MINE MANAGEMENT SYSTEM FOR OPEN-PIT MINES

Sapio Solutions Pty. Ltd.
with impact...

MINEMATICS
Enabling Operational Efficiencies...

PROCESS FLOW & SCOPE

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PROCESS FLOW

Crushing Plant

Loading Zone

Main Haul Road

Weigh Bridge

Waste
Dump Yard

Parking Yard
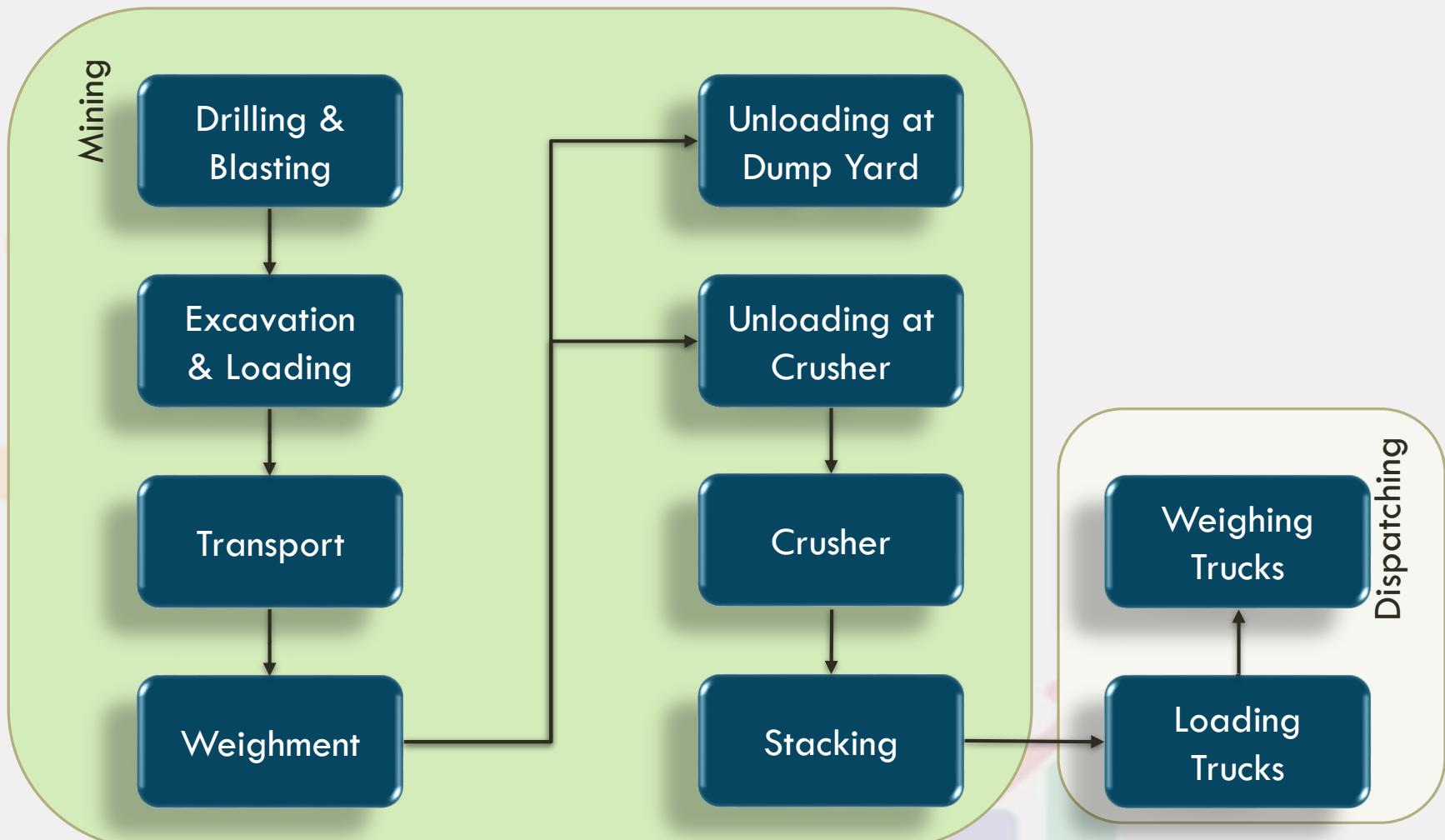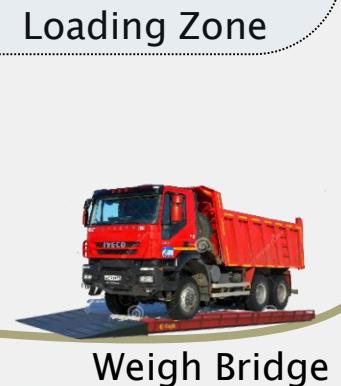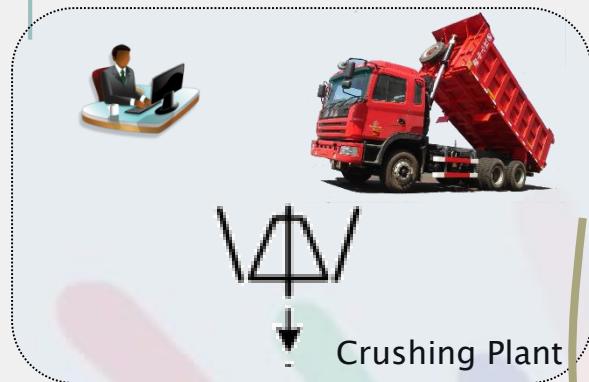
PRIORITIES IN OPENCAST MINES

- Fuel consumption pattern

- Optimize mine fleet size and combination

- Manage overall mine operations, not individual assets

- Assess production constraints and improve productivity

- Inconsistent wireless connectivity in mines

PRESENTING …

Versatile State-of-the-Art

Mine Management Solution for open-pit mines …

SALIENT FEATURES – MINE OPTIC

SOLUTION STACK MINEOPTIC

Operations Insights

Process Intelligence

Flexible Communication Network

Robust Scalable Hardware

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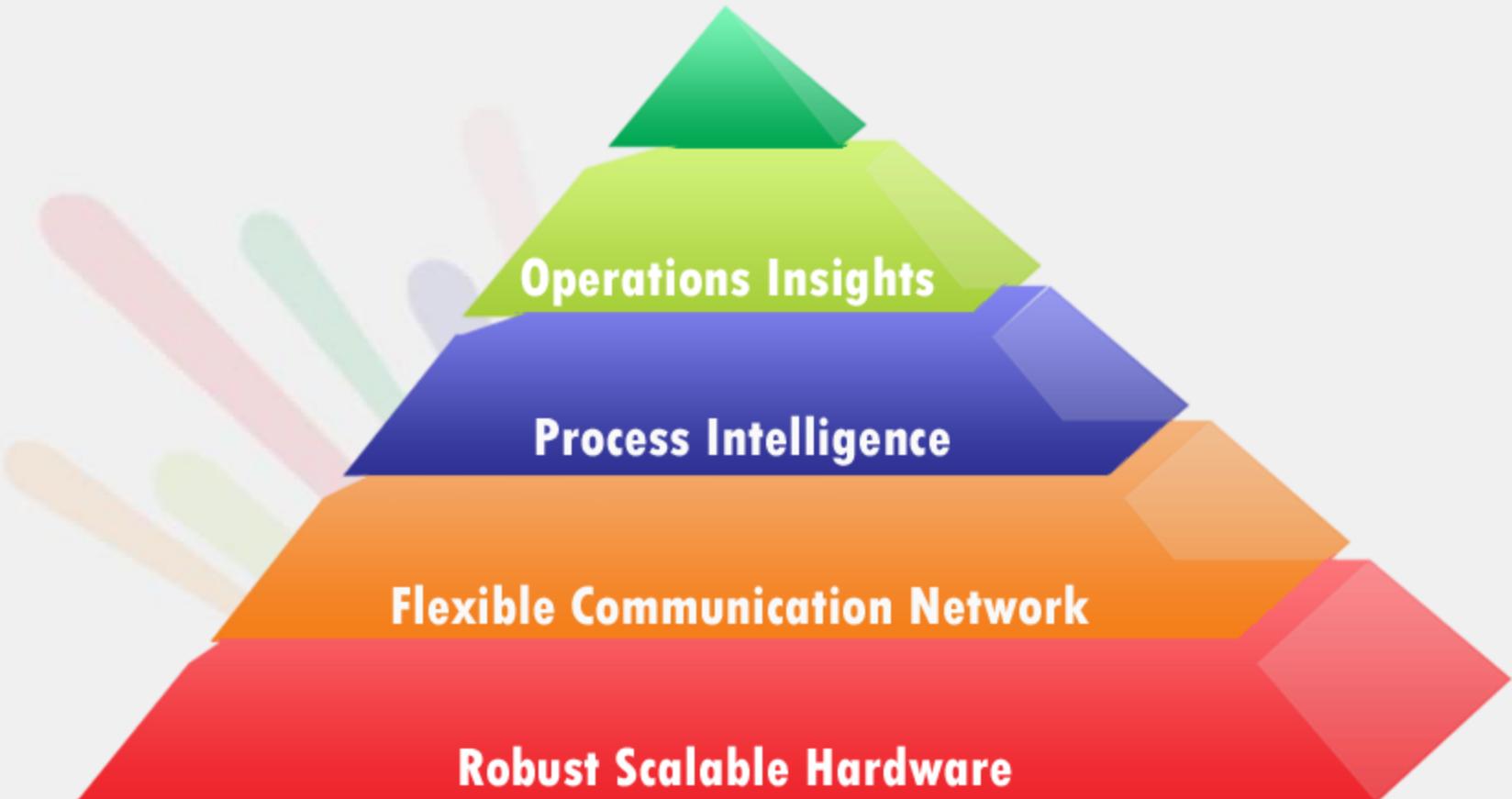
MINE OPTIC ARCHITECTURE

Crushing Plant

Loading Zone

Base Station

Main Haul Road

Weigh Bridge

Waste Dump Yard

Parking Yard
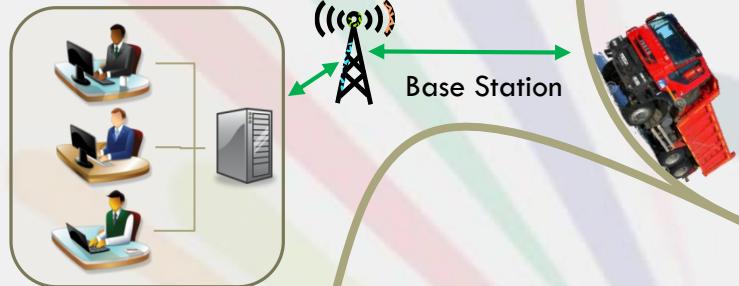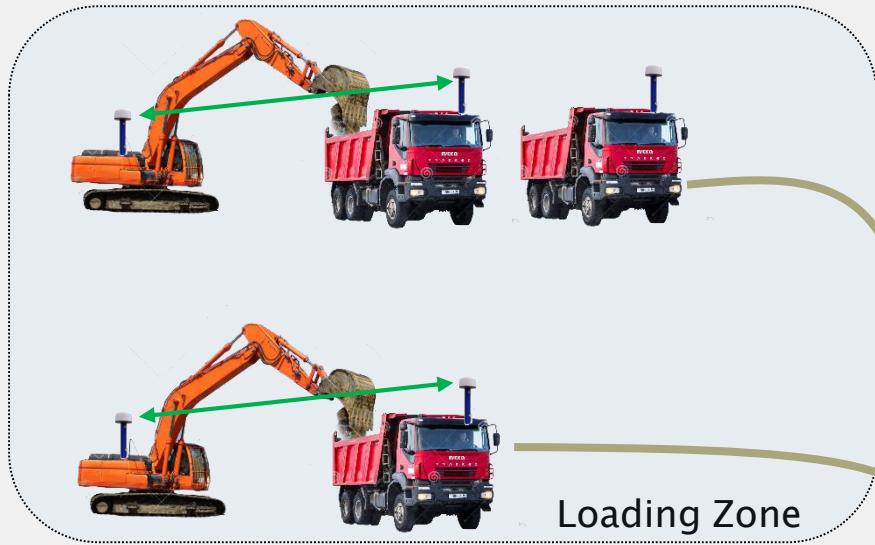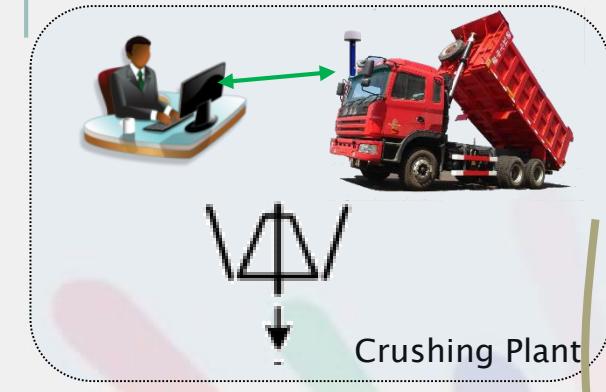
TRUCK-EXCAVATOR COMMUNICATION

i. Select Loading Excavator

ii. Select Dump Location
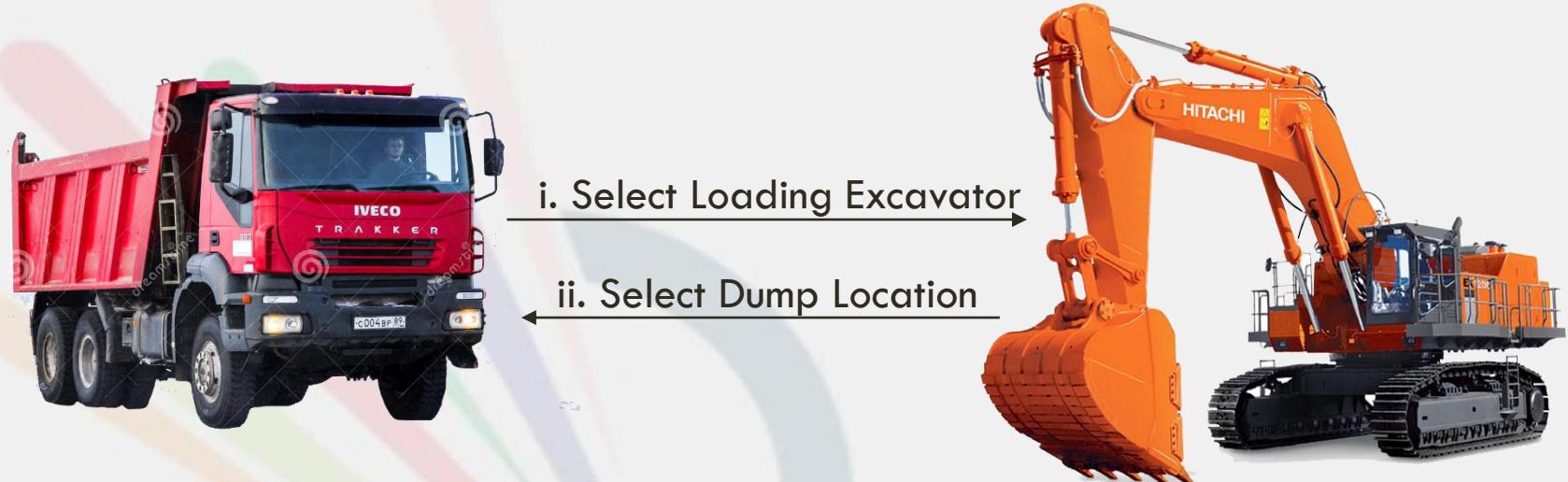
TRUCK WEIGH BRIDGE COMMUNICATION

RFID
Reader

i. Truck ID Information

ii. Truck Load Information

iii. Driver Confirmation

WB Load Sensors

i. Truck Load Data

Weigh
Bridge
Software

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CLOUD VS FOG COMPUTING
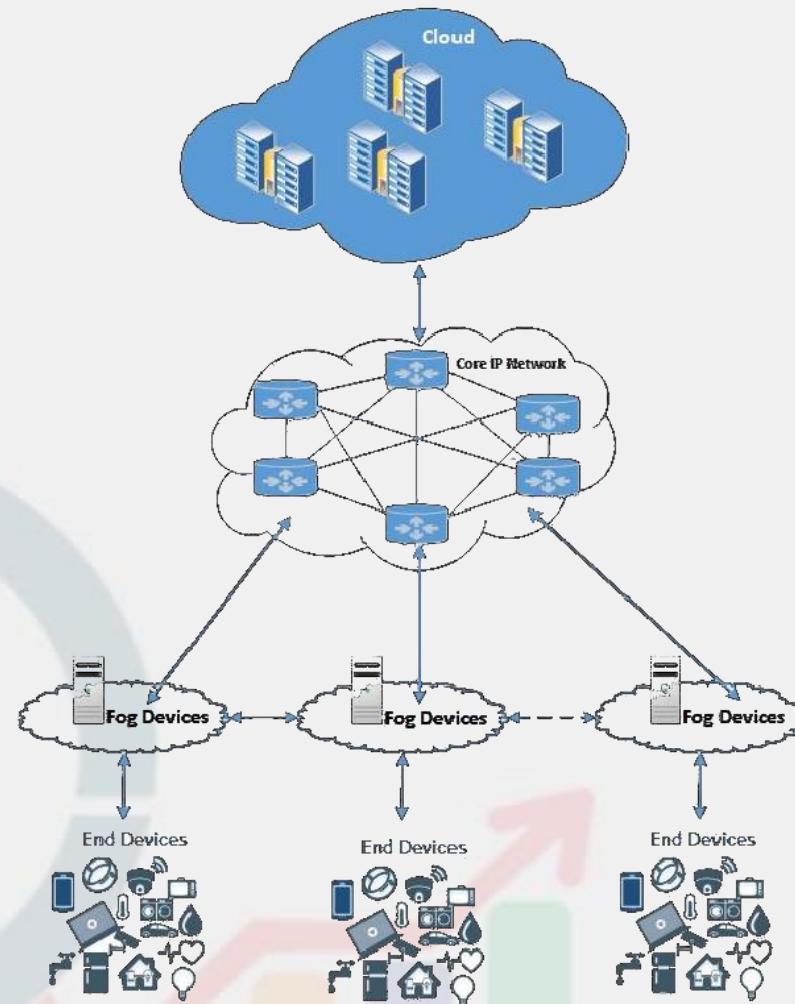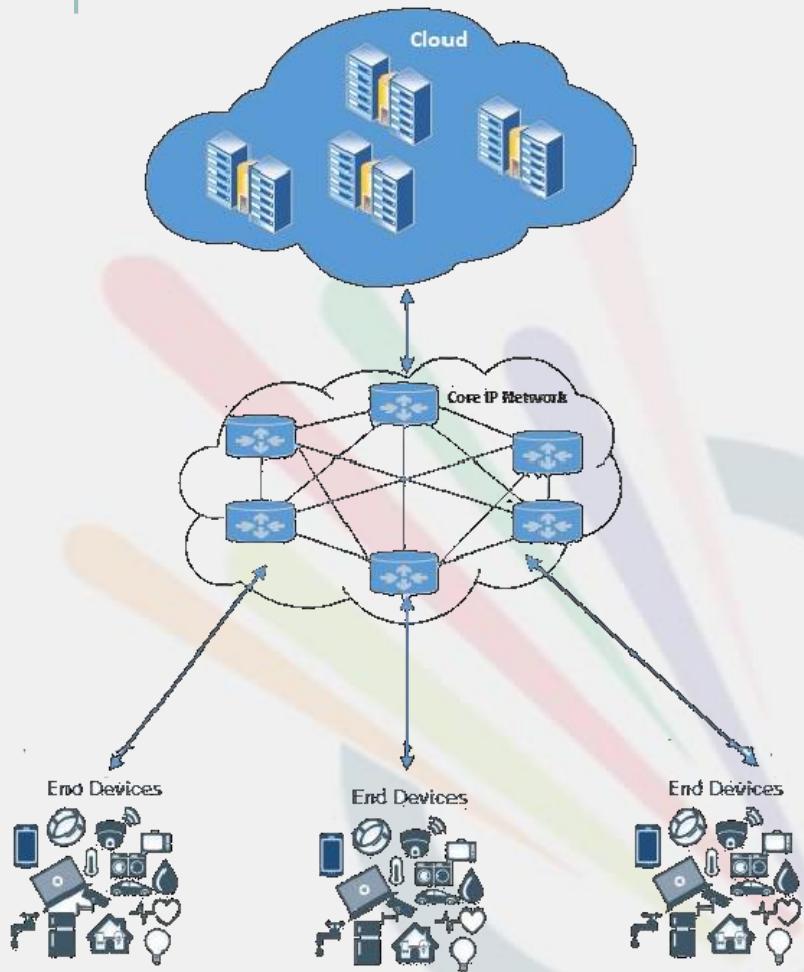
ROBUST HARDWARE

	Android/Linux based	**Micro-Controller based**
Purpose	Multi-purpose Manual interaction	Special purpose Machine interaction
Durability	Consumes more power Gets heated quickly Shorter battery life Device prone to hang Long restart time Scope to loose data Medium term life	Consumes less power Does not get heated easily Battery independent Controlled device behavior Insignificant restart time Data loss in control Long lasting
Applications	Consumer & Commercial Standalone, not meant for automotive	Industrial & Mission Critical Automotive also

OPTIMIZING FLEET RATIO

Costs & Total Waiting Time

Trucks Waiting

Total Waiting

Excavator Waiting

Trucks per Excavator

☞ Mine Model

☞ Sample Reports

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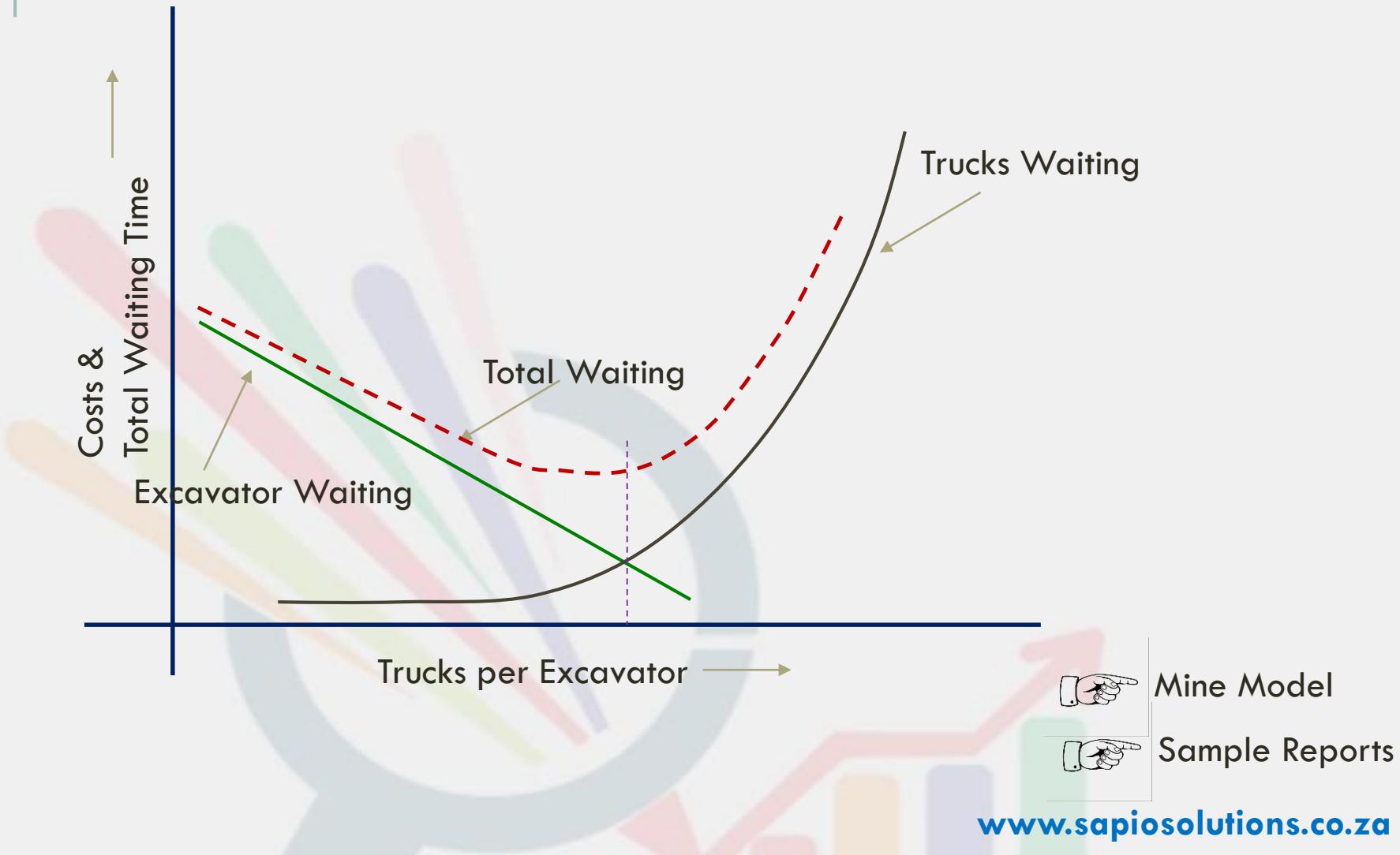
BUSINESS BENEFITS

Complete visibility of mine operations

Ability to understand inter-dependencies across mine assets

Understand fuel consumption pattern across mine assets

Optimize fleet size using detailed interactive analytics

Provide insights into operations and enable managers to identify production constraints quickly and improve productivity

SALIENT FEATURES MINE OPTIC

Detailed Operational Analytics

Flexible & Pertinent Architecture

Highly Scalable Solution

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ADVANTAGE MINE OPTIC

Detailed Operational Analytics

Flexible & Pertinent Architecture

Highly Scalable Solution

- Complete visibility of mine operations in terms of data
- Understand fleet capacity
- Optimize fleet size/combination
- Enable continuous improvement

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ADVANTAGE **MINE**OPTIC

Detailed Operational Analytics

Flexible & Pertinent Architecture

- Effective in all climatic conditions
- Less dependent on 3rd party network
- Least fixed/ground infrastructure
- Easily extendible to any corner of the mine

Highly Scalable Solution

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ADVANTAGE MINE OPTIC

Detailed Operational Analytics

Flexible & Pertinent Architecture

Highly Scalable Solution

- Easily plug additional function without disturbing existing solution
- Low cost of solution upgradation in future

Interested?

Get in touch

www.sapiosolutions.co.za

+0027 81 500 8912   info@sapiosolutions.co.za