C4IR SA Overview

Presentation to SADC
31 March 2021

CENTRE FOR THE FOURTH INDUSTRIAL REVOLUTION
South Africa
HOSTED BY THE CSIR

Contents

C4IR Network Overview

- C4IR Network is dedicated to co-designing technology governance protocols that accelerate the application of science and technology.

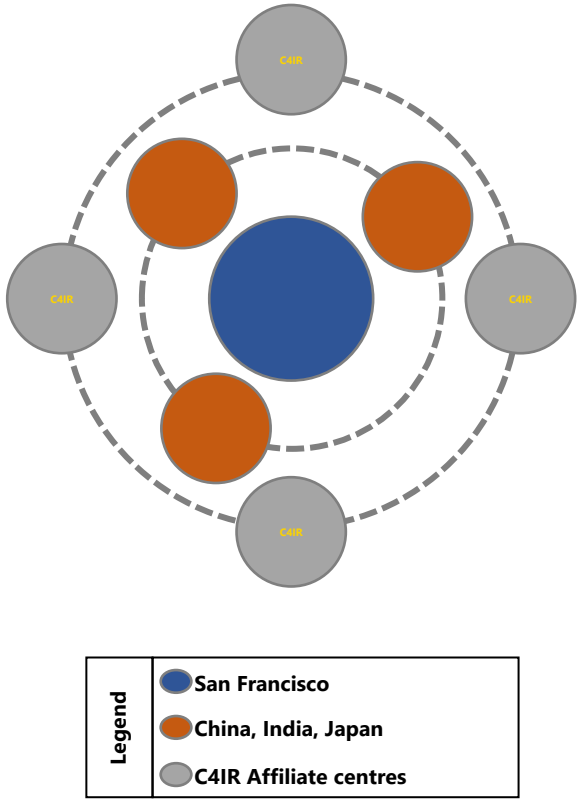
C4IR Global centres

- **Global Centres**

  WEF Centres in China, India, Japan and the US, where the Forum has had long-standing operations and a strong business partnership base, will be **managed by WEF**.

C4IR Affiliate Centres

- Affiliate Centres in other strategic markets are **managed locally in each country** to maximise flexibility based on local and regional priorities and business interests. Rwanda and South Africa are the only African countries that have those centres. The South Africa affiliate centre is known as the **Centre for the Fourth Industrial Revolution South Africa (C4IR SA)**, it hosted by the CSIR.



Partnering with C4IR SA

- **Government Partners**

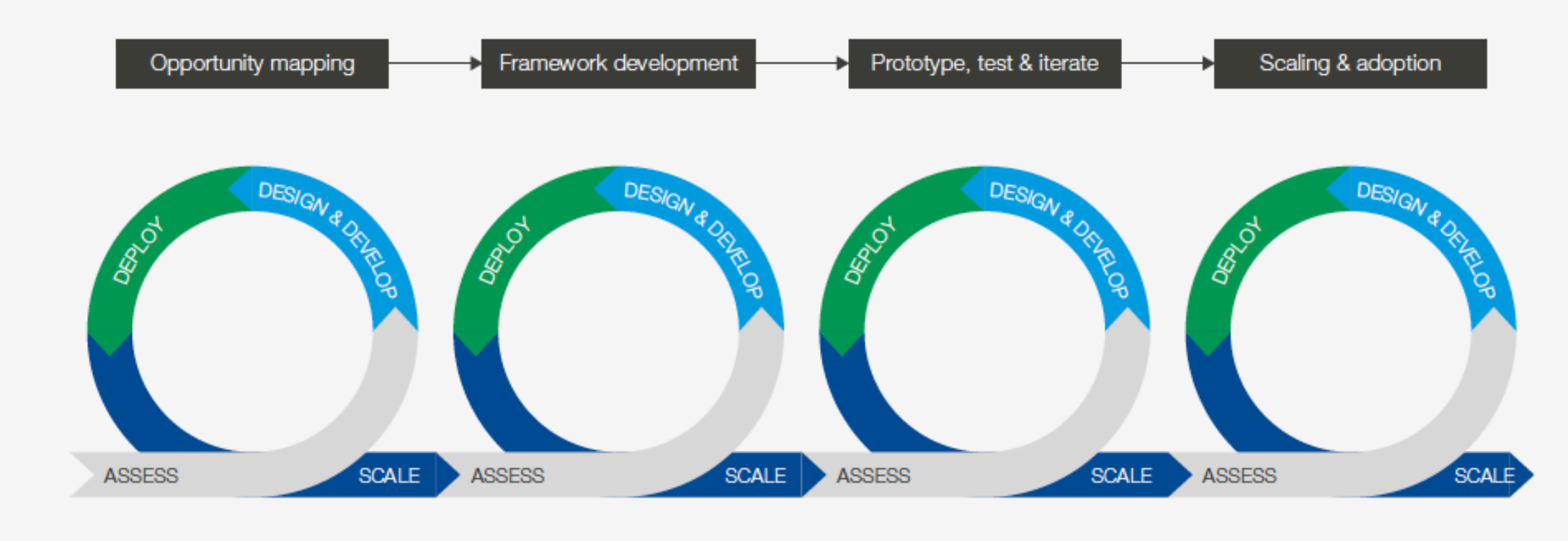
  Government partners will **host, support** and **advance** the development and deployment of pilot protocols and launch projects with the centre.

- **Business Partners**

  Business would partner through various membership categories, secondments of staff to the Centre, to enable **constant cross-fertilisation of insights and knowledge sharing** throughout the Network.

Agile Framework

- The C4IR Network's Agile Framework for **creating impact** involves building communities of interest, purpose and action across the public, private, academic and civil society sectors to identify **key levers for impact and trigger systemic change**. This is manifested through a consistent platform design and delivery methodology across the whole network.



Categories of governance protocols

1. Strategy, knowledge or insight output

Applicable where **technology is evolving and governance parameters are being explored or not clearly defined**

Outputs include; Guidelines/decision trees (non-binding), Strategic plans, Reports, White papers, Policy briefings, Industry insights

2. Protocol or governance model

Applicable where there is **more clarity on use cases and the application of technology but guidance is needed** for wide-scale and inclusive adoption

Outputs include; Principles/protocols/policies (non-binding), Implementation toolkits, Governance toolkits, Requirements (e.g. for procurement), Incentive structures, Best practice standards

3. Policy template to guide concrete regulation

Applicable where **governance gaps for technology more clearly identified and more clarity on type of policy output** e.g. regulation

Outputs include; Principles/protocols/policies (binding), Guidelines (binding), Government regulation, Certifications, Industry standards/norms, Standard operating procedures

Business Partnering options

- Different set of partnership models have been adopted across the C4IR Network
- Partnership models for C4IR SA will be finalized during the establishment phase, three tiers of partnership are envisaged:
  - **Tier 1** – Have broader interest in the centre and are involved in the governance of the centre. They make a financial contribution to the operational costs of the centre.
  - **Tier 2** – Have interest in the projects and are involved in the governance of the projects. They make financial contribution to the costs of running the projects.
  - **Tier 3** – Participates in the communities that form part of the methodology of delivering projects, but are not involved in the governance of the projects

ICT SMME Project Overview

Future of the Connected World Initiative

Mobilisation of industry and the public sector to shape the development of the Internet of Things. The participating countries are working together to help build the technological capacity of small and medium sized enterprises. The partnership aims to provide training and support services to over 3000 companies in the next 3 years.

Partnering countries:

 Brazil

 Turkey

 Colombia

 Saudi Arabia

 South Africa

Critical areas:

- Building transparency and trust into IoT technologies
- Ensuring public privacy and security is protected
- Providing equal access for all
- Incentivising the use of IoT to help solve humankind's biggest challenges
- Brining people together to create global consensus on these critical issues

Brazil was the first country to run the project. The have completed first three phases and they are entering scaling phase

The rest of the countries are looking to apply to phase two to the country unique circumstances and proceed to phase three quickly

Next two slides show Brazil experience

Project Overview - Brazil (1 of 2)

Brazil's manufacturing industry is still lagging in it's digital transformation, with most organisations still transitioning from the 2nd and 3rd industrial revolution. The IoT offers benefits such as connectivity, efficiency and reliability which can be leveraged to unlock operational efficiency and growth in the manufacturing industry

BACKGROUND

SMMEs in Brazil represent approximately 99% of enterprises, 60% of employment and more than 50% of economic value creation. However, SMME productivity was only at 53.2% of the average industry.

This project sort to understand how public policies can accelerate technology adoption, specifically IoT in industrial SMMEs to address the challenges of productivity, competitiveness and labour reskilling.

Entity	People	Data	Technology	Operations	Value Chain
Lack of knowledge of IoT value and strategy by leadership	Lack of qualified personnel for digital and IoT capabilities	Low understanding and usage of analytics and big data strategy	Low use of digital technologies in the production site	Low level of digital technologies and data usage to support operations	Low levels of digital platforms use for connecting with clients and suppliers

PROJECT SOURCES AND PARTNERSHIPS

To address the implementation of the project was dependent on the collaboration of stakeholders from government, industry, funders, universities, research institutions and private sector companies.

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Project Overview - Brazil (1 of 2)

There are five objectives we will achieve by the end of the session

Workstreams

The engagement was divided into two work streams:

1. **Policy:** economic impact and KPIs, funding models and industrial policies
2. **Implementation:** business and use case definition, solution design, vendor selection and implementation and operating model changes

Business & use case definition

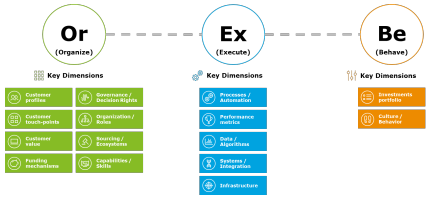
Maturity Model
Used to assess important dimensions that impact the adoption of Industrial IoT

Through these work streams, seven use cases were developed:

- Asset tracking (tool and products)
- Machine learning (production process optimisation)
- Sensing (equipment and machinery)
- Image quality control
- Process scanning (paperless)
- Digital twin
- Telemetry and power consumption analysis

Operating model changes and deployment

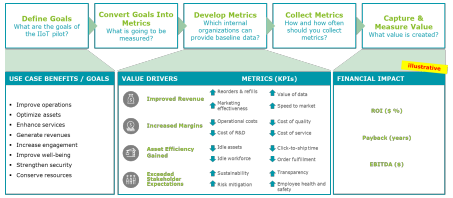
Defining operating model dimension



- Defined the effective structure, processes, capabilities, culture and behavior that will underpin the IoT strategy

Economic impact and KPIs

Economic impact methodology



Defined use case goals, value drivers, metrics (KPIs) and potential financial impact.

PILOT MAIN FINDINGS

- SMEs need assistance with accessing financial resources for IoT adoption
- Public seed money is vital to create awareness
- Regardless of the sector analysed, the maturity level of the SMEs is uneven (and usually at the lower end of the spectrum)
- SMEs don't employ professionals with the necessary knowledge for selecting and implementing 4.0 technologies
- SMEs require external support when selecting the right technologies
- Most Brazilian SMEs lack the skills for self-assessing their problems and bottlenecks, becoming dependent on consultant to improve their processes
- SMEs struggle with calculating ROI, making it difficult to source funding
- SMEs know of 4.0 technologies but do not know how it can be applied to them

Delivery Approach and Milestones

There are many industries that can benefit from 4IR technologies but it is important to take a more focused approach by identifying industries that will benefit the most and will have the maximum level of impact on the economy

	1. Inception	1. SELECTION	2. ASSESSMENT	3. SOLUTION DESIGN	4. IMPLEMENTATION	5. EVALUATION
	February - March Industry Prioritisation Workshop	April	May	June	July - Oct	
High-level Activities Delivery Partners	• Industry Selection • SMME Archetype Definition • Define application process for SMME • Identify key delivery partners and responsible areas of work • Identify key stakeholders and agree on stakeholder engagement Approach • Finalise Agreements with key partners • Agree selection process with key stakeholders	• Formulate policy options to be tested through the pilot • Identify existing policies that may require alignment • Refine Evaluation Methodology • Initiate selection process • Conduct final Selection • Inform Selected applicants and finalise terms of applicants role	• Conduct baseline assessment of applicant • Conduct Digital Maturity Assessment • Conduct Bootcamp onboarding • Define incentive structure for the implementation stage • Assess development requirements Demand side	• Assess existing use case for fit • Develop business case • Create reference architecture and cost benchmarks • Set up mechanism for incentives disbursements • Assess development requirements Supply side	• Scan Ecosystem for potential suppliers • Define Supplier requirements • Conduct Supplier selection process • Manager solution implementation • Provide Solution Mentoring • Conduct Performance Monitoring	• Conduct Survey amongst SME • Review overall impact of investment and intervention on the organisation, their customers and their value chain • Evaluate Policy Options • Provide recommendations on Policy Implementation • Propose scale-up Options for the programme

African Smart City Alliance (Starting with SADC)

- Evaluating a proposal to develop a regional smart cities community for South Africa, connected to the G20 Global Smart Cities Alliance (GSCA) and anchored in C4IR South Africa.
- Latin America will soon be launching a similar model with C4IR Columbia being the lead.
- India is also launching a similar model led by the C4IR Forum centre in India.
- The G20 Global Smart Cities Alliance has rapidly created a global community of cities, experts and institutions, working together to accelerate the adoption of better policies for more ethical and responsible deployment of smart city technology.
- At a global level, there are 36 cities working on adopting 5 initial model policies created by a community of more than 60 experts.

How we envisage our community to work

- Dedicated community lead – C4IR SA, as project specialist
- Fellows supporting on specific policies – Each model policy has a Fellow assigned to exploring policy specific issues with the cities. Fellows can come from any city win SADC
- City focus – At least one city in each country in the region. City of Ethekwini is already a member of G20 Alliance led by the C4IR network centre in Japan.
- Monthly meeting – the community will holds a closed officer-level meeting.
- Support from political leadership – Participation is supported by city mayors who regularly feature in panel sessions that the team produces.
- Regular catch-ups with global lead – i.e. I meet with Rushi (lead for the project at network level) at least once a week.

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THANKING YOU

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