ICT Research and Development in Indonesia

Bangkok, 26 February 2015

Ministry of Communication and Information Technology

Republic of Indonesia

Indonesia Profile

- ◉ Archipelago of 17,504 islands. Some of Indonesia's larger islands (Sumatra and Java for example) have large interior mountains.

- ◉ Total Area : 1,910,931 km²

- ◉ 33 provinces :

- ◉ 502 Regencies/Cities

- ◉ 6,633 Sub-Districts

- ◉ 76,155 Villages

- ◉ Population : 237,556,363 (2010). The people are spread out in more than 6000 islands.

- ◉ 62 M household`

INDONESIA POPULATION DENSITY
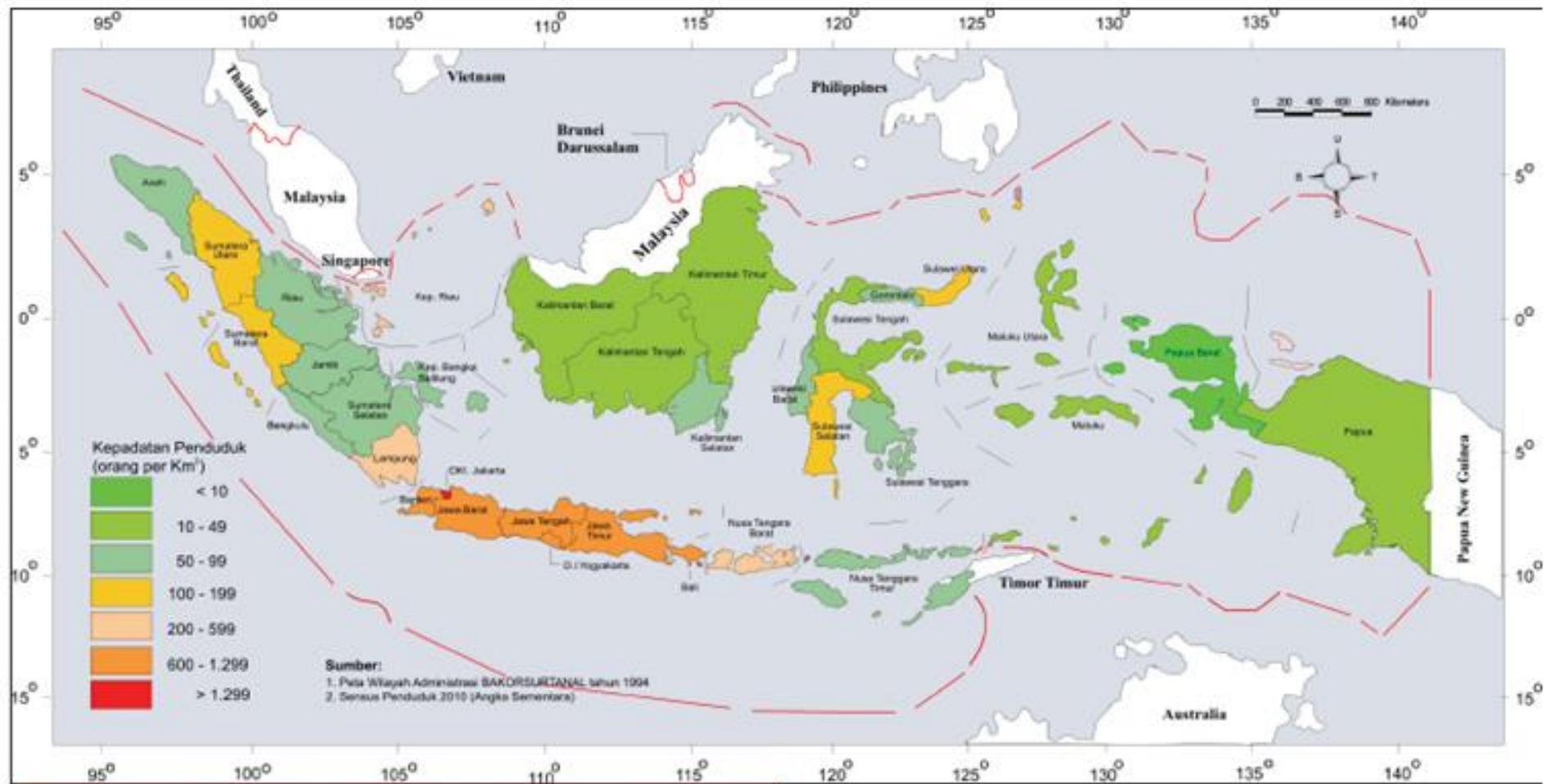
UN Conference on Sustainable Development (Rio+20), Juni 2012

"We recognize that information and communication technology (ICT) is facilitating the flow of information between governments and the public. In this regard, it is essential to work toward improved access to ICT, especially broadband network and services, and bridge the digital divide, recognizing the contribution of international cooperation in this regard."
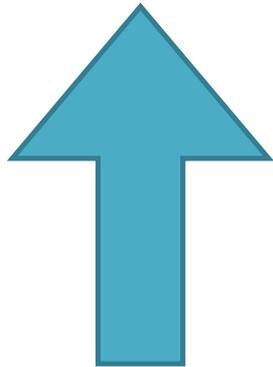
Improved Access to ICT
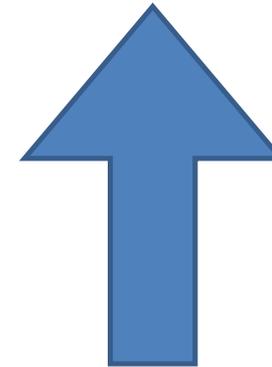
Increased Economic Growth

TELECOMMUNICATION NETWORK
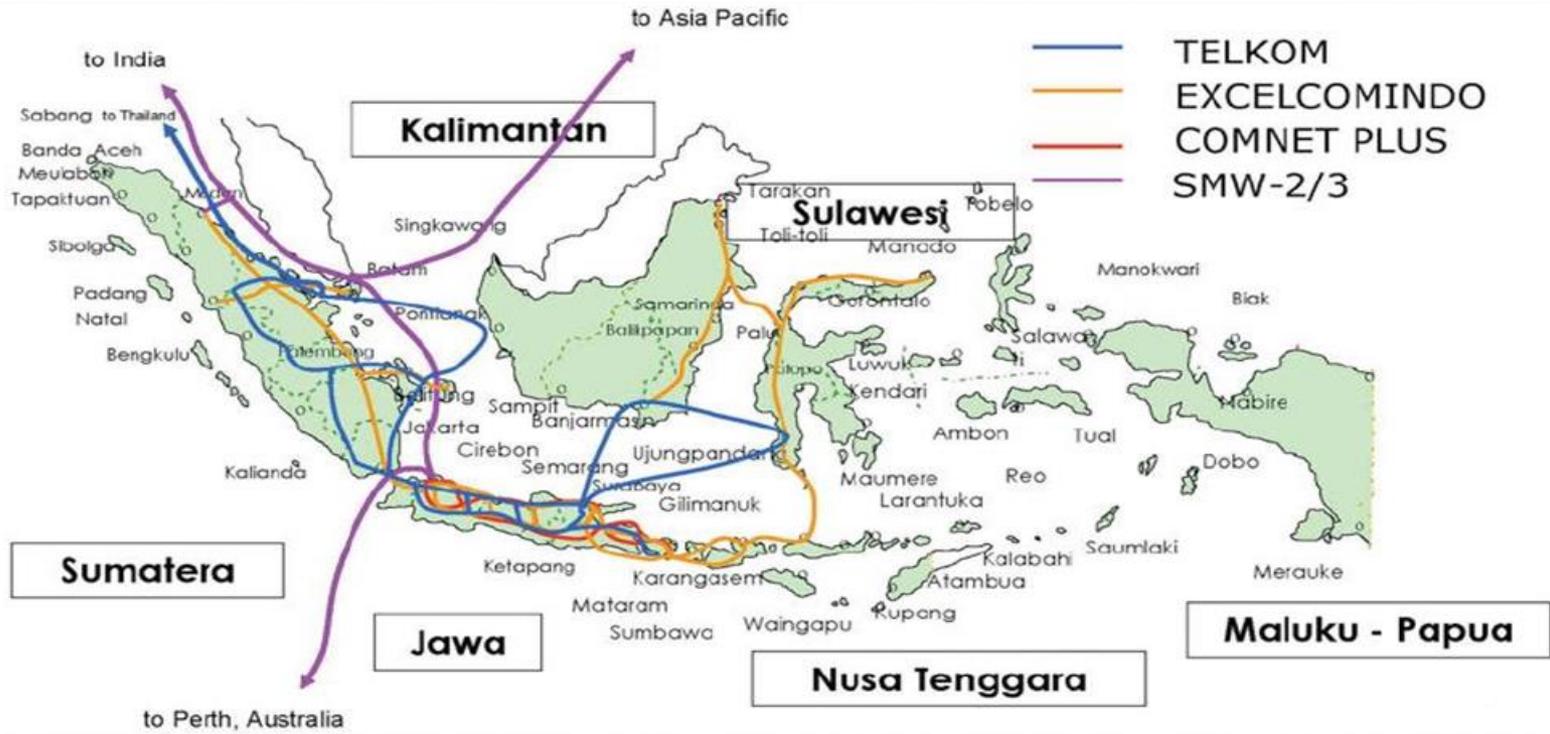
ICT Issues in Indonesia

Infrastructure Gap	Low Information Literacy	Inefficient Spectrum Frequency Use
Expensive Broadband Service	Cybercrime	Not-Connected Goverment Network

National Development Plan

National Longterm Development Plan

2005 - 2025

National Midterm Development Plan

2015 – 2019

Target : Strengthen National Connetivity to Balance Economy and Infrastructure Development

MIDTERM STAGES 2005-2025

RPJMN - 4 (2020-2024)

Realize an independent, progressive, equal and prosperous Indonesian people through acceleration of development in all areas with a solid economic structure based on competitive advantage.

RPJMN - 3 (2015-2019)

Strengthen overall development by emphasizing the development of economic competitive advantage base on natural resource available, qualified human resources, and the ability on science and technology

RPJMN - 2 (2010-2014)

Consolidation of the NKRI reform, improving the quality of human resources, science and technology capacity building, strengthening economic competitiveness

RPJMN - 1 (2005-2009)

Restructure the NKRI, to build a safe and peaceful Indonesia, fair and democratic, with a better level of wellbeing.

Economics competitiveness

Inclusive Development

BROADBAND DEVELOPMENT DIRECTION
CONCEPT OF RPJMN 2015-2019

Most of the broadband infrastructure is expected to be operational in Indonesia before mid RPJMN - 3. Therefore, the development of broadband in RPJMN - 3 is more focused on the level and quality of utilization.

	2012	TARGET 2014	
e-Government Index	2,3 (bad)	3,0 (good)	
Broadband Infrastructure	1,1% (fixed), 22,2% (mobile) thdp populasi	30% population	
	All areas, except Maluku & Papua	100% big islands	
	79,2% reg/city	88% reg/city	
Close the Blank Spot (USO Programme)	93,7% (phone) 100,6% (internet)	100%	
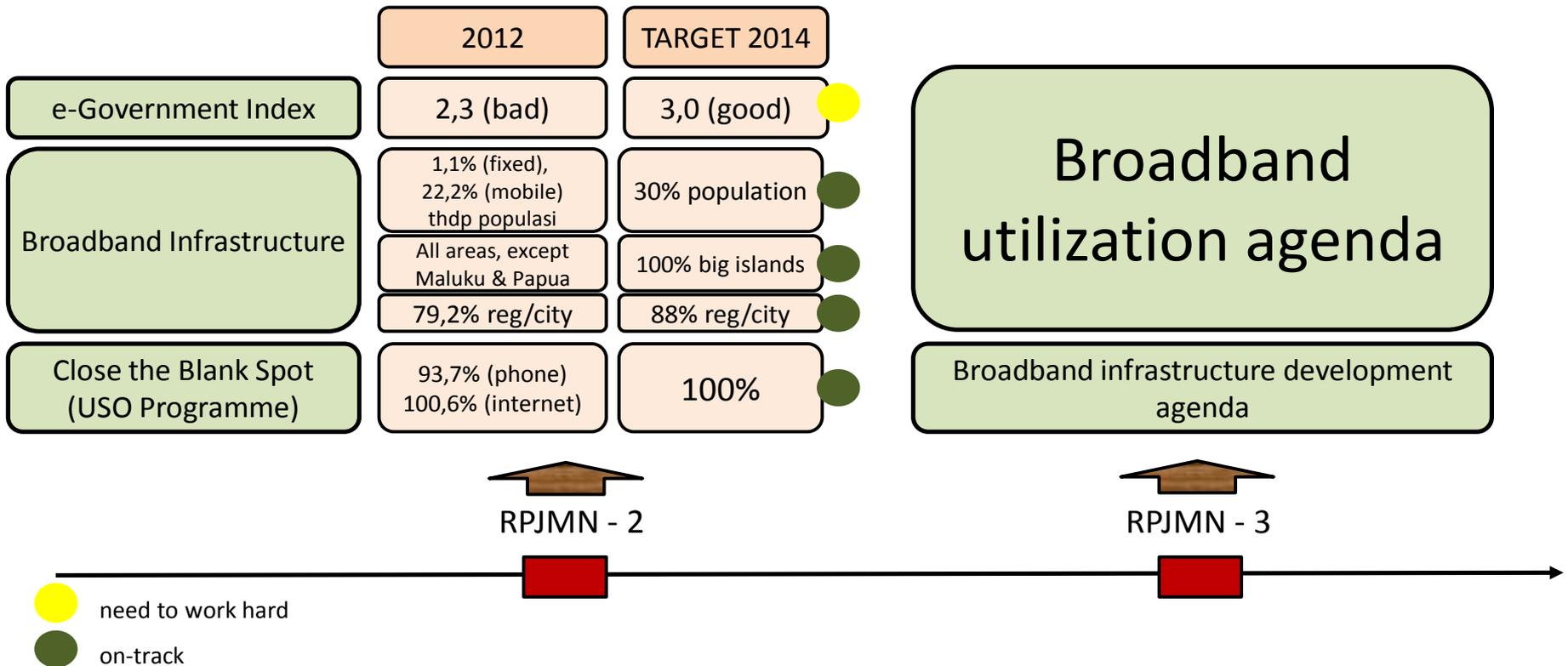
Broadband utilization agenda

Broadband infrastructure development agenda

RPJMN - 2

RPJMN - 3

- ● need to work hard
- ● on-track

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ICT Development Target In National Midterm Plan 2015 - 2019

Minimize Blankspot
- 100 % coverage of telecommunication and internet access
- 80% coverage of TV and radio broadcasting

High Speed Internet Access
- Optic backbone network to reach 497 district/city capital
- 71 % penetration broadband fixed service (20Mb)
- 100% penetration broadband mobile sevice (1Mb)

Optimize Spectrum Frequency Use
- TV analog switch off
- 500 Mhz spectrum frequency available for wireless broadband (LTE)

Connect ICT Goverment Network
- Connected goverment network

INDONESIAN BROADBAND PLAN FLAGSHIPS

- **Flagship 1: Nation wide Backbone FO Palapa Ring**
- **Flagship 2: Shared Duct/Passive Infrastructure**
- **Flagship 3: Rural Terrestrial Broadband Piloting within USO area,**
- **Flagship 4: Government Network and consolidated data center**
- **Flagship 5: USO Fund Reform to Support Broadband ecosystem {not only for infrastructure)**
- **Flagship 6: National Digital Literacy programe to fasten broadband adoption and utilization**

Flagship Program

- Palapa ring

- NIX/IIX

- PLIK/M-PLIK

- Rural teresterial broadband

- Improvement on TV transmitting station

ICT Research Background

- ICT develope very fast
  - *Emerging new technology: Grid, Cloud Computing, RFID, Smartphone, 4G Wireless, etc.*
- ICT do things differently
  - *Emerging new capabilities: Unified communication, Semantic connectivity, Collective intelligence, etc.*
- ICT change the way people do business
  - *Emerging new busines model: Global-micro-business, Personalized pricing, Real-time enterprise, etc.*
    (Source: Gartner, 2006)

Interesting Facts for ICT R&D in Indonesia

- Knowledge divide due to geographically vast creates regional disparities and inequities of resources allocation (a lot of ICT problems domain).

- There are around 950 out of 3150 Higher Education Institutions have study programs related to ICT with around 550,000 students (more than enough human resources).

- ICT investments is growing: ICT-infrastructure procurement such as hardware, system software, and networking, especially for government usage (Continuous ICT spending).

- ICT Policy and Regulation are developed and in place
  - National ICT Council: Coordinating ICT flagships
  - Ministry of Communication and Information: the use of ICT for community access point
  - Ministry of Education: Endorse the use of ICT for teaching and learning

ICT Research Agency in Indonesia

ICT Research Ecosystem

UNIVERSITY

Special Interest Research Group

ICT Department

prototype

Service Provider

funding

INDUSTRY/ Government Agencies

facilities, human resources, expertise, tech. assistance

start-up capital (competitive)

skill dev.

FUNDING AGENCY
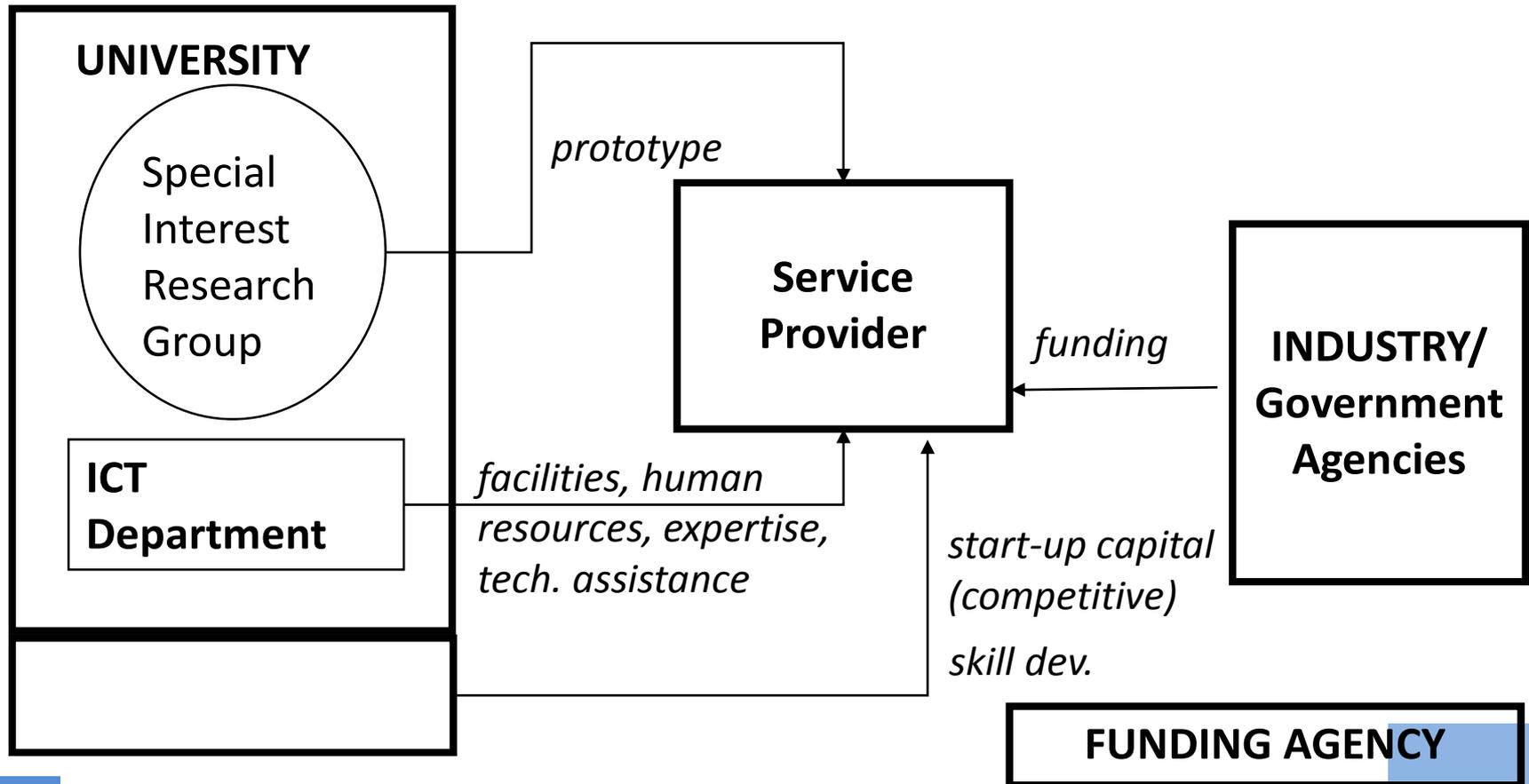
IV. Indonesian Strategies to Develop ICT R&D

- Empower 950 Higher Education Institutions (HEI) that has ICT related study programs (resource sharing & relevance).

- Use government ICT spending to stimulate ICT industry and ICT R&D (setting priorities).

- Establish ICT R&D focal points, according to their specificity (business incubator).

- Establish regional and international ICT R&D collaboration.

Main Focus ICT RnD in Indonesia

Develop ICT Content and Infrastructure for Rural Area

Research in ICT Include :

- IT Security

- Information Content

- Supporting System

Joint Project Between NICT and MICT

Implementasi sistem NerveNet di Indonesia
(NerveNet system : a concept of regional wireless access platform , where multiple service providers to provide services through the use of their respective networks together , and enables deployment of a range of services such as early warning system, eg : disaster early warning system)

Project Stages:

Licensing , technical implementation (field test) NerveNet system in Indonesia in accordance with prevailing regulations .

NerveNet system integration with the facility /device PLIK /MPLIK and TVWSUSO owned by the Ministry of Communications and Informatics

Possibbility for Join Research between MCIT and NICT

Possibility for join research field beetween MCIT and NICT :
- *Telecommunication (frequency, network, wireless technology, rural telco infrastructure, etc);*
- *Broadcasting Technology*
- *ICT application and development (Software and Content development for e-goverment, e-healt, e procurement, e-logistic, etc);*
- *Cyber Security, safe and secure internet;*
- *Capacity building (training, workshop, scholarship);*
- *ICT policy.*

Thank You