Third HRDC 2018 Summit
"Technology and Jobs in the 4th Industrial Revolution"

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Director-General
10 May 2018

science & technology
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

Fourth Industrial Revolution: about Convergence

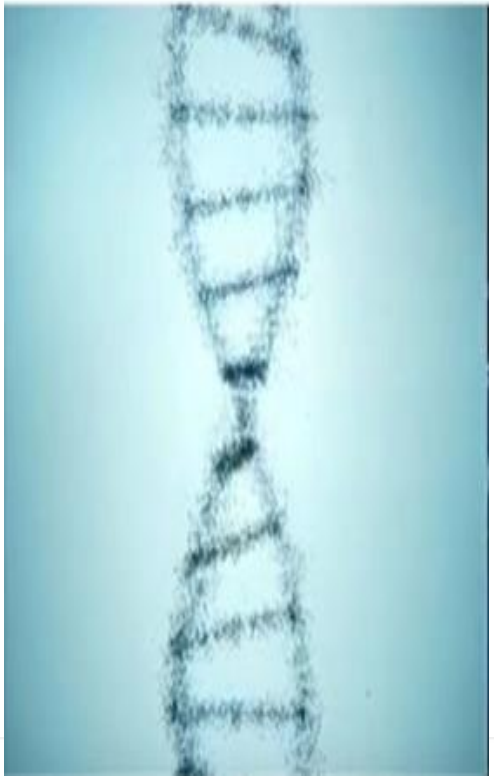
Convergence of physical, digita and biological sphere

Physical

Autonomous vehicles, robotics, 3D printing, new materials

Biological

Genomic diagnostics, treatment, engineering

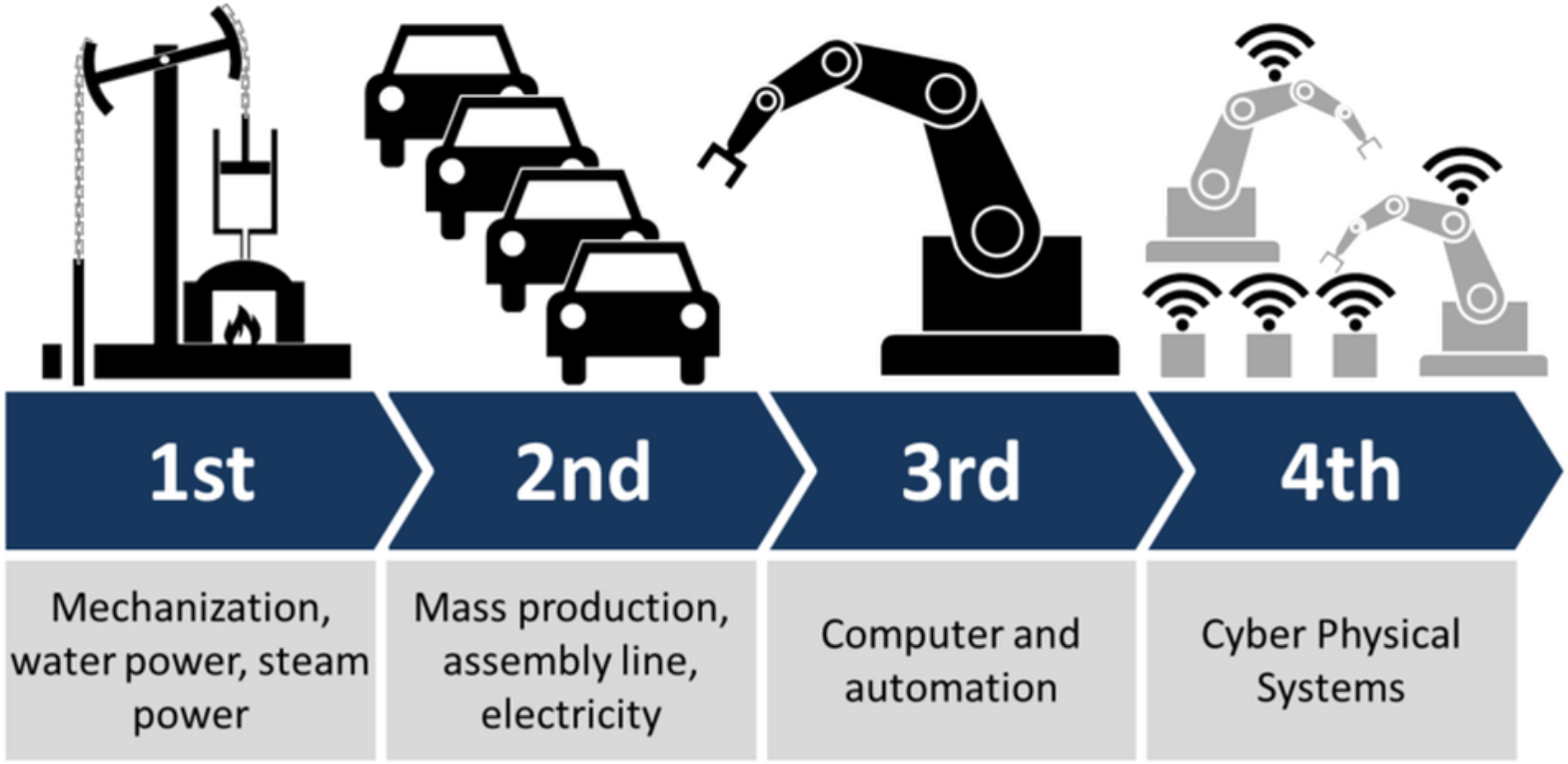


Digital

IoT, Blockchain, disruptive business models

Which Paradigm?

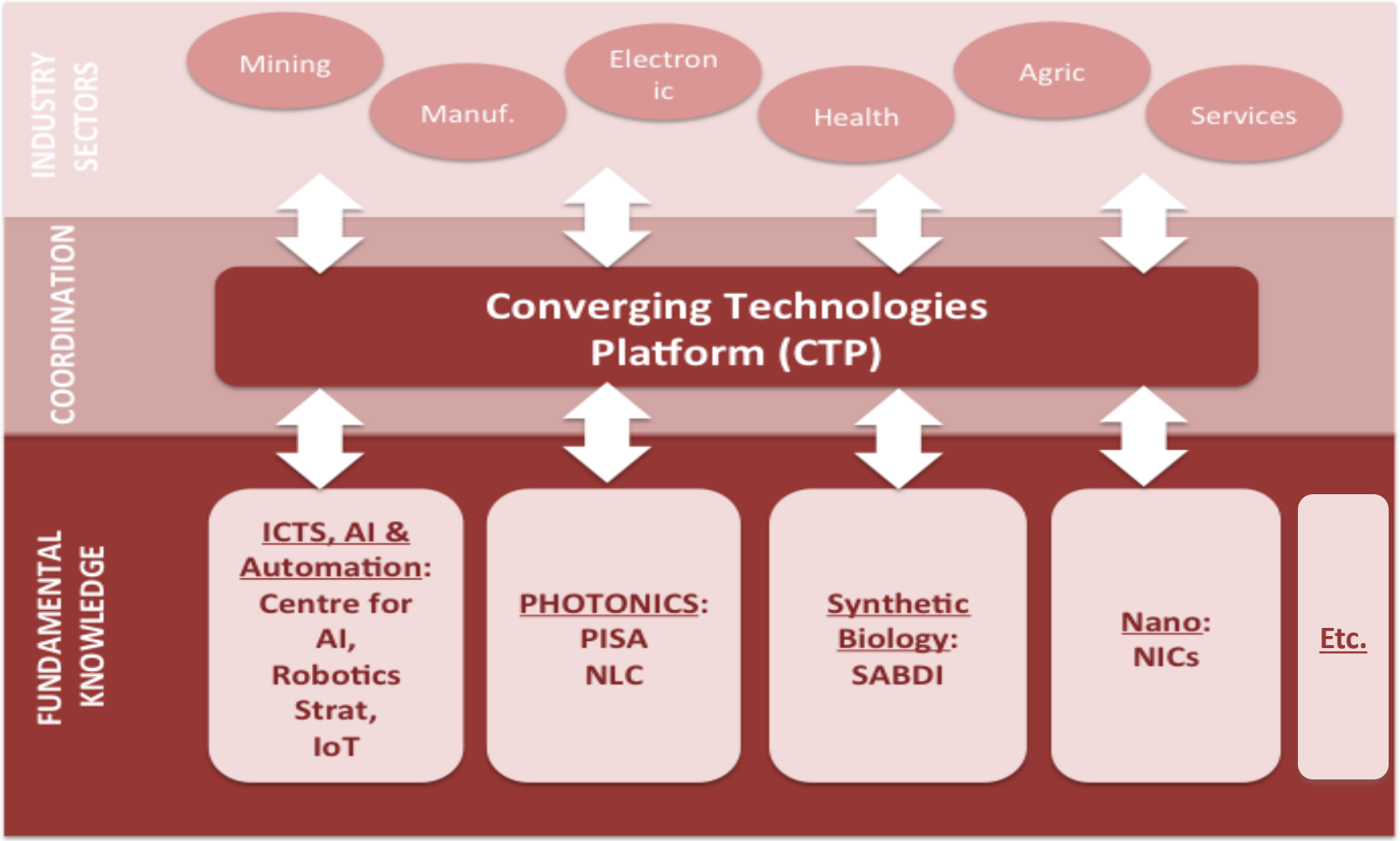
Industrial Revolution



Source: The 4 Industrial Revolutions (by Christoph Roser at AllAboutLean.com)

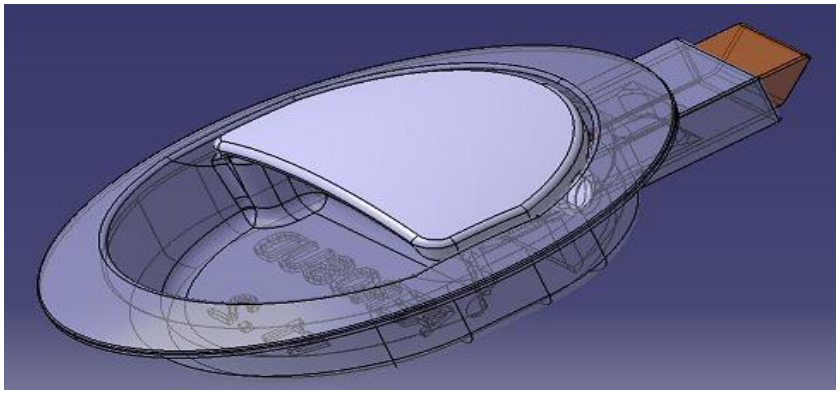
Product Lifecycle Management Platform

Converging Technologies Platform



Aeroswift – Photonics and Additive Manufacturing

Source: Council for Scientific and Industrial Research and Aerosud Training Centre

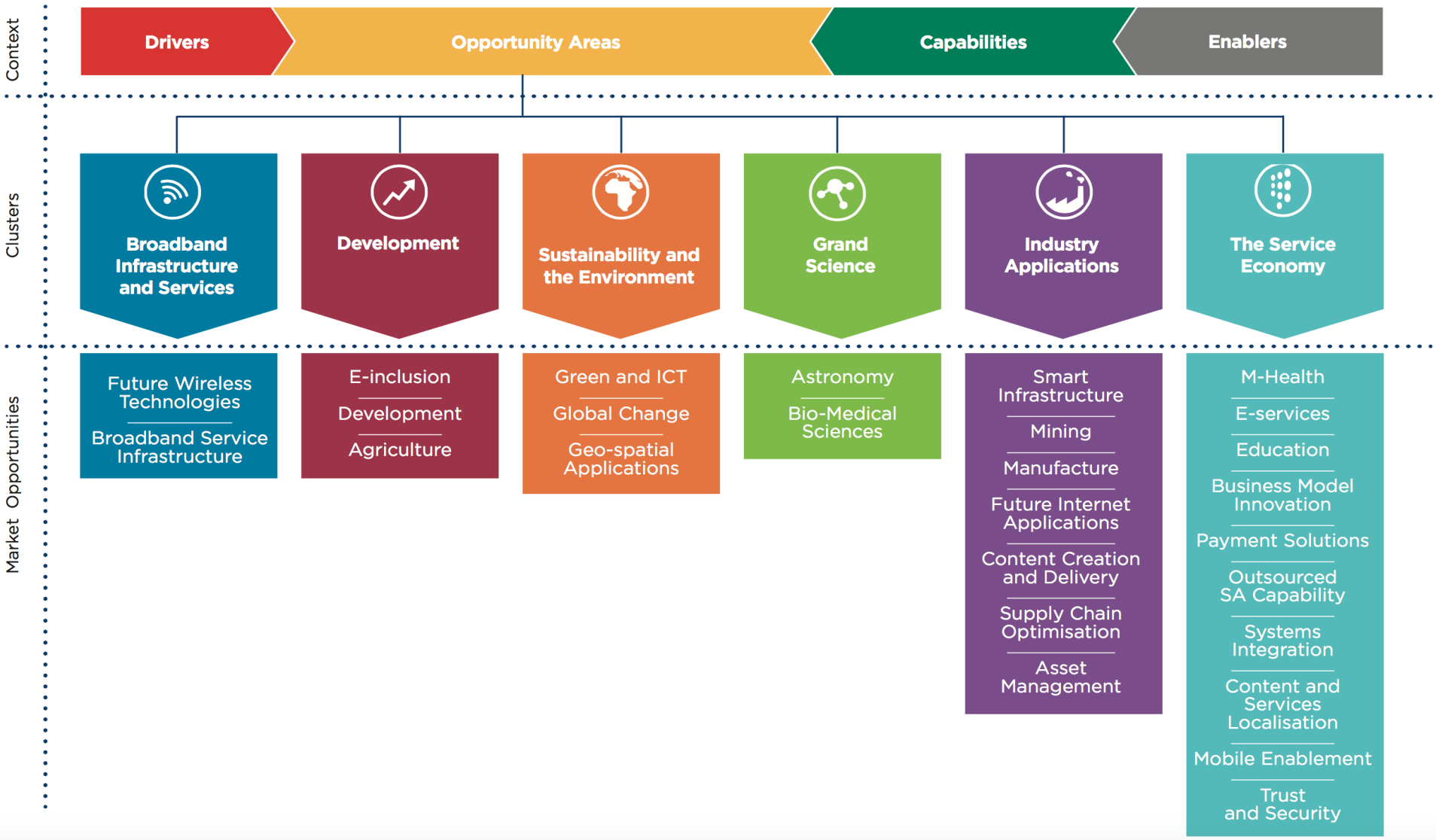


CSIR
our future through science

AEROSUD
Innovation & Training

aeroswift

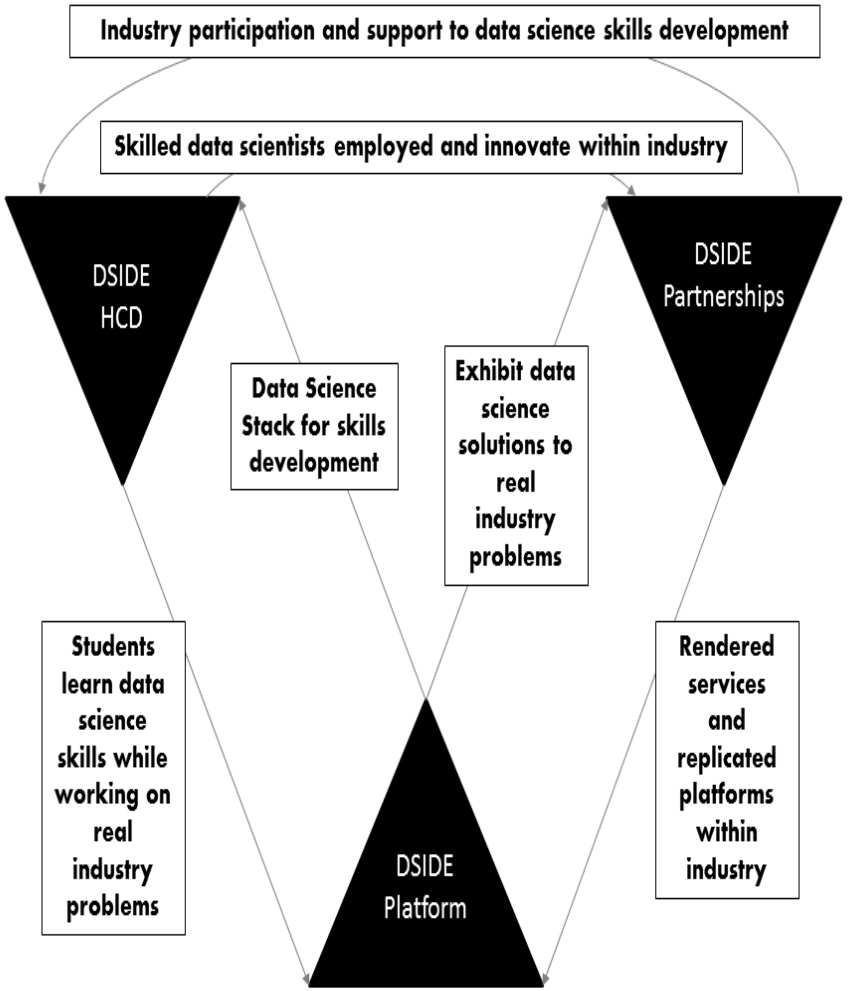
ICT RDI Roadmap (2013)



Source: DST and Council for Scientific and Industrial Research

Accelerated Capacity Building in Data Science (DSIDE)

- Since 2014, 149 trainees
- 88% black, 31% female
- 40+ employed at financial, ICT and energy companies.
- Targets for 2018/19 and 2019/20 are 60 and 70 trainees respectively.



Mobile Laboratory Southern Africa (mLab)

- In 2017/18, 26 start-ups.
- Number of youth trained in coding skills (Skills Academy) in last three years is 394.
- Expansion of the mLab outside to Limpopo, Northern Cape and Mpumalanga.
- Target to train 60/year/province for 3 years.

Some of the mLab startup graduates: GoMetro, AftaRobot, Afroes and Tour2.0

GoMetro

Capacity
Research & Dev

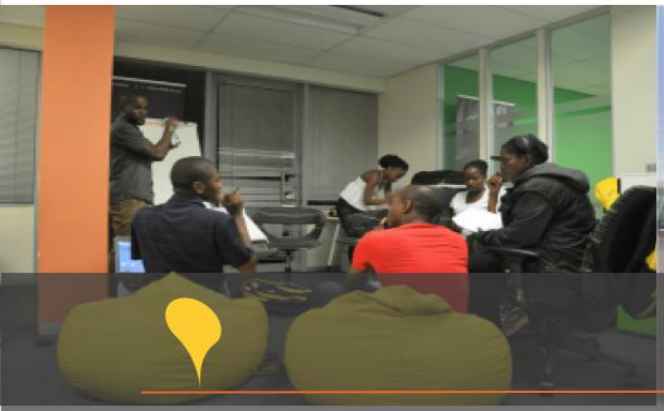
Business
Entrepreneurial development

Use
Products & Services

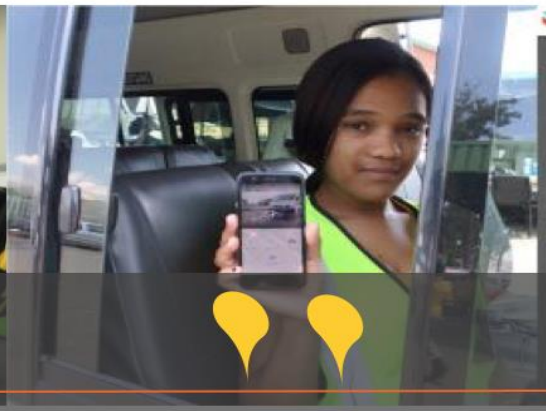
&

Readiness
Maintenance

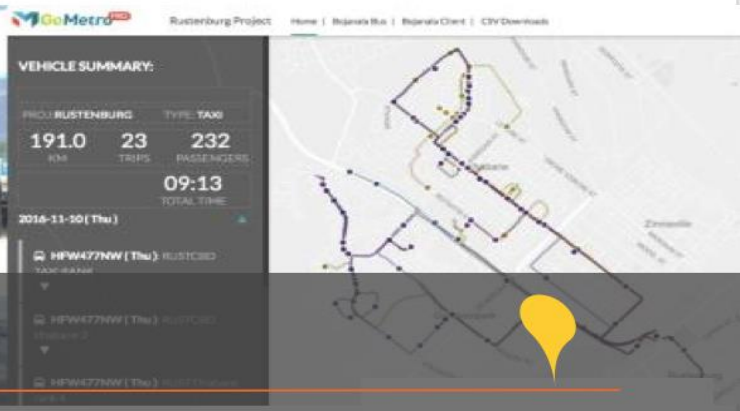
Impact
Outcomes



Capacity development and initial support via mLab (CSIR & DST)



Get Real Updates Anytime for Metrorail in Gauteng, Western Cape, KZN and Eastern Cape



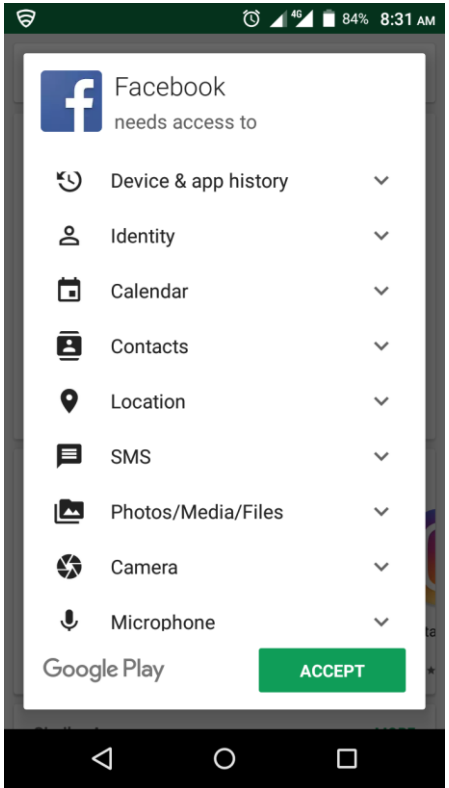
Cape Town Start-up Part of Google's Dreamteam

Source: Council for Scientific and Industrial Research

CSIR
our future through science

Risks of increased digitalization

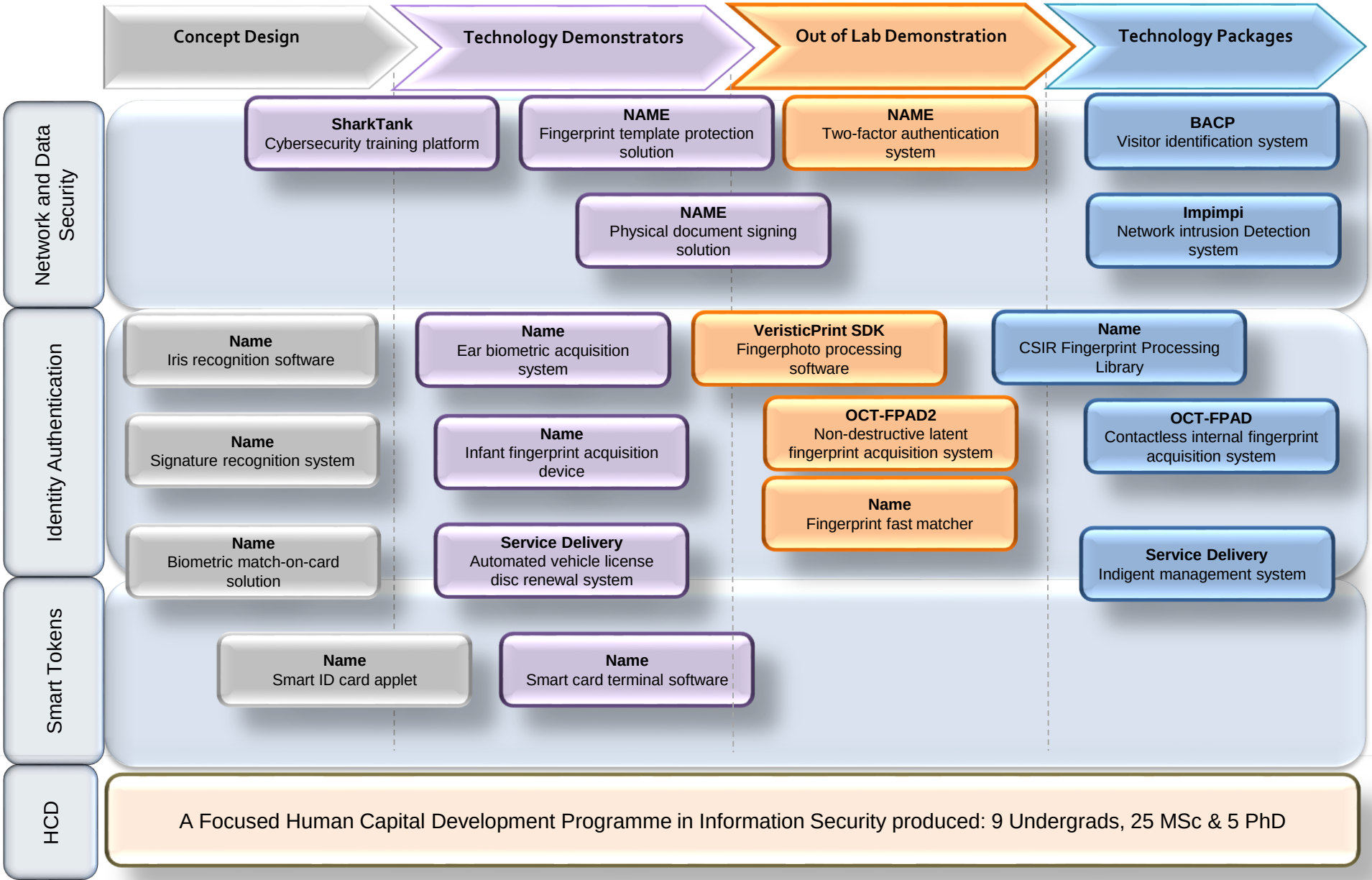
Source: Shutterstock and venturebeat.com



Source: id:analytics

Trust and Security

Building Capabilities in Cyber/Information security



Industries and Skills Gaps

Global shortfall of 2.9-million data scientists with 1,000's required across corporate South Africa (Source: Business Report).

Skills in highest demand on LinkedIn, South Africa. (Source: LinkedIn, 2017)
1. Statistical analysis and data mining
2. Java development
3. Network and information security
4. Mobile development
5. Perl/Python/Ruby

Industries that could benefit from the 4th Industrial Revolution (RIF)

Domains related to RIF	Industry
Artificial Intelligence	E-Commerce (Smart logistics)
Data analytics	Health
Internet of Things	Production lines
5G Networks	Telecommunications

Industries Impacted by FIR

Conclusions

- Digitalisation and digital disruption are a reality, and South Africa needs to embrace this global trend or risk becoming less and less competitive on the global stage, despite the associated risks and fears.

- The DST is currently investing in the technological building blocks of the Fourth Industrial Revolution, and plans to develop a public-funded science, technology and innovation plan of action over the next 12-18 months for Socio-Economic impact in the context of this revolution.

- Through smart investments in research and development, informed by the country's developmental challenges and societal imperatives, the DST is helping to support South African industry to grow and create more jobs through building scientific, technological and knowledge-based capabilities which are relevant to the era of rapid technological change that we live in today.

Dankie
Enkosi
Ha khensa
Re a leboga
Ro livhuwa
Siyabonga
Siyathokoza
Thank you