



Unleashing Wi-Fi Potential in Indonesia

The Role of Unlicensed 6 GHz Band

Dick Maryopi



About Us

Assoc. Prof. Dr. Eng. Khoirul Anwar



Dr. Nachwan
Mufti



Dr. Rina Pudji
Astuti



Citra Dewi
Angreini ST. MT.



Dick Maryopi
Ph.D



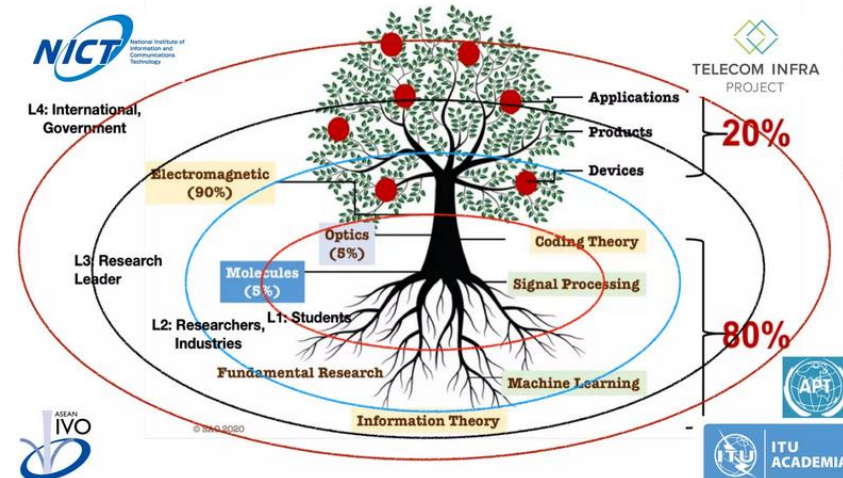
Dzata Frahiyah
ST. MT.



Lukman Yazid



• Becoming one of the **world-class leading research center** in the field of Advanced Intelligent Communications



- Indonesia in Overview
- Internet Access in Indonesia
- The Role of 6 GHz Bands
- The Current Status of 6 GHz bands in Indonesia
- Challenges and Opportunities
- Future Agenda

Indonesia in Overview

Location

- Southeast Asia

Population

- 273 million, the 4th in the world

Life Expectancy

- 69 years (2020)

GDP

- US\$1.19 trillion in 2021

GDP Growth

- 3.7% in 2021

Human Capital Index (HCI) scale 0-1

- 0.5 in 2021

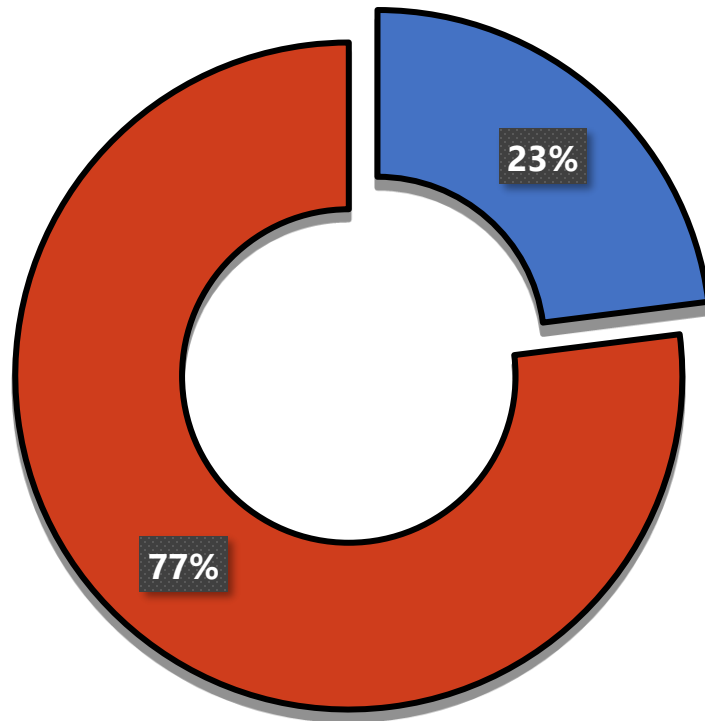
Literacy rate

- 94.8% in 2020

Source: [/data.worldbank.org](https://data.worldbank.org)

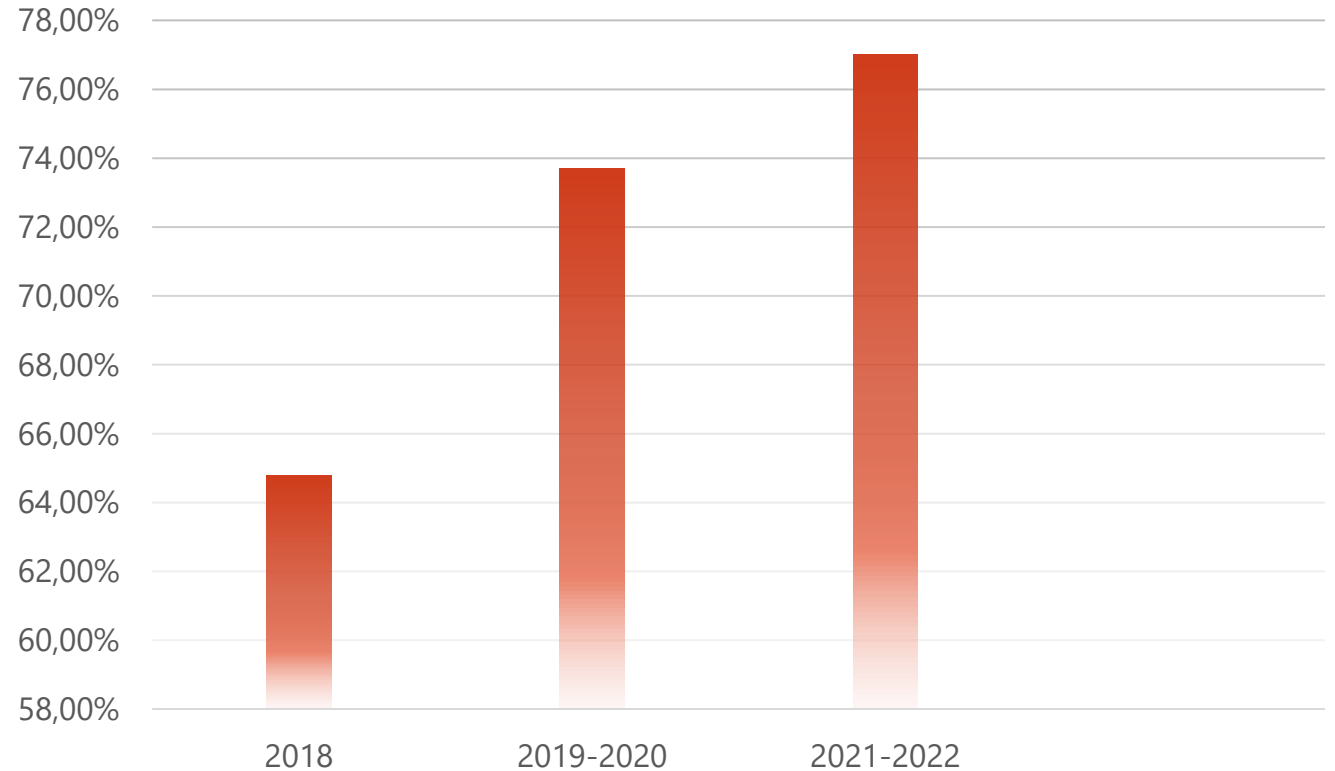


Internet Penetration in 2022



210,026,769 people out of the total population of 272,682,600

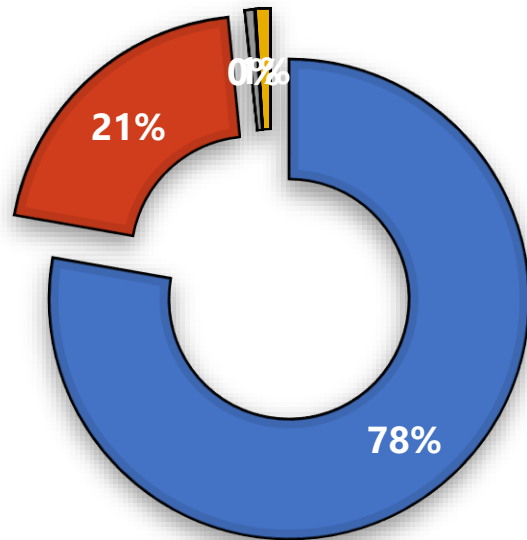
The Growth of Internet Penetration



Source: APJII (2022)

Method of Internet Access

- Celluler
- Wi-Fi at Home
- Wi-Fi at Office/Schools
- Wi-Fi at Public space



Source: APJII (2022)

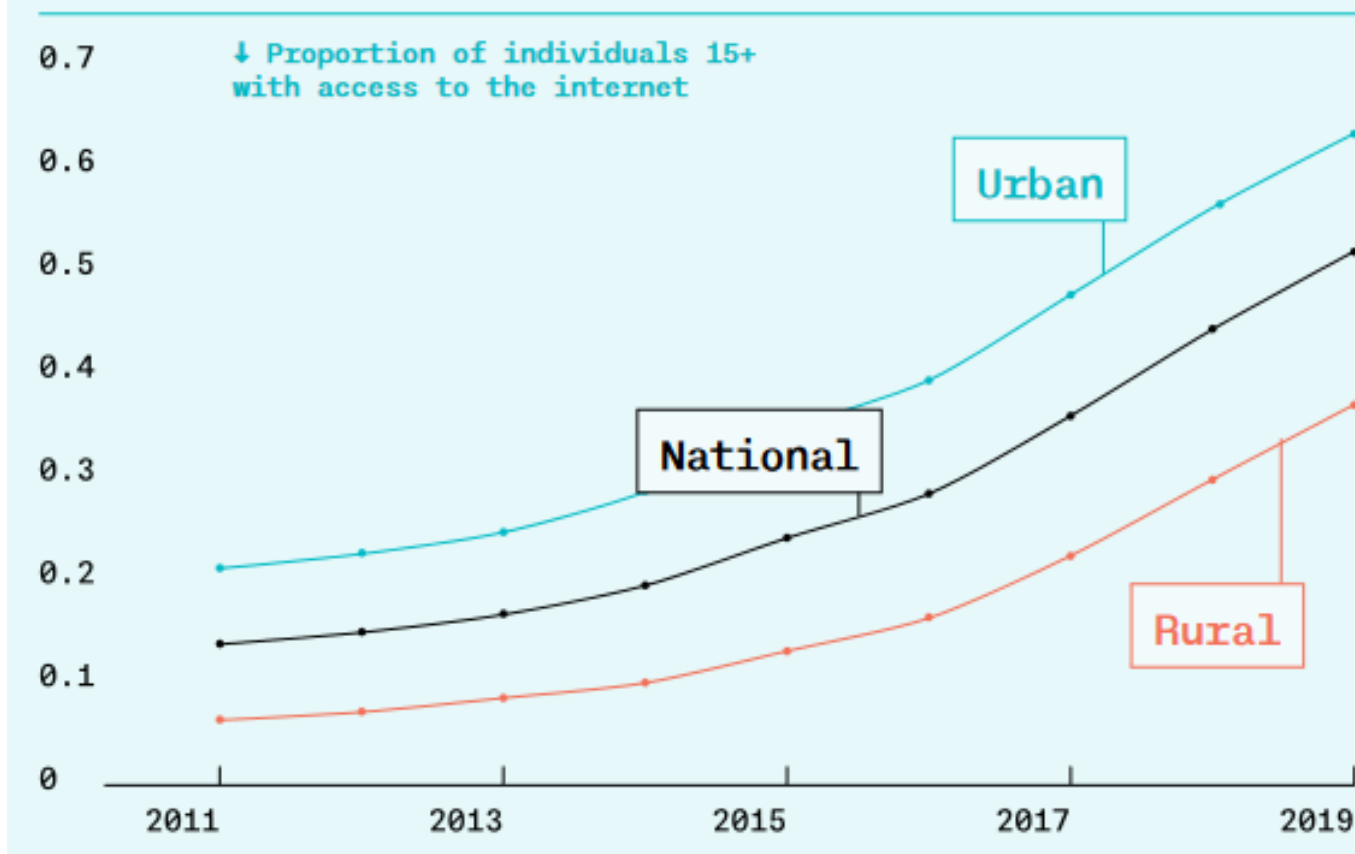
Reasons to Use the Internet

Reasons to Use the Internet	Mean Score	Rating
To be able to access social media	3,35	98,02%
To be able to access public services	2.99	84.90%
To be able to make online transactions	2.90	79.00%
To be able to do work or school from home	3,19	90,21%
To be able to access information/news	3.12	92.21%
To be able to access entertainment content	2,87	77,25%
To be able to access financial services	2.80	72.32%
To be able to access online transportation	2.86	76.47%
To be able to use email	2.93	80.74%

Scale 1-4:

1 = strongly not important, 2 = not important, 3 = important, 4 = very important

Internet Access in Indonesia (3/4)

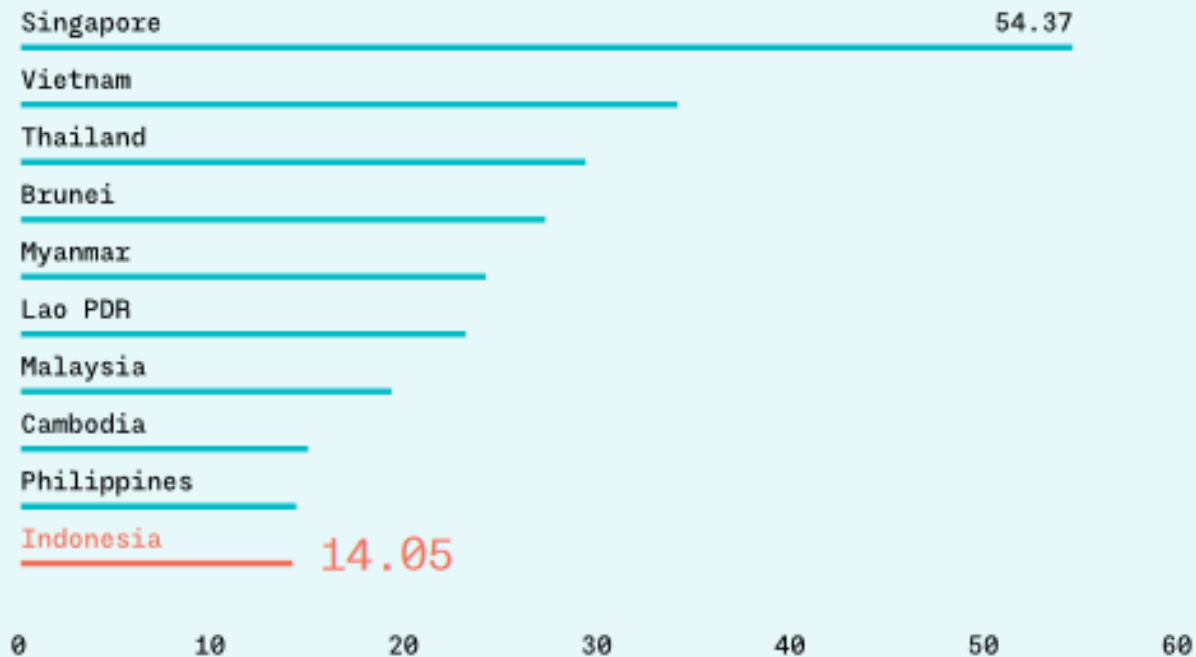


A large gap between urban and rural still exists

Source: Worldbank (2021)

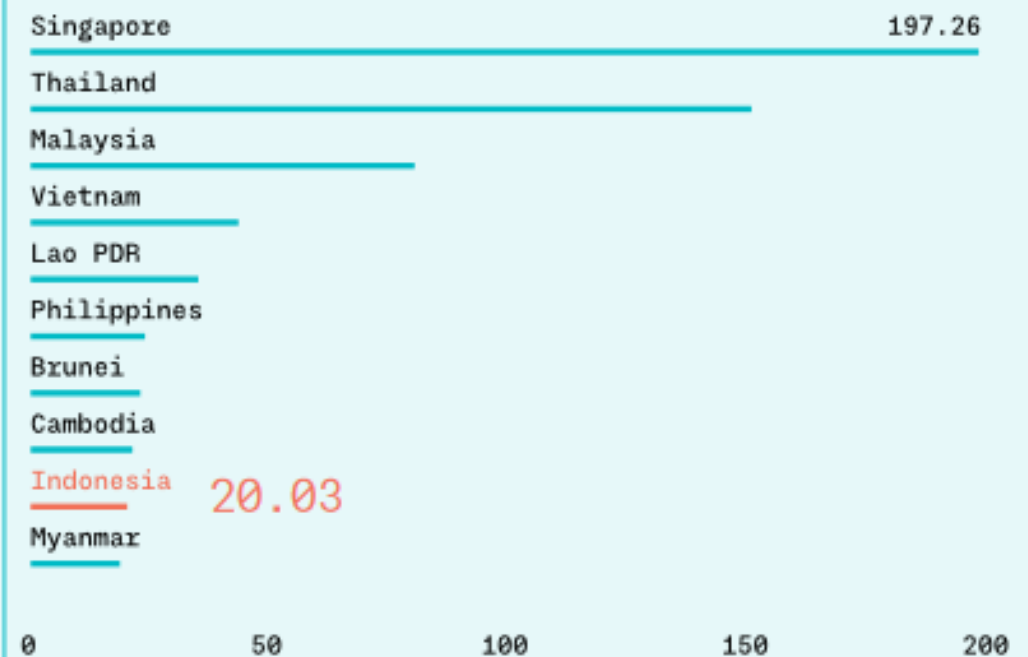
Internet Access in Indonesia (4/4)

↓ Mobile broadband throughput (Mbps)



Source: Worldbank (2021)

↓ Fixed broadband throughput (Mbps)



The quality of the connection is still limited



Optimized spectrum allocation is required!

The Role of 6 GHz Bands (1/2)

- What if 6 GHz is used for WiFi in Indonesia?



Source of Economic value

- Enhance **broadband** coverage and **improve affordability**
- Increase **speed** by reducing Wi-Fi congestion
- Wide Deployment of IoT
- Reduction of **Enterprise Wireless costs**
- Deployment of AR/VR solutions
- Enhanced capacity of municipal Wi-Fi
- Deployment of **free Hot Spots**
- Aligning spectrum decision with other advanced economies
- Enhance the capability for **cellular off-loading**

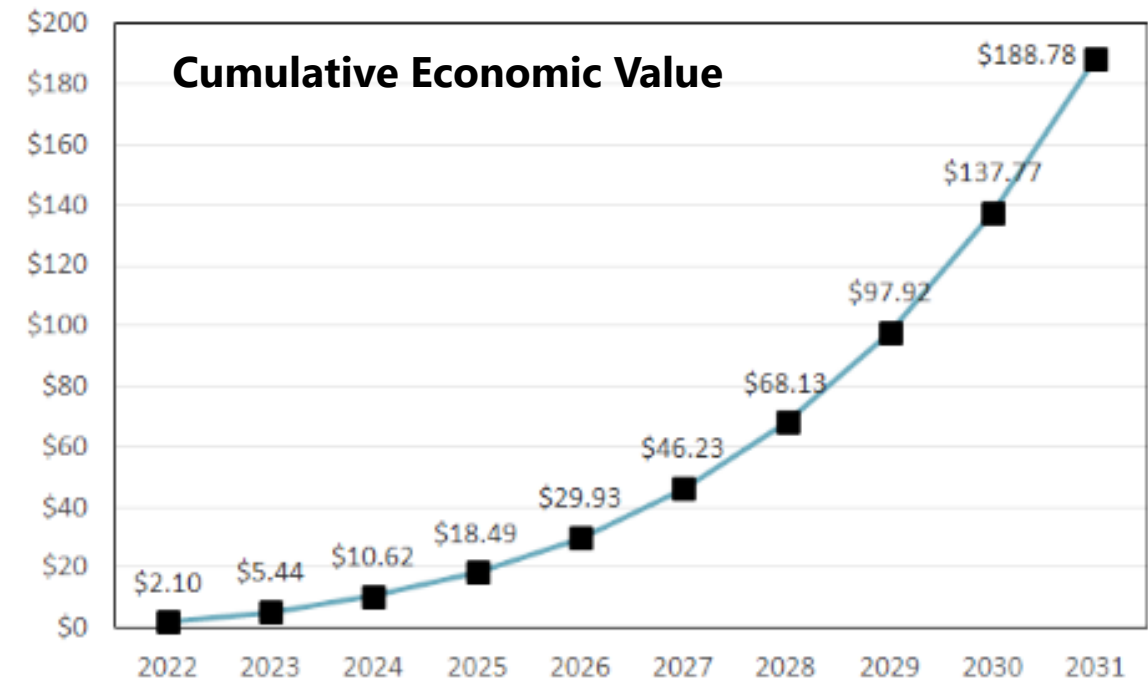
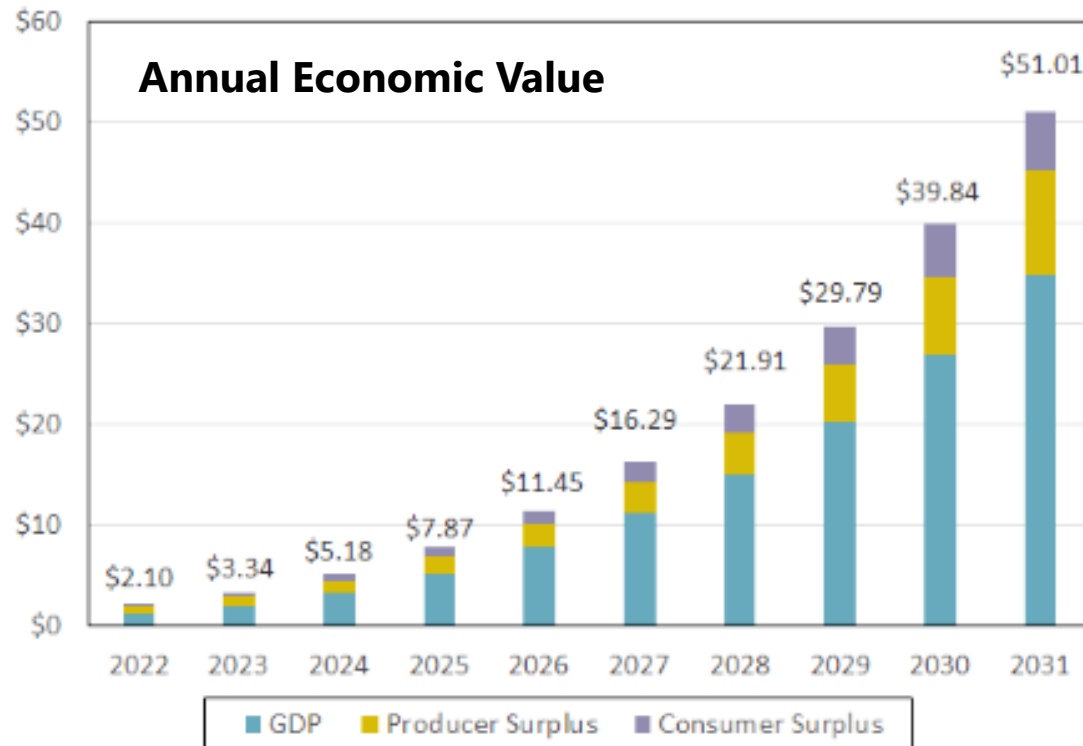
Economic Value

- Incremental growth to Indonesia's GDP
- Producer Surplus:** margins of Indonesian technology firms supplying this market
- Consumer Surplus:** benefits to Indonesian consumers (e.g lower prices, faster broadband speeds)

Source: Telecom Advisory Services analysis (2021)

The Role of 6 GHz Bands (2/2)

- What if 6 GHz is used for WiFi in Indonesia?



Source: Telecom Advisory Services analysis (2021)

Further Challenges

Negative experiences with the previous WiFi at 2.4 GHz and 5 GHz bands

Illegal WiFi operation at 2.4 and 5 GHz (e.g. Power limit violations, illegal repeater.)

Lack of awareness of the benefits of 6GHz for WiFi

Low participation from local industries

Limited deployments of Fibre Optics

Berita Kominfo Kominfo Musnahkan Hasil Penertiban Alat dan Perangkat Telekomunikasi

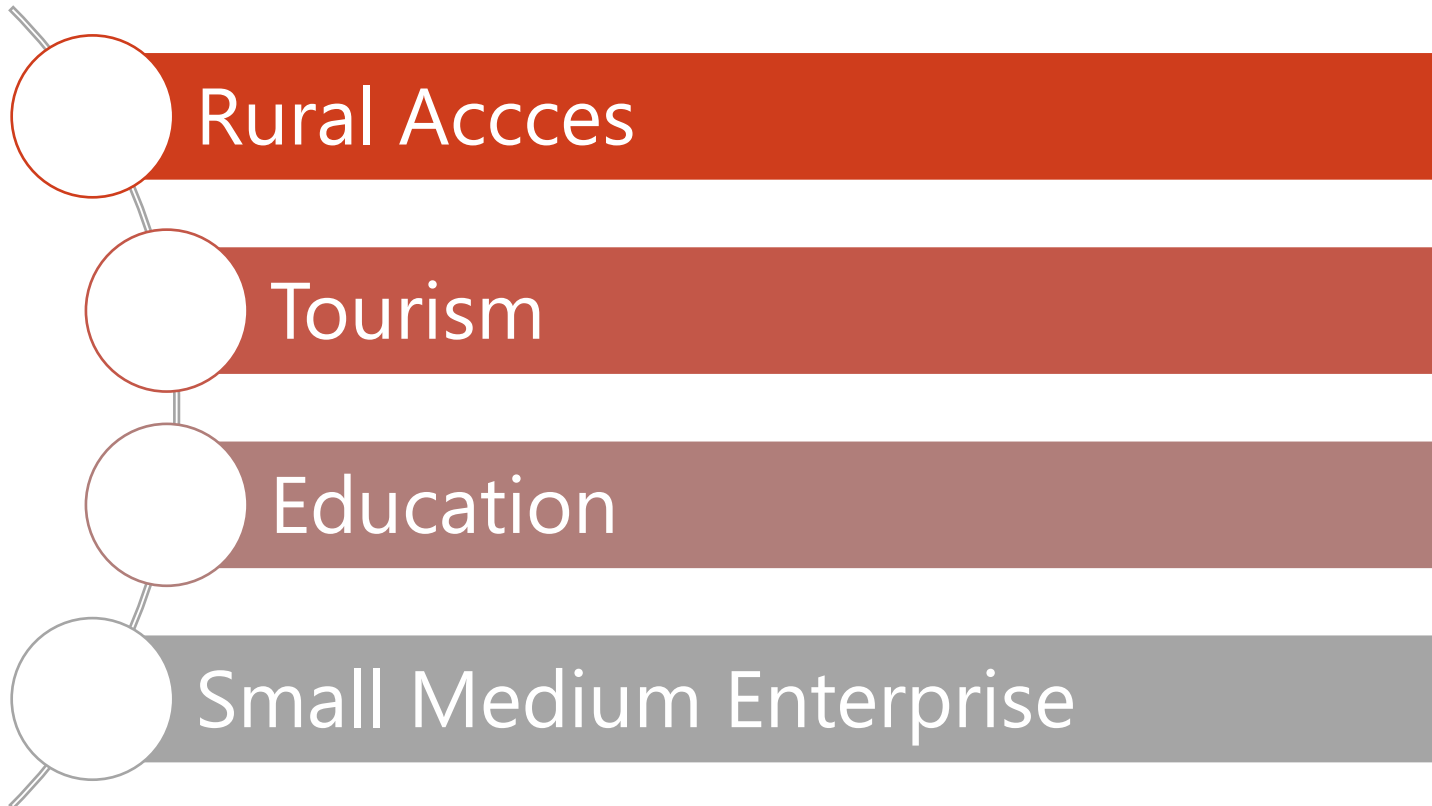
Kominfo Musnahkan Hasil Penertiban Alat dan Perangkat Telekomunikasi

Kategori Berita Kominfo | Viska



The Ministry destroys telecommunication equipment that violates the regulation

Growing needs for **Affordable** Broadband Access in Indonesia:





Focus Group Discussion

- Awareness of Dynamic Spectrum Access
- Achievement of Industry 4.0 in Indonesia



Technical Studies specific to Indonesia

- Co-existence Study
- AFC Study



Assist regulator with the spectrum outlook



Capacity Building



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Obrigado!

maryopi@telkomuniversity.ac.id