

# National ICT R&D and Innovation Roadmap



South Africa-VINNOVA Workshop

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



# National ICT R&D and Innovation Roadmap

The ICT R&D and Innovation Roadmap is key guiding framework for DST's ICT RDI activities towards having impact on:

- Supporting delivery on national priorities by government departments and impacting on both socio and economic dimensions
- Leveraging on existing Government programmes, policies and projects for the benefit of the South African ICT RDI landscape.
- Attracting Foreign Direct Investment (FDI) into South African ICT R&D



# Underinvestment in ICT R&D, in international comparison

2013 data, pa

	Population (million)	GDP \$Bn	GERD % GDP	ICT R&D as % GERD	ICT R&D as % GDP	ICT R&D Expenditure (\$Bn)	ICT Sector Size (\$Bn)
<b>South Africa</b>	<b>52</b>	<b>350.6</b>	<b>0,78%</b>	<b>8,4%</b>	<b>0,065%</b>	<b>0,22</b>	<b>29</b>
<b>Brazil</b>	200	2 246	1,3%	19,4%	0,46%	10,3	110
<b>South Korea</b>	50	1 305	4,2%	44,8%	1,93%	25,1	261
<b>Australia</b>	23	1 056	2,4%	15,9%	0,38%	4,0	129
<b>Taiwan</b>	23	475.3	2,3%	19,0%	1,85%	6,4	200

► South Africa spends close to 10% of GDP on ICT goods and services, of which most are imported

► ICT R&D intensity as a % of GDP has decreased from 0.12% in 2009 to 0.065% in 2013

► OECD Review of the South African NSI - Report: South Africa ranked below bottom five on ICT for Innovation

*To harness the socio-economic benefits of ICT and to be a player in ICT,*

*we must **significantly** increase investment in ICT RDI*





# ICT RDI Roadmap Development

## Background

DST initiated the development of a 10-year ICT Research, Development and Innovation (RDI) Vision and Implementation Roadmap, intended to:

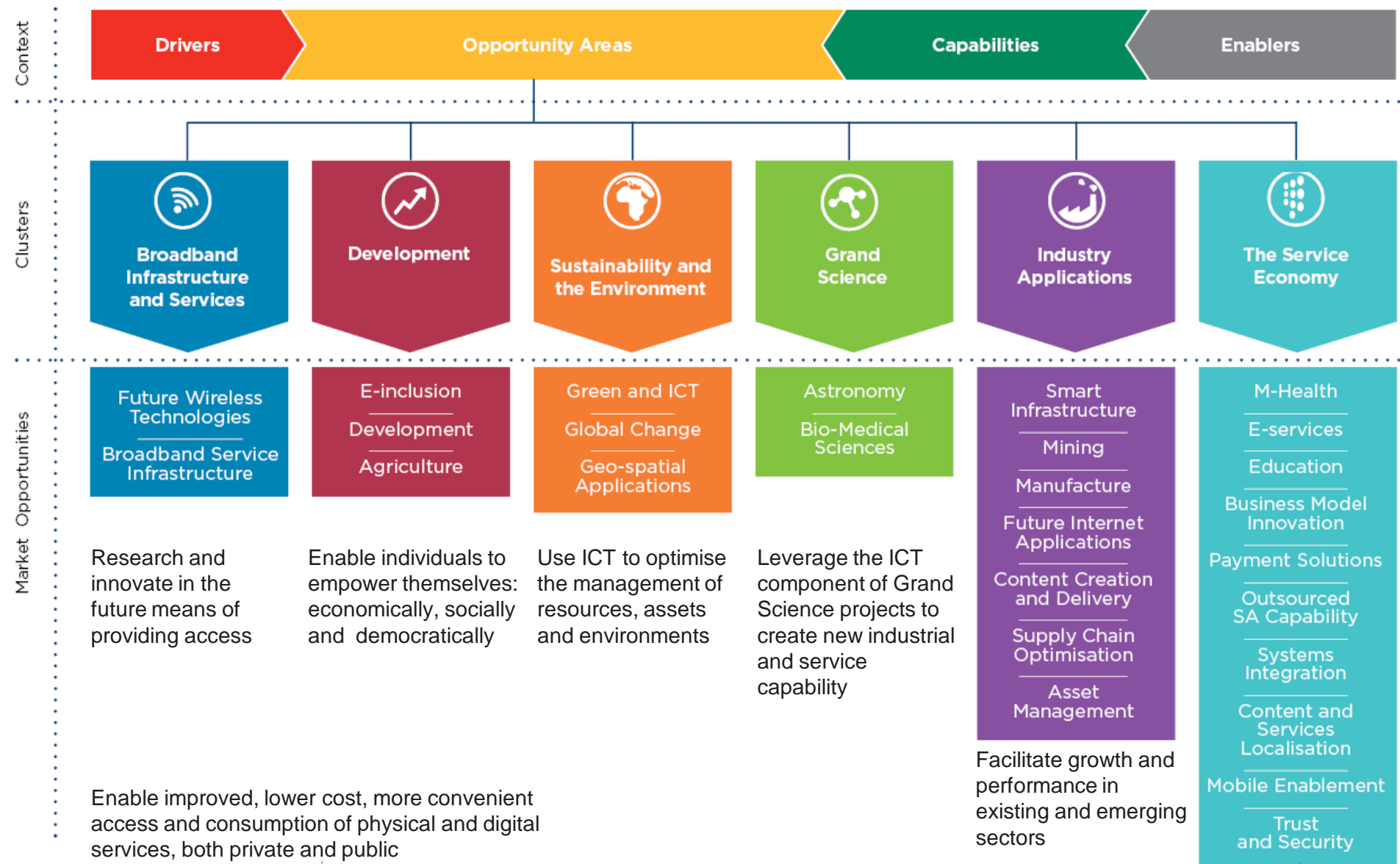
- Take the national **ICT RDI Strategy** to the next level, in a way that strengthens the **local ICT ecosystem**
- Enable DST to develop and implement a set of **specific interventions** required to guide and direct ICT RDI activity in South Africa
- **Position South Africa more competitively** in the global market, taking cognisance of and addressing the challenges facing a developing economy

DST and CSIR Meraka Institute partnered to develop this Roadmap for South Africa

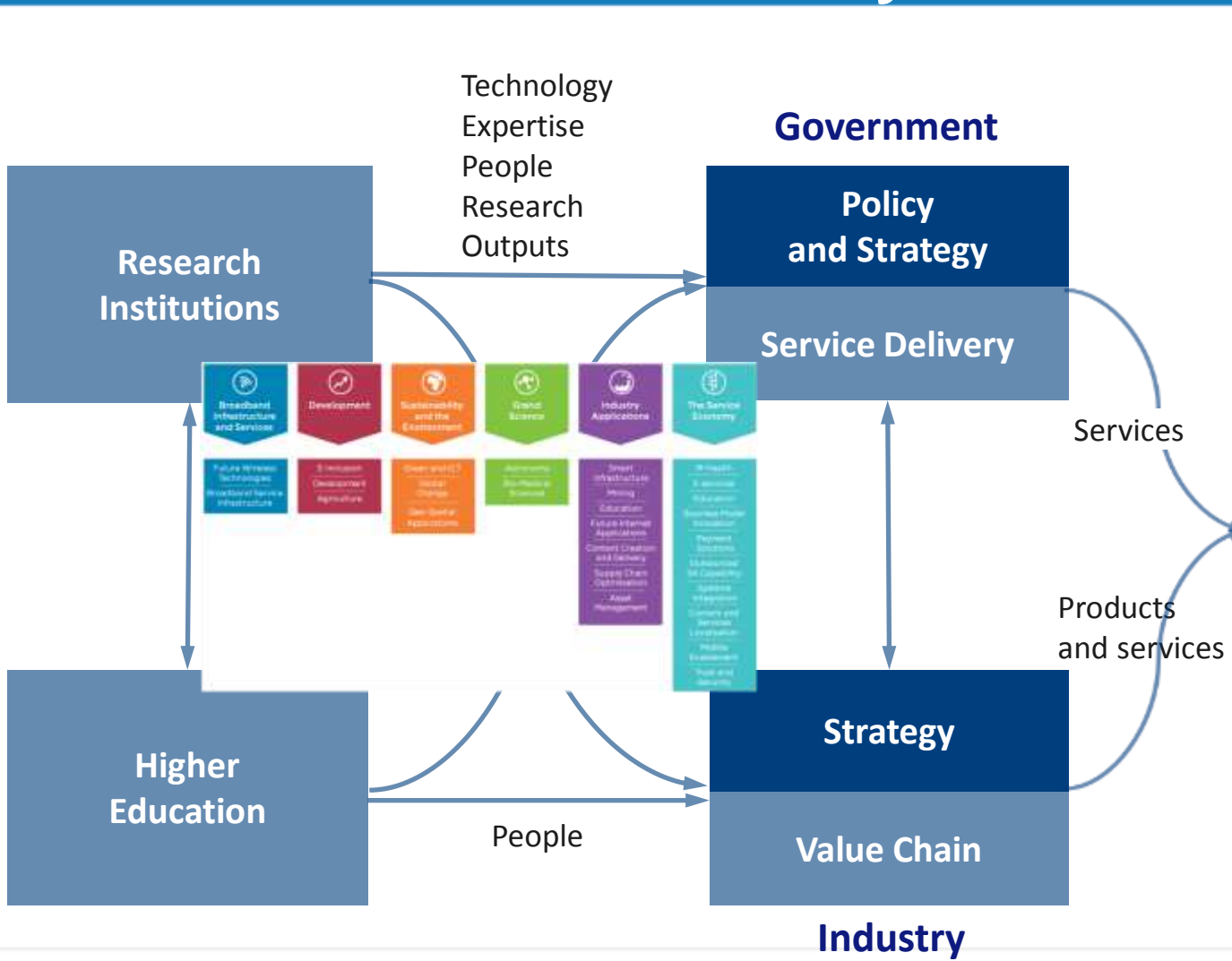
## Intent

1. Enable **increased** public and private **investment** in ICT RDI
2. Provide a **framework** to plan and coordinate technology development, in order **to enable efficient and sophisticated investment decision-making**

# Mission: Deliver Impact, in Alignment with National Priorities




# The Roadmap frames and guides ICT RDI activity – focus is on Impact



- ▶ Improved quality of basic education
- ▶ A long and healthy life for all South Africans
- ▶ All people in South Africa are and feel safe
- ▶ **Decent employment through inclusive economic growth**
- ▶ **A skilled and capable workforce to support an inclusive growth path**
- ▶ An efficient, competitive and responsive economic infrastructure network
- ▶ Vibrant, equitable and sustainable rural communities with food security for all
- ▶ Sustainable human settlements and improved quality of household life
- ▶ A responsive, accountable, effective and efficient local government system
- ▶ Environmental assets and natural resources that are well protected and continually enhanced
- ▶ Create a better South Africa and contribute to a better and safer Africa and World
- ▶ An efficient, effective and development oriented public service and an empowered, fair and inclusive citizenship
- ▶ An inclusive and responsive social protection system
- ▶ Transforming society and uniting the country



# Key RDI Initiatives & Flagships

- Cyber-Infrastructure (SANReN, CHPC and DIRISA)
  - Increasing ICT access and enabling inclusive use of ICTs (SA Connect: Broadband Policy)
    - Rural connectivity: Wireless Mesh Networks and TV White Spaces
  - Incubation Platforms: mLab Southern Africa
    - A mobile solutions laboratory and start-up accelerator that provides entrepreneurs and mobile developers with support.
  - European Union General Budget Support - ICT to support government service delivery
    - Information security, mHealth, Mobile IPTV and Multi-hazard early warning system
  - Supporting national priorities
    - draft Cybersecurity RDI Agenda to support the implementation of the National Cybersecurity Policy Framework
      - Network Emulation and Simulation Laboratory at CSIR
  - Positioning and Capacity Building
    - Intensive internship programme training students in advanced Data Science, resulting in multiple technology demonstrators and data analytic tools for government
    - **Big Data Strategic Framework**
- 



***Leveraging Funding through  
Partnerships with Multinational  
ICT Companies***







# DST's Foreign Direct Investment requirements

- Human Capital Development – bias towards MSc and PhD.
- Innovation and Technology-based SME development.
- World-class research infrastructure, e.g. R&D laboratories and innovation centres.
- Technology transfer – adoption of practices that will foster transfer and diffusion of technology within the existing IRP regime.





# ICT Industry Innovation Partnership: Summary of Fund Objectives and Intent

## ICT-IIP Fund Objectives and Intent

- **Aim** Improve competitiveness of key sectors of SA economy, including the ICT sector
- **Rationale** Foster R&D and Innovation (RDI) partnerships with private sector
- **Approach** Create an enabling environment and facilitate investment in, and uptake of, ICT RDI
- **Outcome** The ICT sector serves domestic needs (uptake & use) to a greater degree and enables increased exports. More specifically:
  - » Private sector (co-)investment secured
  - » Revenues from licensed technologies commercialised
  - » Increased company turnover
  - » Improved productivity in SME's





# EU – South Africa Cooperation

## Current EU-SA Cooperation in ICT

1. ICT FP7: 15 projects (221 overall participation)
2. Two SA Projects under the FIRE Call – Test beds for reliable Smart City M-to-M Communications and Mobile Empowerment for the Socio-Economic Development in South Africa
3. Good response to ICT 39 Call: “International partnership building in low and middle income countries”, has themes such as agriculture, mobile health, open data and public sector delivery.
4. South African ICT Priorities for EU H2020
  - Trust and Security** ==> Cybersecurity RDI Programme
  - Big Data and Cloud Computing** ==> Grand Science projects, e.g. SKA, and the DST Big Data Strategic Framework.
  - Smart Living** ==> Smart Sensor Networks
  - Robotics** ==> Industry Applications cluster of the ICT RDI Roadmap





# THANK YOU

For further information please contact

Email: [peacemaker.dlamini@dst.gov.za](mailto:peacemaker.dlamini@dst.gov.za)

ICT RDI Roadmap: [www.meraka.org.za/ictroadmap](http://www.meraka.org.za/ictroadmap)

DST web address: [www.dst.gov.za](http://www.dst.gov.za)

