

## **About the APNIC Foundation**

APRICOT 2023 / APNIC 55 January 2023



**Overview of Foundation programs and projects in 2023** - Duncan Macintosh, CEO

**ISIF Asia and project updates** – Sylvia Cadena, Head of Programs and Partnerships

EcoInternet Index – Edmon Chung, CEO Dotasia Foundation

**Update on the Switch! Gender and Diversity project** – Mia Perez, Switch! National Coordinator for the Philippines

Facilitated by David Dawson, Senior Communications Coordinator



# **Overview of Foundation programs and projects in 2023**

**Duncan Macintosh, CEO** 

## **The APNIC Foundation**

#### PROJECTS

SWITCH SEA

PacTraining

ISIF Asia

#### VISION

To have a global, open, stable and secure Internet that is affordable and accessible to the entire Asia Pacific community

### MISSION

To increase investment in Internet development in the Asia Pacific region, through education and training, human capacity building, community development, research, and related projects and activities

2021 Annual Report



## **Investing in Internet development**

Some examples of what the Foundation's fundraising efforts focus on:

- Technical training
- Increasing diversity and inclusion
- Network operations research
- Internet infrastructure research and deployment
- Research and Education networks



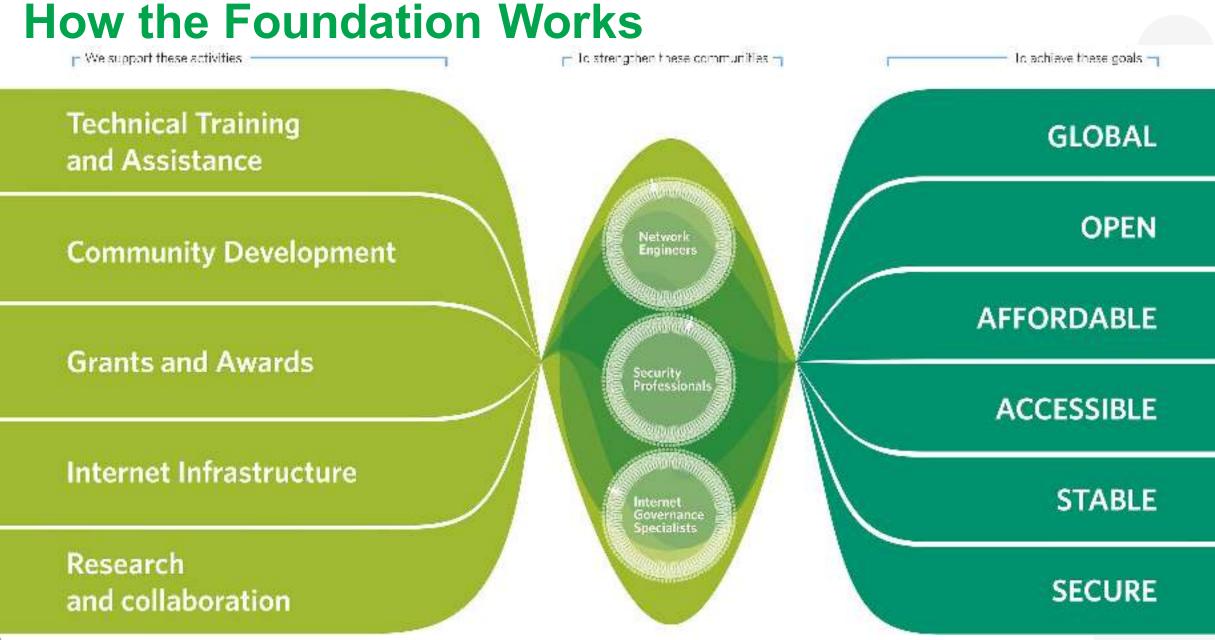














## **Strategic Plan**

Strategic Pillar	Objective						
1. MEANINGFUL IMPACT	<ul> <li>INFRASTRUCTURE - Strengthen and support the deployment of Internet infrastructure and deploy tools for operational infrastructure security and monitoring</li> </ul>						
Enhance levels of knowledge, infrastructure development and inclusion within the Asia Pacific technical community	B. INCLUSION - Support/enable the Asia Pacific Internet community in providing meaningful and efficient access to the Internet, from a technical and operational perspective						
	C. KNOWLEDGE - Enhance technical and operational knowledge contributing to an informed and collaborative community						
2. TRANSFORMATIONAL ENGAGEMENT & PARTNERSHIPS Raise awareness of Foundation activities through engagement & collaboration. Foster productive partnerships to support Internet development	A. Build and support targeted communities so they sustainably grow and develop independently						
	B. Collaborate in program design and project delivery to ensure meaningful impact, shared value and ongoing improvement						
	c. Engage with the Internet development community to promote key issues and priorities						
	D. Increase and diversify the Foundation's funding and resources by engaging with existing and new partners/investors in support of Internet development						
	E. Expand the Foundation's profile/influence/reputation and capabilities/expertise through proactive communications and networking opportunities						
3. HIGH PERFORMANCE	A. Strengthen program quality and evidence base						
Deliver best practice people, finance and business systems that support the Foundation's operations.	B. Implement equitable, accurate and efficient process and systems						
	C. Provide efficient and robust governance, finance and business services						
	D. Deliver an engaged employee lifecycle experience						



## 2023 projects

### **Partnerships**

#### APNIC

- Capacity development (Academy, Training Delivery, Community Trainers)
- Infrastructure support (M-Root and IXPs)
- Community building (NOGs, CERT support)
- Research (Honeynet, measurements)

#### Keio University

- SOI Asia
- AI3

### Foundation

- Switch! Gender and diversity project in 6 South East Asia economies
- Afghanistan training and mentoring
- Information Society
   Innovation Fund (ISIF Asia)
- Foundation grants



## **ISIF Asia and project updates**

Sylvia Cadena, Head of Programs and Partnerships

## **Foundation Programs**

## (()) INFRASTRUCTURE

Efforts to increase Internet speed, reduce maintenance and operational costs, improve reliability and/or security from a technical and operational perspective.

Network deployment and operations Network monitoring and management Security and privacy





## **Foundation Programs**



Efforts to ensure that everyone has meaningful and efficient access to the Internet, online applications and services, from a technical and operational perspective.

> Availability of connectivity Internet access affordability Accessibility Diversity





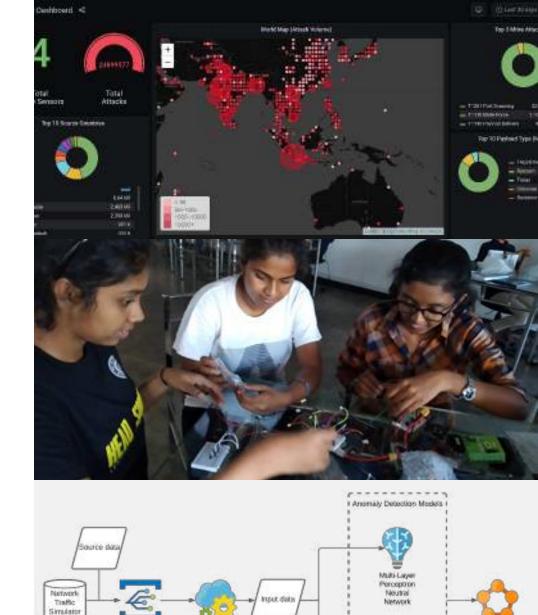
## **Foundation Programs**

## KNOWLEDGE

Efforts to develop technical capacity and/or research around Internet network operations, from a technical and operational perspective.

Professional development New information and training resources

Translation of knowledge resource into Asia Pacific (APAC) languages



Data percautio

performance

Advensarial Reinforcement Learning



## Funding mechanisms available to the community



ISIF Asia Open call for proposals opening soon



#### **Foundation Grants**



#### **Trust Discretionary Funds**





## isif 🕸 asia

- The APNIC Foundation's Information Society Innovation Fund was established in 2008
- The fund is available for APAC organizations that research, design and implement Internet development solutions
- Stay tuned for 2023 Call for Proposals

## **ISIF Asia grant recipients in The Philippines**

- Institute for Social Entrepreneurship in Asia, Inc (ISEA) (Philippines) IN PROGRESS: Building a model for community networks linked to social enterprise and sustainable local economic development
- CVISNET Foundation, Inc. (Philippines)
   IN PROGRESS: ISLET Connect
- Davao Medical School Foundation (DMSF) (The Philippines) IN PROGRESS: Internet connection to four villages in San Isidro
- Ateneo de Manila University, Philippines COMPLETED - <u>UAV-Aided Resilient Communications for Post Disaster Applications: Demonstrations and</u> <u>Proofs of Concept</u>
- Access Health International (Philippines) COMPLETED - Integrated maternal and child healthcare delivery and training for community health teams
- Foundation for Media Alternatives (Philippines) COMPLETED - Promoting women's rights and safety online: addressing electronic violence against women (eVAW)
- SynapseHealth (The Philippines) COMPLETED - <u>Health, emergency and disaster information using mobile and virtual earth technology</u>



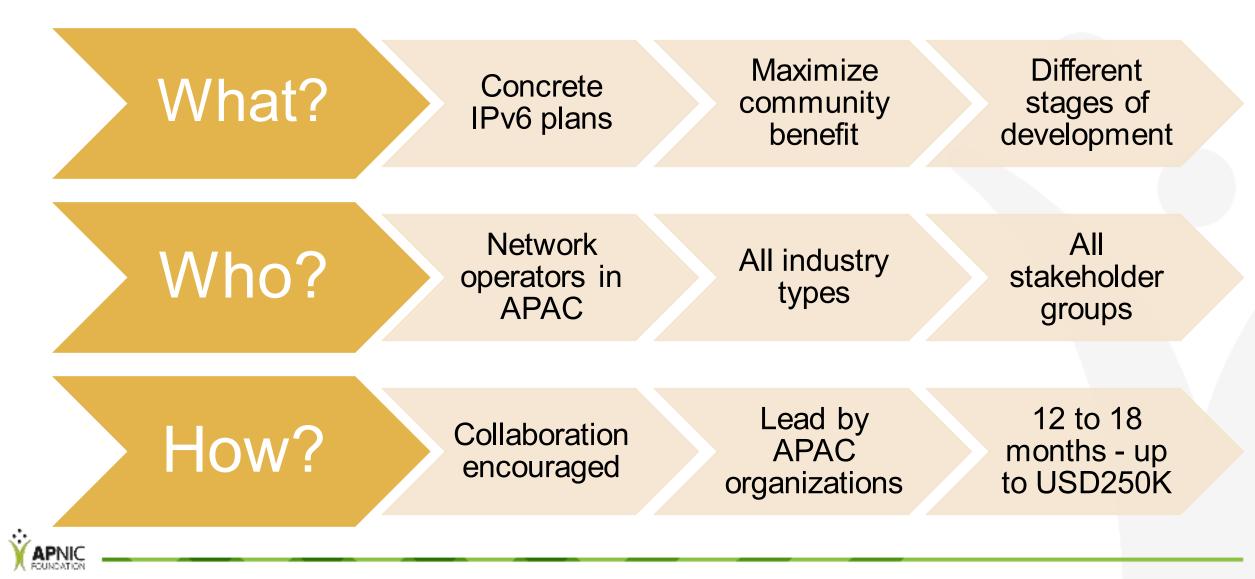
## **Funding types**



Small Grants	Scale-up Grants	Impact Grants	Deployment Grants	Awards	
New ideas Proof of concept Prototyping	Addressing challenges around growth / expansion	Expanding community benefit beyond initial targets	IPv6 deployment plans in different stages of development	Outstanding Community Contributions	
Research USD 30,000	USD 85,000 Including organizational capacity support	USD 150,000 including organizational capacity support	Variable grant size from USD 30,000 up to USD 250,000	USD 5,000	



# 2023 IPv6 Deployment Grants open and accepting applications



## **2022 IPv6 Deployment Grants**

#### Boom!, Micronesia: USD 250,000

Boom! Inc. is currently allocated a /23 IPv4 and a /32 IPv6 address block.

Half of the IPv4 address space have been exhausted through the design of the internal core infrastructure along with deploying several key customer networks.

This project will solely focus on improving the design of the backbone infrastructure and IPv6 address allocation, and adoption of best practices for small to large scale customer deployments, with all testing being conducted at their enterprise lab network.

#### Tonga Communication Corporation, Tonga: USD 250,000

TCC has successfully deployed IPv6 to their fixed networks back in 2018 and adoption is slowly progressing. The project will support the infrastructure deployment to their Mobile Networks as well as support for their billing system to be ready for future 5G network deployments.



## **2022 IPv6 Deployment Grants**

#### National Institute of Technology Karnataka, India: USD 240,000

NITK Surathkal's campus network migration to IPv6 (45000+ terminals to the Internet with 350+ switches, 1200+ indoor/outdoor WiFi access points and a dedicated data centre hosting firewalls, core switches, web and application servers, servers for DHCP, DNS, IPAM, NAT, network management and monitoring)

- Security auditing/planning and mitigating risks
- Converting web services and applications
- Test, validate and monitor network performance and security

#### Universitas Islam Indonesia, Indonesia: USD 60,000

Accelerate IPv6 deployment at schools, higher education institutions, and research organizations, through an SDN-based implementation



## Ian Peter Grants for Internet and the Environment

#### **Focus Areas**

- Inclusion: Support for Indigenous and grassroots organizations working on environmental issues to enhance their work through increased Internet availability
- Infrastructure: Hardware and software development, and/or deployment to understand and address the environmental impact of Internet infrastructure
- Knowledge: Technical research that supports policy development around Internet technologies and climate change

- ISLET Connect CVISNET Foundation, Inc. The Philippines. USD85,000
- Early warning and communication system for flood risk reduction in Gilgit-Baltistan - Lahore University of Management Sciences. Pakistan. USD85,000
- **IoT data-driven water management for climate resilient communities** - Similie Timor Lda. Timor Leste. USD85,000
- EcoInternet index DotAsia Foundation Ltd. Hong Kong USD30,000
- Tackling climate change misinformation -Faculty of Social and Political Science, Center for Digital Society. Indonesia. USD30,000



## **ISLET Connect**

#### CVISNET Foundation, Inc. The Philippines USD 85,000

- Provide a stable broadband Internet connection to 3 islands barangays
- Provides a reliable solar power communications facility
- Establish a web portal that provides both online and offline information around livelihoods, learning, ecotourism and disaster risk reduction
- Introduce a sustainable community-based support operations
- Can be easily expanded and replicated in the nearby islands





## **The EcoInternet Index**

**Edmon Chung – CEO DotAsia Foundation** 

## EcoInternet Index: Towards an Eco-Friendly Internet

Edmon Chung | 2023.02.27 | APRICOT Manila

# WWW-BSI3 Asian #InspirAsian

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# asia #RiseWithAsia

## What is ".asia"?

www.domain.com



Every .Asia Domain Contributes to Internet Development in Asia





### HEINRICH BÖLL STIFTUNG











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## Factcheck: What is the carbon footprint of streaming video on Netflix?



EDITORIAL CALENDAR

Events



Webinars

Software Directory

## Calculating the Pollution Effect of Data



Who emits					North America 6.5 billion tonnes CO, 18% global emissions		Europe 6.1 billion tonnes CO, 17% global emissions EU-28		
the most CO <sub>2</sub> ?				2.5 billion tonnes 6.8%	5.3 billion tonnes CO, 15% global emissions		3.5 billion tonnes CO. 9.8% global emissionis		
						Canada	Mexico	Russia 1.7 bition tornes 4.7%	
	Japan 1.2 bilion tonnes 3.3%	Saudi Arabia 635 million tonnes 1.8%	Thailand 331M tornes 0.9% Kazakhstan	UAE 232M torre 0.6% Vietnam	lrag	573M tonnes 1.6%	490M tonnes		D. one. Sector of S124 (s)
	Iron	South Korea 616 million tonnes 1.7%	Talwan 272M tomas	0.55% Qatar 1304 tirrus 0.4% Philippines 0.8%	CONTRACTOR Contractor Contra	456M tannes	Record Argentina	Australia Anavi t 1, st. A ship 1, st. 15 bi 1, 25	ational aviation ping lon formes
	Iran 672 million tornes 1.9%	Indonesia 489 million tonnes 1.496	Malaysia 255M formes 0.7%	HOLENDARY HOLENDARY CLIMA Underkister Underkister Underkister Underkister Underkister		Egypt 2184 cones 248 Algeria 1510 cones (0.4%)			
					1.3 billion t 3.7% globa	Africa tonnes CO, I emissions	1.1 billion tonnes	erica Oceania s CO., 0.5 billion t isions 1.3% globa	onnes CO.,



## Group of Advisors:



**Cassian DREW** 

Managing Director, Inclusive Growth Advisor on COVID-19 Economic Recovery, UNDP



Kavickumar MURUGANATHAN Sr Manager, Asia Datacenter Sustainability Policy, Microsoft



David JENSEN UNEP Head of Environmental Peacebuilding





**Desiree MILOSHEIC** International Affairs and Policy Adviser at Afilias Former Special Advisor to the Chair of the UN IGF MAG

Anna MOORE

Sustainability Consultant and Partnerships Manager, Eco-Business





Kathryn SFORCINA

Global Head of Strategy, IV.AI Co- Chair, UN IGF Policy Network for Environment and Digital

Sang Min SHIM Visiting research fellow, Sejong Institute Former Assistant Professor of Korean National Diplomatic Academy







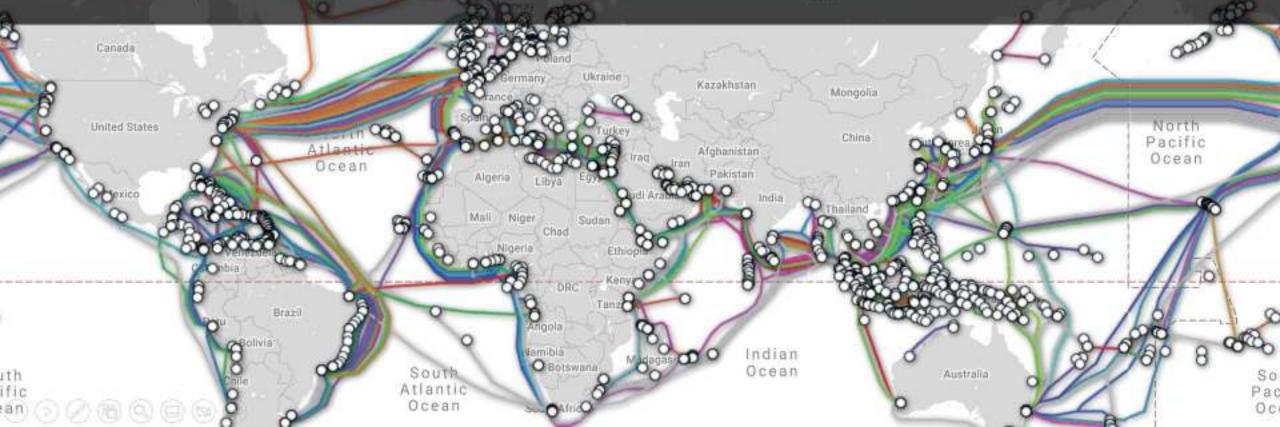
## Internet Footprint vs. Physical Footprint





## The Power Grid as a Critical Component

## Capacity & Bandwidth of the Infrastructure





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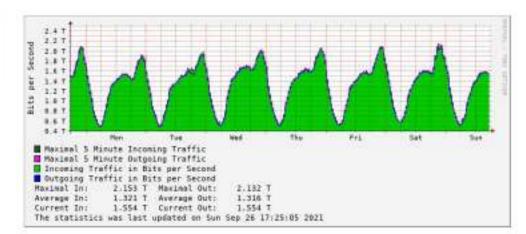
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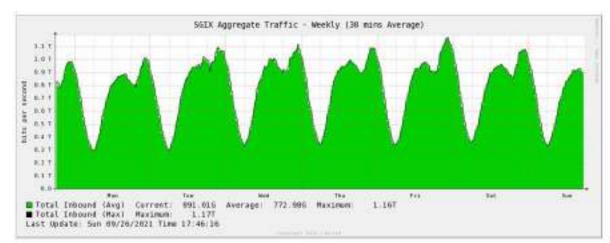
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## Variances (Peak & Troughs) in Internet Traffic Patterns

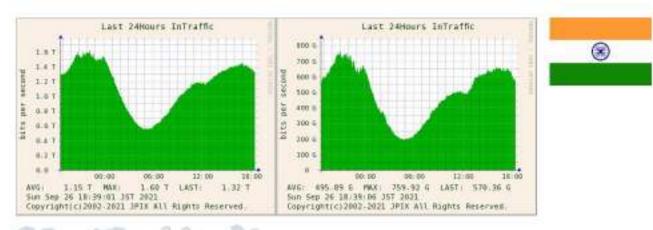




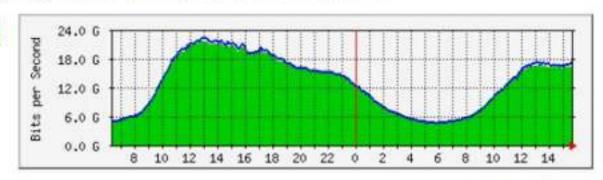




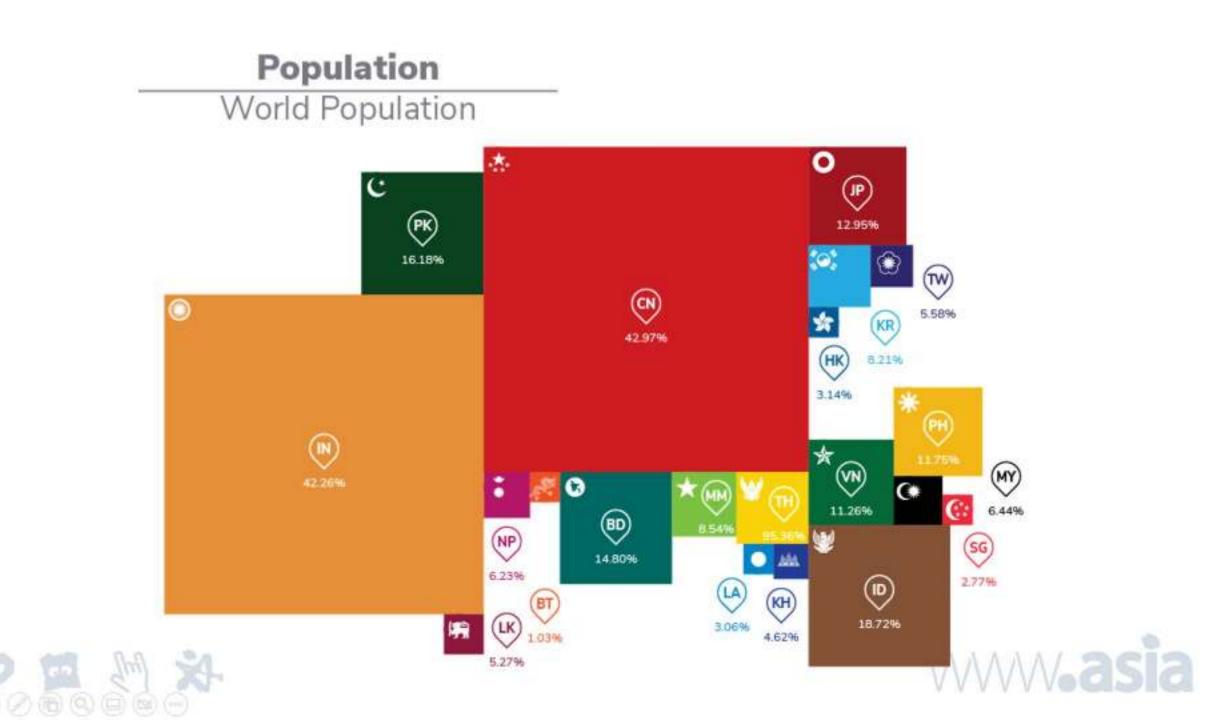




#### Aggregated traffic graphs for all locations



www.asia



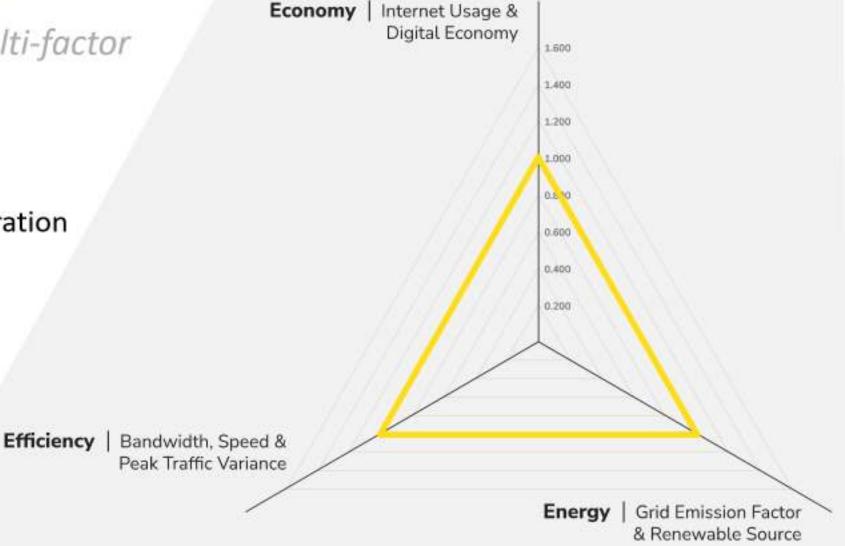
#### **Internet Population**

#### World Internet Population



## Additional Indicators

- Towards a composite multi-factor index
- Economy
  - Internet Usage patterns
  - Digital Economy Consideration
- Energy
  - Grid Emission Factor
  - Renewable Sources
- Efficiency
  - Network Capacity, Speed & Variance



#### Economy

 Carbon Footprint of Internet Activities vs. Digital Economy

Carbon Footprint of Internet Activities

Total Carbon Emission

ICT Services as % of Total Trade in Services (Export + Import)

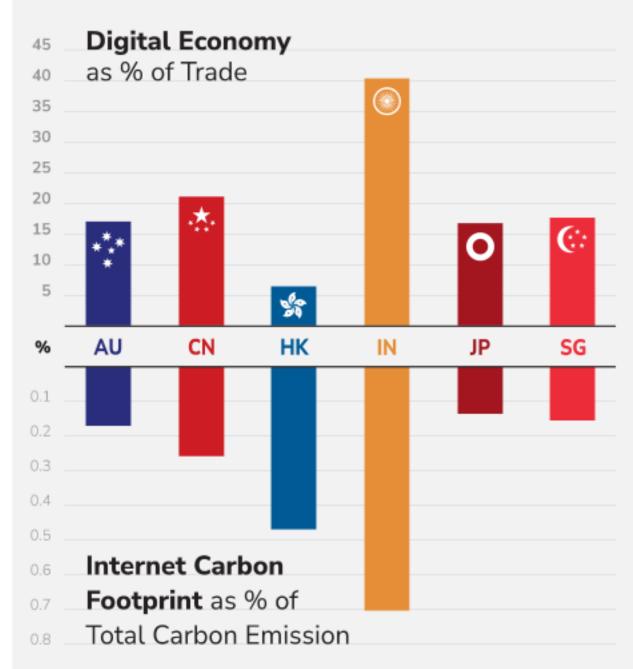
• Data Sources:

🖉 (6) (9) 💷

Local authorities & providers +







#### Energy

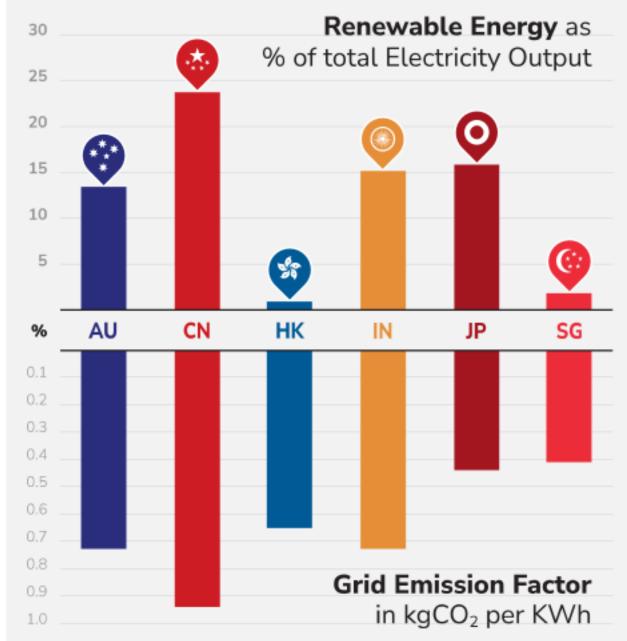
 Grid Emission Factor and Renewable Energy Source components

Grid Emission Factor (kgCO<sub>2</sub>/KWh)

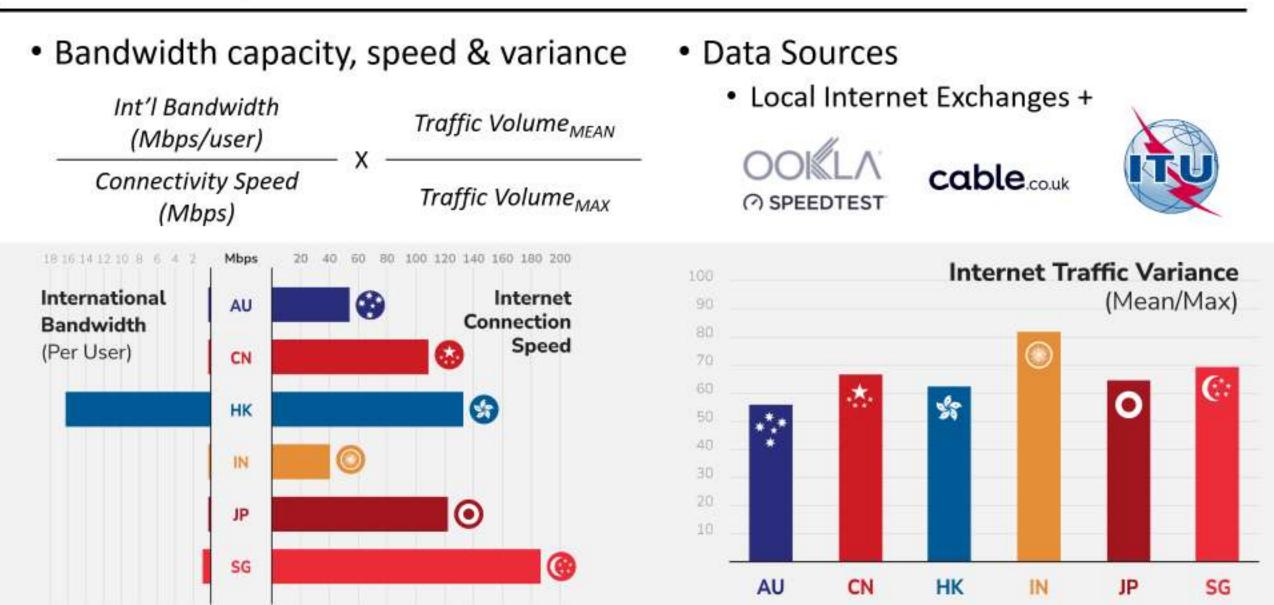
*Renewable electricity output (% of total electricity output)* 

- Data Sources
  - Local authorities & providers +





### Efficiency



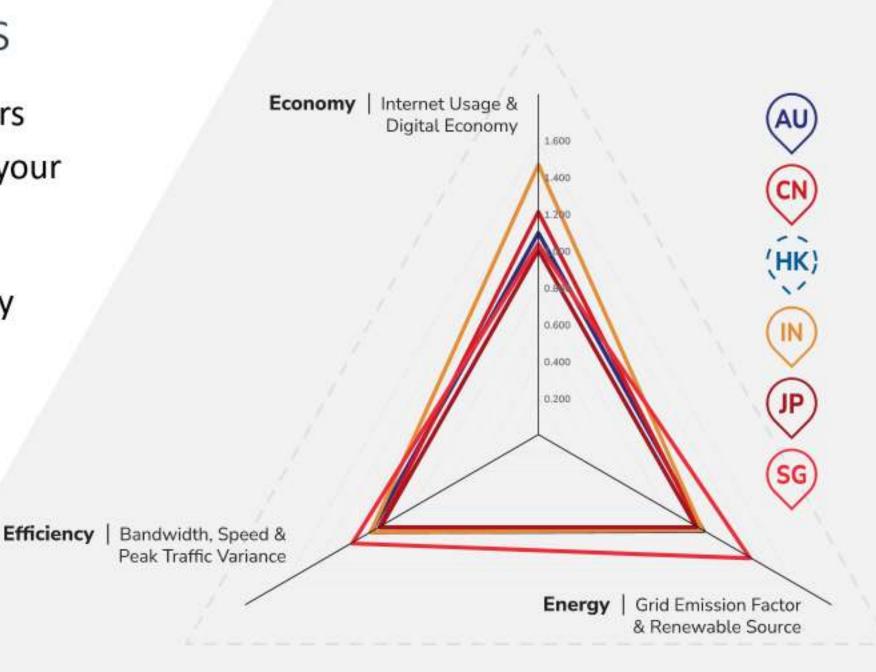
#### Eco-Internet Index (EII) Pilot Study Scores

	Economy		Energy		Efficiency		Composite Index	
	Normalized Score	Rank	Normalized Score	Rank	Normalized Score	Rank	Composite Score	Rank
AU	1.094	3	1.045	4	1.063	3	0.992	2
CN	1.209	4	1.020	2	1.010	2	1.012	3
HK	5.000	6	5.000	6	5.000	6	21.773	6
	1.466	5	1.034	3	1.066	4	1.214	4
₽	1.000	1	1.000	1	1.000	1	0.871	1
SG	1.037	2	1.341	5	1.181	5	1.219	5

www.asia

## Core Narratives

- Carbon conscious users
- The grid that powers your Internet
- The digital economy advantage & efficiency
- Do more, waste less







#### **EcoInternet Pilot Study Report 2021**

The COVID-19 pandemic unequivocally demonstrated that the Internet is and will likely continue to be the core and



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#### 2022-2023: Expanding across Asia Pacific

HEINRICH

STIFTUNG

BÖLL

- 15-20 Economies
- Refinement of methodology
- Connecting with Stakeholders



Every .Asia Domain Contributes to Internet Development in Asia

Thank You! | info@dot.asia

# WWW.asian #GenerAsian

an Ini

#### Update on the Switch! Gender and Diversity project

Mia Perez – Switch! National Coordinator for the Philippines

#### **Switch! – diversity in the Internet Industry**





**145** women and **16** gender diverse professionals receiving professional development



Covering Cambodia, Laos, Thailand, Timor Leste, The Philippines and Viet Nam



**166** training providers, **1480** enrollments, **416** courses complete and certifications achieved

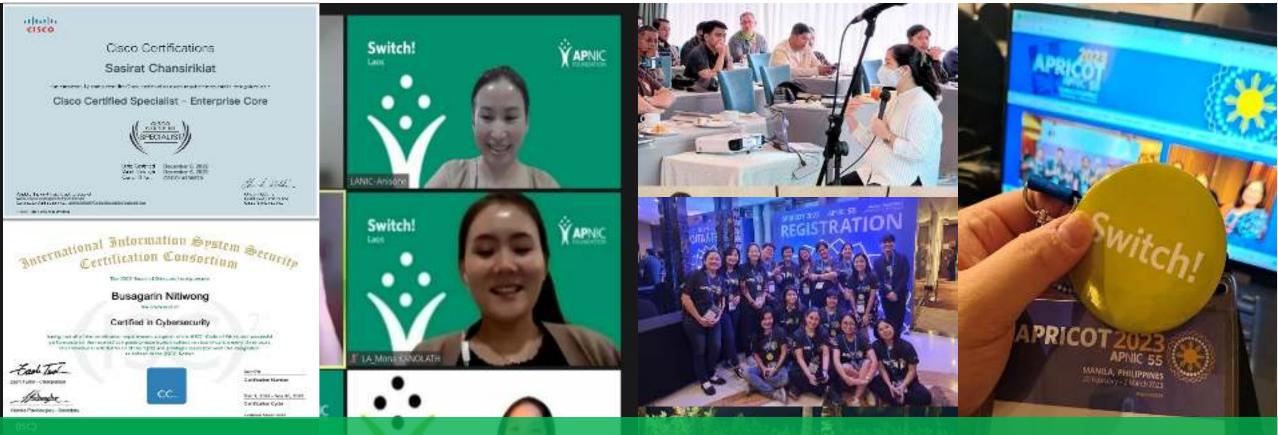


**124** participants sharing knowledge and expertise, including **14** technical research projects in progress



**6** FtF national events + **6** delegates APNIC54 + **27** delegates APRICOT 2023/APNIC55

#### Switch! – diversity in the Internet Industry



Certifications for network operations, cybersecurity achieved, and professional development 60 participants received mentoring support 124 participants reporting increased activity around networking and visibility of their professional contributions

27 participants received support to attend APRICOT 2023 / APNIC 55 across workshops, hackathon and conference

#### **Switch! - National Events**



Networking events were organized in **Cambodia**, **Laos**, **Thailand**, **Timor Leste**, **The Philippines** and **Viet Nam and were** attended by 137 participants out of 203 Switch! and Switch SEA participants from 2021-2023



#### Switch! - participants research outcomes

- 2 published papers
- 12 ongoing

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#### ENERGY HARVESTING BETWEEN UAVS FOR BACKHAUL CONNECTION

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#### **Switch! - Participation in technical community events**



Women: Thailand Cyber Top Talent 2022 Switch! at SOIAsia

KHNOG

Viet Nam Internet Day

#### **Stay tuned for more news!**





https://apnic.foundation



@ApnicFoundation



**APNICFoundation** 



apnic-foundation



https://bit.ly/3A8qDJD





https://isif.asia

@ISIF\_Asia



**ISIF.Asia** 





## Questions? Let's discuss!