



**IGF**

INTERGOVERNMENTAL FORUM  
on Mining, Minerals, Metals and  
Sustainable Development

# Technology Trends and implications in Mining

A community perspective

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*A brief overview*

*Isabelle Ramdoo  
Deputy Director, IGF  
June 23<sup>rd</sup>, 2021*

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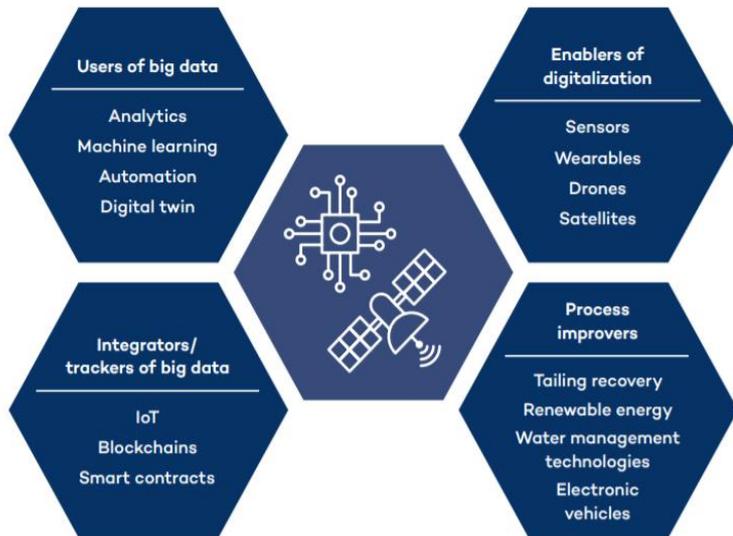
 Canada



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# What technologies are coming?

## A Taxonomy of disruptive technologies

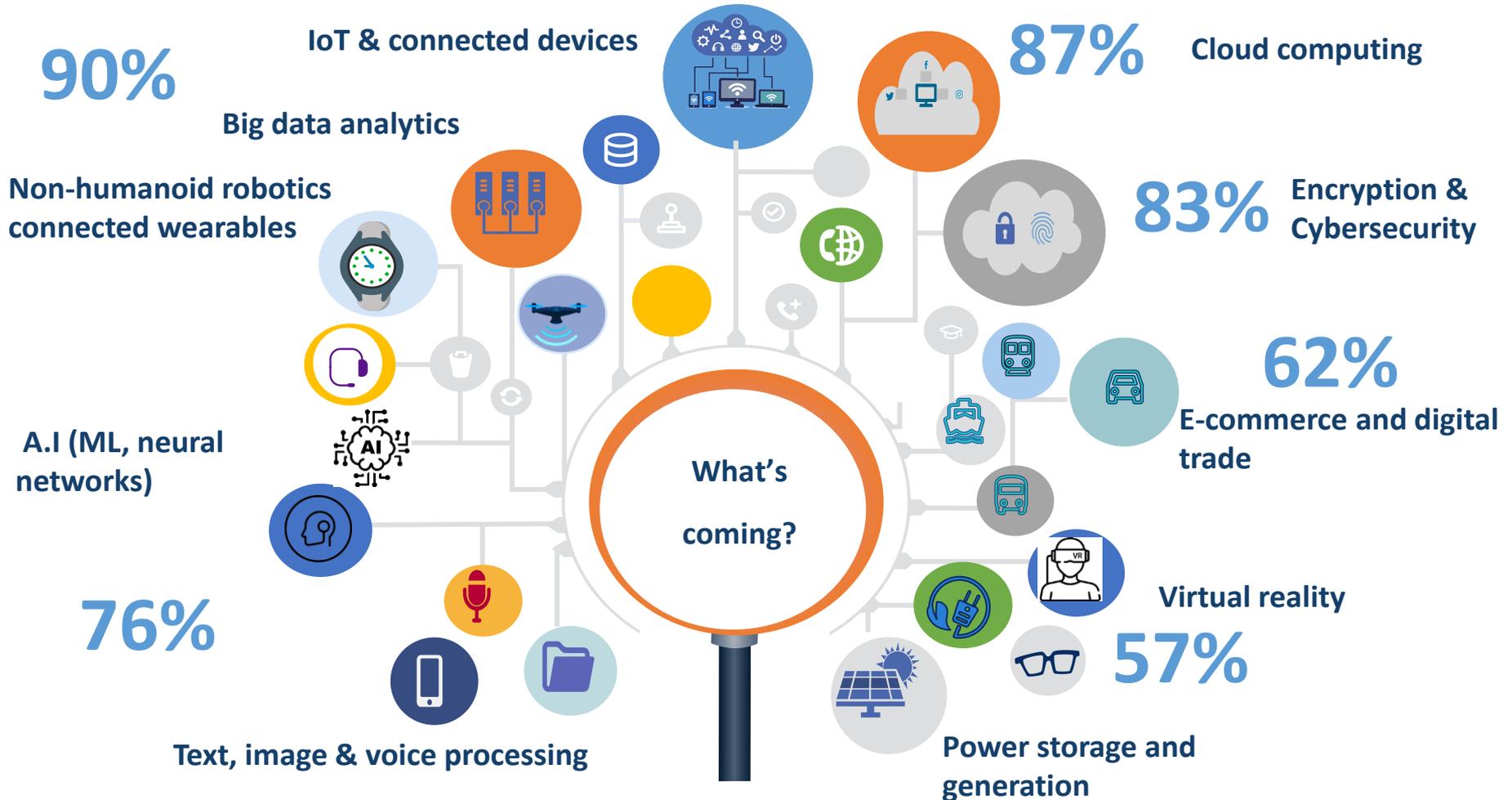


Source: IGF 2019



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# Technologies likely to be adopted by 2025





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## What impacts are we likely to see?



### For mining industry:

- ✓ Improved efficiency (labour; assets; operation)
- ✓ Higher productivity
- ✓ Improved work & workers safety

### For Governments:

- ✓ Balance of socio-economic benefits
- ✓ Revenues
- ✓ Possible implications for ASM

### For communities:

- ✓ Changes in occupations and jobs
- ✓ Ripple effects on local economies
- ✓ Gendered implications



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# Impacts at the local level: Employment

**2<sup>nd</sup> highest risk for mining industry**

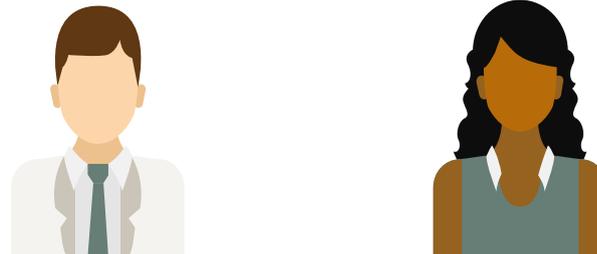
**19.9%**

**Risk of Job  
displacement by 2025**



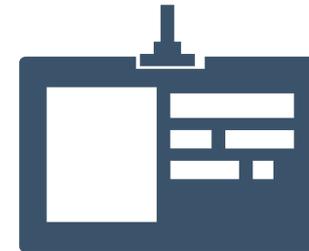
**49%**

**Expected fall overall by  
2040 (Canada)**



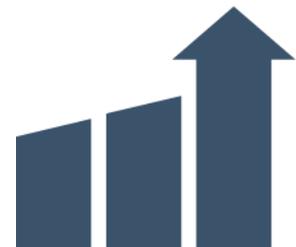
**What is needed?**

**Skills and education**



**Alternative  
livelihoods:  
diversification**

**Recalibrating  
local content  
policies**





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## Impacts at the local level: Tech as an opportunity

### Shared infrastructure

1. Renewable energy: greening the mine can be an opportunity to light up communities
2. Access to water: Water saving technologies can free resources for communities. Water management technologies can be shared with communities.
3. Shared connectivity: A game changer overall, for economic activities; in support of education; health etc.

### Local innovation

Opportunities for local firms to design tailor-made solutions for high-tech mines.

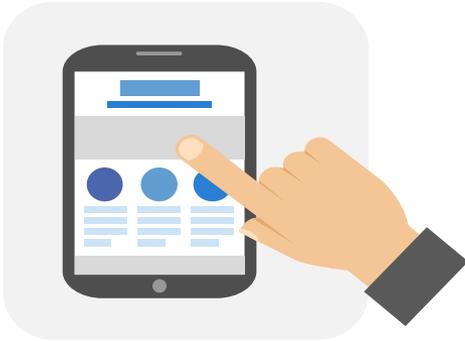




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# Data collected by mines for wider benefits

## Data to support mining governance



### Real-time data analyzed through AI:

- Better understanding of ore grades
- Real time info on flow and quantity of ore extracted
- Improved audits and revenue collection/ avoid IFFs
- Responsible sourcing

## Two examples



## Data to support non-mining sectors



### Real-time data on weather, water, climate

- Water management policies
- Better agriculture policies
- Development of new farming techniques;
- Environmental management and biodiversity
- Management of climate risks



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## Questions for discussion

Do new technologies offer an opportunity to reset and rethink community relations?  
What are the risks?

How are governments engaging with companies? Are rethinking ways to strengthen community resilience?



Is CSR still sufficient to keep the social licence to operate? Or should we brace for new and innovative social investment mechanisms?

# THANK YOU

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**secretariat@IGFMining.org**  **@IGFMining**  **@IGFMining**



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