Accenture, Digital in Mining; Progress and Opportunities, 2017*

**Significant room for improvement in the mining industry**

# We have a strong track record of technology and innovation



(Product improvement)



Blaster 3000

Osx 5

HandiLoader

Minimaster

Bulkmaster 7

SHOTplus 5

DIPplus

LOADplus PROFESSIONAL



BLASTIQ (Next Generation)

LOADplus U



SHOTPlus



BLASTIQ MOBILE



ENVIROTrack



# Returns on technology investment

## Sales

- Introduced NT5 KPI; revenue generated from new technologies as a percentage of our total revenue
- NT5 growth was 12% between FY16 and FY17
- NT5 has grown at >20% across all regions from FY17 to HY18

NT5: Revenue from new technology<sup>2</sup>



## Returns

- For every \$1 invested in Electronic Blasting Systems (EBS) Orica captures >\$3x<sup>1</sup>
- For every \$1 invested in Bulk Explosives Orica captures >\$5x<sup>1</sup>
- Driving market conversion to more modern, less commoditised technologies



Investment in market led technology drives sales and returns

# We are focused on three differentiated theses aligned with market demand

**Digitally enabled better blasting**

**Unlocking customers productivity**




*Dynamic drill & blast optimisation*

**Blast Automation**

**Step-change in safety, productivity and efficiency**



**ENABLING TECHNOLOGIES**

**WebGen™**  
Wireless Electronic Blasting System

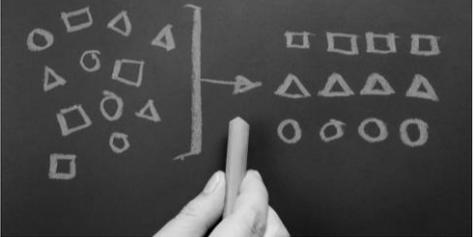
 Underground automation



*Removing people from harms way*

**Product portfolio optimisation**

**Improved quality and agility**



-  SKU rationalisation
-  Manufacturing optimisation
-  Just in time supply chain

*Competitive advantage*

# Investment in technology

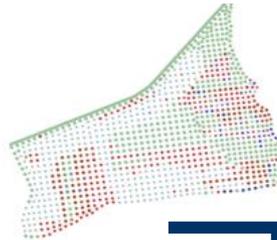
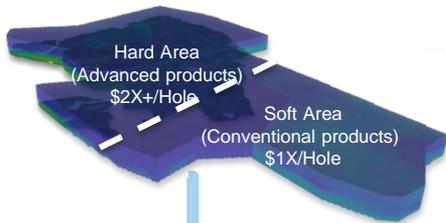
New technology investment threshold (IRR) > 30%

1. Understand the resource

2. Design for output

3. Drill and blast operations

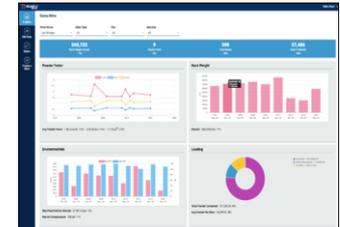
4. Measured outcomes



**Bulkmaster™7**



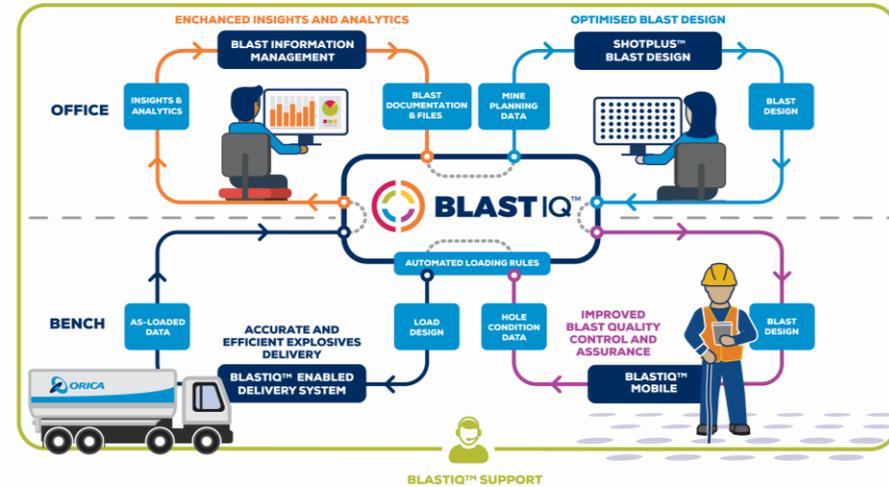
**GroundProbe®**  **ENVIROTrack™**



# Digital solutions

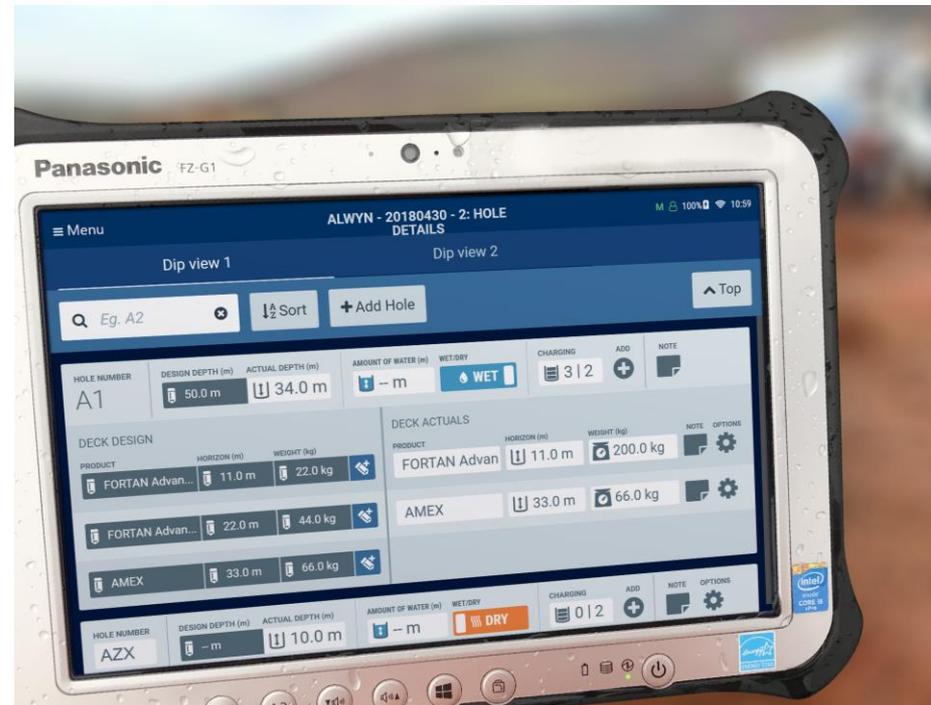
## BlastIQ™

- Digital, cloud based platform
- Reduce cost of drill and blast operations
- Improve productivity
- Facilitate regulatory compliance



## Investment thesis

- Low initial revenue assumed, increasing as product matures
- Go To Market strategy focuses on APA and NA, with EMEA and LATAM to follow in early 2019
- Return >4x investment



# Bulkmaster™7

## Next generation MMU™

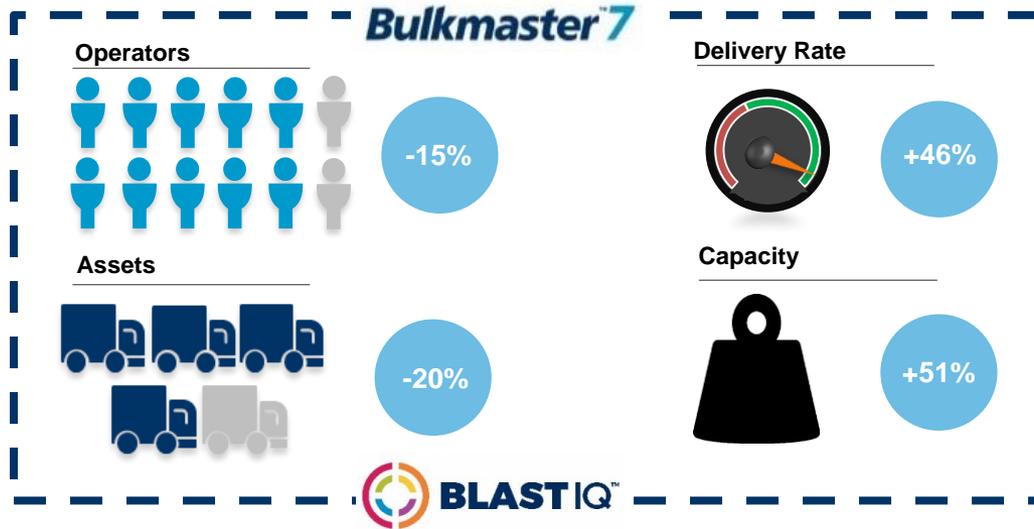
- Productivity minimises the assets and labour required for delivery service
- Latest sensor and actuator technology automates the delivery process and formulation management
- Seamless integration and operational hub of BlastIQ™

## Investment thesis

- Premium product, targeted to specific customers
- Investment case is Australia only but other regions are expressing interest
- Firm commitments will triple current deployment by February 2019
- Higher delivery rates and lower fleet costs
- Return >10x investment



# Bulkmaster™7 Commercialisation case study



Customer benefit– Integrated platform supported by BlastIQ™ for better blasts

Item	Value
Orica services	Costs reduced by ~10%
Customer operations	Increased productivity, reduced downtime and on-bench support
BlastIQ™	Cost more than offset by savings across services and operations

Orica returns – Sharing the value

Bulkmaster™7 EBIT	Shared savings from increased customer productivity
BlastIQ™ revenue	Direct licencing revenue

# WebGen™

## World first wireless initiation system

- Elimination of exposure to high risk activities
- Reduced rework and preparation
- Faster charging cycles
- Flexible blasting with greater reliability

## Investment thesis

- Investment case considers direct revenue only but indirect revenue also anticipated
- Long conversion time to allow customers to become familiar with new technology
- Customer model includes total value agreements, as well as niche and targeted applications
- Second generation will be suitable for open cut mines
- Return >10x investment



# Underground automation

## Unmanned loading vehicle

- Removing explosives personnel from the most dangerous underground locations
- De-risking tunnel development operation doubling the rate of advance
- Reducing delays and improving access to ore reserves

## Investment thesis

- Customer trials anticipated by end of 2019
- Initial offering will be to high complexity customers only, with potential to expand to a wider market
- Returns TBC but initial indications are strong



# QUESTIONS?