

# Philippine Internet Landscape

(Peering perspective from a tier-2 carrier)

## HKNOG 6.0

2 March 2018

Hong Kong

**Achie Atienza**

Globe Telecom AS4775

# Introduction

Vincent Atienza ‘**Achie**’



**Globe Telecom**

Senior Product Manager  
CDN & IP Peering

IP Peering, Interconnection & Strategy  
IP Ecosystem



**Internet Society Philippines (ISOC-Ph)**

Member / ex-Board of Trustee

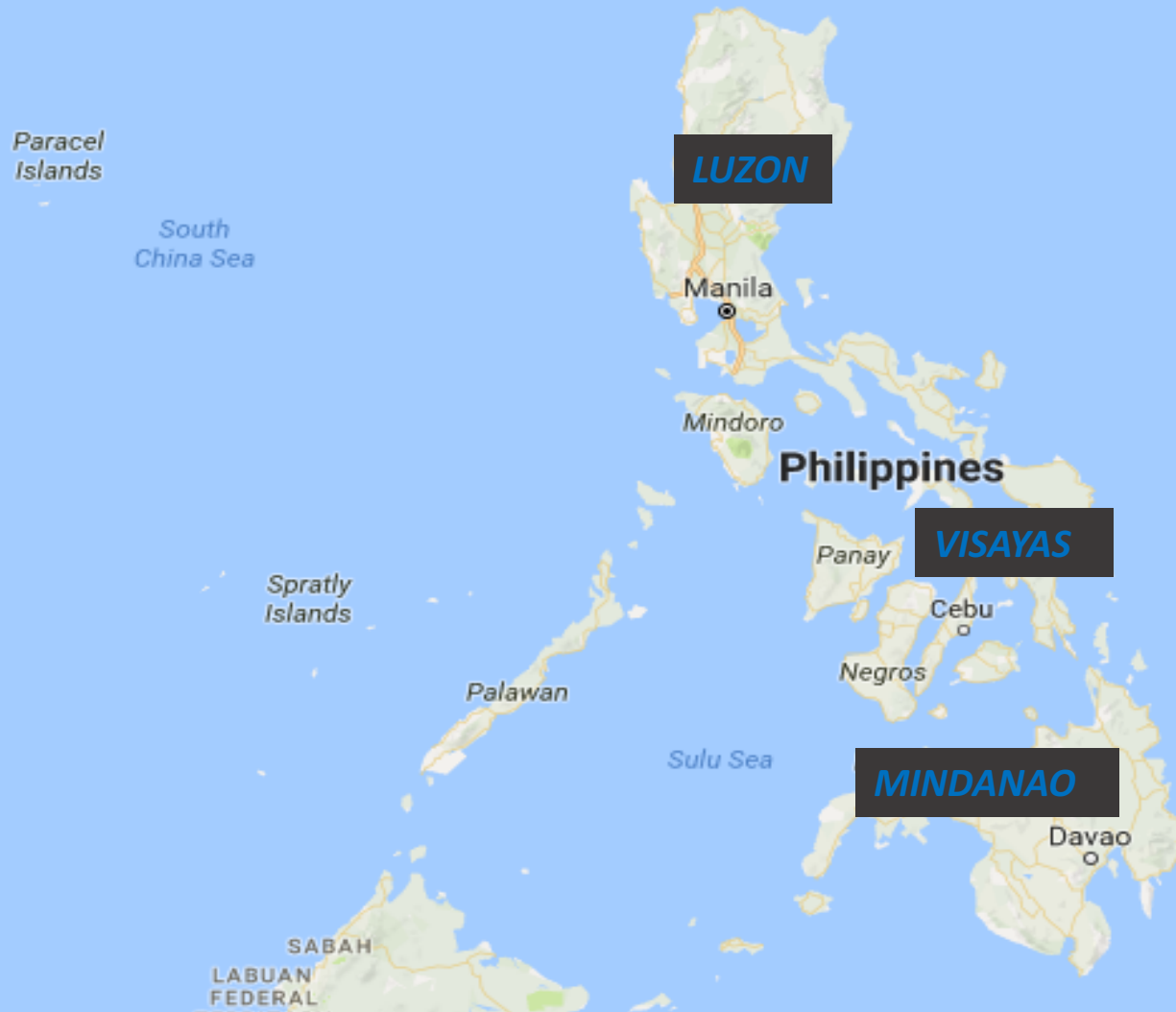
**Philippine Network Operators Group (PhNOG)**

Chairman

# Agenda

1. Cable systems
2. Networks & IXPs
3. Perspectives

# Ph Internet in Numbers



**10** International Submarine Cable systems (2 Ongoing)

**7** International Cable Landing Stations (1 ongoing)

**483** Autonomous System Number (ASNs)

**5.6M** IPv4 addresses

**66** IPv6 addresses (in /32)

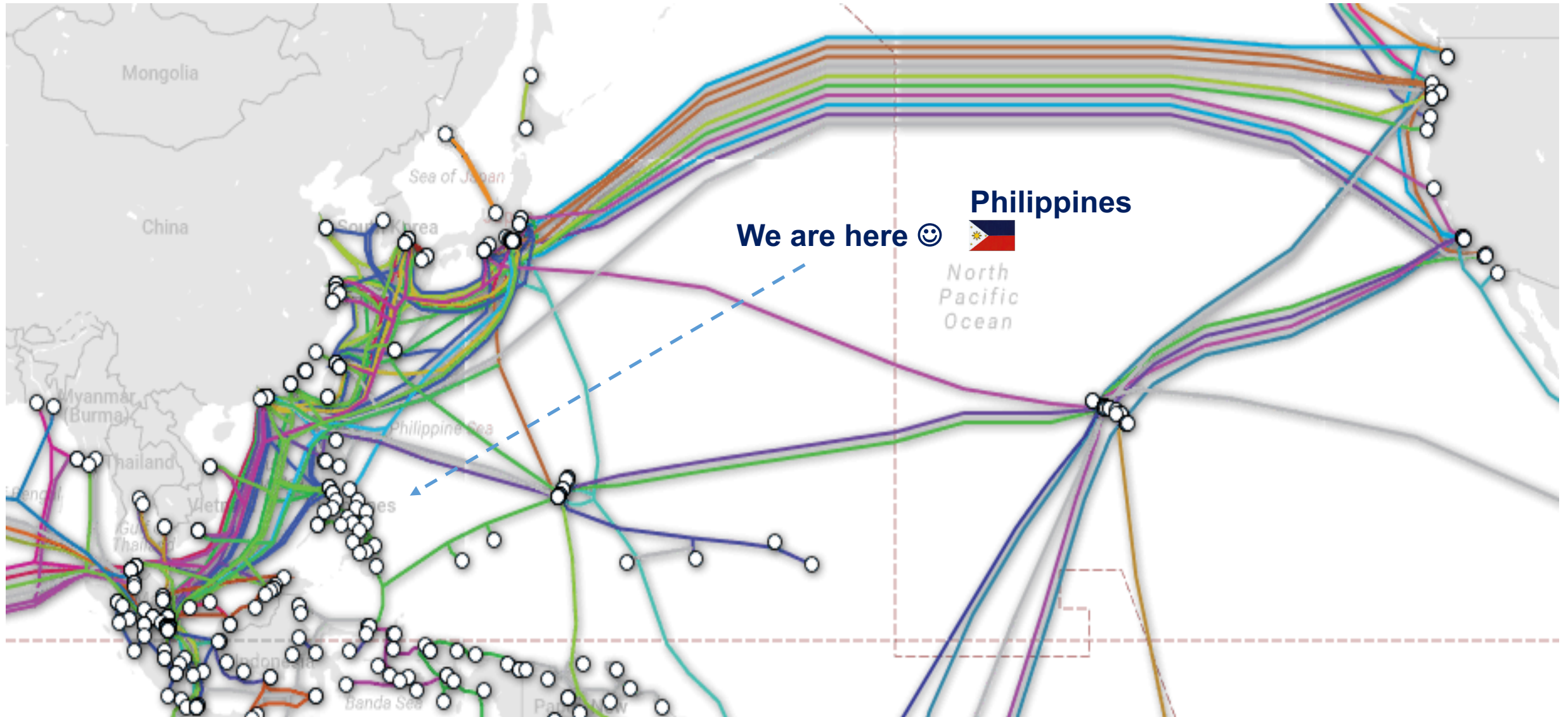
**7** Local IXes

**55%** Internet penetration

References:

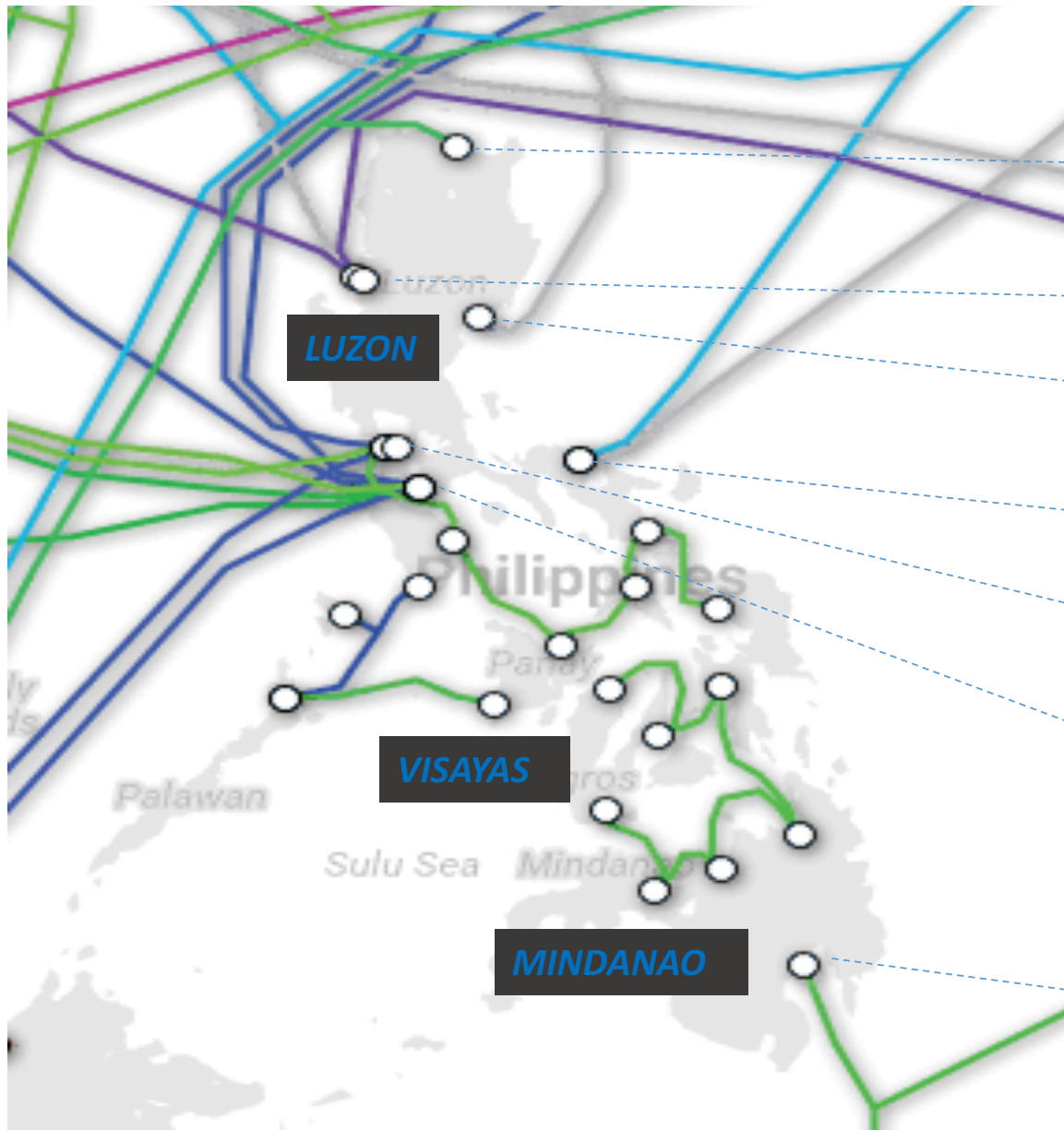
Maps.google.com, APNIC, third party sites, <http://www.internetworldstats.com/asia.htm#ph>

## Submarine Cable Systems reference:



Reference:  
<http://www.submarinecablemap.com/#/>

## Submarine Cable Systems reference: Ph landing points



Ballesteros: **TGN-IA**  
RFS: Mar 2009

La Union: **AAG**  
RFS: Nov 2009

Aurora: **PLCN**  
RFS: Q4 2018

Daet: **ASE**  
RFS: Aug 2012

Daet: **JUPITER**  
RFS: 2020

Nasugbu:  
**SJC**, Jun 2013  
**APCN2**, Dec 2001  
**SMW3**, Sep 1999

Cavite: **EAC**  
RFS: Nov 2002

Davao: **SEA-US**  
RFS: Aug 2017

# Recent Cable cut (2017)

## SE Asia undersea cables got cut; slower internet ensues

by Carl Lamiel · September 2, 2017



Experiencing slower internet lately? You're not alone: Several undersea cables have been cut in the wake of the recent typhoons in the region, leaving most ISPs in the country with slower connections.



**Southeast Asia Suffers Slow Internet Due to Broken Undersea Cables**

## Undersea internet cable repairs may continue until October



ABS-CBN News  
Posted at Sep 07 2017 1:24 PM



References:  
News, PRs

 **Converge ICT Solutions Inc.** ✓  
about 2 weeks ago 

Update as of September 1, 2017, 9 AM:  
Dear Customers,  
Our international backbone providers are still finalizing the estimated time to repair the submarine cable cuts. It usually takes 4-6 weeks to fix issues of such nature. Restoration is still dependent on weather conditions, availability of cable ships and permits. ... [See More](#)

 **PLDT** ✓  
about 2 weeks ago 

### PLDT Advisory

September 2, 2017

We're sorry to inform you that you may experience a slowdown of your PLDT Home broadband service, particularly during peak hours. This is due to cuts in the international cable systems serving PLDT. We are working with our overseas cable system partners to expedite the repair of these facilities and shall provide further updates. Thank you for your patience and understanding.

[See More](#)

Globe Telecom has also issued their statement regarding the incident:

“Globe Telecom takes its internet routing responsibilities seriously, and over the years have invested significant amounts of capital in a variety of subsea cable systems, including the recent SEA-US system, to ensure diversity. Globe has successfully rerouted its data traffic that goes through the affected cable systems, to its other subsea cable capacity routes. In so doing, the multiple subsea cuts had no adverse impact to our enterprise clients and mobile and broadband customers.

Our technical teams are closely monitoring the network to ensure voice, SMS and data services are operating at normal levels.

– Yoly Crisanto, Senior Vice President for Corporate Communication, Globe Telecom

”

# ASNs

by IP address

The report below shows ASNs assigned to 🇵🇭 [Philippines](#), ranked by the total number of IP addresses currently active on each network. Click on the ASN for full IP address information, whois details and more. You can also view our [hosting report](#) to see the networks ranked by how many domain names they host.

A diagram on the left shows a blue circle labeled 'GLOBE' connected by lines to the first six rows of the table. On the right, a red circle labeled 'PLDT' is connected by lines to the last six rows of the table. The last two rows of the table are highlighted with a green border.

ASN	Name	Num IPs
<a href="#">AS9299</a>	Philippine Long Distance Telephone Company	2,447,872
<a href="#">AS4775</a>	Globe Telecoms	539,904
<a href="#">AS9497</a>	Digital Telecommunications Philippines Inc.	387,328
<a href="#">AS6648</a>	Bayan Telecommunications, Inc.	365,824
<a href="#">AS132199</a>	Globe Telecom Inc.	273,664
<a href="#">AS9658</a>	Eastern Telecoms Phils., Inc.	247,296
<a href="#">AS7629</a>	EPLDT	169,728
<a href="#">AS24106</a>	DMPI, Digitel Mobile Philippines Inc.,	156,160
<a href="#">AS10139</a>	Smart Broadband, Inc.	143,616
<a href="#">AS23944</a>	SKYBroadband SKYCable Corporation	109,056
<a href="#">AS17639</a>	Converge ICT Solutions Inc.	72,704

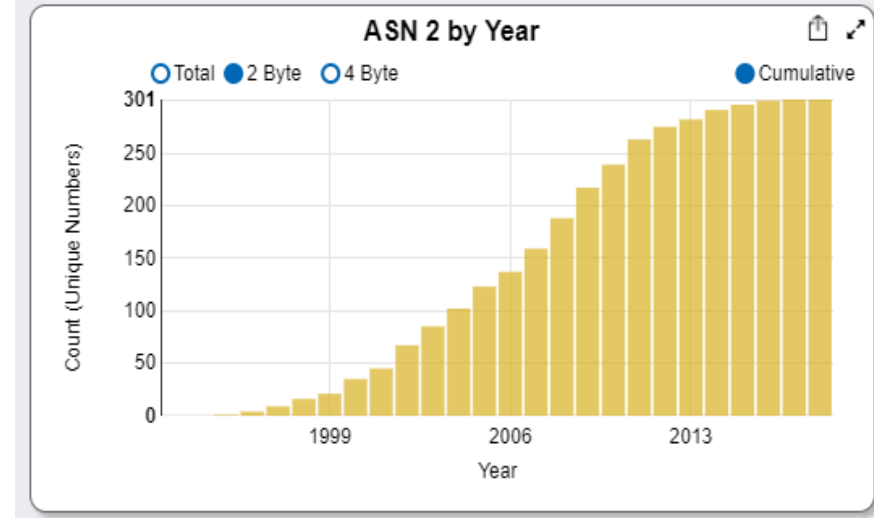
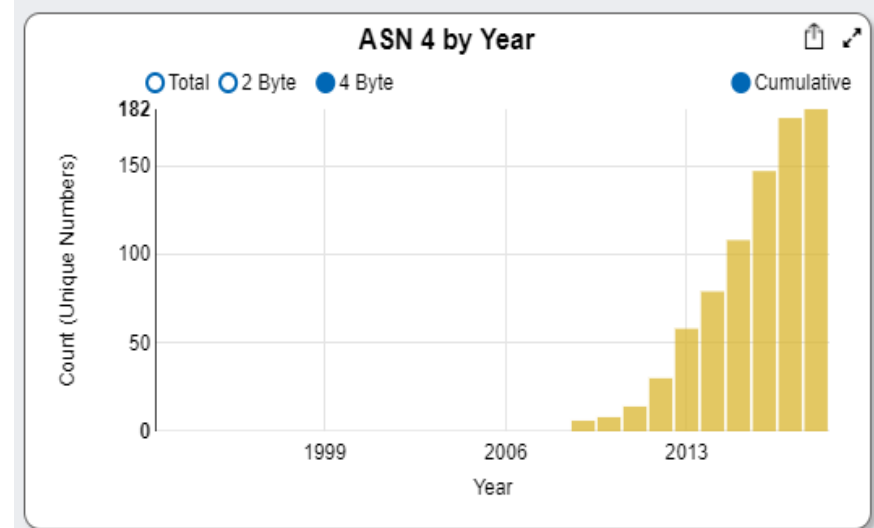
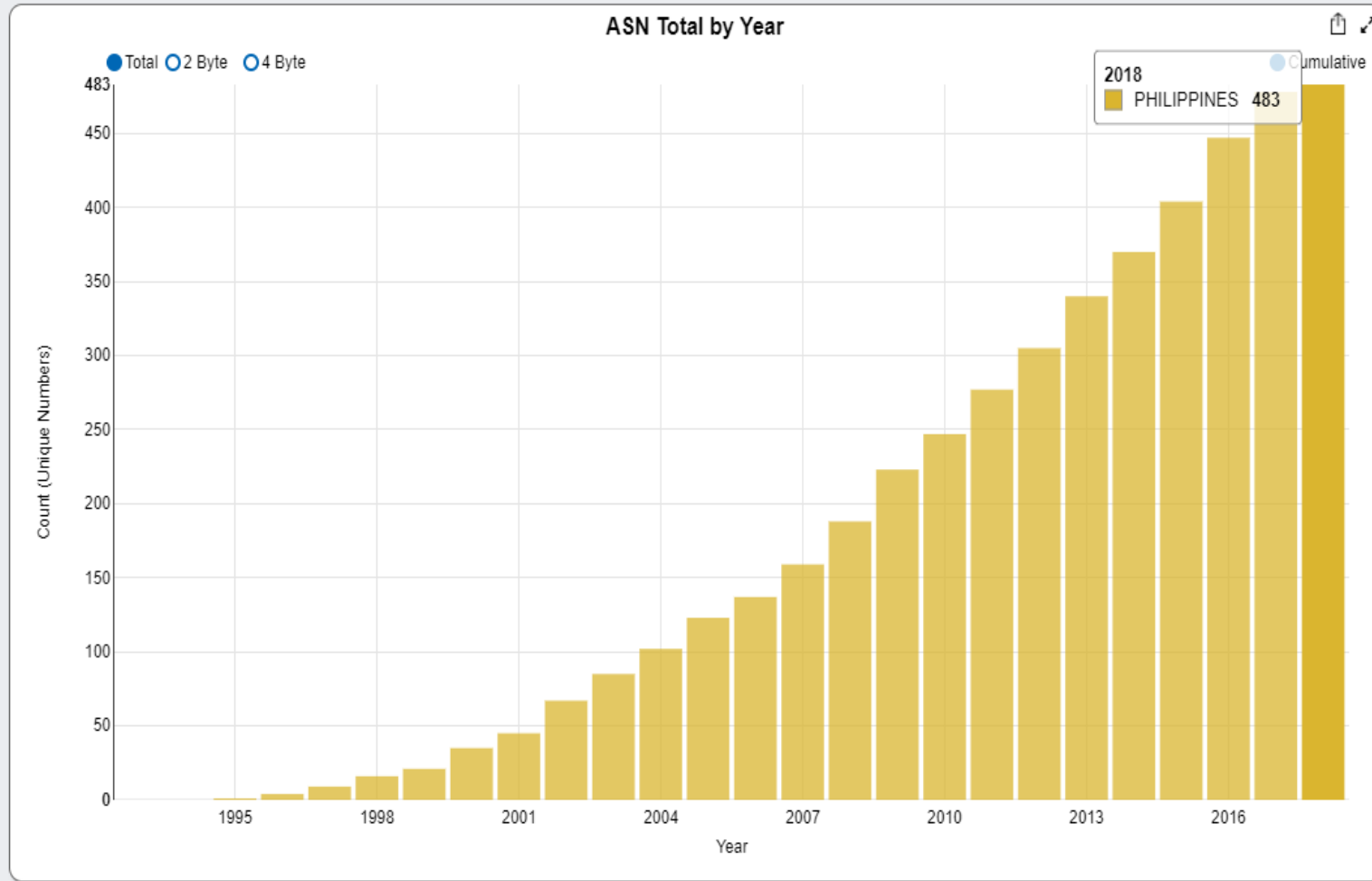
Reference:

<https://ipinfo.io/countries/ph>



# ASNs count

APNIC / South-Eastern Asia / PHILIPPINES / ASN



Reference:  
<https://stats.apnic.net/#>

# ISP draft ...

## San Miguel-Telstra joint venture talks terminated

By Louella Desiderio (The Philippine Star) | Updated March 15, 2016 - 12:00am

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"Both SMC and Telstra worked hard to come up with an acceptable resolution to some issues. However, we agreed we can no longer continue with the talks. I believe this is best for all parties," Ramon Ang, SMC president and COO, said in a statement. File photo

## Lucio Tan Jr's group acquires PT&T

By: Miguel R. Camus - @inquirerdotnet Inquirer Business / 07:27 PM August 25, 2017



Eton Properties president Lucio Tan Jr.

A group led by businessmen Lucio Tan Jr., Salvador Zamora II and Benjamin Bitanga is entering the telco business and has taken control of Philippine Telegraph & Telephone Corp. (PT&T).

References:  
News, PRs

# ISP draft ...

## Duterte insists on having 3rd telco player by March

🕒 Tuesday, February 06, 2018

👤 By RUTH ABBEY GITA

In November 2017, Duterte invited China to enter the Philippine telecommunications industry and put an end to the "duopoly" of publicly listed companies Globe Telecom Inc. and PLDT Inc.

On January 8, Rio signed Memorandum Order 001, which sets the guidelines for the selection of a new third major telecommunications player.

### References:

News, PRs, [sunstar.com.ph/manila/business/2018/02/06/duterte-insists-having-3rd-telco-player-march-587574](https://www.sunstar.com.ph/manila/business/2018/02/06/duterte-insists-having-3rd-telco-player-march-587574)

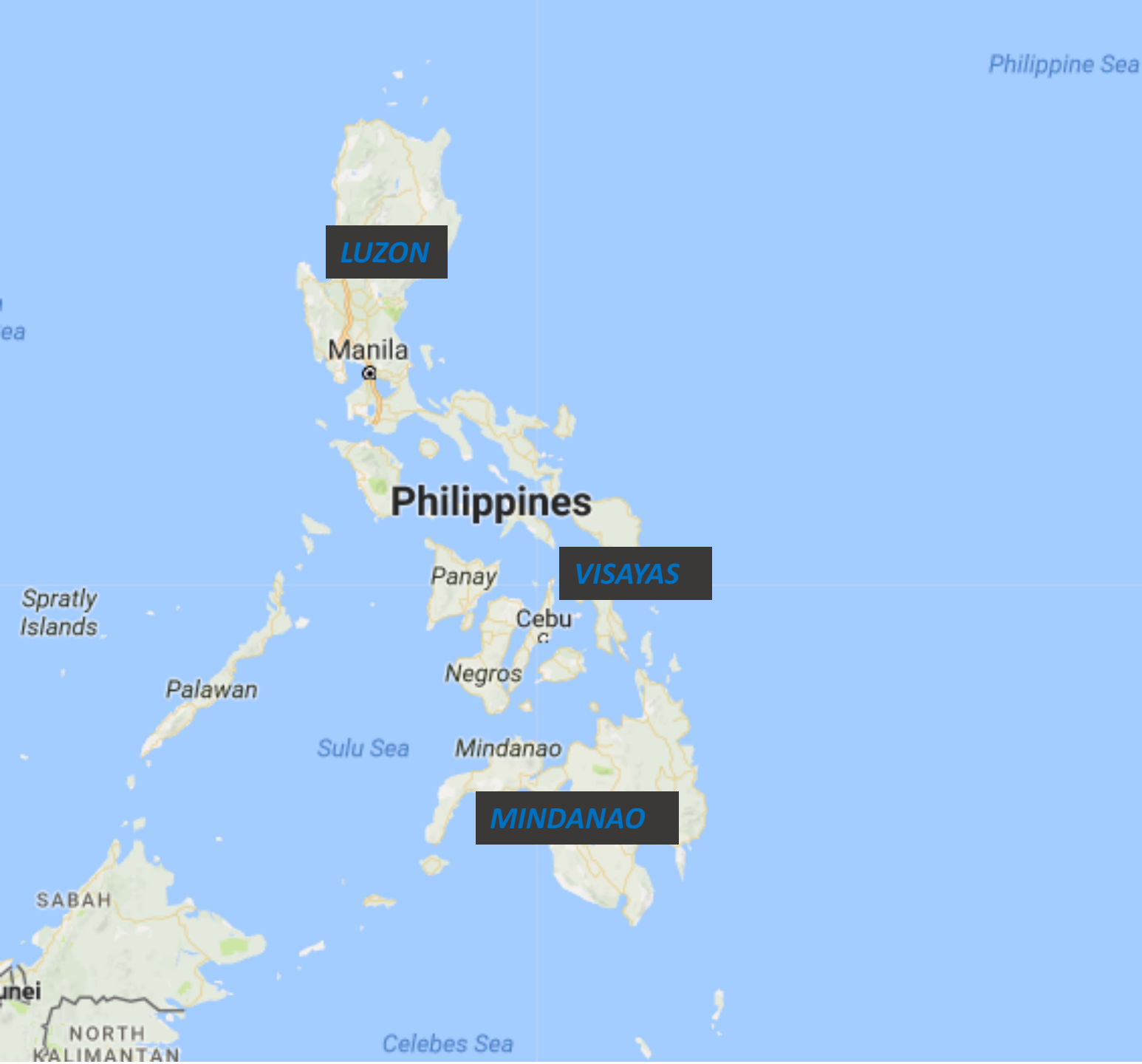
The government is no longer requiring interested bidders to have a **minimum net worth of P10 billion**. Instead, it plans to award the 3rd telco slot to the participant with the **'highest committed level of service.'**

**Chrisee Dela Paz**

Published 6:15 PM, February 27, 2018  
Updated 1:46 PM, February 28, 2018

"We [have] received so many comments and we are now subjecting it [to] a substantial change. For instance, we will not look at the minimum capital investment, but at the actual committed rollout plan of the bidders," Eliseo Rio Jr, officer-in-charge of the Department of Information and Communications Technology (DICT), said on Tuesday, February 27.

<https://www.rappler.com/business/197016-philippines-tweak-guidelines-3rd-telecommunications-player-auction-dict>



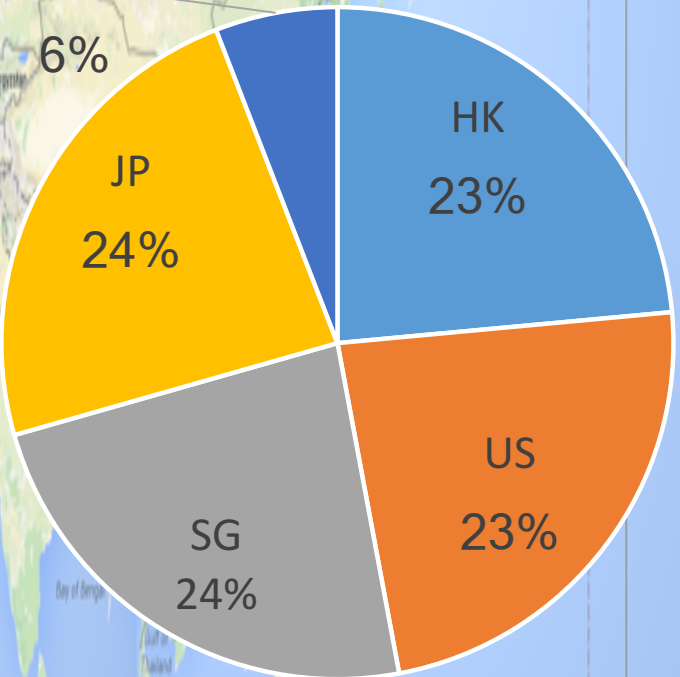
Philippine Sea

# Local IXPs (7)

Operator	Exchange
ASTI/DOST	PhOpenIX
BayanTel	NIGX
Converge ICT	ComclarkIX
Eastern Communications	MIX
Globe Telecom	GIX
PLDT	PHIX
Vitro	VIX

Reference:  
Peeringdb, HE, third party

# International IXPs (20)



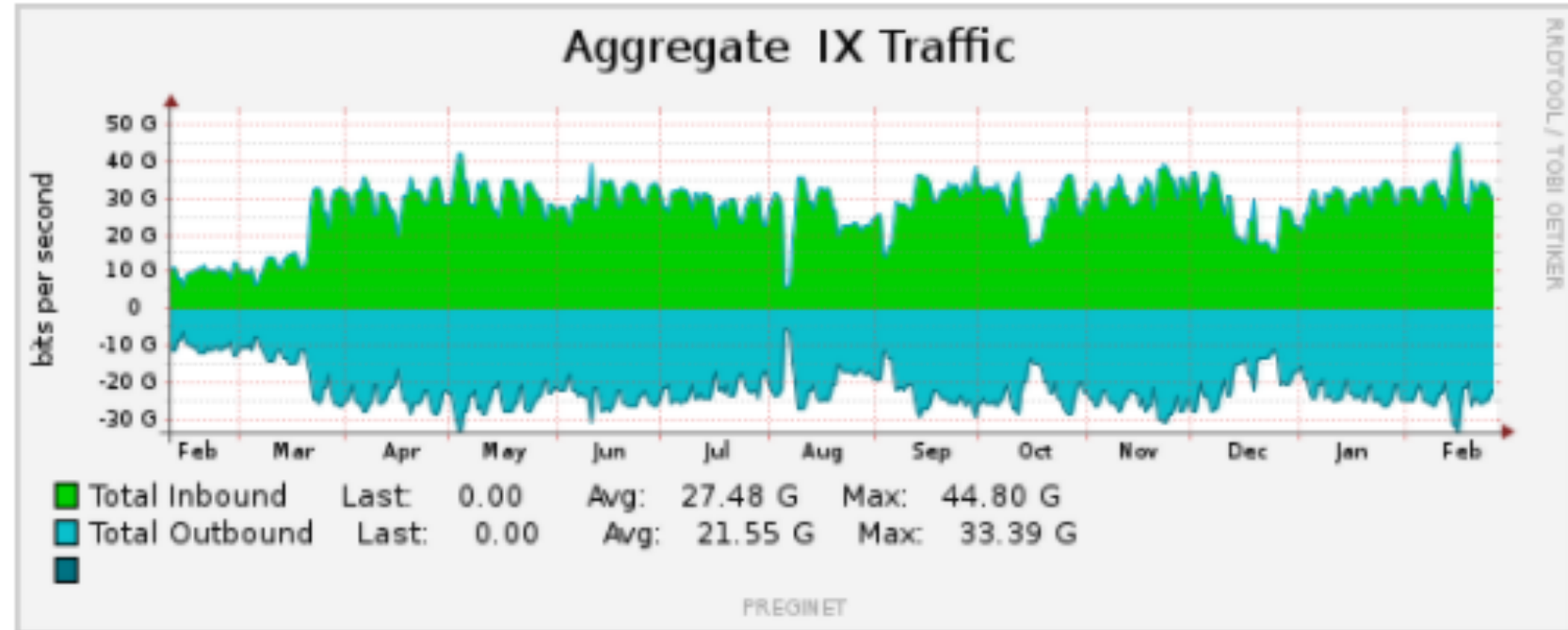
Exchange	CC
AMS-IX Hong Kong Hong Kong	HK
Any2 Los Angeles United States	US
Any2 NY United Sates	US
BBIX SG	SG
BBIX Tokyo Japan	JP
Equinix Chicago	US
Equinix Hong Kong Hong Kong	HK
Equinix Singapore Singapore	SG
Equinix Tokyo Japan	JP
Equinix New York	US
HKIX Hong Kong	HK
iAIX	HK
JPIX Tokyo Japan	JP
JPNAP Tokyo	JP
LAIX United States	US
LINX	GB
NYIIX United States	US
SGIX Singapore	SG
SIX United States	US
SOX Singapore Singapore	SG

Reference:  
Peeringdb, HE

# Open IX

## About PhOpenIX

- AS4779
- Carrier-neutral IPv4 and IPv6 Multilateral Peering Exchange
- Not for profit
- Bottom up management approach
- Layer 2 exchange (supports 1Gb/10Gb interconnect)



# Nation Building

Game!

Globe - PLDT Domestic IP Peering.

We try to make it better 😊

(cheers to the fathers of our Philippine Internet)



Rationale of peering:

Local traffic should stay local.

Then regionalize

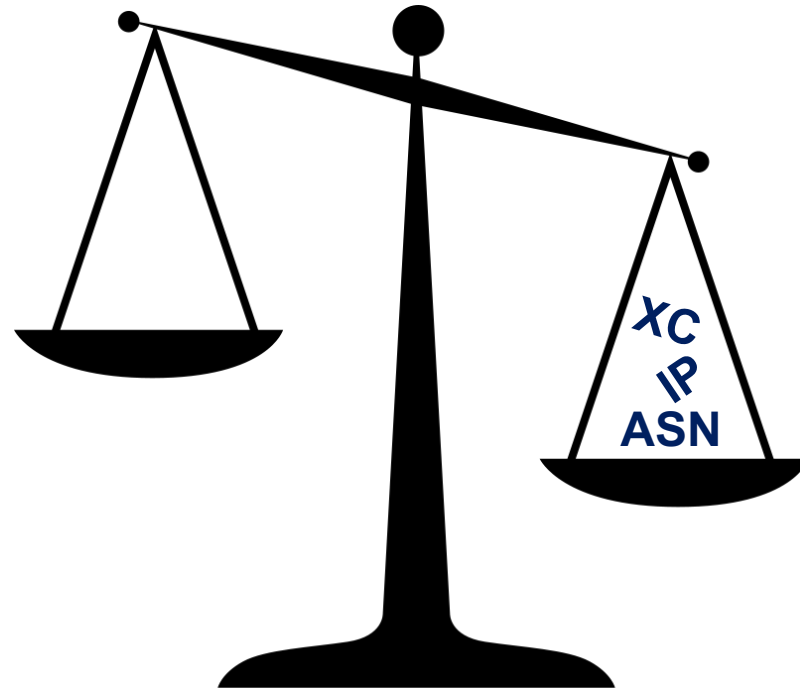
Towards the improvement of  
our Philippine Internet!



Reference:  
Press Release, FB

# Peering perspectives

**“Peering is Economics”**





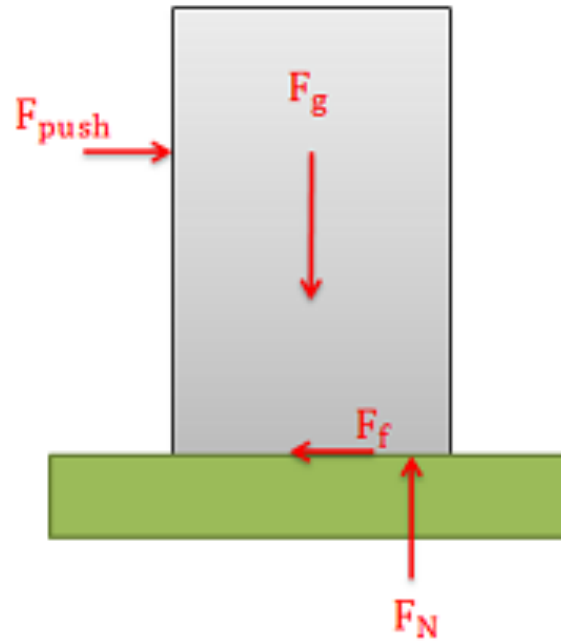
# Peering perspectives

**“Peering is Sociology”**



# Peering perspectives

## “Peering is Physics”



$$F_{f(\text{max})} = \mu_s * F_N$$

If

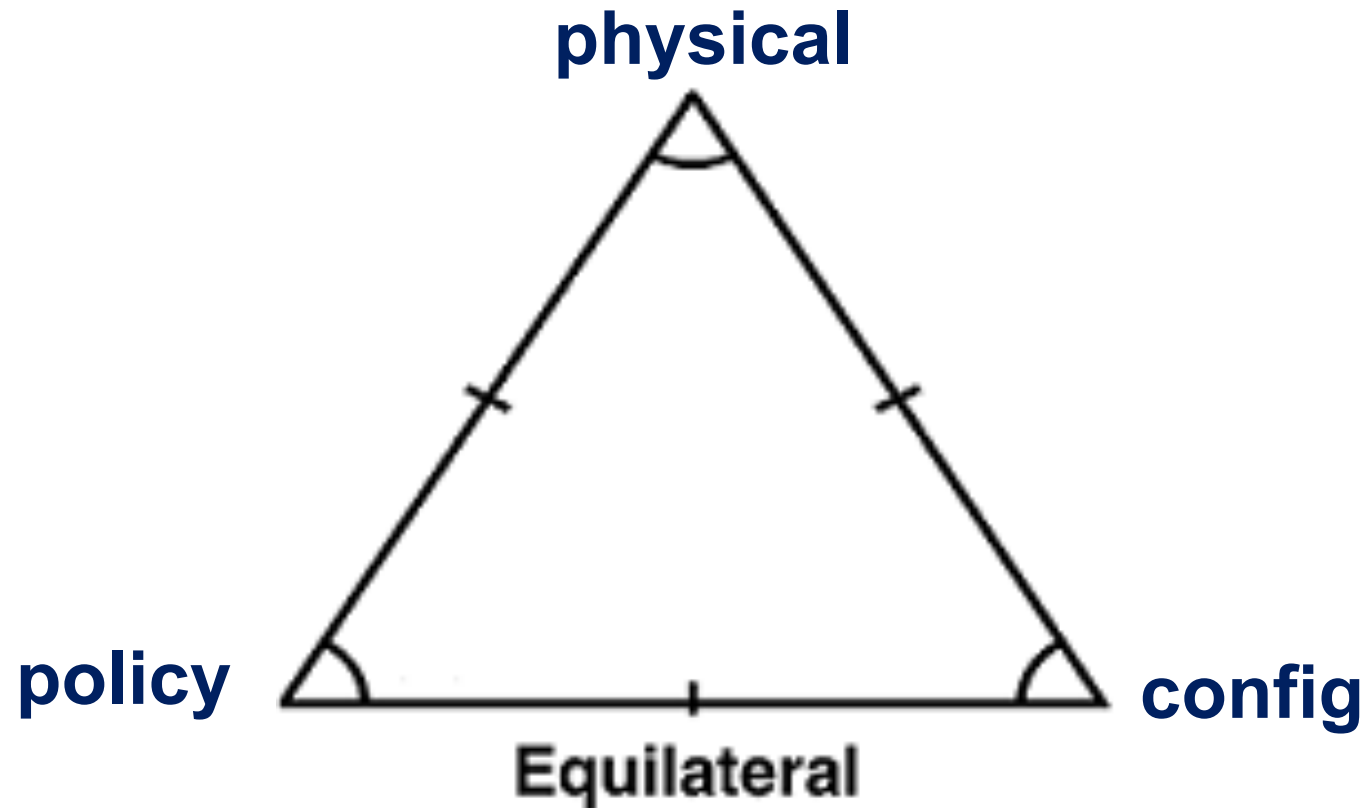
$$F_{\text{push}} > F_{f(\text{max})}$$

Then the box will  
begin to slide

**“SLIP POINT”**

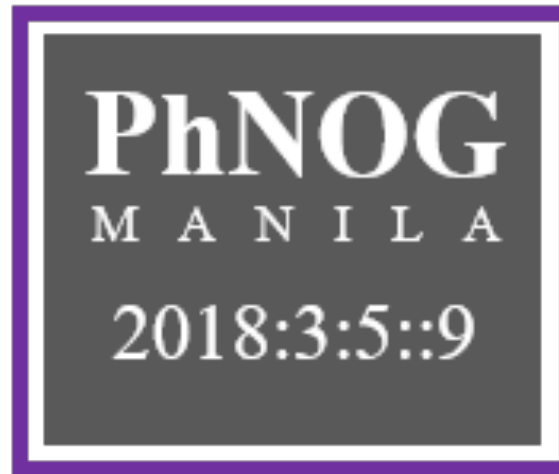
# Peering perspectives

“Peering is ...”



# Peering perspectives

**“Peering is Perspective”**



**Davao – June 2018**

# Salamat!

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