



# **RICHER INSIGHTS, BETTER DECISIONS**

**DRIVING PERFORMANCE VIA KNOWLEDGE  
COLLECTION, CONNECTION, AND CONTINUITY**

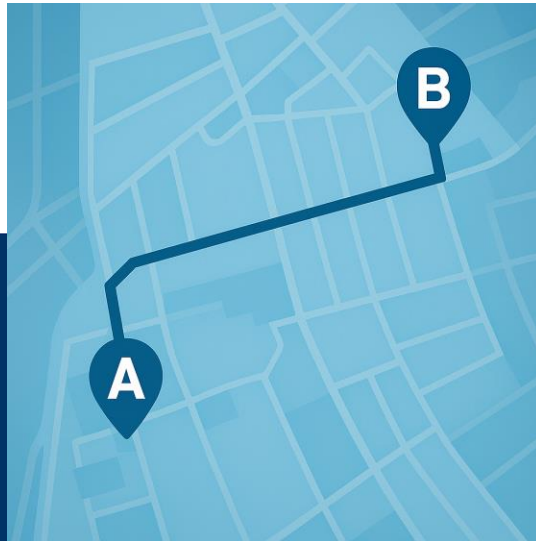


# ORICA DIGITAL SOLUTIONS WAS FORMED TO DELIVER SUSTAINABLE IMPROVEMENT ACROSS NATURAL SILOS

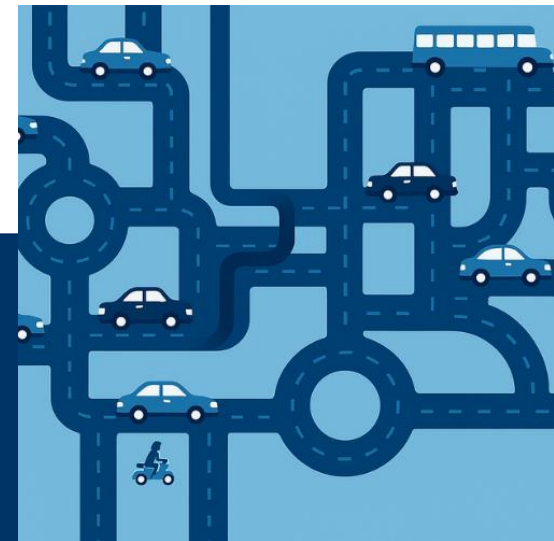
## WE ARE CHALLENGING OURSELVES AND THE INDUSTRY TO DELIVER ON THIS PROMISE, HERE IS HOW IT CAN WORK



# WHAT DOES 'BREAKING DOWN SILOS' LOOK LIKE?



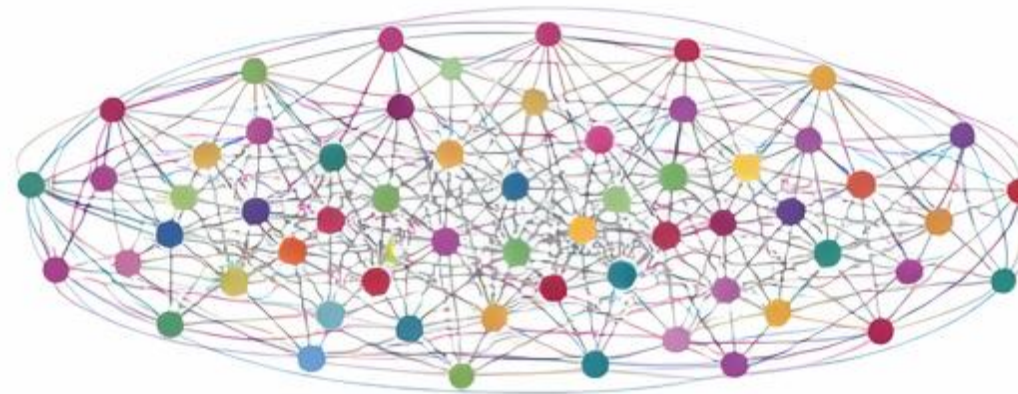
VS



# WHAT IT ACTUALLY LOOKS LIKE

## EXPLORATION AND MINING WORKFLOWS

- Mining activity diagrams in the literature are often department-specific and isolated.
- They rarely show interconnected activities across all departments.
- The diagram is a likeness to one developed by a team at **The University of British Columbia**<sup>1</sup>, to map all activities that integrated geological information
- A likeness to the original has been used, as it is awaiting publication



# HOW MIGHT WE SOLVE FOR THIS?

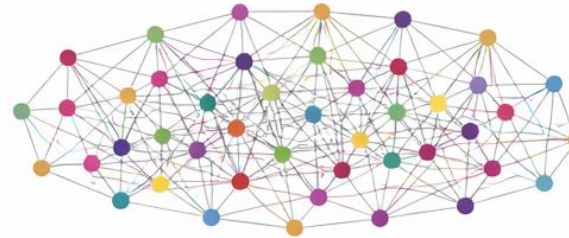
## COLLECTION LAYER

- Point solutions addressing common problems with common solutions.
- Information is collected, and uncertainty reduced at each node.



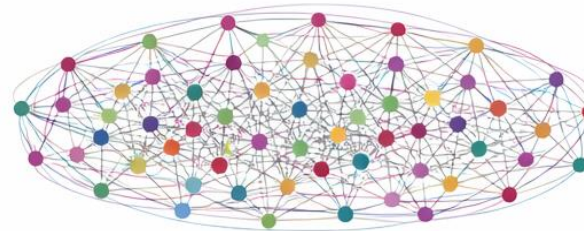
## CONNECTION LAYER

- Links between nodes, addressing common problems that have different solution routes for different customers.



## CONTINUITY LAYER

- The network brought to life and processing data that is collected and connected through space and time.
- Answering open-ended questions that are highly specific to an asset.



# HOW DO I BUILD THE NETWORK PRACTICALLY?

## TARGET KEY POINTS OF COMPLEXITY

The **Connection Layer**: Grouping point solutions in each of these zones will address key uncertainties and help make order from chaos – via measurement, modelling, or implementation of process.

### PRE-DISRUPTION



### COMPLEXITY 1: BLASTING



### COMPLEXITY 2: DIG/HAUL



### COMPLEXITY 3: PILE/BLEND



# HOW DO I BUILD THE NETWORK PRACTICALLY?

## TARGET KEY POINTS OF COMPLEXITY

LAYER 1

Platform driven connections between individual products based on customer value cases



# HOW DO I BUILD THE NETWORK PRACTICALLY?

## TARGET KEY POINTS OF COMPLEXITY

**LAYER 2**

Integrations to third-party systems (e.g. FMS) or customer-build ecosystem (customer database connections)

**LAYER 1**

Platform driven connections between individual products based on customer value cases



# HOW DO I BUILD THE NETWORK PRACTICALLY?

## TARGET KEY POINTS OF COMPLEXITY

**LAYER 3**

Insituisation driven functionality; products & features built on the ability to resolve information through space & time

**LAYER 2**

Integrations to third-party systems (e.g. FMS) or customer-build ecosystem (customer database connections)

**LAYER 1**

Platform driven connections between individual products based on customer value cases



# HOW DO I BUILD THE NETWORK PRACTICALLY?

## TARGET KEY POINTS OF COMPLEXITY

**LAYER 4** Highly connected componentry with a digital twin engine to answer open-ended questions (e.g. intelligent blast design)

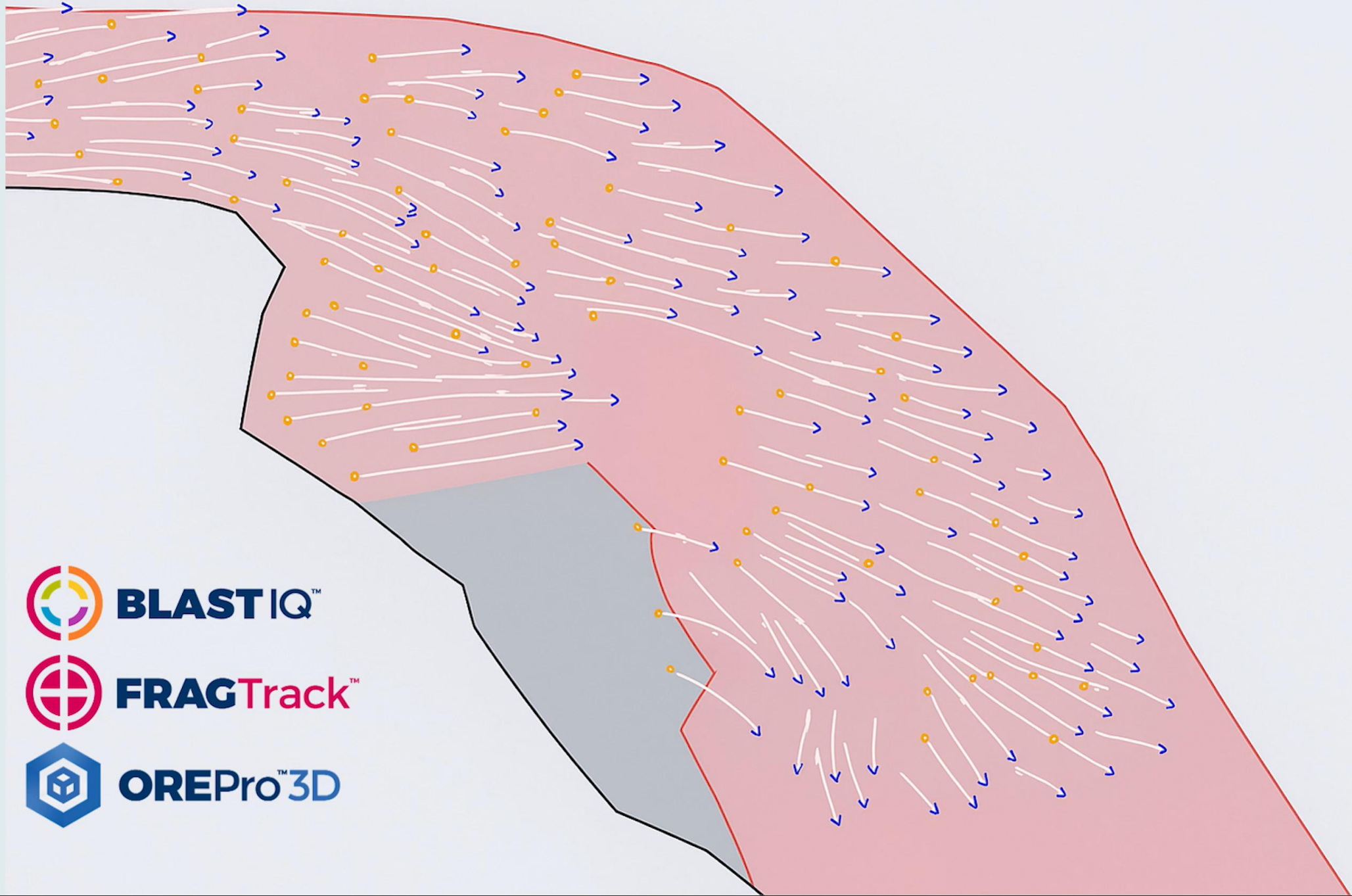
**LAYER 3** Insituisation driven functionality; products & features built on the ability to resolve information through space & time

**LAYER 2** Integrations to third-party systems (e.g. FMS) or customer-build ecosystem (customer database connections)

**LAYER 1** Platform driven connections between individual products based on customer value cases



**A SIMPLE EXAMPLE OF HOW  
THIS IS MANIFESTING**



**BLAST IQ™**



**FRAGTrack™**



**OREPro™ 3D**

**A MORE COMPLEX  
EXAMPLE OF HOW  
THIS IS MANIFESTING**

# TWO EXAMPLES WHERE THE NETWORK ENABLES OPERATIONAL OUTCOMES



Current design baseline

Alternative blast design with improved expected dig rate

Handling risk considered alongside productivity

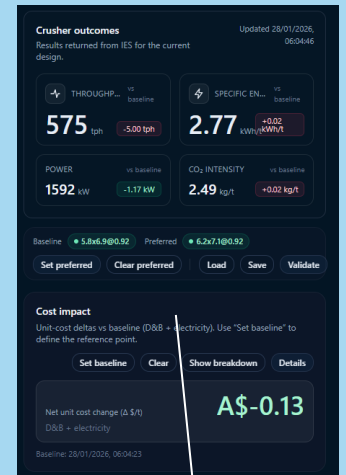
Predicted operational response for this design



Blast-driven feed fragmentation

Operating target range

Expected crusher product for this design



Predicted throughput and energy response

# THANK YOU