Internet Peering in Asia-Pacific

A Comparative Case Study Report

Internet Society

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Acknowledgment

Strong **infrastructure** and local technical **communities** provide complementary building blocks upon which more and better Internet infrastructure can be built.

Where local infrastructure is not robust, Internet connection is less reliable and more expensive.

Congratulations to Peering Community

Survey by APIX and ISOC June 2020

IXP name	Country/ Economy	Peak increased: (%)
TPIX	Taiwan	almost same
BKNIX	Thailand	
PhOpenIX	Philippine	
MM-IX	Myanmar	40%
SGIX	Singapore	8%
VNIX	Vietnam	20%
IIX	Indonesia	8%
IX-Australia	Australia	40%
NP-IX	Nepal	19%
HKIX	Hong Kong	35%
MyIX	Malaysia	20-33%
JPNAP	Japan	10%

Support to Internet Infrastructure during COVID-19

- **Keep traffic local**

- **Improve quality of service & performance**

- **Attract investment**

- **Spark development**

- **Encourage collaboration**

- **Additional increase in capacity**

- **Support to educational community**

Case Study Report Objectives

To assess the current outlook of Internet peering in Asia-Pacific, and how IXPs are contributing to an efficient and economical peering environment.

- What is working in general for the IXPs and, what is not?
- If peering in Asia-Pacific is different than other regions?
- What is the business case of peering in Asia-Pacific?
- Which policies might be able to help promote the establishment and growth of IXPs?
- What are the key factors to run and scale up a successful IXP?

Participating IXPs
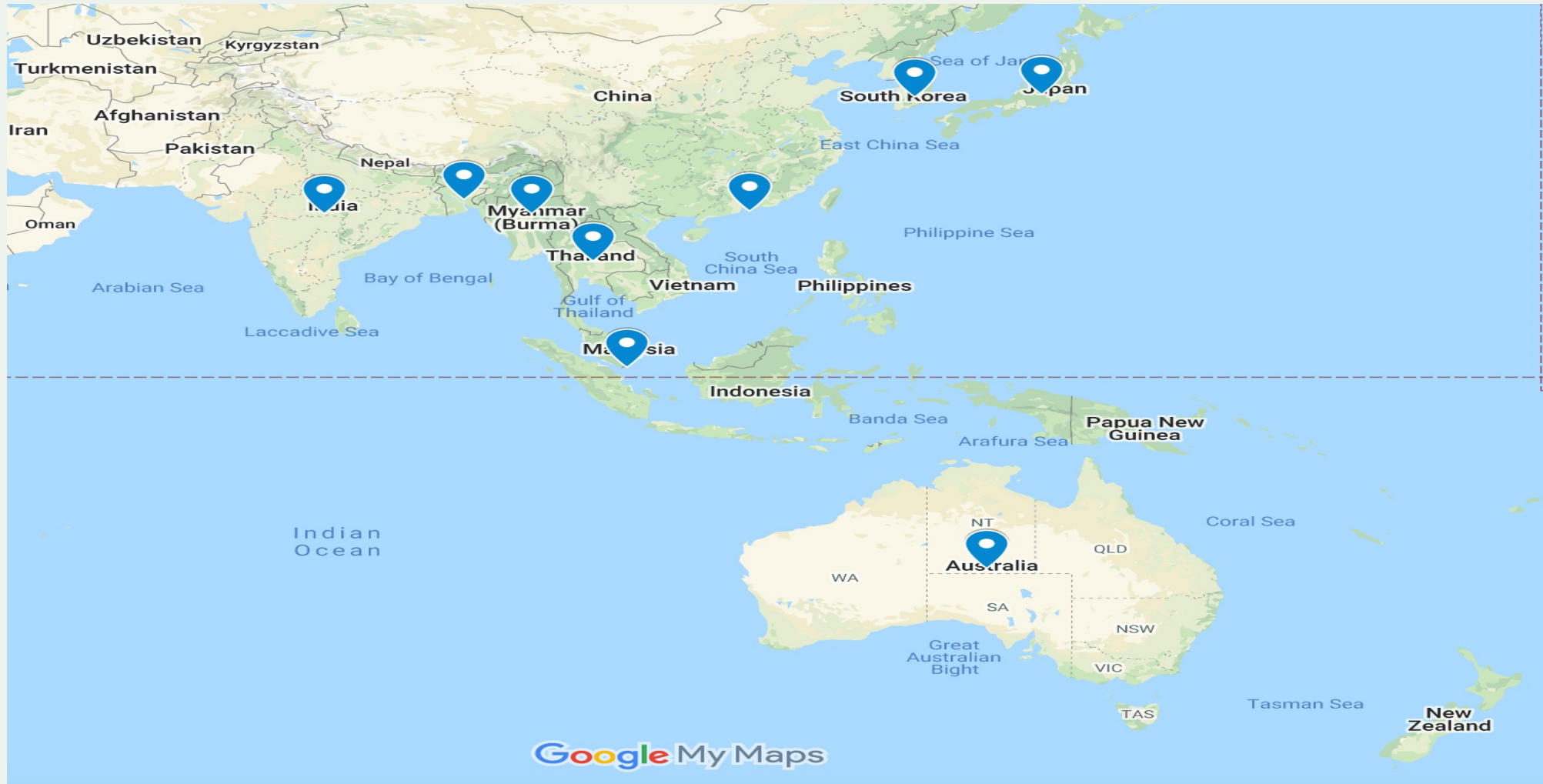
Participating IXPs

Economy	IXP Name	Location	Launch	Model	Population (Millions)	Land Area (Thousands)	Peers	Ave. Traffic	Prefixes (on PCH)
Myanmar	MMIX	Yangon	2017	Community	54	676km²	13	7.3Gbps	N/A
Thailand	BKNIX	Bangkok	2015	Community	66	513km²	38	26Gbps	14,594
Singapore	SGIX	Singapore	2010	Government	5	<1km²	167	493Gbps	295,147
Bangladesh	BDIX	Dhaka	2004	Community	166	143km²	120	44Gbps	4,640
India	NIXI	Delhi	2003	Government	1,312	3,287km²	32	39.3Gbps	N/A
Japan	JPNAP	Tokyo	2001	Commercial	126	377km²	174	1.5Tbps	N/A
Korea (Rep. of)	KINX	Seoul	2000	Commercial	51	99km²	64	274Gbps	191,654
Australia	IX Australia	Sydney	1997	Community	25	7,741km²	228	283Gbps	137,458
Hong Kong (SAR)	HKIX	Hong Kong	1995	University	7	1km²	333	1.1Tbps	648,896

Note: Dec 2020 Data

Overview of Other Regions

Case Studies on sample IXPs in each other region

- DE-CIX, KINX, IX.br, Equinix

By Region

- Europe has the most IXPs per capita
- United States has the most IXPs for a single country
- Latin America is growing some large exchanges
- Africa is still an emerging IXP market
- Asia Pacific IXP growth is highly varied

Key Messages

Asia has a range of IXP business models
- No business model guarantees success

Advanced networks/economies have competing exchanges
- For-Profit and Not-For-Profit

Enabling environment provides opportunities
- Healthy ecosystem supports peering and interconnection

IXPs are great attractors
- Successful IXPs support the ecosystem

Reflections on Best Practice

The growing importance of the edge
- Content sharing, Cloud computing, and IXPs
- The question of datacenters

Starting or Scaling an IXP
- Do the best with what you have got
- Business models are less important than the ability to meet a market need

Fostering a supportive ecosystem
- IXPs are a product of their environment: community, economy, geography
- IXPs can prosper in the right ecosystem

Report will be released next month

Infrastructure and Community Development Project

Enable more effective and sustainable IXPs

Key Audience

Communities interested to establish a new IXP
Existing IXPs
Network Operators
Content Providers
Policy Makers
Regional IX Associations
Communities that develop IXP tools

The Project Provides

Community mobilization support
IXP training
Equipment support
Advise to existing IXP
Peering forums support
Research and Studies

Useful resources

- https://www.internetsociety.org/wp-content/uploads/2015/10/ISOC-PolicyBrief-IXPs-20151030_nb.pdf
- https://www.internetsociety.org/resources/doc/ixpimpact/
- https://www.internetsociety.org/blog/2021/03/in-yucatan-mexico-ixsy-gets-its-watershed-moment/
- https://www.afpif.org/virtual-peering-series-africa/
- https://www.internetsociety.org/blog/2020/07/ixps-keeping-local-infrastructure-resilient-during-covid-19/

Thank you.

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