



Demystifying the 4th Industrial Revolution

South African and African Innovation Context





Demystifying the 4th Industrial Revolution

The Fourth?

Industrial??

Revolution??

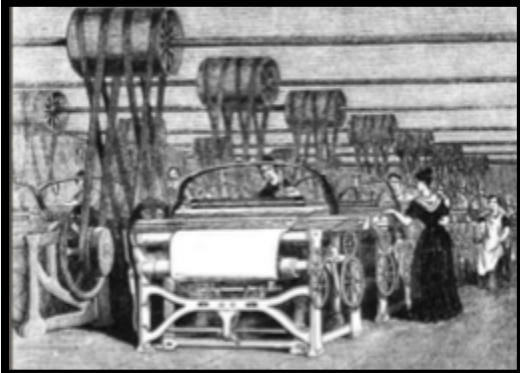
First “three” industrial revolutions



FIRST INDUSTRIAL REVOLUTION

(~ 1765 to 1840)

- Steam Power
- Rise of the Factory System
- Machine tools, chemical manufacturing, iron production



SECOND INDUSTRIAL REVOLUTION

(~ 1870 to 1914)

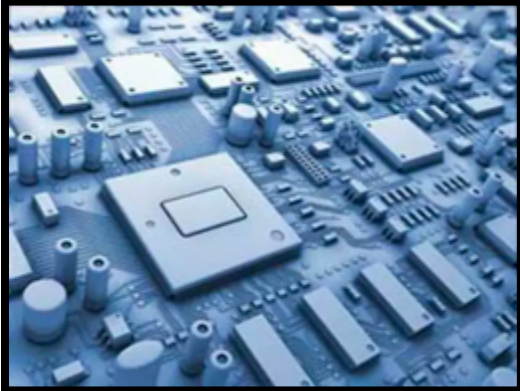
- Electricity
- Rapid industrialization, telephone, rail
- Increased inter-connectedness



THIRD INDUSTRIAL REVOLUTION

(1970 to today)

- Microprocessors
- Rise of electronics
- Telecommunications, automation



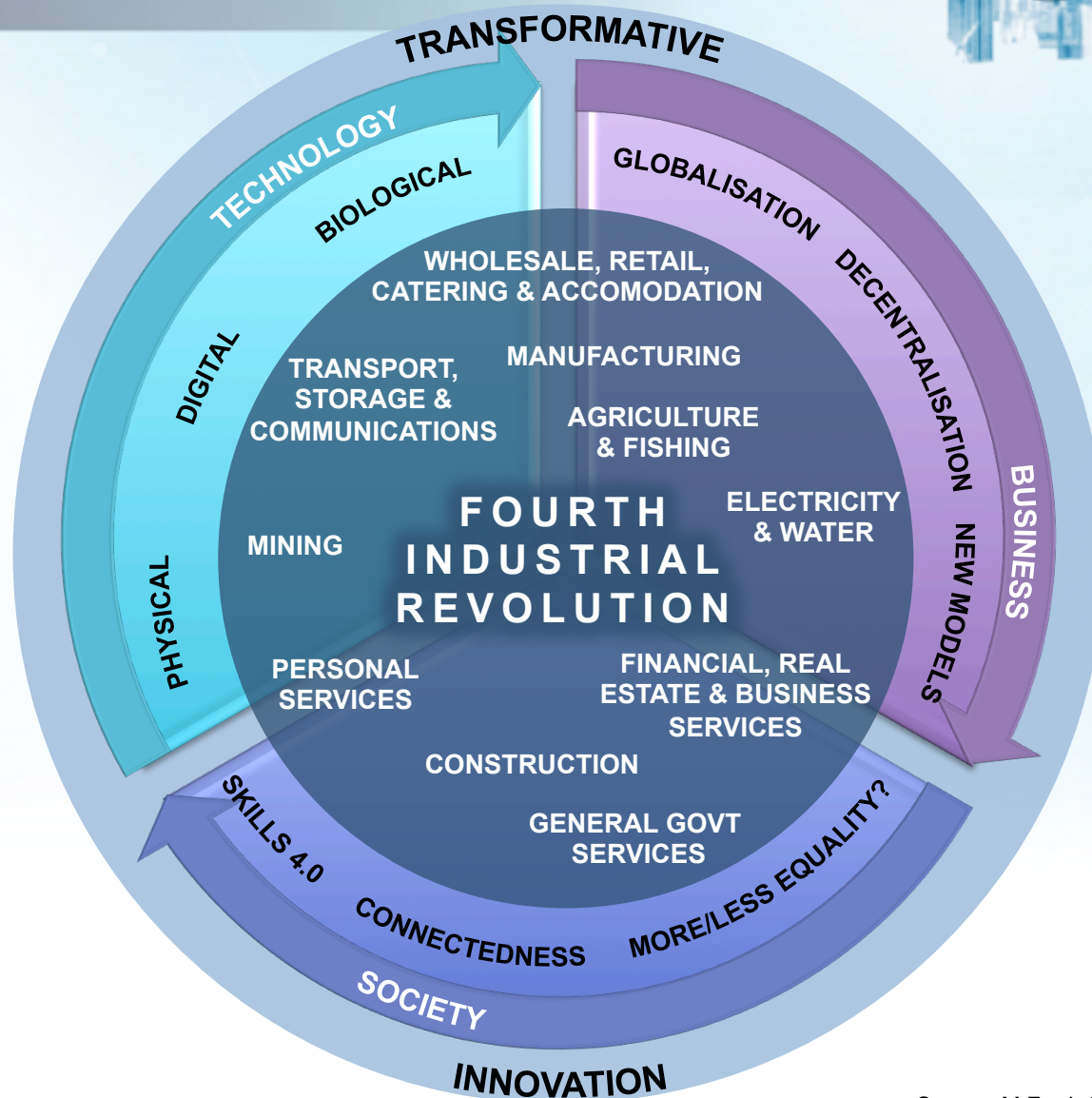
The “Fourth Industrial Revolution”



*The fourth industrial revolution refers to the **fusion of technologies** in the **physical, digital and biological** domains leading to the creation of new technologies that will usher in a new industrial era characterised by **exponential growth, inter – connectedness, increased human productivity and the blurring of the lines between man and machine.***



Not Just Industry!



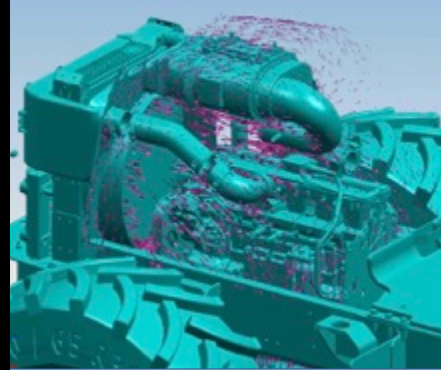
Technology Revolution??



Advanced Robotics



Big Data & Analytics



Big Data & Analytics



Augmented Reality



Digital Integration



Advanced Manufacturing



Cloud Computing



Internet of Things



What Should we be
doing?

Conducive Environment

Science, Technology
& Innovation

Policy & Governance

Workplace Learning

Key Institutional and System-wide elements



A conducive and supportive policy environment



State support instruments and incentives



Research, Development & Innovation Environment



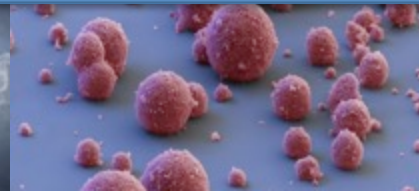
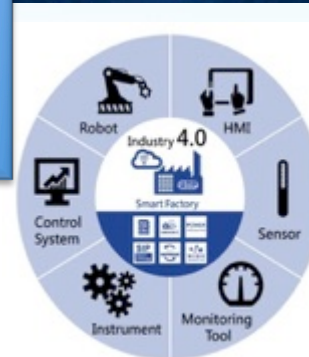
Public-private partnership models and instruments



Science, Technology & Innovation - Converging Technologies Platform

- **Advanced materials (Nano/Alloys)**
- **Micro-nano electronics**
- **Industrial biotechnology**
- **Photonics**
- **Geoengineering**
- **Additive manufacturing (3D Printing)**
- **Advanced robotics**
- **Artificial Intelligence**
- **Neurotechnologies**
- **Space technologies**

- **Big data**
- **Predictive analytics**
- **Cloud computing**
- **Internet of Things**
- **Embedded linked sensors**
- **Augmented reality and wearables**
- **Blockchain**
- **Energy Capture, storage and transmission**
- **New computing technologies**

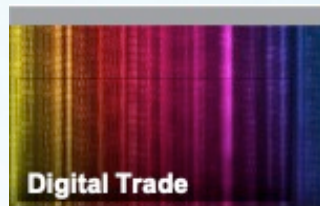
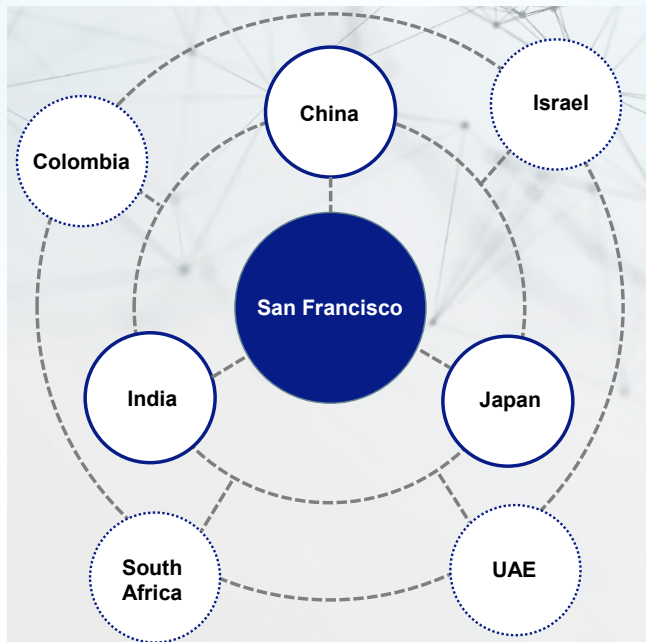


South African Centre for the 4th Industrial Revolution

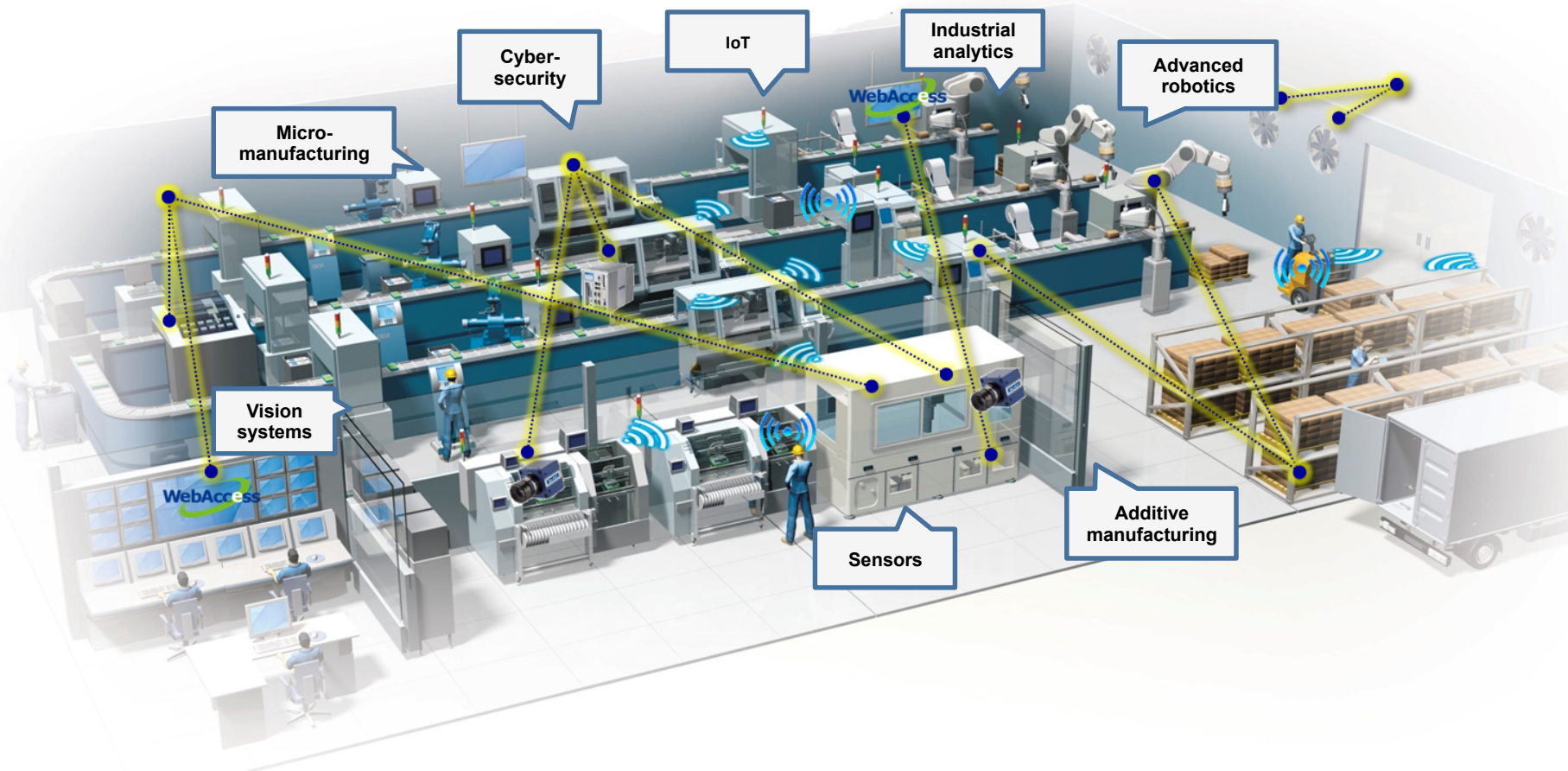
Associate of the WEF C4IR global network



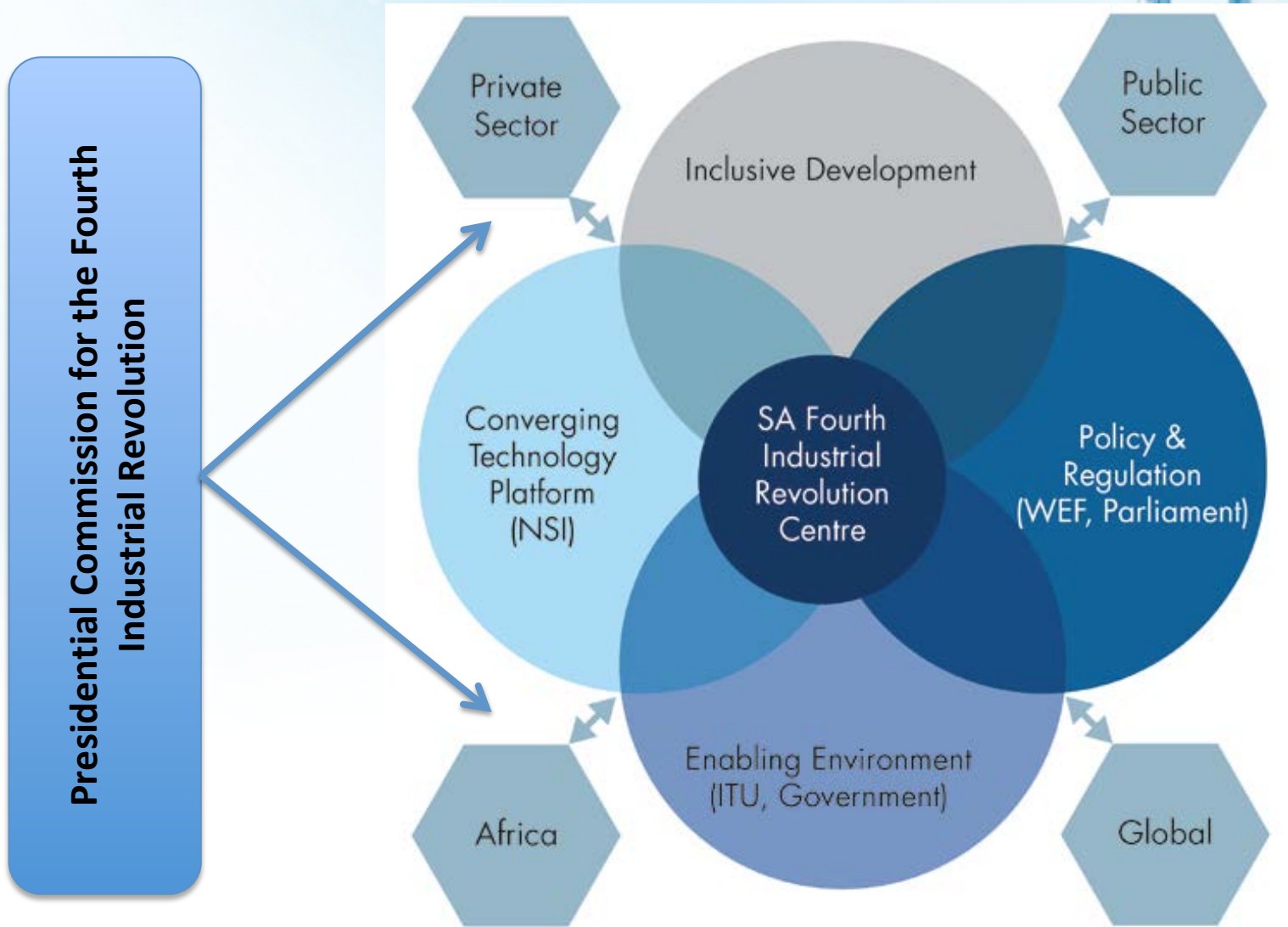
- The Centre focuses on developing, piloting and scaling agile governance tools that can be adopted by policy-makers, legislators and regulators around the world.
- The Centre identifies pressing economic and social challenges that can be addressed in innovative ways using science and technology advancements.



Learning factories



Implementation Platforms





THANK YOU