Indonesia's Initiatives to Deploy NGN

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Outline

- Initiatives to deploy NGN
  - ❖ Major issues of NGN
  - ❖ Operator challenges
  - ❖ Regulatory challenges
- **Indonesia: ICT Outlook & Prospect**
- **Investment Opportunity**
- **Policy and Regulatory Aspects**

Initiatives to deploy NGN

Major Issues of NGN

- Regulatory issues
- Technical and Business Aspects
- Capitalize on technology advancement
- Leverage on extent of coverage
- Improve business relationship
- New investment with less CAPEX
- New technology with less OPEX
- Equipment with global open standard
- Obtain economic scale

Operator challenges

- How to make a network transition (for incumbent)?
  - Facing aging circuit switch technology
  - Evaluation to adopt the new technology
- How to manage a NGN?
  - Security, single billing, network management, OSS
  - QoS, SLA, interconnection
  - Managing 3rd party service provisioning
- How to face more deregulated and competitive environment?
  - Flat rate or free internet telephony impact
  - Seek new service to be survivable

Regulatory challenges

- How to face the changing technology and new services to keep balance between protection to customer and growth of the industry?
- Which part of NGN should be regulated?
  - Licensing, Numbering, tariff, QoS, local content,
- Provide a fair and open competition environment
  - Service division and obligation
  - Telco and Internet competition for services
  - Interconnection

Indonesia:
ICT Outlook & Prospects

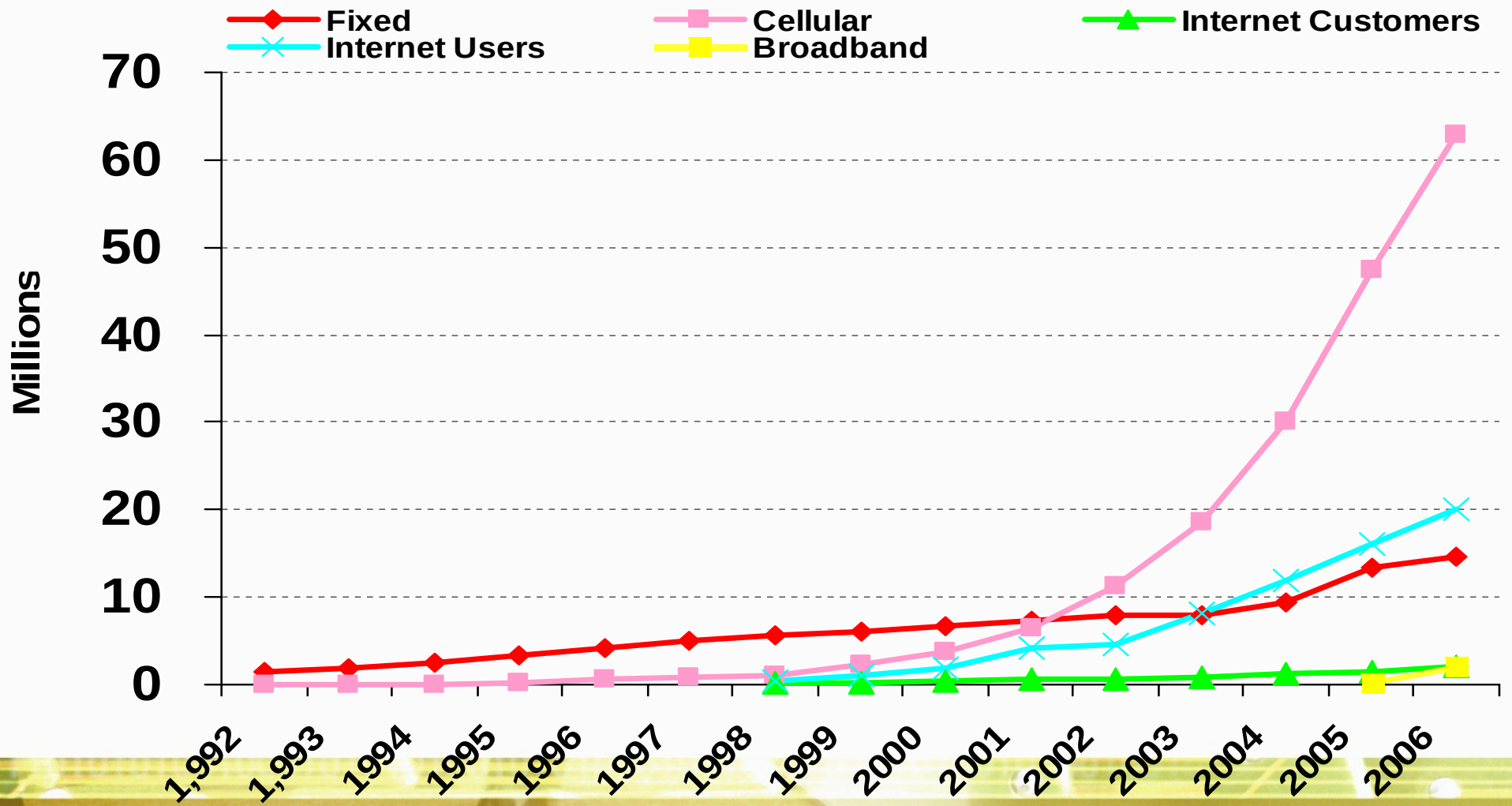
Key Aspects

- Strong growth in **wireless and mobile telecommunications**
- Strong growth in fixed-line services by the significant deployment of **fixed wireless access**
- Increased use of **internet access**
- Increased use of **mobile data services**
- Increasing demand for **mobile voice and data services**
- Increasing demand for **advanced data communications**

COUNTRY OVERVIEW – Dec 2006

- Population: 220 millions
- GDP per capita: US$ 1,200
- Fixed telephone Fixed Wireline (8.7 mill.) – FWA (5.9 mill.) ; density:6.64% (14.6 millions)
  - Major cities : 10 – 40%
  - Rural less than 0.2% (60% villages without phone at all)
- Mobile telephone density: 28.64% (63 millions)
- Fixed and Mobile density: 35.28%
- Internet: 2,000,000 subscribers with approx. 20 million users (± 9.1 %)
- Broadband: - ADSL, FIBER OFTIC : 100,000subs.
  -Mobile (edge, EV-DO, 3G) : 2,000,000 subs

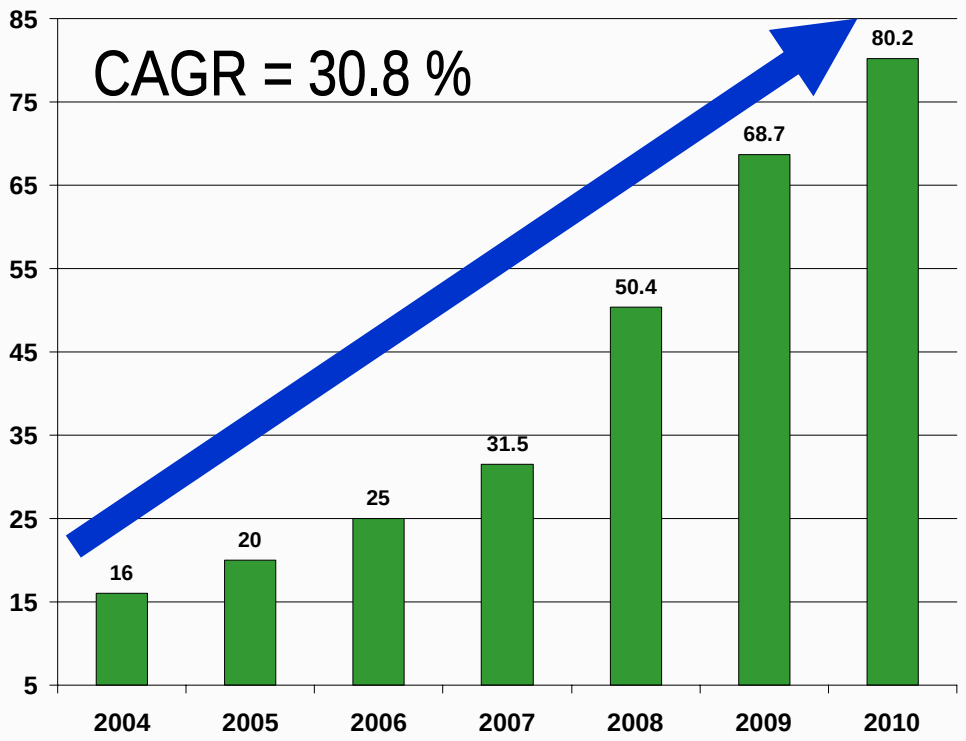
Growth Cellular, Fixed, Internet & Broadband – Dec 2006



Demand Forecast for 2010

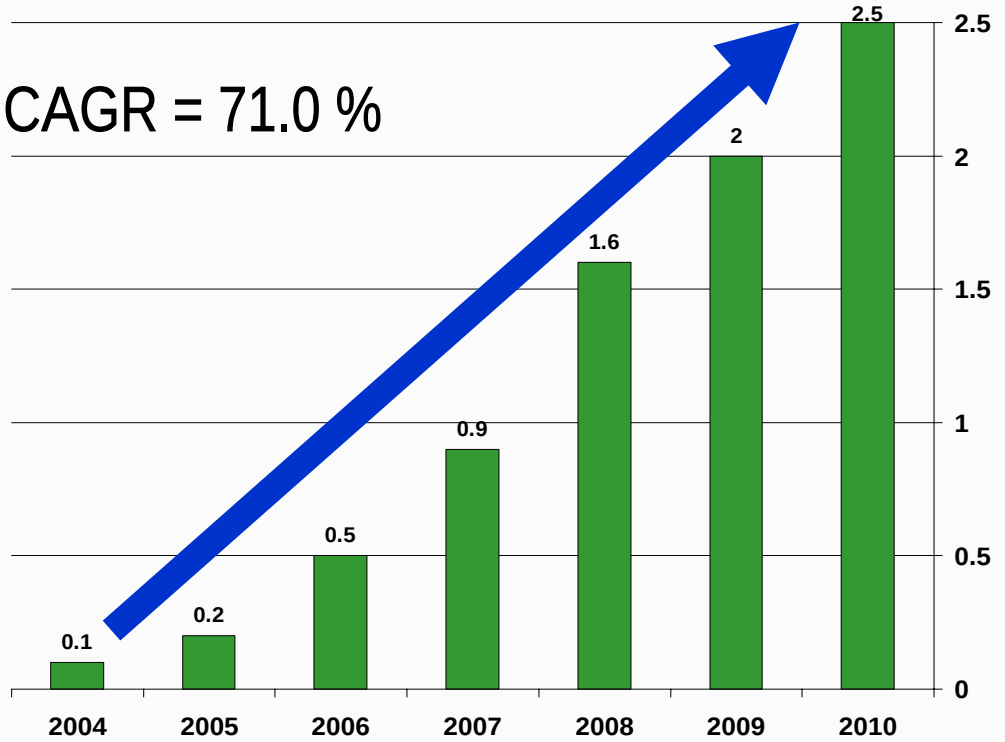
Internet Users (million)

Internet users: 80.2 million users



Broadband Users (million)

Broadband users: 2.5 million users

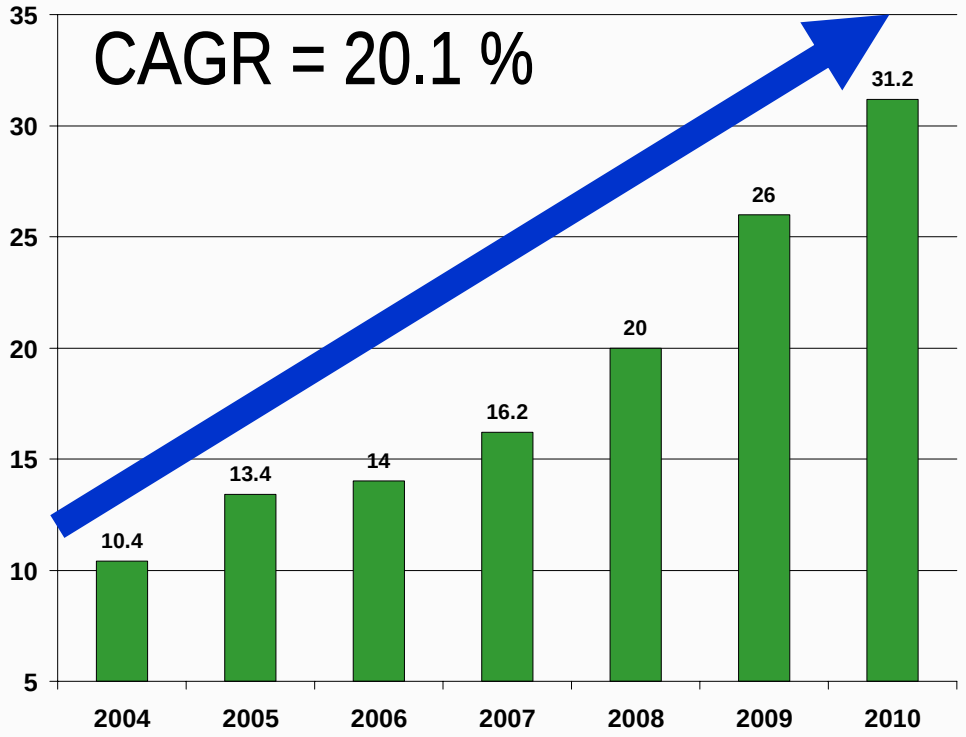


Source: MCIT (2006)

Demand Forecast for 2010

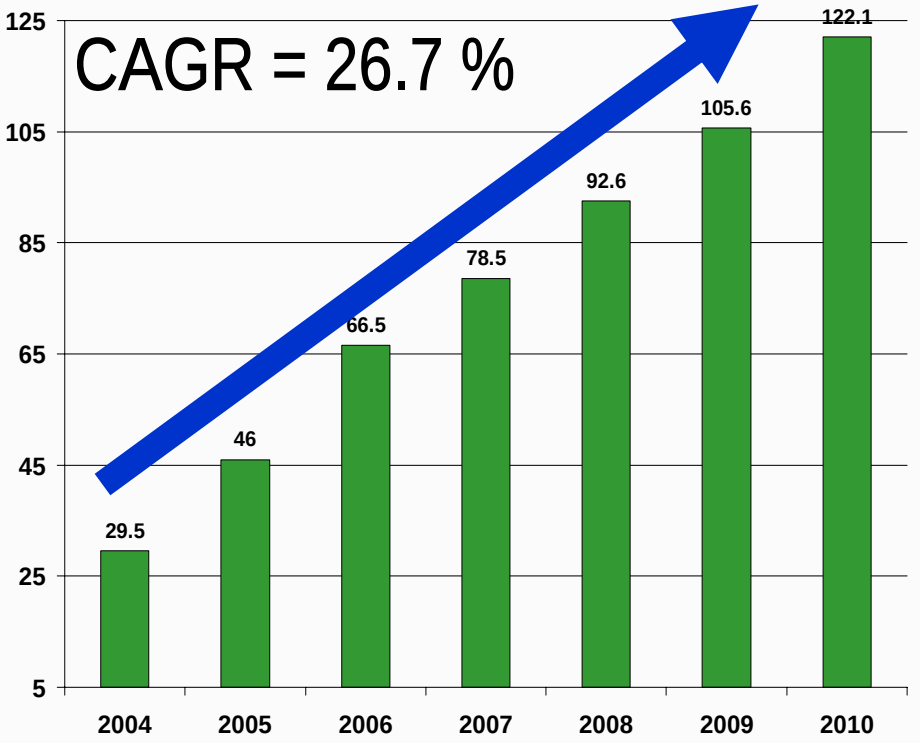
Fixed Phones [incl. FWA] (million)

Fixed phones: 31.2 million users



Mobile Phones (million)

Mobile phones: 122.1 million subscribers



Source: MCIT (2006)

Demand for Telecommunication Infrastructure

- **Closing the access gap:** extending the reach of telecommunications services to rural, frontiers, and remote areas, particularly those that infeasible commercially;
- **Developing next-generation broadband networks:** high-speed communications backbone infrastructure as an enabling technology infrastructure for many other sectors;
- **Stimulating further investment in the sector**, including through private-public partnerships, by enhancing competition; and maintaining the momentum of policy and regulatory reform, taking into account global trends in communications technology and market structure.

Investment Opportunity

Requirement to make NGN in reality

- **Infrastructure**
  - Indonesia has Palapa Ring Fibber Optic Backbone initiative
- **Equipment**
  - Local manufactures and consortia have capability to make soft switch, gateway and router
- **Access**
  - Local manufacturers and service providers are encouraged to invest in this field
- **Content**
  - Local service provider are encouraged to invest in this field

Government Target in ICT Sector 2004-2009

Objective	Target
• Fixed Telephone Penetration (including FWA)	➢ 13 % of Population
• Mobile Telephone Penetration	➢ 50% of Population
• Telecommunication Infrastructure	➢ All villages
• Community Access Point (CAP) in Villages	➢ 45,000 villages

Palapa Ring Project Brief Description

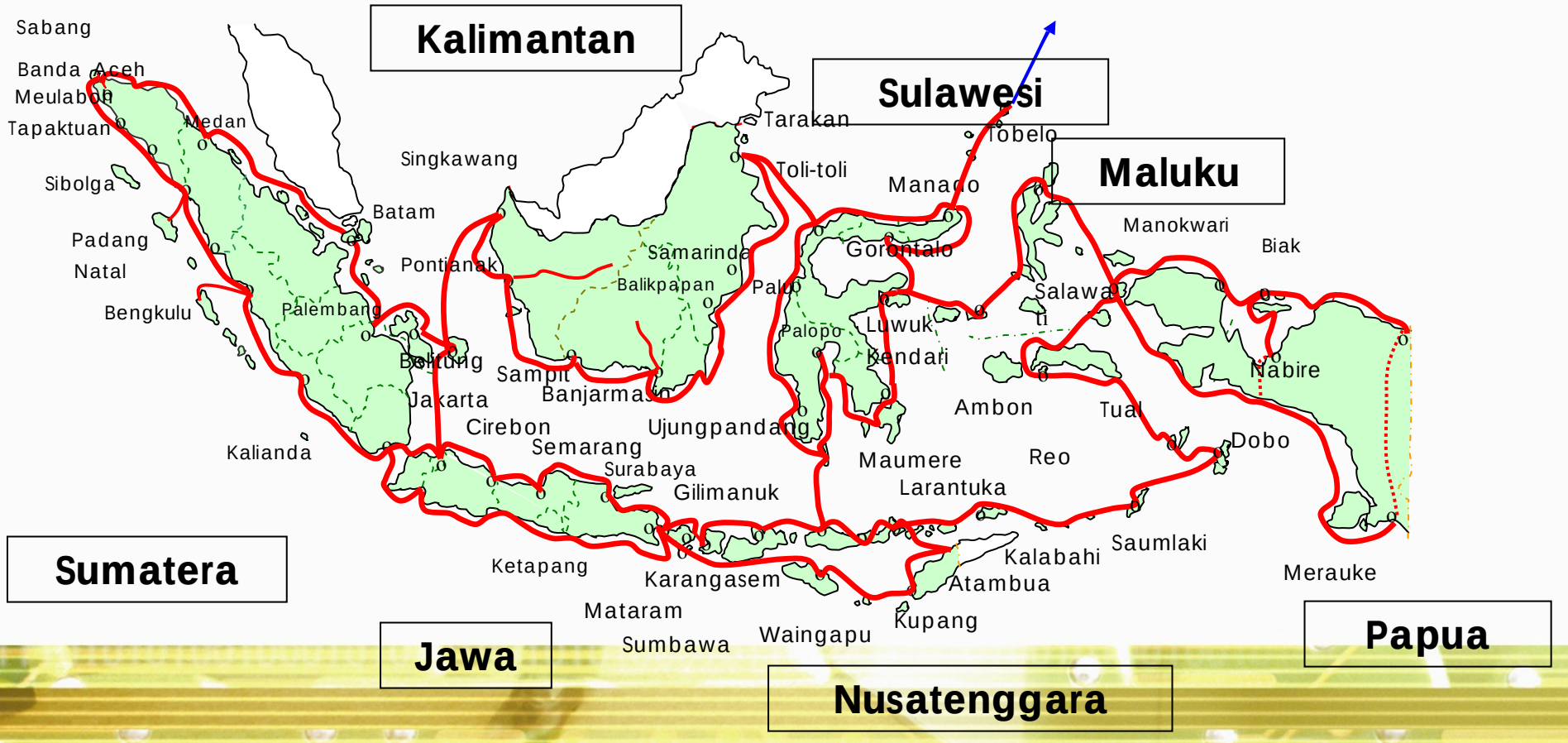
- Constructing, financing and operating domestic fibre optic network connecting all **33 provinces and 440 districts** across Indonesia a as National High capacity (320 Gbps) Backbone Network
- The use of advanced optical fibre technology to create **huge capacity and expandability in the future**
- Ring of rings concept covers: Sumatera, Java, Kalimantan, Nusa Tenggara, Sulawesi, Maluku, Papua and 8th network as connecting lines between the rings

Objectives of *Palapa Ring Project*

- To **reduce digital divide** between societies, especially in smaller cities currently without any broadband network;
- To **increase the number of access points** to the broadband network. By covering 440 cities/counties, each of the cities/counties will become a point of access for the broadband network.
- To support opportunities **for competitiveness** and **business prospects** in under developed regions in Indonesia;
- To provide **more efficient, secure and far reaching communication** to public and government sectors including military, police, meteorology, crisis prevention, and corporate and household customers;
- To **reduce the cost of communication** within the covered areas and encourage the use of broadband access;
- To **cope with current and future telecommunication needs** which will depend on broadband networks.

Palapa Ring Project

A 36,000 km (+ additional 20,000 km backhaul) fiber-optic submarine network connecting **33 provinces and 440 districts (*kabupaten*)**



Policy and Regulatory Aspects

Policy and Regulatory Aspects

- **Consistency in pro-market** policy and regulation:
  - Law 36/1999 on Telecommunication to open telecommunications market
  - Government Regulation PP 52/2000 on Telecommunication Operation to shape competitive market structure
  - Government Regulation PP 53/2000 on the Use of the Radio Frequency Spectrum and Orbital Satellites for frequency spectrum allocation
- **Indonesia Telecommunication Regulatory Body** to monitor and supervise telecommunication competition and fair trading practices
- Government commitment for **sound market structure and operating activities**:
  - **Telecommunication Sector Blue Print** revision
  - **Transparent and fair frequency management**
  - Fair and transparent **cost-based interconnection regime**
  - **Infrastructure sharing and co-location**
  - Optimal tariff of **leased-line**
  - **Fair and enforceable modern licensing**
  - **Fine and sanctions** to ensure regulatory compliance

List of Policy and Regulation Adjustment

General Policy	Technical Regulation
• Awareness of NGN • Collaboration among Stakeholder • Adjustment of License Structure • Consistent competition policy • Migration Strategy of NGN (including timing strategy) • Explore government incentive • Local content policy of NGN • Implementing USO	• Interconnection and Tariff • Numbering • QoS • Security • Standardization and Interoperability • Migration of IPv4 to IPv6

Thank you