REPUBLIK INDONESIA

BROADBAND AS NATIONAL DEVELOPMENT STRATEGY: Indonesia Case

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INDONESIA BROADBAND PLAN

Connect • Innovate • Transform

Outline

1. INDONESIA PROFILE
2. MEDIUM-TERM NATIONAL DEVELOPMENT PLAN 2015-2019: ICT
3. INDONESIA BROADBAND PLAN 2014-2019

INDONESIA BROADBAND PLAN

the world's largest archipelago

scattered rural areas

difficult landscape

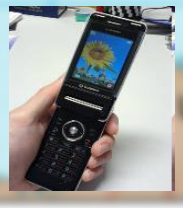
challenging weather

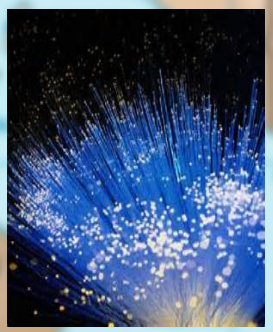
more than 17,500 islands
spanning the length of 3,977 miles
total areas of 1.9 million sq miles

more than 248.8 million people

34 provices; 514 districts;
74,093 villages

Robust ICT connectivity is a must



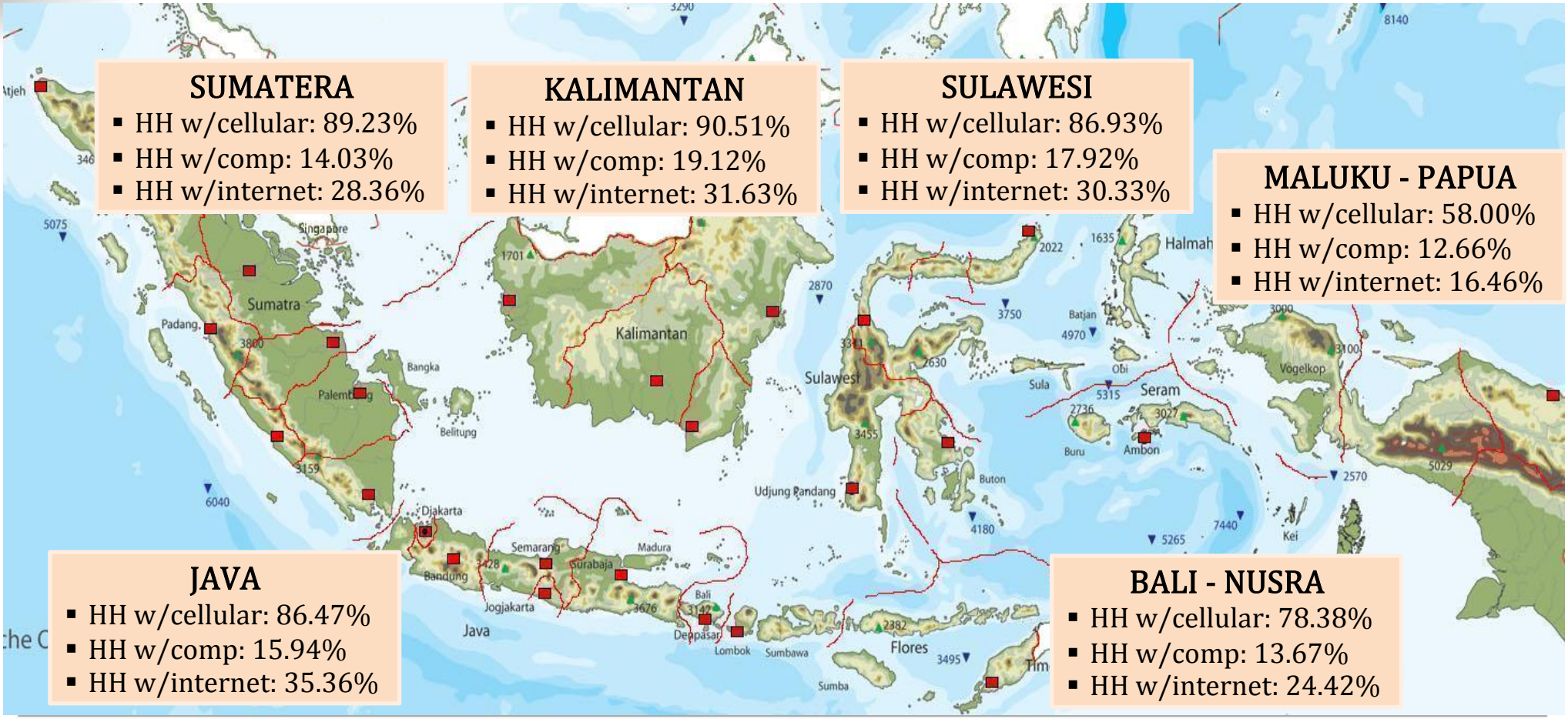


3 source: Indonesia Statistics Agency, 2014

INDONESIA BROADBAND PLAN

ICT Infrastructure

NATIONAL					
HH w/cellular	86.09%	HH w/computer	15.62%	cellular coverage	>90% population
SIM cards	>280 millions	HH w/internet	32.21%	FO backbone coverage	74% districts



4 2013 figures, except FO (2015). Source: Indonesia Statistics Agency, 2014

2 MEDIUM-TERM NATIONAL DEVELOPMENT PLAN (RPJMN) 2015-2019: ICT

Strategic Issues in Infrastructure 2015-2019

Water, Food, and Energy Resilience

National Connectivity

Urban Mass Transportation System

Basic Infrastructure

Infrastructure Funding

ICT as Connectivity Pillar

− Lack of BB infrastructure

- Fixed BB penetration was only 1.1% while mobile BB reached 22.2% (WEF, 2012).
- 95% telco access is wireless-based in the last 5 years. Cellular is also the main access for internet.
- Spectrum crisis. Need additional 350 MHz until 2019.

Uneven distribution of FO backbone

FO backbone covers 74% districts, mostly in western part of Indonesia. FO will cover Papua and Maluku in the end of 2015.

Expensive BB connection

Connection cost of 512 kbps is IDR 600,000 or 23% of average monthly income (IDR 2.57 million).

Unproductive use of BB/ICT

- The growth of internet users in 2002-2012 reached 1,300% while HDI only 13%.
- In public sector, ICT is used mainly for administrative purposes.

+ Huge potential in ICT sector

The growth of ICT contribution to GDP is consistently double digit in the last 10 years.

Huge market

4th biggest population in the world, a sustainable national economic growth, ICT-oriented people: facebook (4th) and twitter (5th).

Potential market: 4.5 mil civil servant, 50 mil students, 3 mil teachers, 60 mil HH with internet.

Productive population

Young population (10-24 years of age) as potential technology adopters is more than 20% of total population.

Increasing need for virtual connectivity

Challenging geography calls for more virtual connectivity.

ICT Agenda 2015-2019

Goal: Strengthen National ICT Connectivity

Agenda 1:
Economic Connectivity
To provide connectivity inter/intra islands and districts

Agenda 2:
Government Connectivity
To provide connectiviy inter/intra government institutions (government's back office)

Policies/ Strategies

- Redesigning USO to accommodate broadband deployment
- Optimalizing spectrum frequency management:
  spectrum refarming, migration to digital TV, dynamic use of spectrum frequency
- Fixed broadband development:
  sharing of passive infrastructure (dark fiber, poles, tower, right of ways), open access, multi-mode access (fiber, spectrum, satellite)
- e-Government:
  consolidation of national data center, security, obligation to use "go.id" email account for government communication
- ICT-literacy
- Local ICT industry
- Restructuring broadcasting industry

ICT Targets for 2015-2019

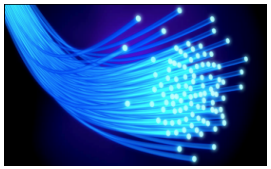
1. ICT services in non-commercial areas

- 100% coverage of telco and internet in USO areas*
- 90% coverage of RRI and 88% of TVRI (national broadcasters for radio and TV) to population

* can be rural, border areas, schools

2. Broadband as Information Highway

National FO backbone networks connecting all districts



- Fixed BB (HH coverage): 71% (urban); 49% (rural)
- Mobile BB of 1 Mbps (population coverage): 100% (urban); 52% (rural)

3. Spectrum Management

- Completion of migration to digital TV
- Addition of 350 MHz bandwidth to support mobile BB

4. ICT literacy

National ICT literacy: 75%

5. e-Government

e-Government Index of 3.4

3 INDONESIA BROADBAND PLAN 2014 - 2019

Call for Broadband Acceleration

National Agenda	International Commitment	Global Trends
Article 28F of Constitution 1945	MDG and WSIS	Globalization
Long-Term Development Plan 2005-2025 and Medium-Term Development Plan 2015-2019	ASEAN Masterplan on Connectivity	Shifting of Government's Roles
Economic Master Plan 2011-2025	Broadband Commission	Technology Innovation
Connectivity, Competitiveness, and Economic Transformation	Connectivity and Broadband	Required Adjustment

Broadband as a driver in national development.

Need for a systematic, comprehensive, dan integrated broadband development plan.

The Process

31 July 2012	Kick off meeting chaired by Vice Minister of BAPPENAS
Aug – Dec 2012	A series of discussion: issues stocktaking
Jan – May 2013	Preparation of IBP concept
Jun – Jul 2013	Public consultation: forum (20 June 2013) and online (20 June – 31 July 2013)
Aug – Oct 2013	Further assessment on adoption and utilization
Nov – Dec 2013	Development of IBP concept
Jan - Aug 2014	Finalizing the IBP. Drafting the Presidential Decree
15 Sep 2014	Signing of the Presidential Decree Number 96 of 2014 on IBP 2014-2019
15 Oct 2014	Launching of IBP by Minister of BAPPENAS

Kementerian PPN/ Bappenas	Kementerian Koordinator Bidang Perekonomian	KEMENTERIAN KOMUNIKASI DAN INFORMATIKA REPUBLIK INDONESIA	mastel / KADIN INDONESIA
Main Coordinator & Coord. for Funding	Regulatory Framework Coordinator	Infrastructure Coordinator	Adoption and Utilization Coordinator

Presidential Decree Number 96 of 2014 on Indonesia Broadband Plan 2014-2019

Definition

- always-on internet connectivity with triple-play capability;
- resilient and secured information;
- 2 Mbps (fixed), 1 Mbps (mobile)

Objective

To give direction and guidance for acceleration of Indonesia broadband development in a comprehensive and integrated manner for the period of 2014-2019

Function

- A reference/guidance for ministries and local governments to prepare policies and action plans
- A reference for private sectors to invest

They are required to consult and coordinate with Minister of National Development Planning/Bappenas in doing so

Priority Sectors

e-Government; e-Health, e-Education, e-Logictic, e-Procurement

INDONESIA BROADBAND PLAN

Republik Indonesia

IBP Main Strategies

NATIONAL BROADBAND DEVELOPMENT

1. Supply/Infrastructure:
availability, accessibility, affordability

- Competition in wireline broadband
- Optimal use of spectrum
- Optimal use of right of ways
- Infrastructure sharing
- Neutral technology
- Open access
- Secured network and system

2. Demand/Adoption and Utilization:
awareness and ability

Priority Sectors:
- e-Government
- e-Education
- e-Health
- e-Logistics
- e-Procurement

Supported by:

3. Funding

- Optimal use of USO Fund and Non Tax Revenue in ICT sector
- Public-private partnership
- Consolidated planning and budgeting for ICT on national level

4. Regulatory and Institutional Frameworks

- Regulatory frameworks to create condusive investment climate
- Governance and institutional setting for the implementation of Indonesia Broadband Plan

IBP Staging

2010 - 2014
CONNECT

2014 Targets, among others:
- FO backbone connects all big islands
- BB in 88% districts
- e-gov index: 3.0 out of 4.0

RPJMN II

RPJMN III

- Providing BB services to all districts, schools, and other public facilities;
- Strengthening government connectivity by improving government secured network and consolidating data center;
- Promoting adoption and effective use of BB

2015 - 2019
INNOVATE

RPJMN IV

2020 - 2025
TRANSFORM

Long-term Vision 2025:
Prosperous Indonesian society

IBP Targets

2013

Fixed Broadband:
15% HH (1Mbps) and 5% population;

Mobile Broadband:
12% population (512 kbps)

2019

Urban:
Fixed Broadband: 71% HH (20Mbps);
Mobile Broadband: 100% pop (1 Mbps)

Rural:
Fixed Broadband: 49% HH (10Mbps);
Mobile Broadband: 52% pop (1 Mbps)

Utilization:

- Broadband service price: max 5% of average monthly income
- Priority Sectors: e-Government; e-Education; e-Health; e-Logistic, e-Procurement

IBP Targets (contd)

Infrastructure	2014	2015	2016	2017	2018	2019
ACCESS						
Urban						
Fixed (HH)	3 Mbps	3 Mbps	3 Mbps	5 Mbps	10 Mbps	20 Mbps
Mobile	512 kbps	512 kbps	1 Mbps	1 Mbps	1 Mbps	1 Mbps
Rural						
Fixed (HH)	1 Mbps	2 Mbps	2 Mbps	3 Mbps	5 Mbps	10 Mbps
Mobile	128 kbps	256 kbps	512 kbps	512 kbps	1 Mbps	1 Mbps
FO BACKHAUL						
Districts	75%	80%	85%	100%	100%	100%
Rural	45%	60%	70%	80%	100%	100%
FO BACKBONE						
Districts	75%	85%	100%	100%	100%	100%
Rural	50%	75%	85%	100%	100%	100%

Priority Sectors

G2G

e-Government
(back office)

To integrate all government institutions enabling more efficient way to communicate and share data

G2C

e-Education

e-Health

To manage the demographic bonus

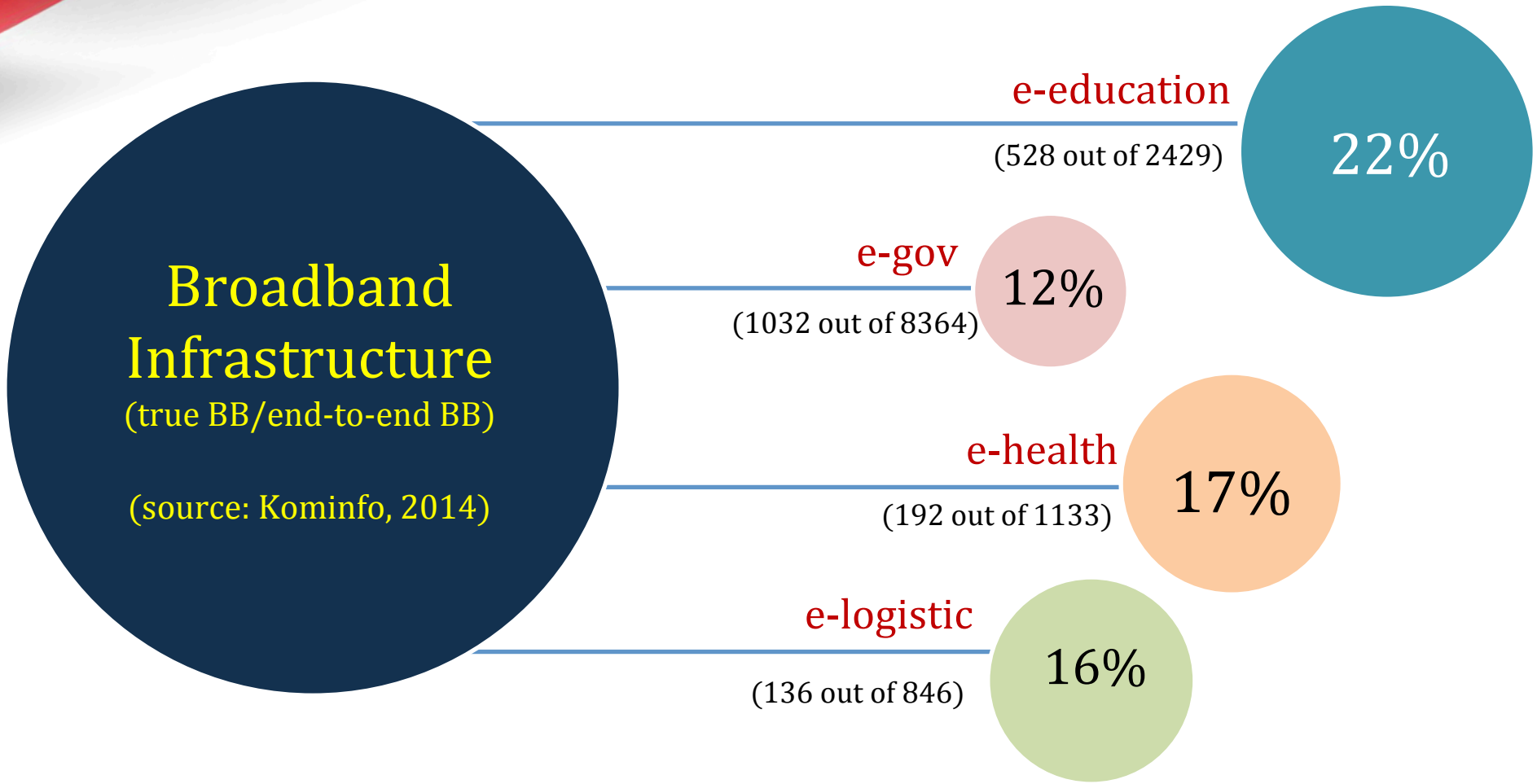
G2B

e-Logistic

e-Procurement

To support prompt flow of commodities and promote efficiency in government spending

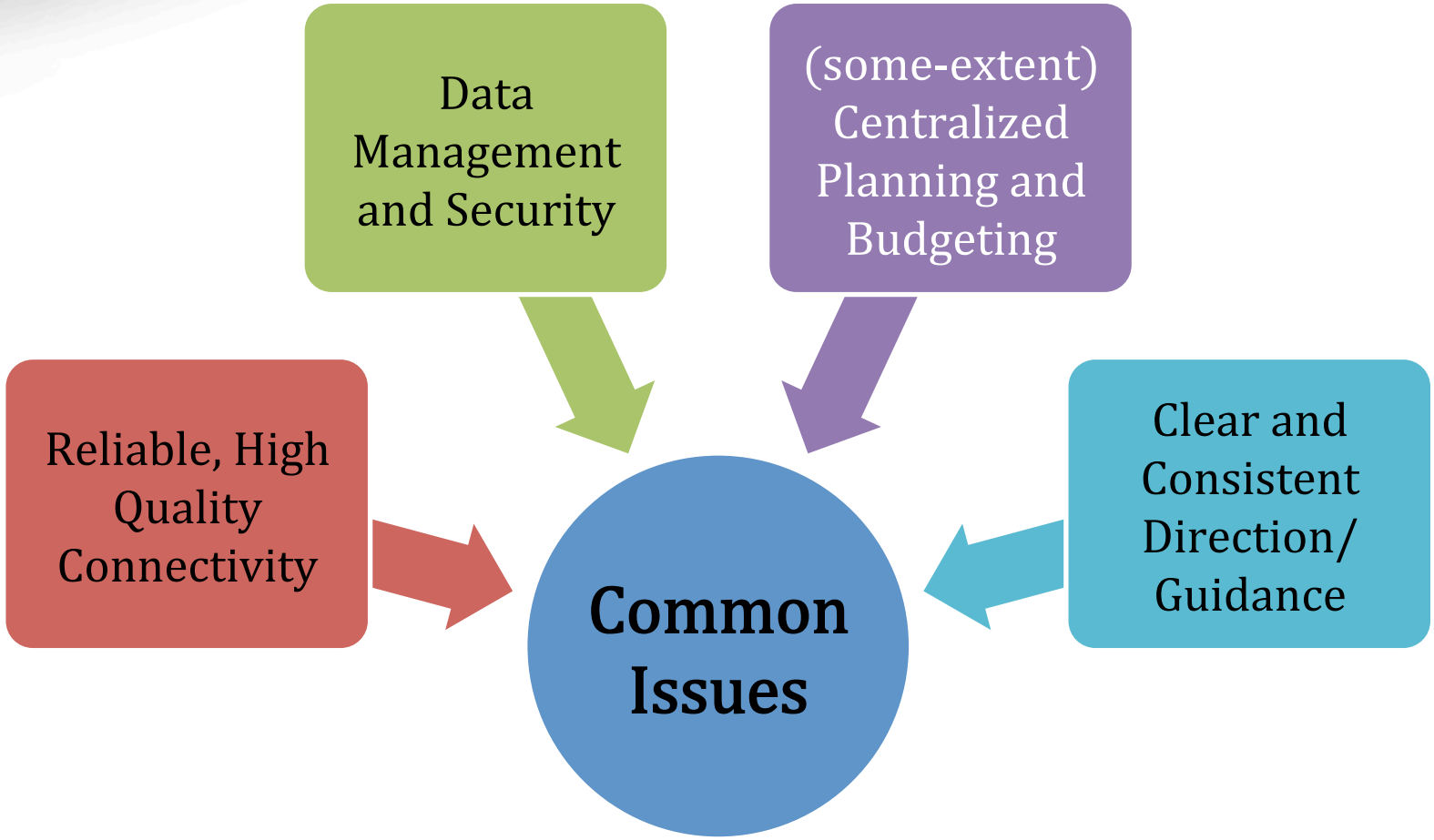
Broadband in Public Sector



Broadband in Public Sector (contd)

Priority Sectors	Issues
e-Government	▪ Mostly in the digitalization phase, limited business process transformation ▪ Various directions/guidance in the operational level, both in central and local governments ▪ Inefficient investment due to activities duplication ▪ Deal with sensitive data
e-Education	▪ Limited broadband access, not optimal for multimedia-based schooling ▪ Need for reliable data warehouse
e-Health	▪ Very limited broadband access to support telediagnostic (tele-consultation, tele-radiology, tele-cardiology) ▪ Many but disconnected e-health systems ▪ Need for data security/protection
e-Logistic	▪ Various logistic information systems
e-Procurement	▪ Need for robust data warehouse and access for in-time tender process ▪ ICT infrastructure gap between regions hinder tender process

Broadband in Public Sector (contd)



IBP Flagships

Economic Connectivity

1. Palapa Ring Project
To build FO backbone to all districts

2. Shared Duct
To construct a shared pipe/duct to accommodate fiber optics from different operators

3. Regional Terrestrial Broadband Piloting
To serve as extension of Palapa Ring in USO areas using wireless solution

Government Connectivity

4. Government Networks and Consolidated Data Warehouse
To build a secured, dedicated, high-speed government networks and consolidated data centers

Enabling

5. USF Reform
To accommodate more extensive use of USO Fund to cover broadband ecosystem development

6. National Digital Literacy Program and Local ICT Industry
To improve ICT literacy nationwide in order to promote adoption and meaningful use of broadband and strengthen local ICT industry

Government's Participation: Shifting of Government's Roles

low penetration

Liberalization and Competition (2000-2010)

Issues:
- Liberalization: duopoly in fixed and full competition in mobile
- Cellular started to become main access → shifting focus from PSTN to mobile

Government's role:
Facilitating development through modern licensing

Telecommunication Law 36/1999
- Abolish monopoly
- Separate policy and regulatory function from operation
- Eliminate cross and joint ownership in operators

Equal Access and Efficiency (2010-2014)

Issues:
- Multiple infrastructure in some areas
- Unserved/blank spots in others

Government's role:
- Improving efficiency: encouraging infrastructure sharing and industry consolidation
- Filling in the gap: covering unserved areas/blank spots through USO Programs

Acceleration (2015-2019)

Issues:
- Quality use/adoption of ICT
- BB is more than infrastructure → need ecosystem development

Government's role:
Accelerating ICT development and adoption, among others: create more incentives (i.a spectrum and USF), aggregate cross-sectoral demand, build passive infrastructure*

* included in the draft of new Telco Law

Government's Participation: Spectrum Management

National Goal 2019:
Mobile BB of 1 Mbps covers all population in urban and 52% population in rural

Need additional bandwidth of 350 MHz in 2019

- Dissolve FWA license at 800 MHz, adopt neutral technology to support CDMA migration to 3G/4G
- Beauty Contest Blok 11-12 at 2100 MHz
- Refarming 1800 MHz for LTE
- Dynamic spectrum regulation
- Migration to digital TV (digital dividend)

Government's Participation: Lesson Learnt from Past USO Program

- project-oriented, no grand design
- duplications with operators' program
- substantial delay between planning and implementation
- under-utilized and low quality of use in some areas
- local gov and people were not fully involved, limited social engineering
- low disbursement

- USO is not a charity program → need contribution from targeted areas
- Need to be efficient
- Need to ensure productive use and sustainability
- Need buy-in and ownership from all parties

Government's Participation: Transformation of USF

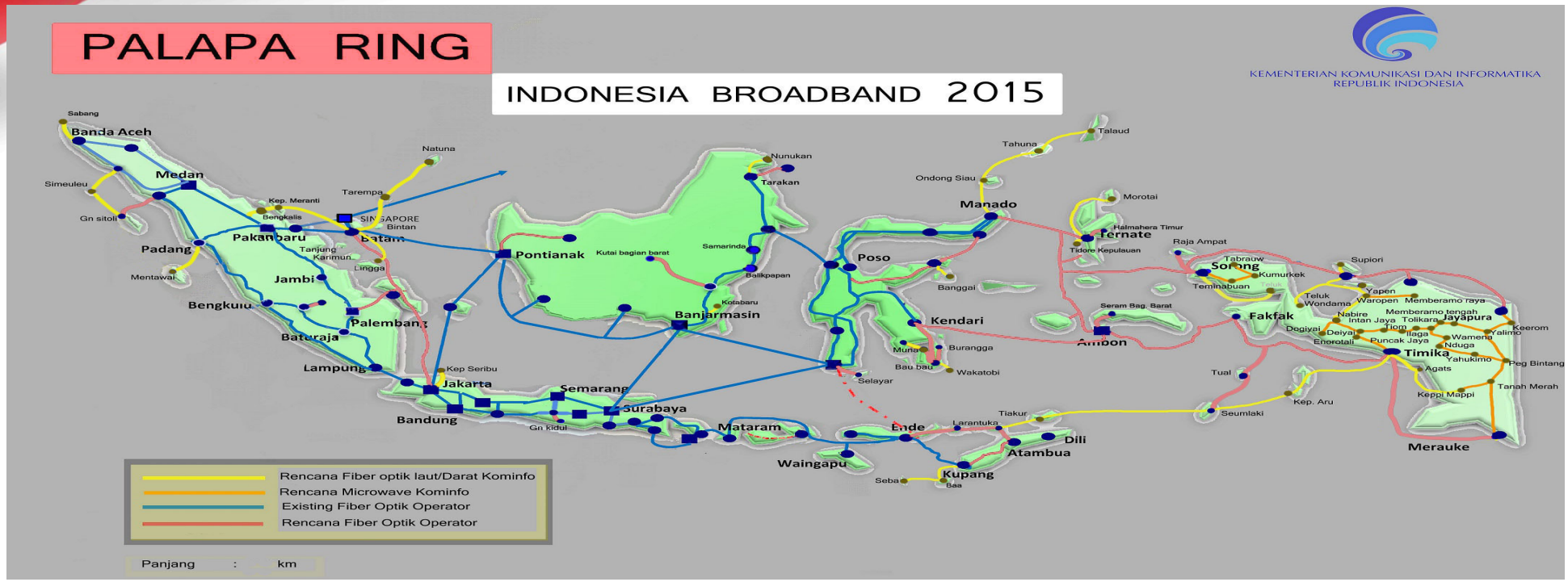
	2003-2004	start of USF collection	2006 - 2013	2014 onward
goal	covering blank spots		covering blank spots	accelerating broadband
project design	massive, top-down		massive, top-down	cluster, bottom-up
focus area	rural		rural	any (rural, SME's production centers, schools etc)
scope of work	infrastructure		infrastructure	ecosystem
contract	single-year		multi-year	multi-year
roles demarcation	all by central government		central gov: design and monev local gov: propose location operator: execution	multi-stakeholders, synergy (design, execution, monev)

Government's Participation: Examples of USF Use

Project: providing cellular services in Kalimantan border area. Roles demarcation:	
Local Gov: ▪ District ▪ Province	Provide land Build tower
Telco Operator	Build and operate BTS
Central Gov: ▪ Min. of ICT ▪ Min. of Energy & Mineral Resources	Subsidize backbone cost connecting BTS and BSC Provide sollar cell/diesel power plant
Other SOE (electricity)	Provide sollar cell/diesel power plant

Synergy among ministries	
BTS in 31 outer islands	Min. of ICT; Min. of Fishery
Internet access in schools in remote and outer areas	Min. of ICT; Min. of Education

Government's Participation: Examples of USF Use (contd)



Project: FO backbone networks connecting all districts with ring configuration (Palapa Ring). Roles demarcation:	
Operator (PT Telkom)	Covering 446 districts using corporate fund (red lines)
Government	Covering the rest using USF with PPP scheme (yellow lines)

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THANK YOU

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