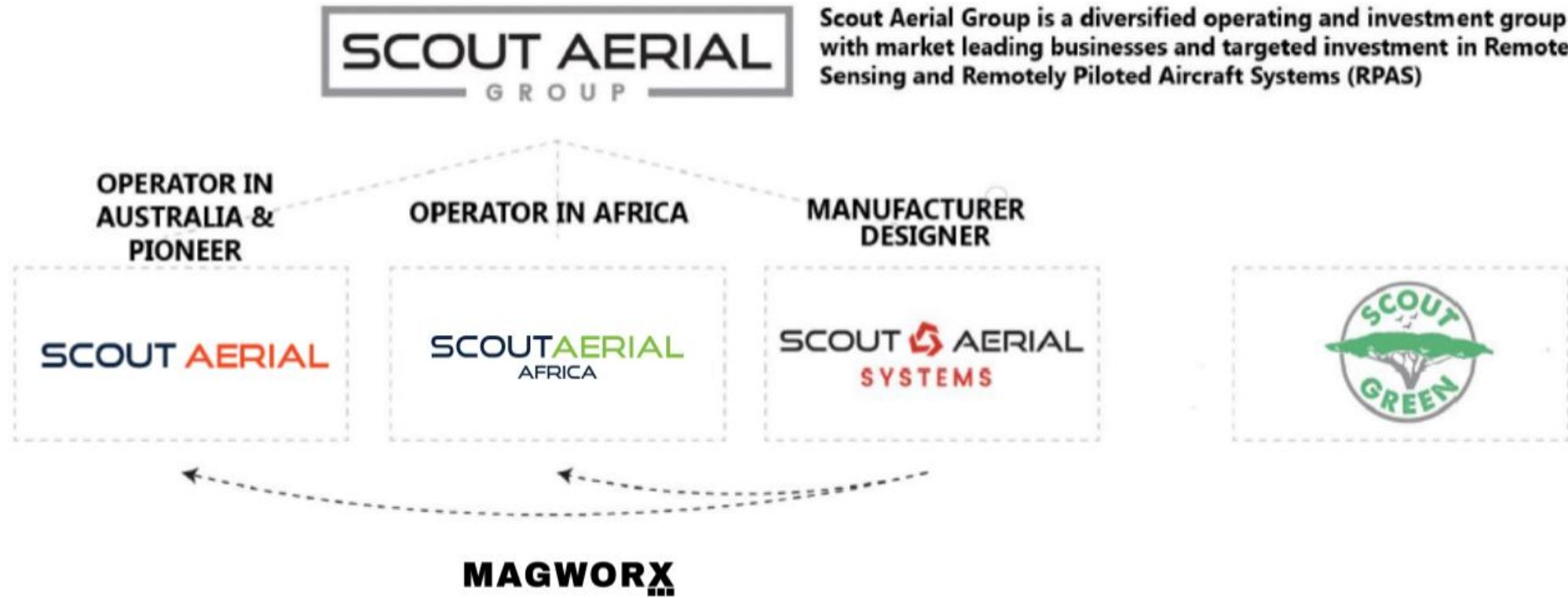




# ABOUT SCOUT AERIAL



**THE BENEFITS OF  
DIGITAL  
TRANSFORMATION IN  
MINING**

**'BUILDING VALUABLE INSIGHTS'**



# DEFINITION

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Digital transformation (DT) is the use of technology to radically improve the performance or reach of enterprises; Westerman et al. (2011, p.5).

This involves optimising operations and value delivery through digitized data and advanced analytics.

The mining industry is 30-40% less mature digitally than other industries, according to the BCG, Digital Acceleration index (DAI)

# CHALLENGES

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- High operational costs- drilling accounts for approximately 55% of exploration costs.
- Unpredictable global metal prices.
- Financing challenges.
- Outdated technology

# SOLUTION

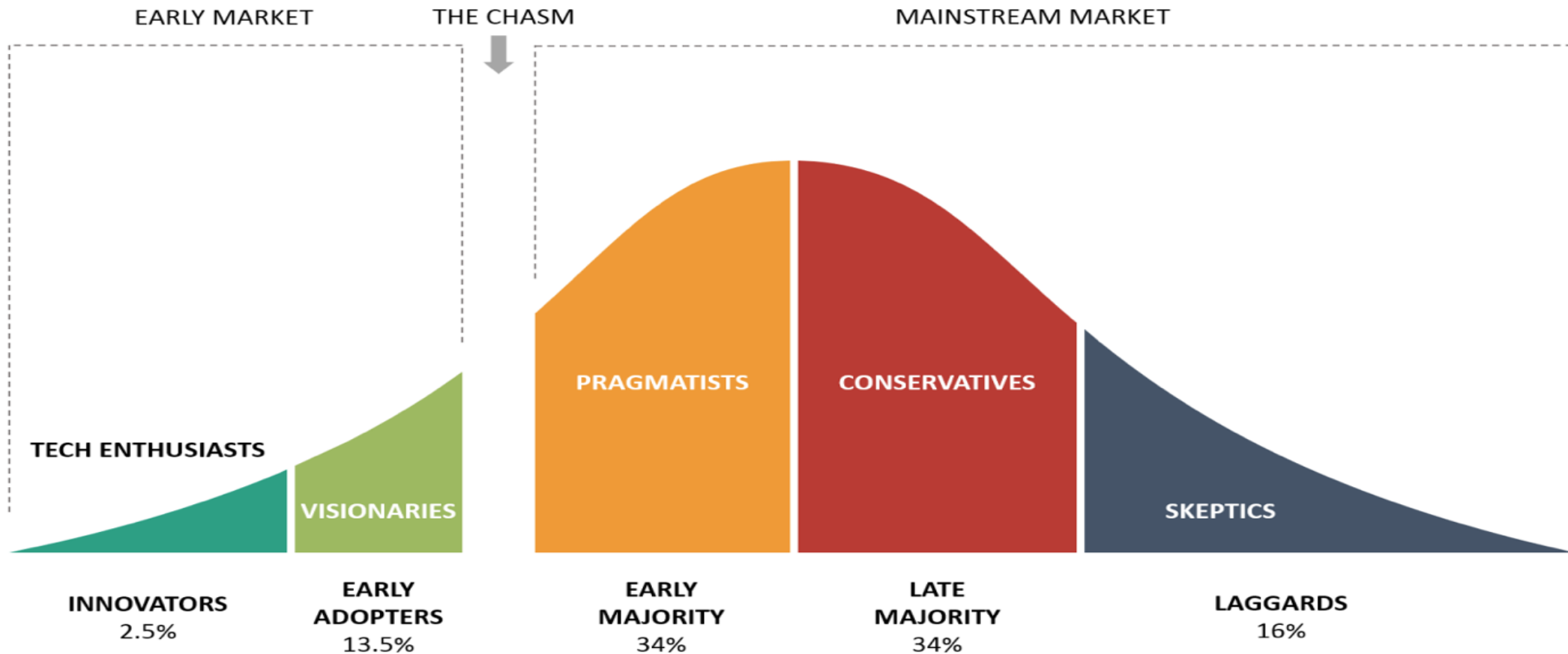
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Successful individuals and organisations have adopted digital transformation to achieve superior business performance and competitive advantage.

- focus on reduction in exploration time through use of remotely piloted aircrafts.
- Greater data insights for strategic decision making.

Technology adoption is best explained by the “technology adoption life cycle by Everett Roger in “Diffusion of Innovations.

# TECHNOLOGY ADOPTION LIFE CYCLE



# DIGITAL TRANSFORMATION

Organisations that embrace remote sensing services achieve agility, flexibility and are ready to grow.

DT focuses on all value creation opportunities.

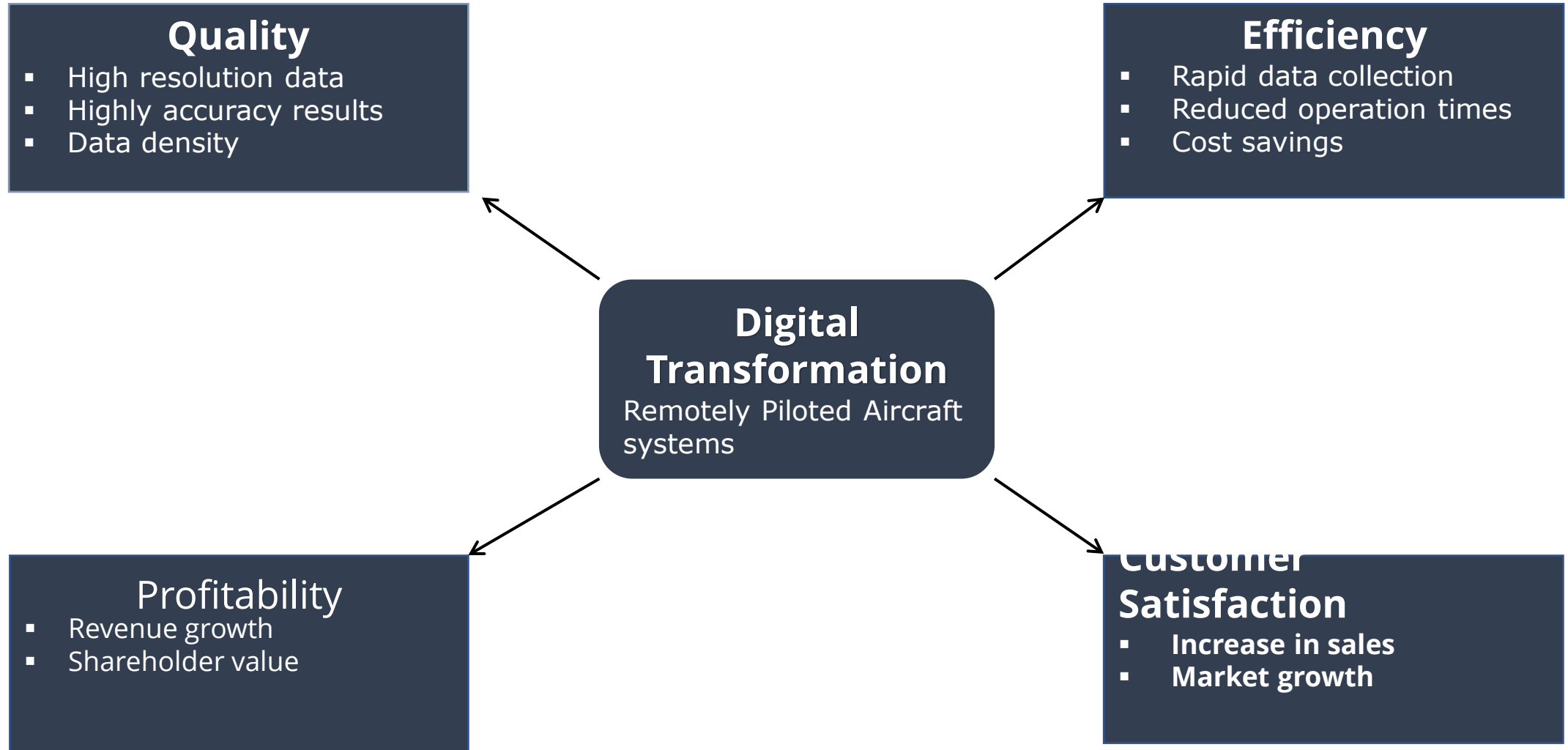
Radical improvements in quality, efficiency, profitability and customer satisfaction are achieved.

Deliverables are output are in multiple formats.

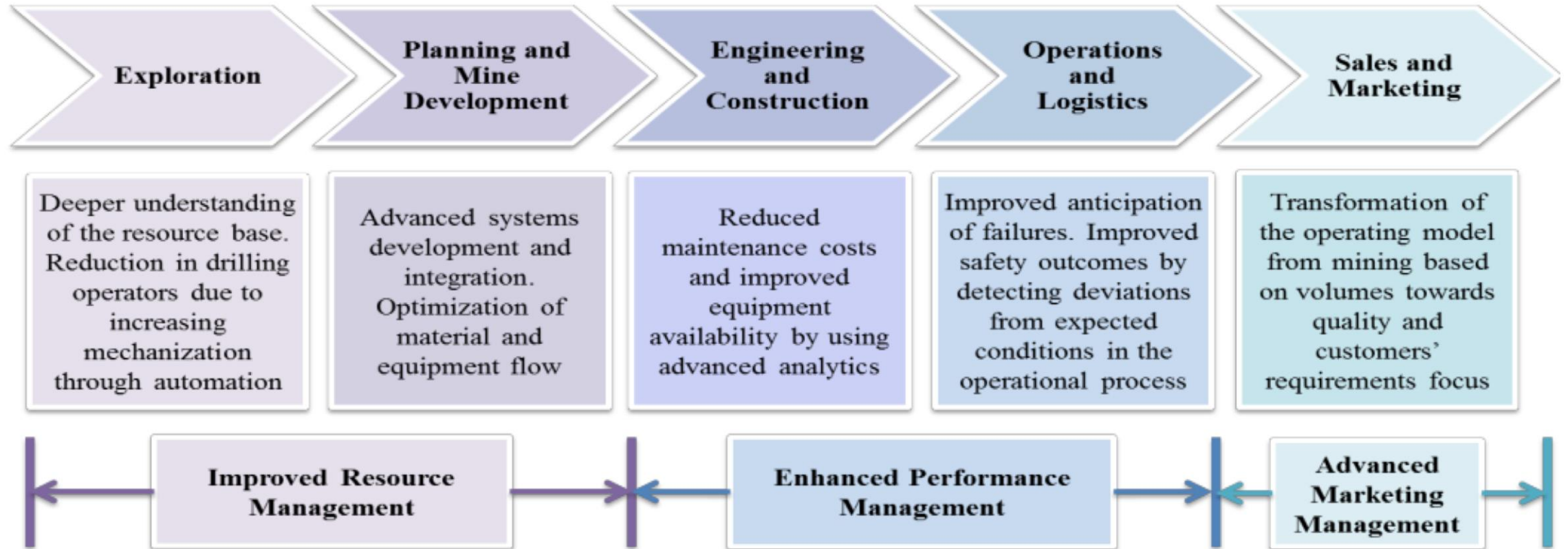




# DIGITAL TRANSFORMATION - BENEFITS



# IMPACT OF DIGITAL TECHNOLOGIES



**Fig. 2.** The impact of the digital technologies implementation on different stages of the mining value chain

Source: Developed by authors adapting [2; 14-17]

# SUCCESS & FAILURES

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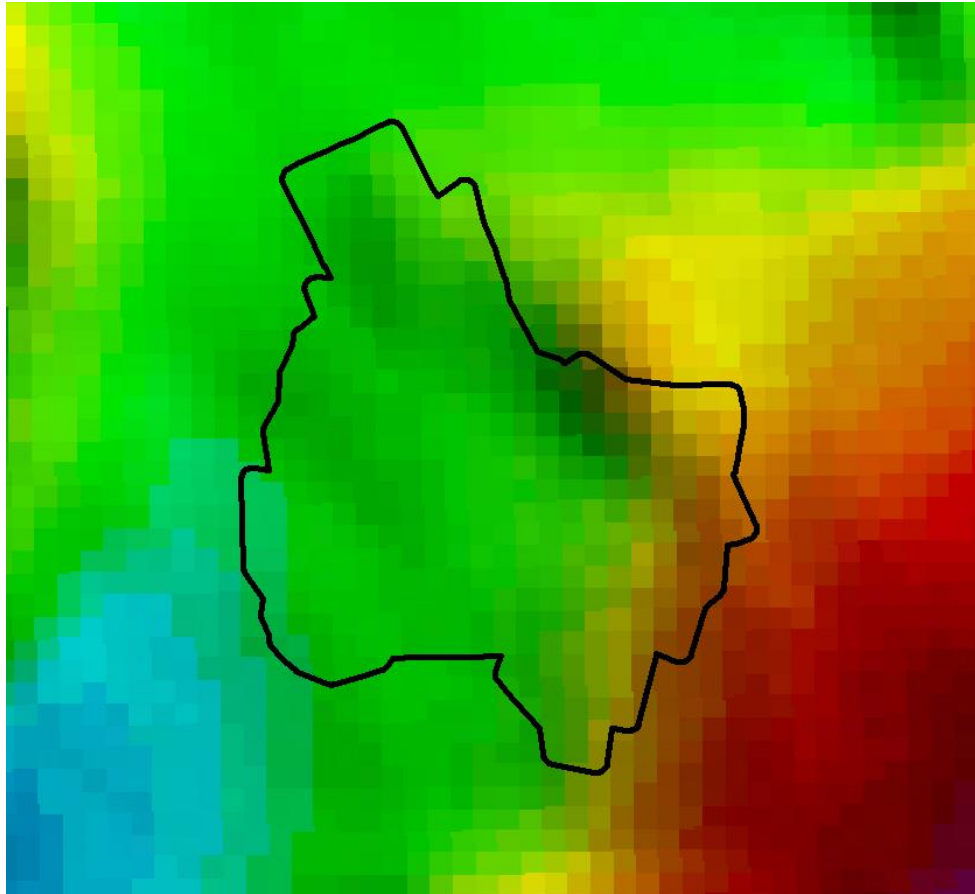
The success and failure of digital technology in any organisation is determined by:

- Managerial acceptance / leadership
- Employee capacity building
- Processes
- ability to integrate and implement DT technologies.

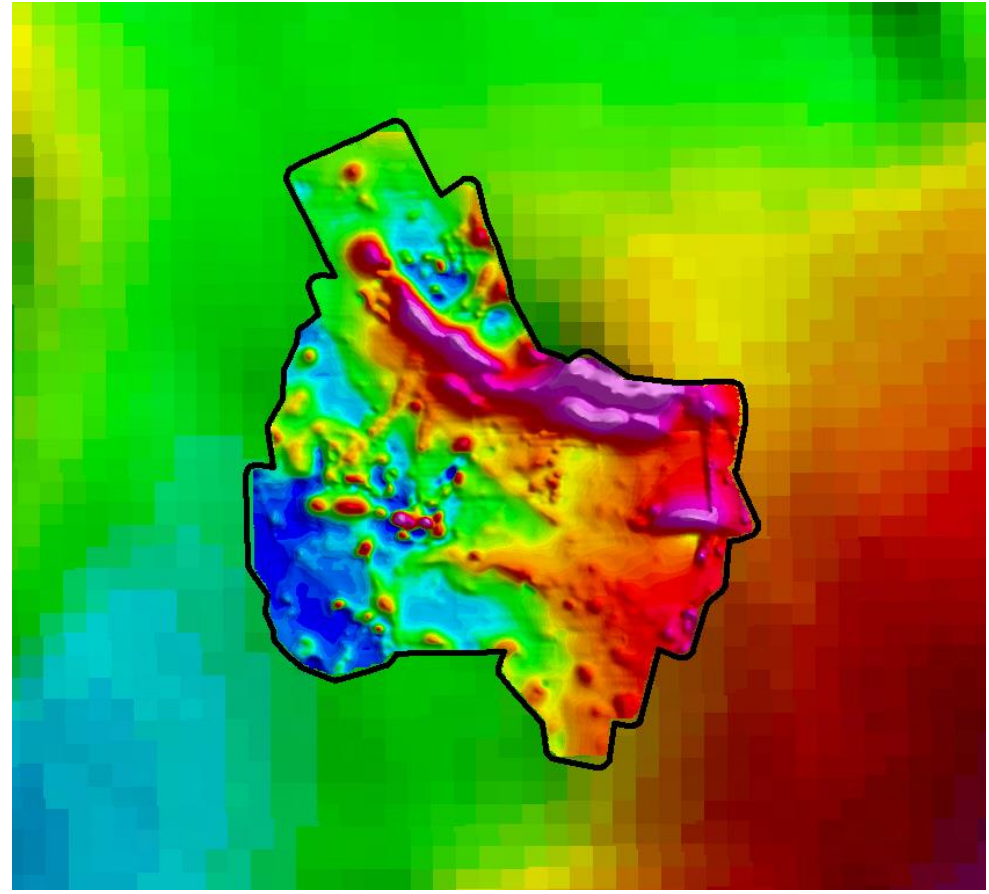
# MAGNETIC SURVEYS - GEOPHYSICS

Current vs New Data - Comparison between aeromag and drone surveys data output.

**AERO-MAG**



**DRONE-MAG**



## Current vs New Data

CURRENT (AERO-MAG)	NEW (DRONE-MAG)
<ul style="list-style-type: none"><li>Height : 304m</li></ul>	<ul style="list-style-type: none"><li>Height : 20m</li></ul>
<ul style="list-style-type: none"><li>1km line spacing</li></ul>	<ul style="list-style-type: none"><li>Spacing as little as 10m (standard is 25-50m) = <b>1,520 times more detail</b></li><li>Able to cover larger areas than surface mag</li></ul>

**Drone Magnetism** is the perfect solution between surface mag & traditional Aero-mag



# DIGITAL TRANSFORMATION

Ground based magnetic survey

vs Airborne drone magnetic survey

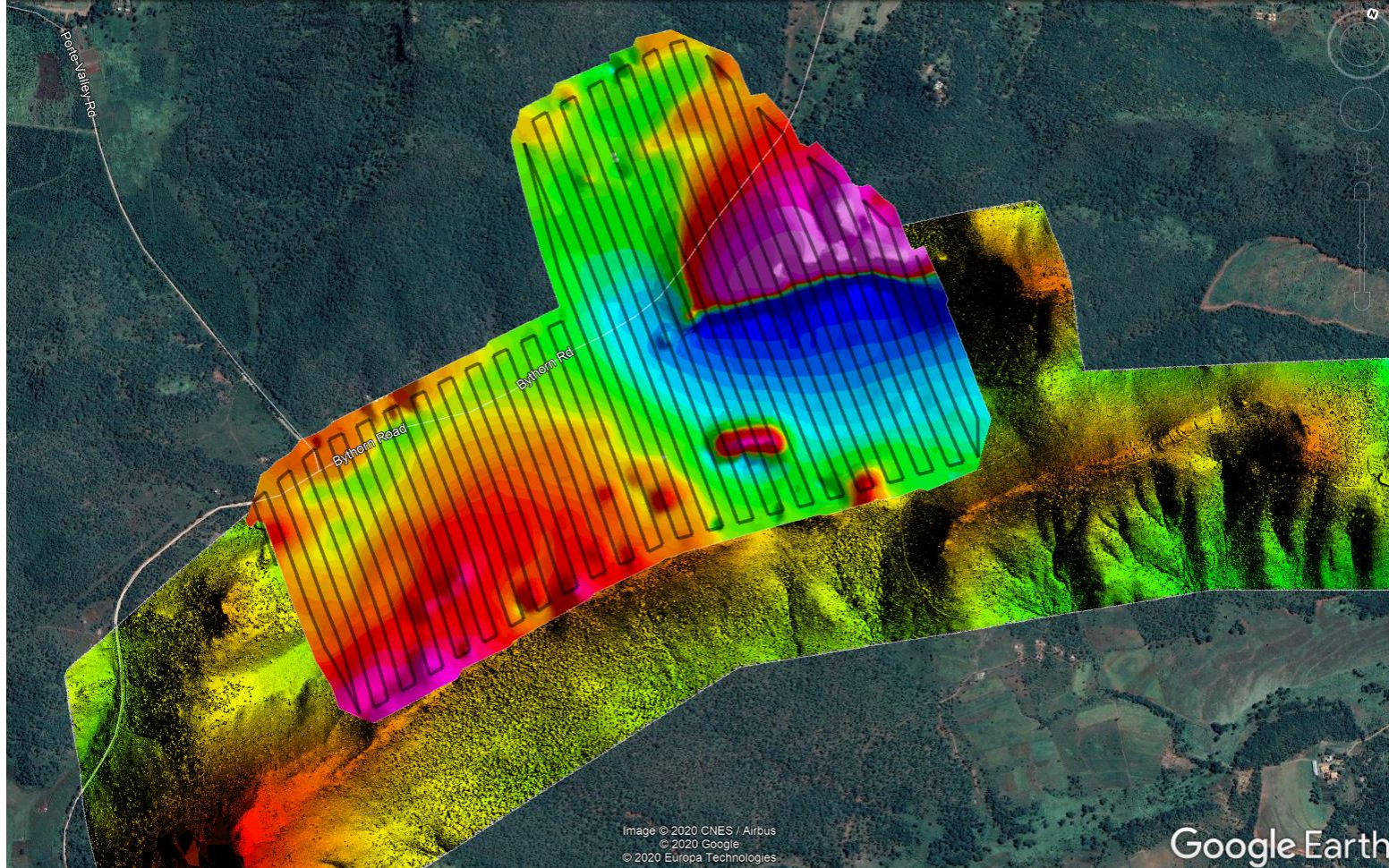


Defined and systematic RPA's flight plan is more accurate and results in greater data density.



# MAGNETIC SURVEYS - GEOPHYSICS

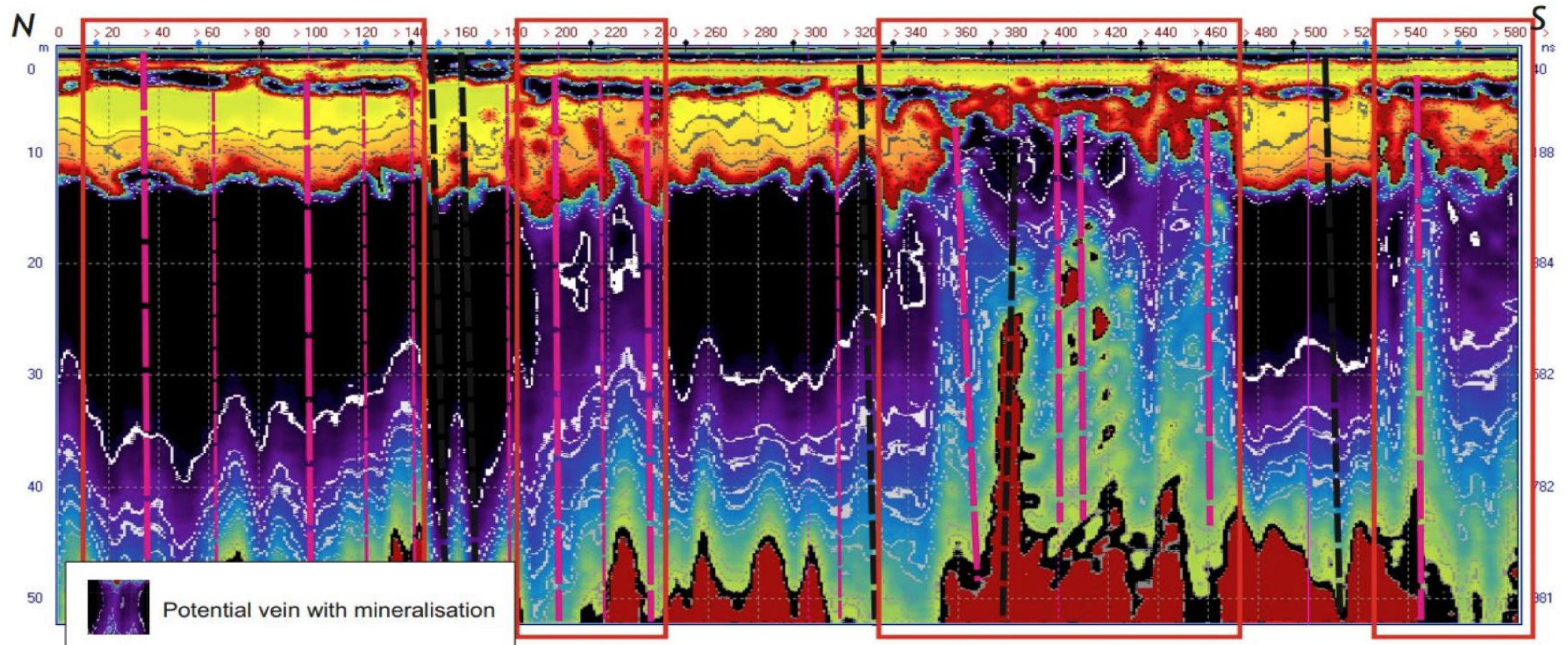
SCOUTAERIAL  
AFRICA





# GROUND PENETRATING RADAR - GEOPHYSICS

*Geophysical interpretation 50m*



# MAGNETIC SURVEYS - GEOPHYSICS

## Key Advantages

- **On target drilling**
- **Fast** – approx. **30 times** faster than surface mag
- **100 – 150 line km per day** – 1 field day for a drone vs 13 days for a field operator
- **Rapid deployment** – no ferry time, complex permits or large crews
- **Quiet operation over populated areas** - reduced disturbance to ground occupants and livestock
- **Very high resolution** – 20 samples per second / 5 samples per metre
- **Quick turnaround** – 20,000 hectares in 1 month @ 50m line spacing





# TOPOGRAPHIC MAPPING



**ORTHOMOSAIC PLAN**



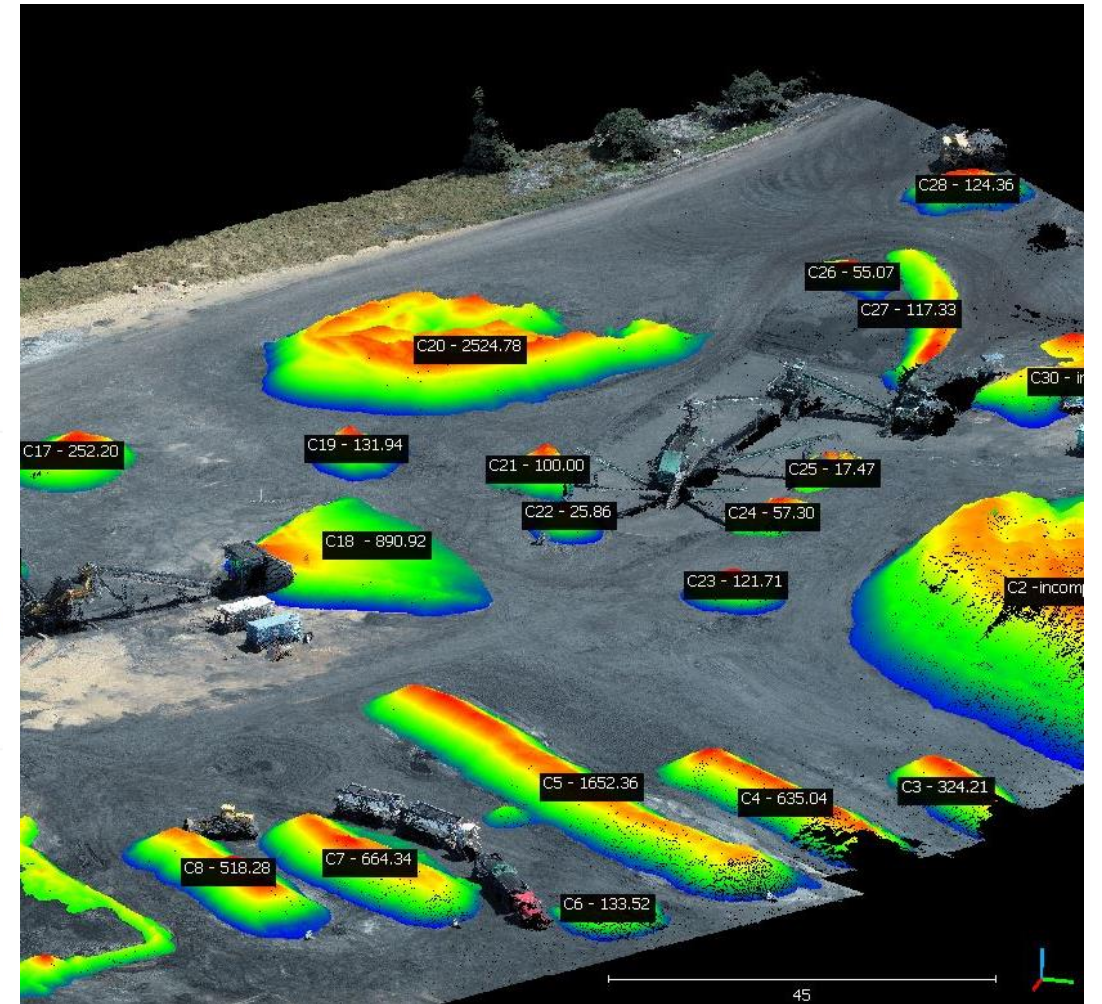
**TOPOGRAPHIC MAP**

Other deliverables include Digital surface annd Digital terrain models.



# VOLUMETRIC SURVEYS

- Stockpile volume calculations
- Pit and dump management





# MINE INSPECTION & MONITORING

## 'Artisinal Miners' Tracking & Monitoring



# CONCLUSION

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**We can conclude that the integration of digital transformation technologies in exploration will result in cost reduction, increase in efficiency, accurate high resolution data and better understanding of the resource base for on target drilling and extraction.**

# WHY WORK WITH SCOUT?



**SAFE  
METHODS**



**COST-  
EFFECTIVE**



**ACCURATE  
RESULTS**



**ENVIRO-  
FRIENDLY**



**CLIENT  
SUPPORT**

# THANK YOU

**Vimbayi Matarirano**

BUSINESS DEVELOPMENT MANAGER

 +263 776 023 663

 [vimbayi@scoutaerialafrica.com](mailto:vimbayi@scoutaerialafrica.com)





# References

- Rogers, EM. 1995. Diffusion of Innovations (4th ed.) New York: Free Press
- Westerman, G., D. Bonnet and A. McAfee. 2014. The nine elements of digital transformation. MIT Sloan Management Review (Spring): 1-6.
- Mckinsey & Co. 2018. Unlocking success in Digital Transformations