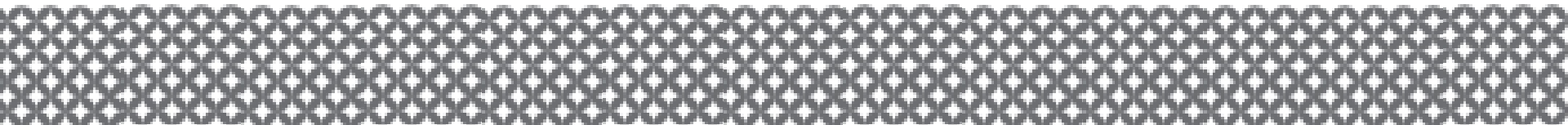


Indonesia ICT Infrastructure Journey

# Key Challenges on Optical Silk Road

**Arief Mustain**  
Division Head of Digital Service  
Innovation and Strategy Portfolio Directorate



▶ Broadband Industry Structure Model

▶ Competition Model

▶ Investment Strategy

▶ Regulatory Intensity

> 3 Operators

One Operator

No Operator



Urban Market



Sub Urban Market



Rural Market

▶ **Cherry Picked**

▶ Demand Aggregation

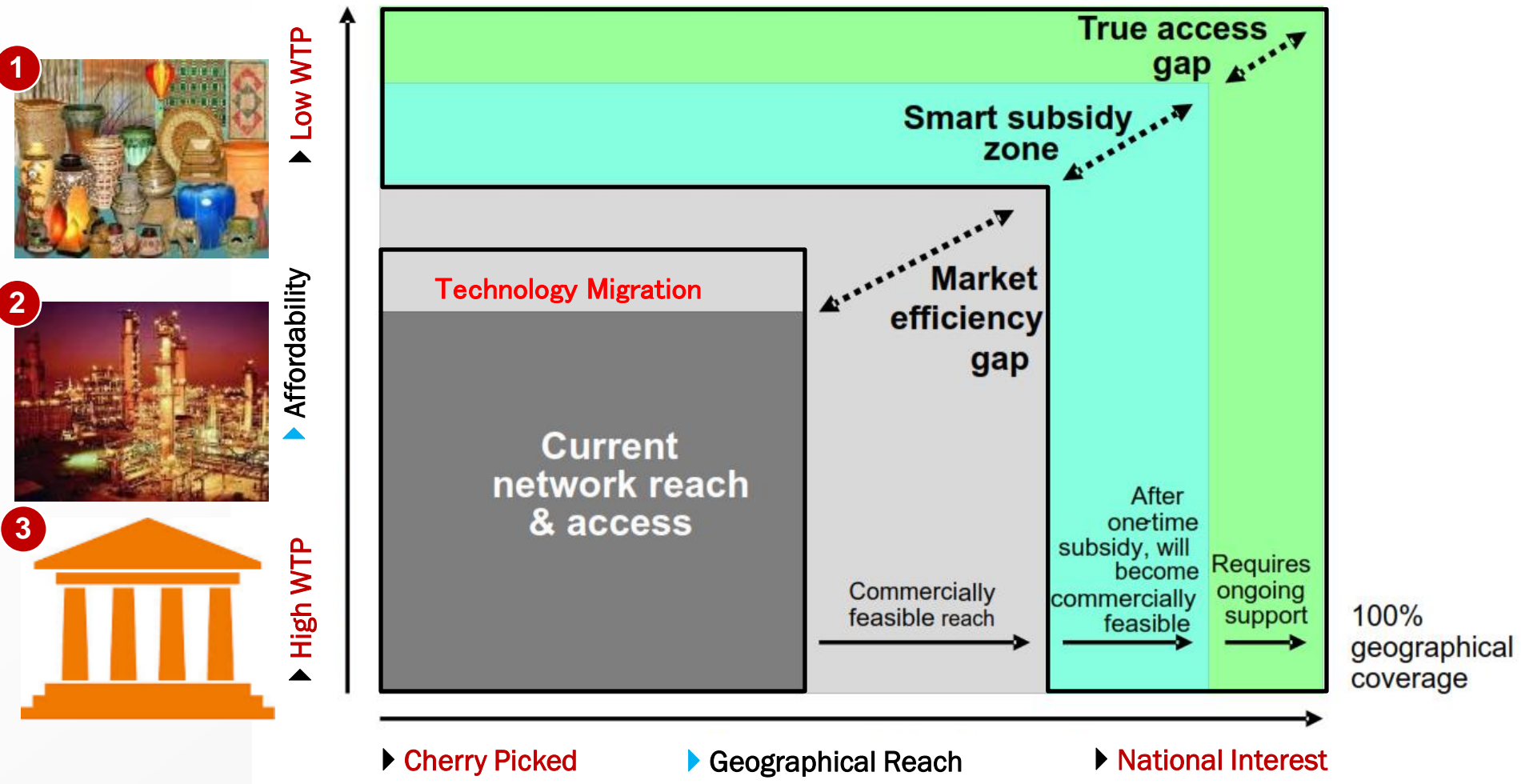
▶ **National Interest**

▶ Level Playing Field

▶ Market Failure

Indonesia Profile (%)					
2010	2015	2020	2025	2030	2035
49.8	53.3	56.7	60.0	63.4	66.6

Indonesia Profile (%)					
2010	2015	2020	2025	2030	2035
50.2	46.7	43.3	40.0	36.6	33.4



## ► Strategic Element

A country's leaders are ultimately responsible for defining Broadband as a national interest (e-Leadership)

Broadband be a nation's vital needs or goals

Only the government was convinced that the future survival of the country absolutely depended on their having access to the technology will strive developing National Agenda on it

## ► Current Model



Cherry Picking

Although studies had linked broadband to economic growth, there was no conclusive proof that spreading the latest technology into every corner of the country would be necessary.

Fiber to the Home (FTTH) is not just about speed and doing the same things faster. FTTH enables a wide range of services and applications and brings wider benefits to society and its citizens, the economic health of communities and smart nations.

## ► Future Model



National Roll Out

## ► Strategic Element

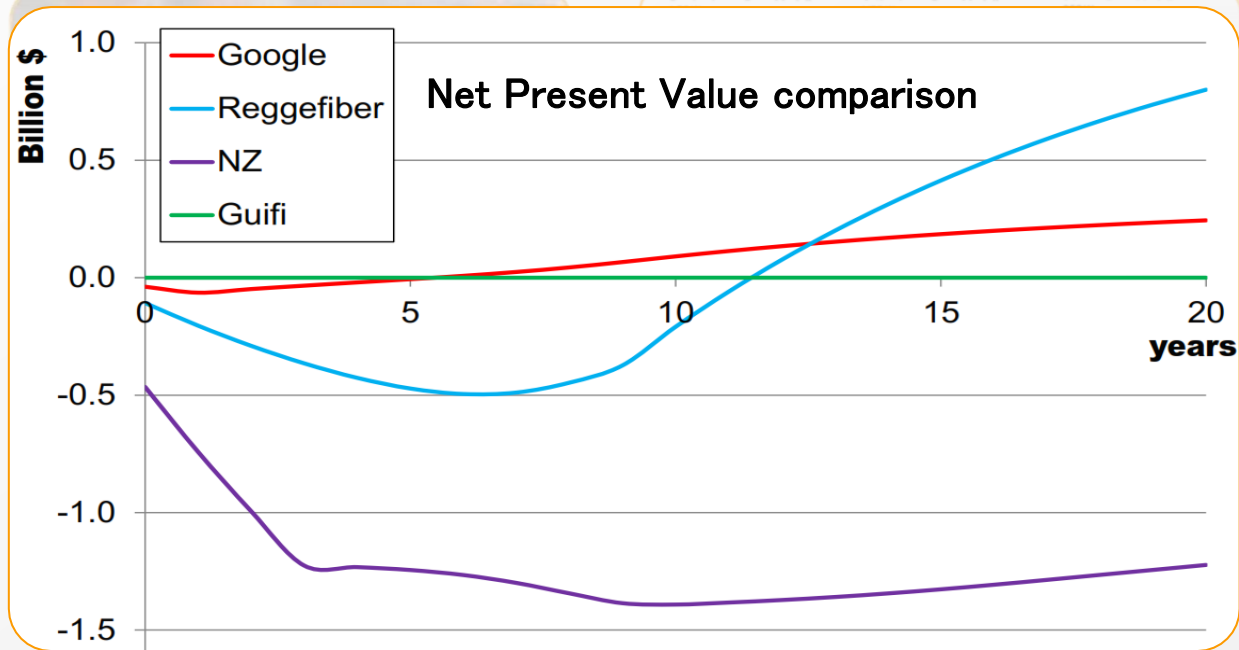
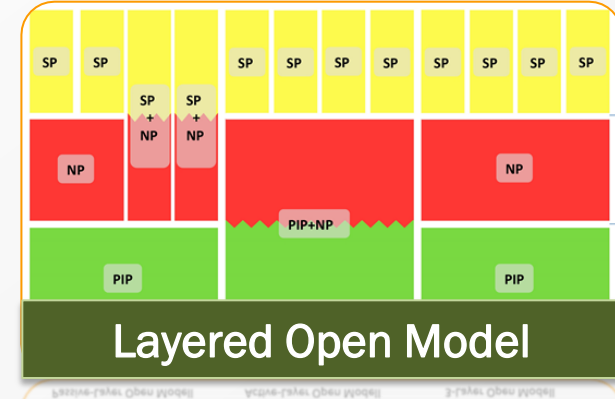
Consolidation on Infrastructure investment as a big opportunity in National Agenda Execution. It allows to achieve greater economies of scale and is crucial for the development of next-generation broadband infrastructure

Layered Open Model will be best fit for National Roll Out ?

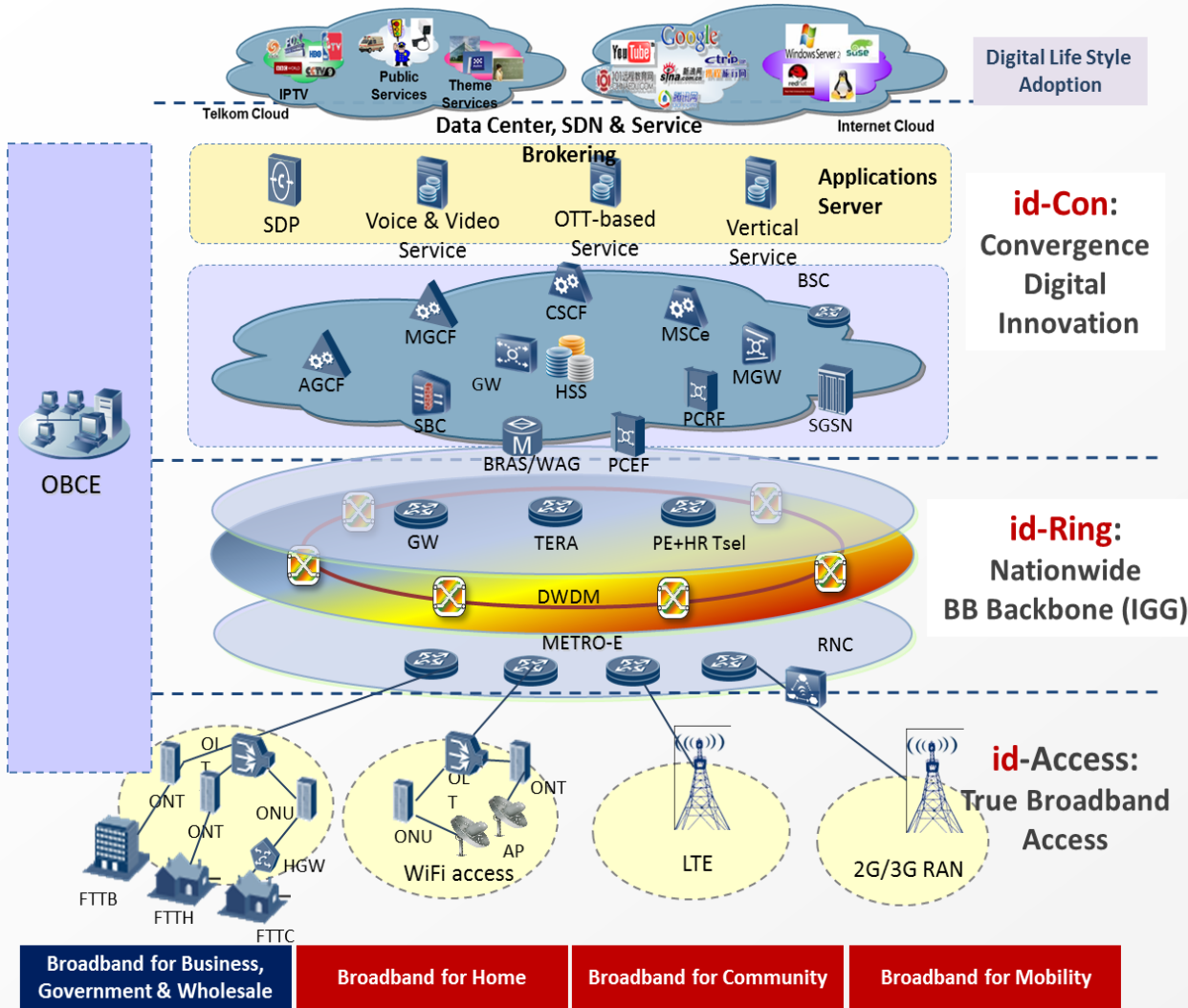
## ► Current Model



## ► Future Model



## Vertical Solution



## CNOPP

- Integrated Data Center & Cloud
- Integrated Application & Delivery Platform
- Integrated Service Control

- One Optical Backbone
- One IP MPLS Network
- One Content Delivery

- One Backhaul Access
- Integrated Wireless Access Infrastructure
- Broadband Smart Client

# Indonesia Global Hub Vision

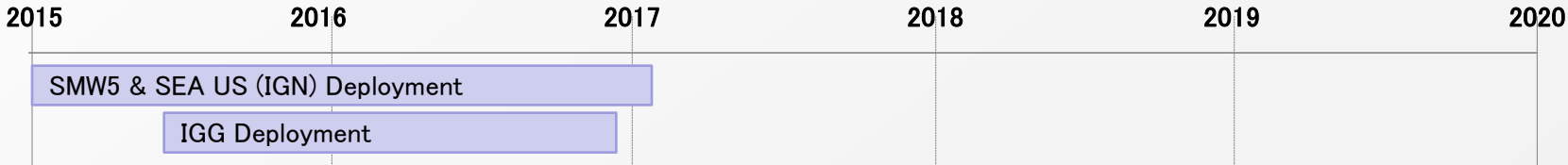


- **Unlocking Strategic Position** to be the center of regional and global economy
- **Leveraging capability and resources** to strengthen ICT industry
- **Building global competitive advantage**

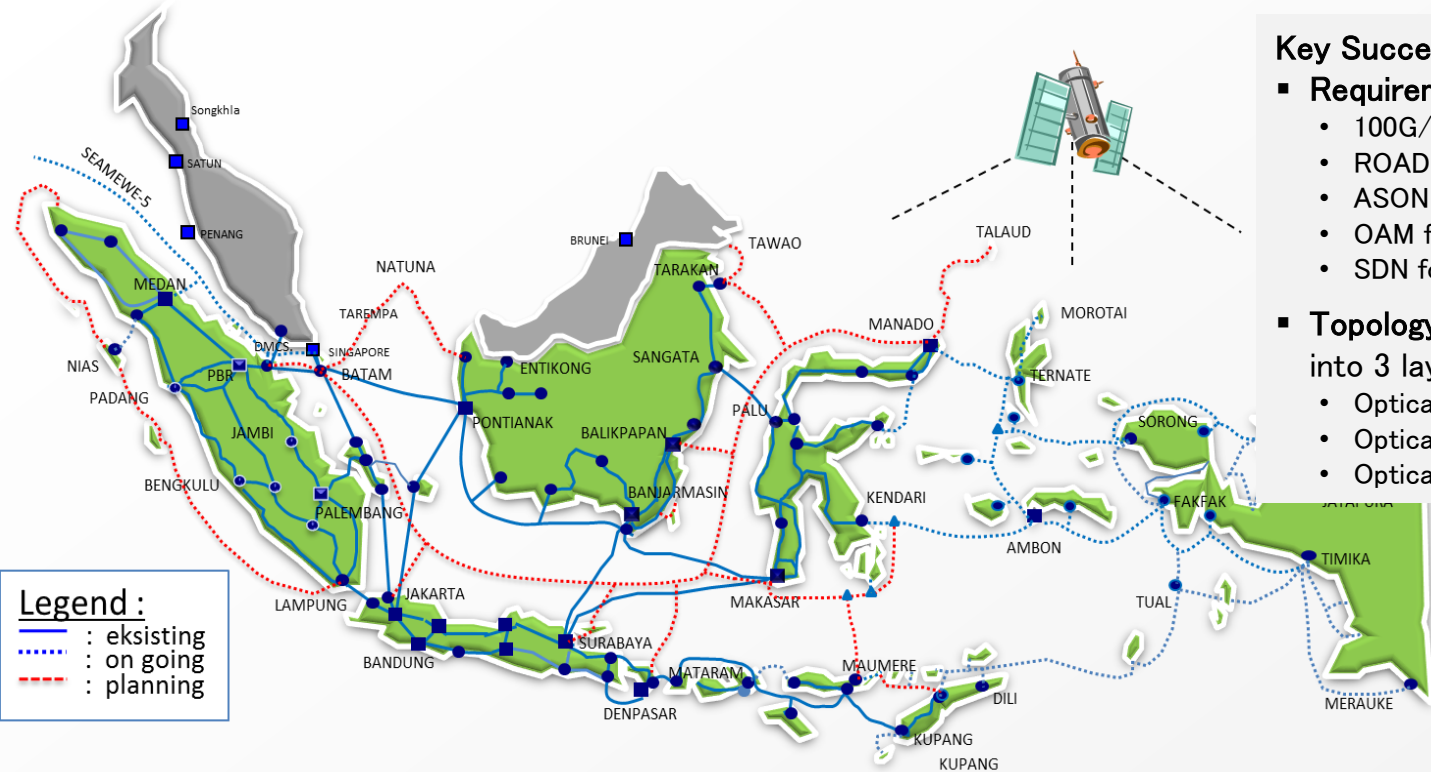
## Towards Indonesia as a Global Hub (2017)

The 1<sup>st</sup> Step by Implement Indonesia Global Network (IGN) & Indonesia Global Gateway (IGG)

Global PoP : 17 PoP  
Global Cable : 65,000 Km  
Domestic Cable : 78,000 Km



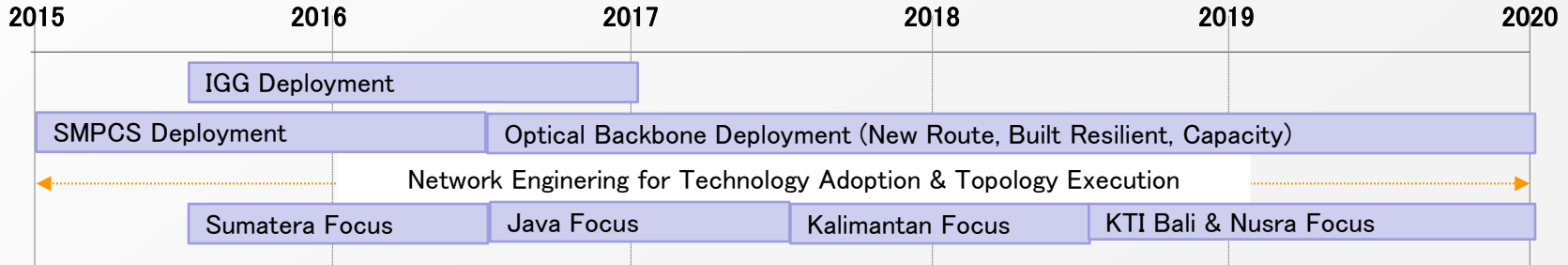
# Optical Backbone Transport



**Legend :**

- : eksisting
- ⋯ : on going
- - - : planning

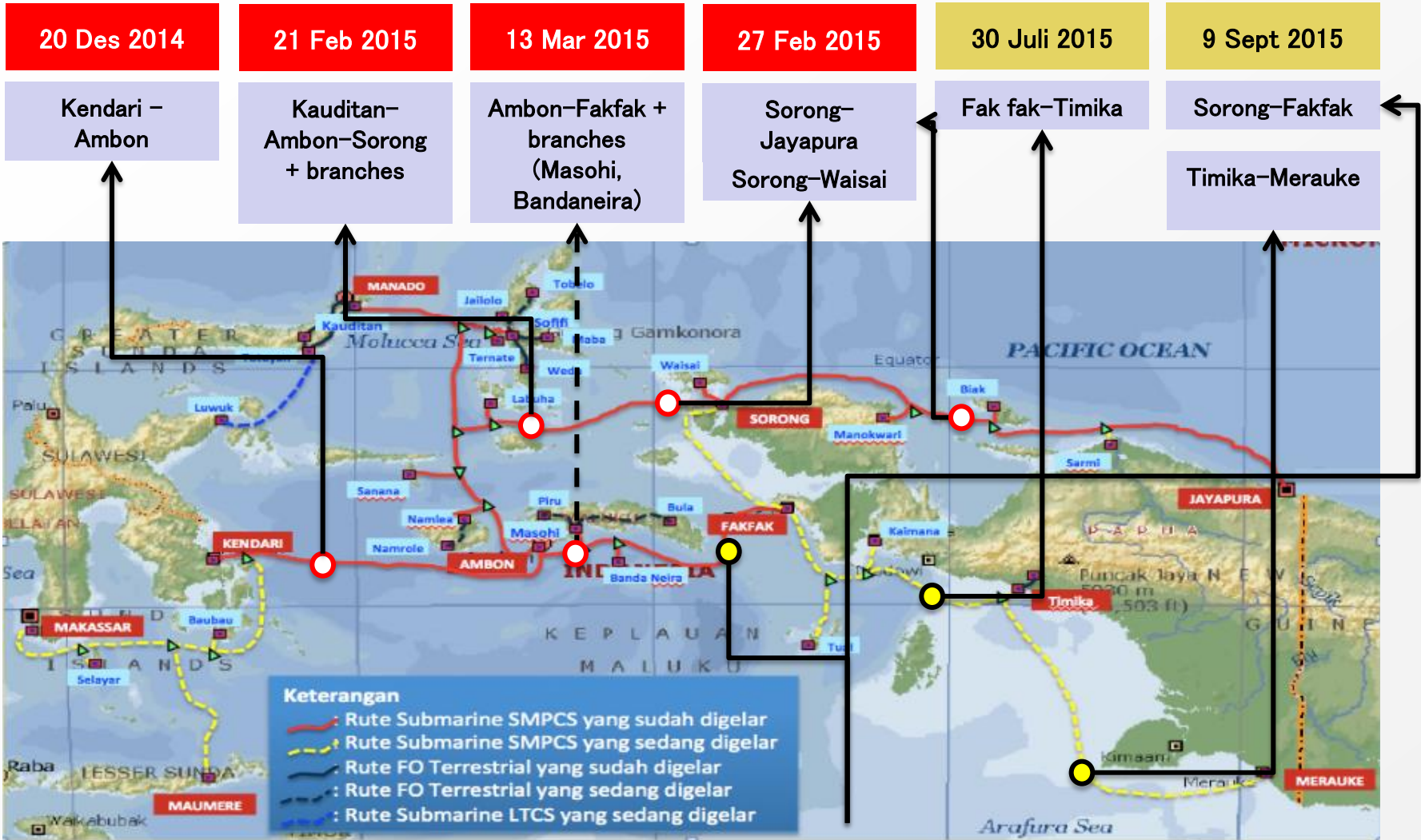
- Key Success :**
- **Requirement Technology :**
    - 100G/1T for Capacity
    - ROADM for Scalability
    - ASON for Reliability
    - OAM for Manageability
    - SDN for Automation & Intelligence
  - **Topology, follow IP Traffic divide into 3 layers :**
    - Optical Transport eXpress (OTX),
    - Optical Transport Backbone (OTB).
    - Optical Transport Regional (OTR)



**CNOP Optical Backbone for Realize High Performa Network at Lower Cost**



# Backbone Masterpiece 2015



Key Challenges of ODN Deployment A Big Picture View of Key Success Factor on Rolling Out Fiber in Indonesia

Right of Way

PON Technology  
Owner

Partner Structure,  
Model & Ecosystem

Competitive  
Price/Homespassed

Network  
Technology  
Owner

Integrated  
Design &  
Engineering

ODN  
Deployment  
Scale Out

Indoor  
Wiring  
Model

Migration  
and  
Dismantling

IT Technology  
Owner

Project Management and Quality Supervision

Integrated Supply  
Chain

**Terima Kasih**

