

TWNOG 5.0

JPIX updates and our partnerships with IXes

JPIX
Masataka MAWATARI

2024/04/26

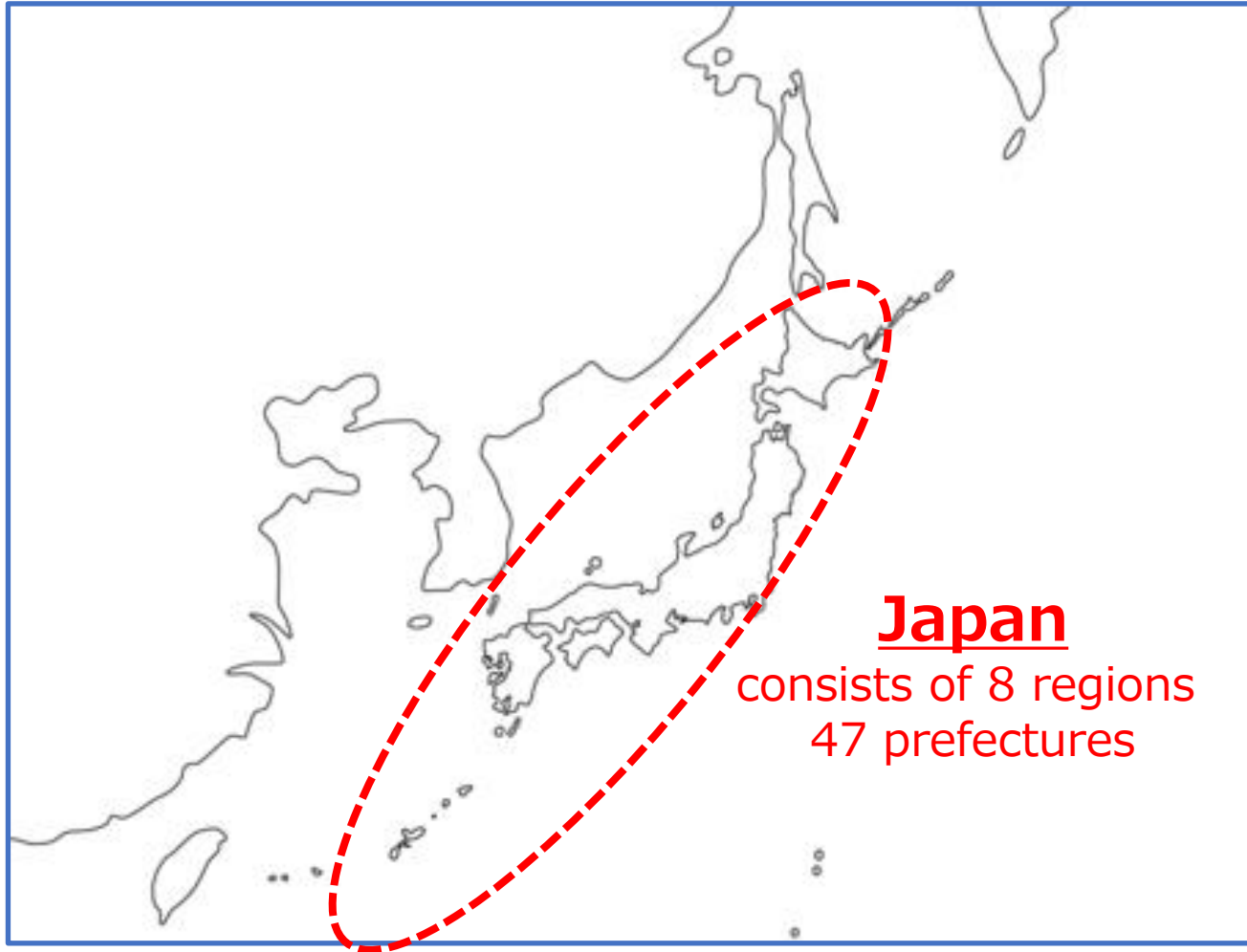
Agenda

- Japan Landscape
- JPIX Updates
- Partnerships with IXes

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- Partnership with IXes

Japan Landscape : General Information



JAPAN	
Land area	378,000 km ²
Population	124 million

From statics by Ministry of Internal Affairs and Telecommunications

- Internet usage (Individuals) : 84.9%
- Smartphone usage (Individuals) : 77.3%
- Number of broadband subscribers :
 - Fixed broadband : 44.6 million
 - Mobile broadband : 276 million

<https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/r05/summary/summary01.pdf>
<https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/r05/html/nd242100.html>

Japan Landscape : Datacenter Information



TOKYO (48)

- AT TOKYO (CC1/CC2)
- Broadband Tower - Monzen-nakacho Bldg.
- Broadband Tower - Shibuya Datacenter Bldg.
- COLT DC Tokyo I
- COLT in Asia Tokyo Data Center 1 (TDC1)
- Colt DC Tokyo II
- Colt DC Tokyo III
- ComSpace III
- Cyxtera Tokyo (HND1)
- Digital Edge TYO1 (MDC) - Tokyo
- Digital Edge TYO2 (ComSpace 1) - Tokyo
- Digital Edge TYO3 (ComSpace 2) - Tokyo
- Digital Edge TYO7
- Digital Realty Tokyo - HND10
- Digital Realty Tokyo - HND11
- Equinix TY1 - Tokyo
- Equinix TY2 - Tokyo
- Equinix TY3 - Tokyo
- Equinix TY4 - Tokyo
- Equinix TY5 - Tokyo
- Equinix TY6 - Tokyo
- Equinix TY7 - Tokyo
- Equinix TY8 - Tokyo
- Equinix TY9 - Tokyo
- Equinix TY10 - Tokyo
- Equinix TY11 - Tokyo
- IJ Ikebukuro DC
- Marunouchi Direct Access Ohtemachi Data Center 1
- Marunouchi Direct Access Ohtemachi Data Center 2
- NTT Com TK1 - Tokyo (NTT Otemachi)
- NTT Com TK2 - Tokyo
- NTT Com TK3 - Tokyo
- NTT Com TK4 - Tokyo
- NTT Com TK5 - Tokyo
- NTT Com TK6 - Tokyo
- NTT Com TK9 - Tokyo
- NTT Com TK10 - Tokyo
- NTT Com TK12 - Tokyo
- NTT Com Tokyo (NW1)
- NTT DATA Mitaka DataCenter EAST
- NTT DATA Otemachi Bldg
- Otemachi Place West Tower (BBTower Shin-Otemachi)
- Shin Nikko Bldg
- SoftBank Tokyo No. 4
- Telehouse - TOKYO Koto (AT TOKYO CC1)
- Telehouse - TOKYO Otemachi (KDDI Otemachi)
- Telehouse - TOKYO Shibuya
- Telehouse - TOKYO Tama

OSAKA (20)

- AT TOKYO (DC12 NTT DATA Dojima(building #4))
- Digital Edge OSA1 - Osaka
- Digital Realty Osaka - KIX10
- Digital Realty Osaka - KIX11
- Digital Realty Osaka - KIX12
- Digital Realty Osaka - KIX13
- Equinix OS1 - Osaka
- Equinix OS3 - Osaka
- NTT Com OS1 - Osaka (Telepark Dojima Building 1)
- NTT Com OS2 - Osaka (Telepark Dojima Building 2)
- NTT Com OS3 - Osaka (Telepark Dojima Building 3)
- NTT Com OS4 - Osaka
- NTT Com OS7 - Osaka
- NTT DATA Dojima (building #4)
- NTT Kitahama Data Center(Dojima Campus)
- NTT Nipponbashi Data Center(Dojima Campus)
- NTT Sonezaki Data Center(Dojima Campus)
- OPTAGE Umeda Kita Data Center
- Ogis Osaka
- Telehouse - OSAKA 1&2

CHIBA (7)

- Digital Realty Tokyo - NRT10
- Digital Realty Tokyo - NRT12
- IJ Shiroi DCC
- KDDI Corporation - Chikura Landing Station
- Maruyama Cable Landing Station
- SCSK netXDC (SI1/SI2/SI3)/NEC Inzai DC
- TATA Communications - Emi Cable Landing Station

HOKKAIDO (4)

- AT TOKYO (HC1 HOTnet Sapporo(SDC))
- HAMANASU INFORMATION CENTER
- Hokkaido Internet Exchange Data Center
- NTT EAST 2nd HOKKAIDO DATA CENTER

OKINAWA (4)

- FRT iDC Okinawa
- Ginoza Village IT Operation Park
- NTT Communications Jitchaku Building
- Nago Mirai2 Data Center

FUKUOKA (3)

- AT TOKYO (QC1 QTnet Fukuoka(QD3))
- NTT Fukuoka Tenjin Data Center
- QTnet Fukuoka Data Center 3(QD3)

MIYAGI (2)

- TOHKnet Sendai Central Data Center
- NTT EAST 3rd MIYAGI DATA CENTER

ISHIKAWA (1)

- HTNet

SAITAMA (1)

- Princeton Digital Group TY1

IBARAKI (1)

- NTT Communications - PC1 Ajigaura Landing Station

KANAGAWA (1)

- NTT Com TK8 - Tokyo

AICHI (1)

- TATA Communications - Toyohashi Cable Landing Station

MIE (1)

- NTT Communications - PC1 Shima Landing Station

HYOGO (1)

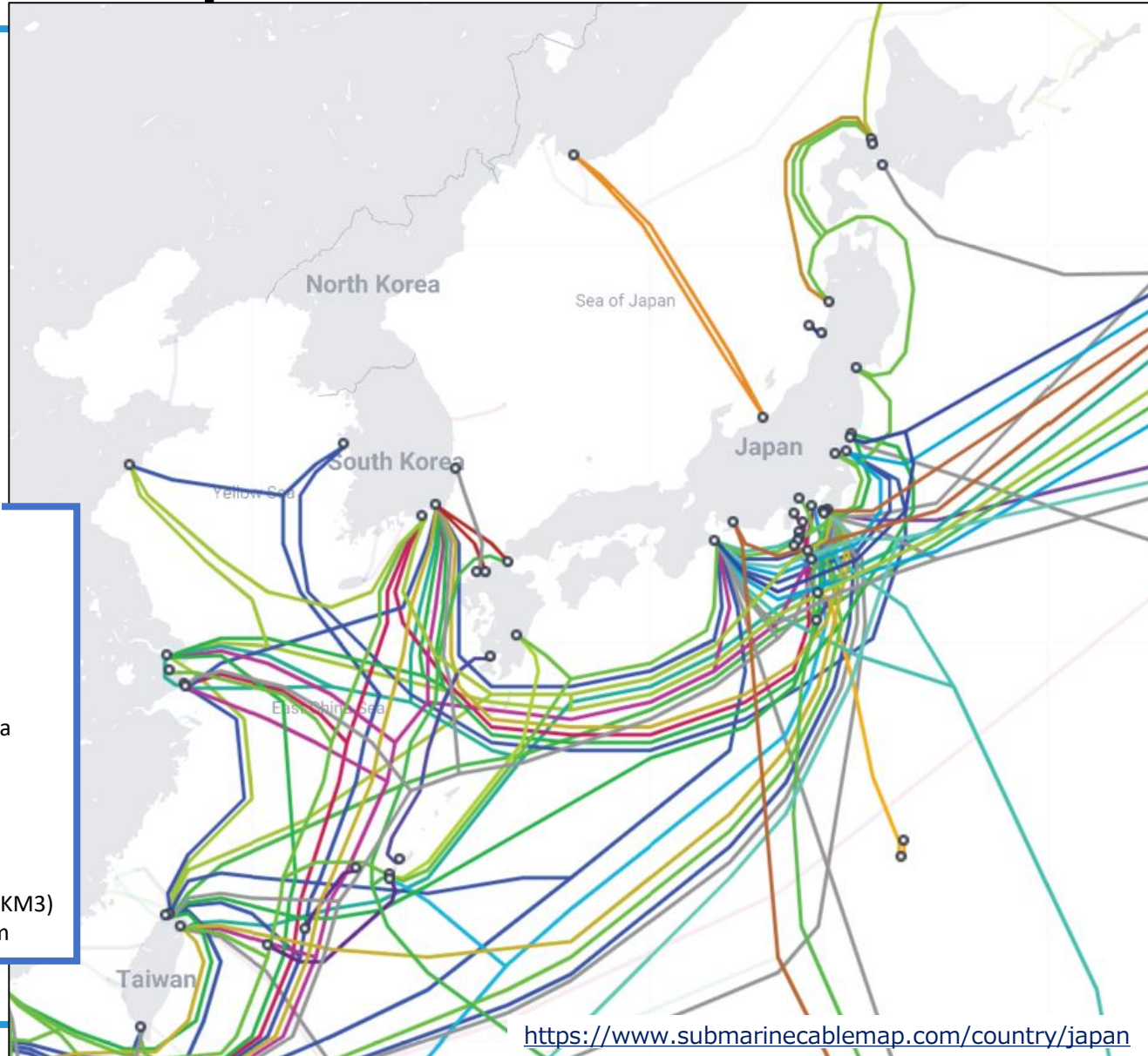
- SCSK netXDC (SH1/SH2)

OKAYAMA (1)

- KCT Corporation

Source : PeeringDB

Japan Landscape : Subsea Cable Information



40 subsea cables landing in Japan

- 5 Villages 6 Islands
- APCN-2
- Apricot *RFS:2026
- Asia Direct Cable (ADC) *RFS:2024
- Asia Pacific Gateway (APG)
- Asia Submarine-cable Express (ASE)/Cahaya Malaysia
- Australia-Japan Cable (AJC)
- Bridge One *RFS:2026
- EAC-C2C
- Far North Fiber *RFS:2027
- FASTER
- FLAG Europe-Asia (FEA)
- FLAG North Asia Loop/REACH North Asia Loop
- Guam Okinawa Kyushu Incheon (GOKI)
- Hachijojima-Mainland
- Hokkaido-Akita Cable
- Hokkaido-Sakhalin Cable System (HSCS)
- Izu Islands Cable System
- Japan-Guam-Australia North (JGA-N)
- Japan Information Highway (JIH)
- JUNO *RFS:2024
- JUPITER
- Korea-Japan Cable Network (KJCN)
- Miyazaki-Okinawa Cable (MOC)
- New Cross Pacific (NCP) Cable System
- Ogasawara Cable Network
- Okinawa Cellular Cable
- Pacific Crossing-1 (PC-1)
- Proa
- Russia-Japan Cable Network (RJCN)
- SeaMeWe-3
- Southeast Asia-Japan Cable 2 (SJC2) *RFS:2024
- Southeast Asia-Japan Cable (SJC)
- Taihei
- Tata TGN-Pacific
- Topaz
- Trans-Pacific Express (TPE) Cable System
- Unity/EAC-Pacific
- YUI
- Yuza-Tobishima

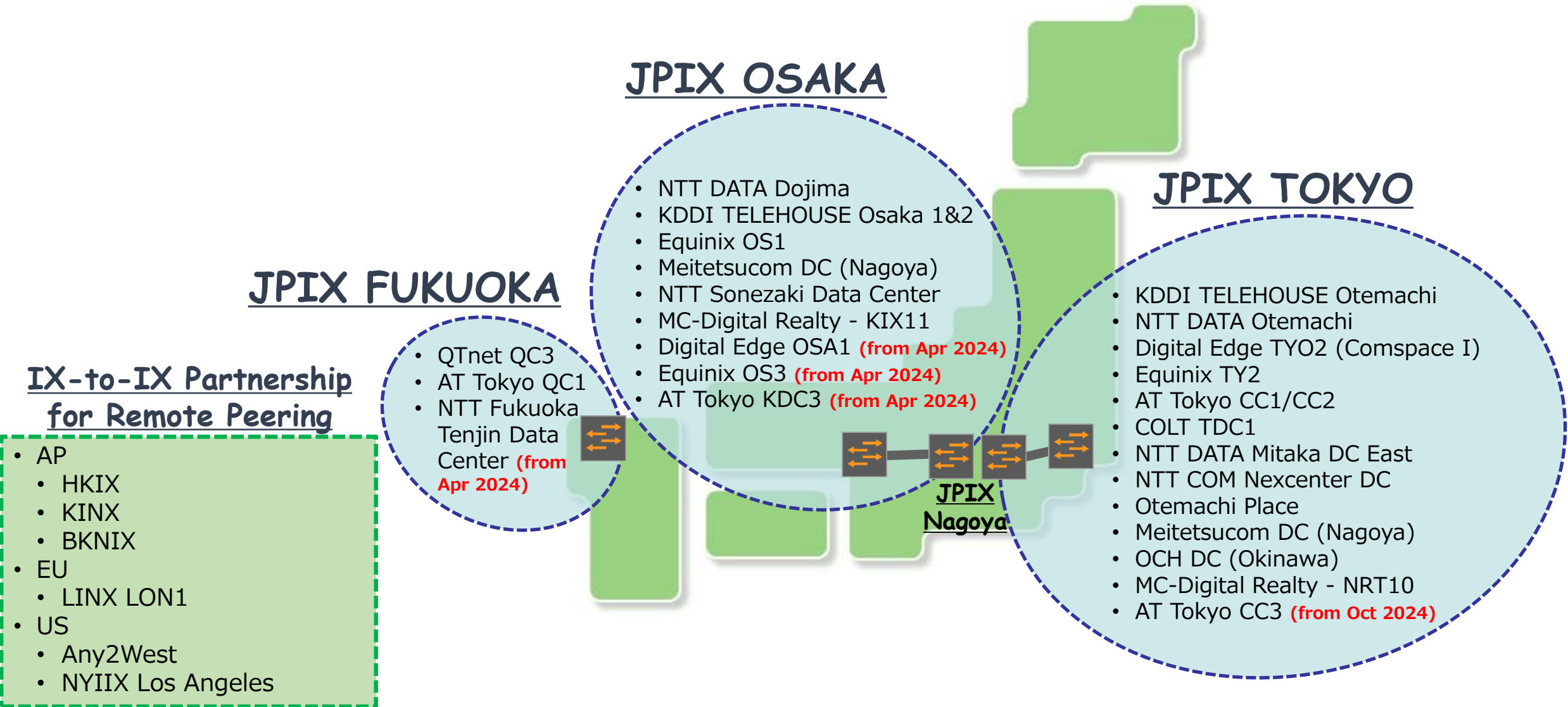
11 subsea cables between TW and JP

- APCN-2
- Apricot *RFS:2026
- Asia Pacific Gateway (APG)
- EAC-C2C
- FASTER
- FLAG North Asia Loop/REACH North Asia Loop
- New Cross Pacific (NCP) Cable System
- SeaMeWe-3
- Southeast Asia-Japan Cable 2 (SJC2) *RFS:2024
- Taiwan Penghu Kinmen Matsu No.3 (TPKM3)
- Trans-Pacific Express (TPE) Cable System

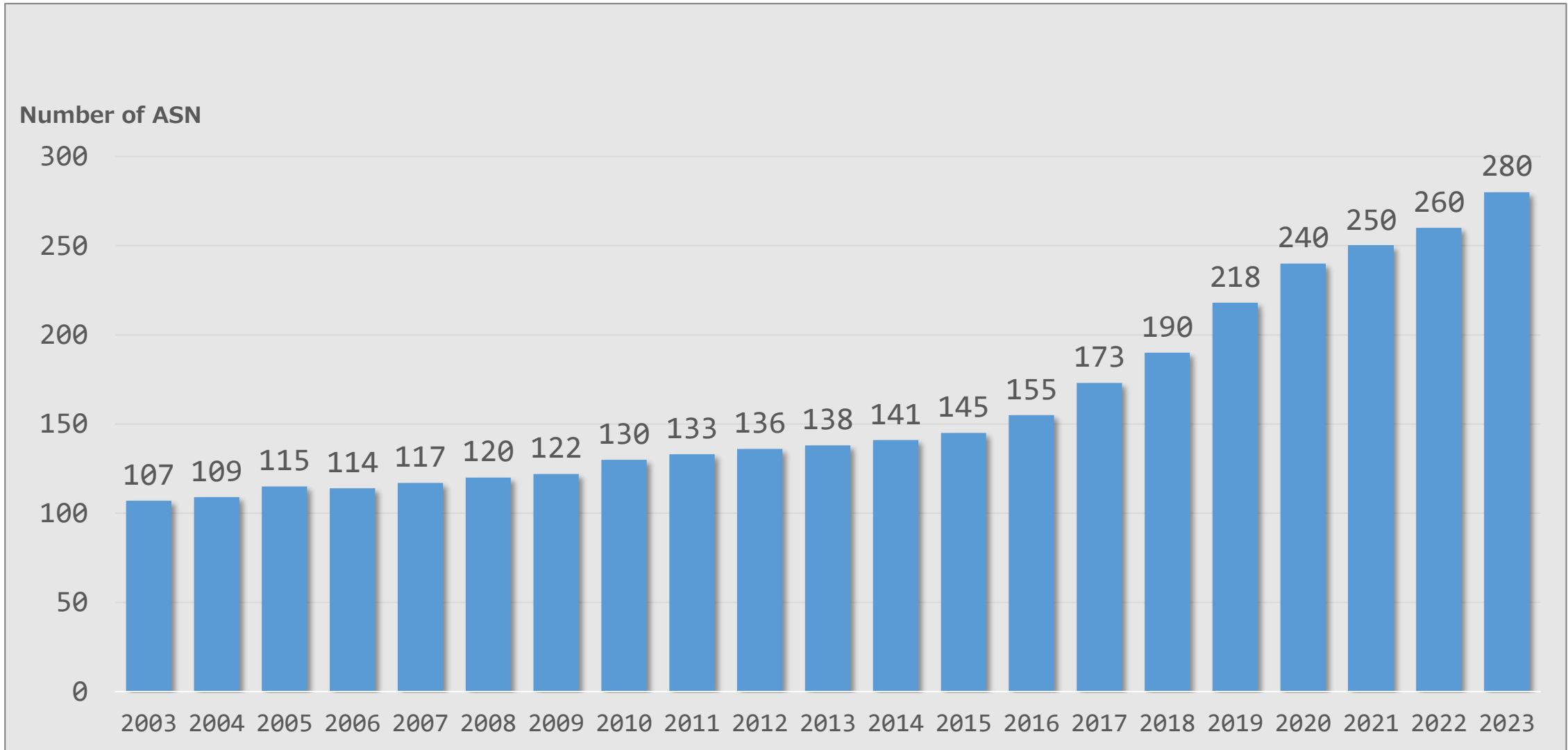
<https://www.submarinecablemap.com/country/japan>

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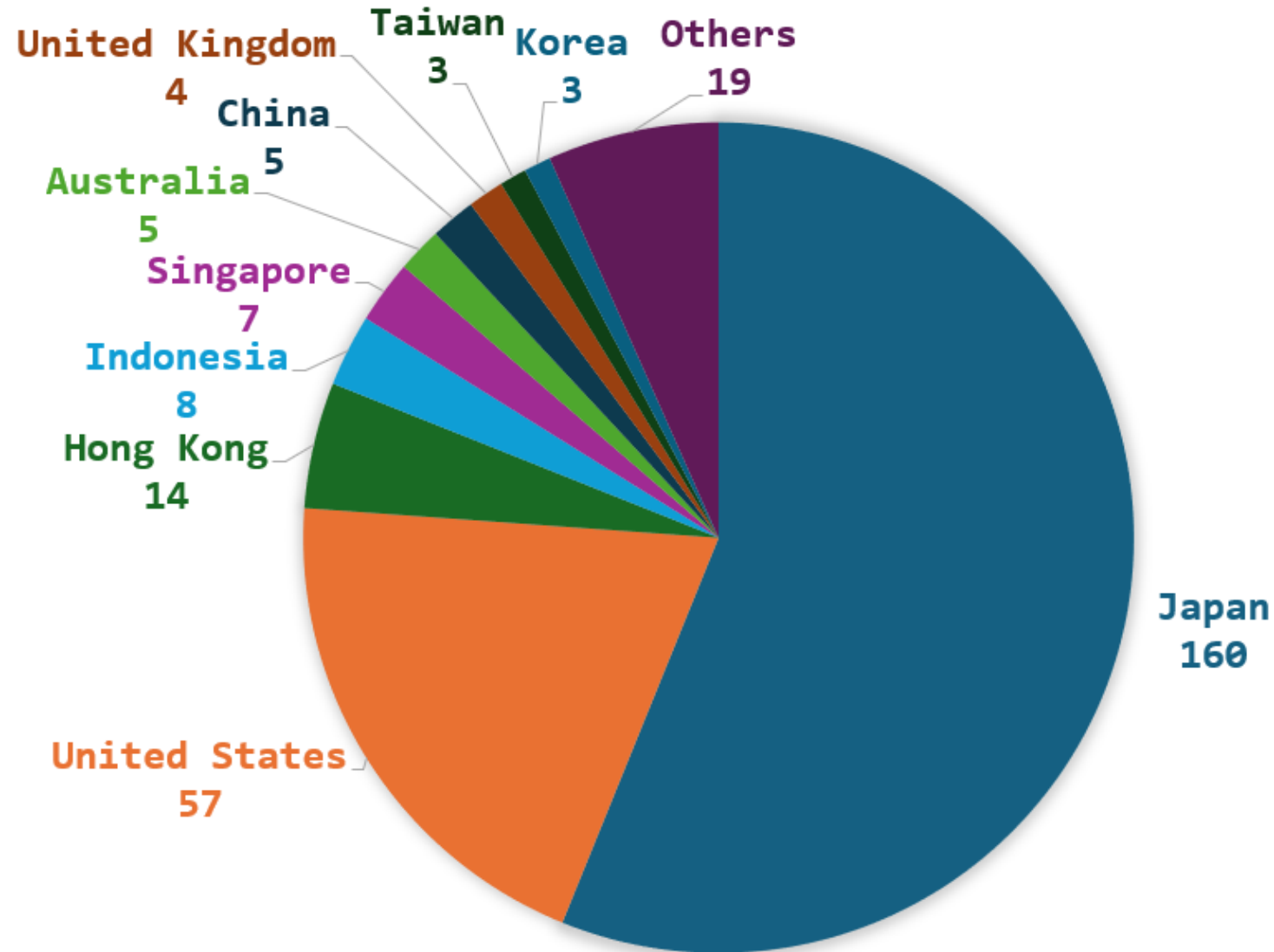
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- **JPIX Updates**
- Partnerships with IXes



The number of JPIX members

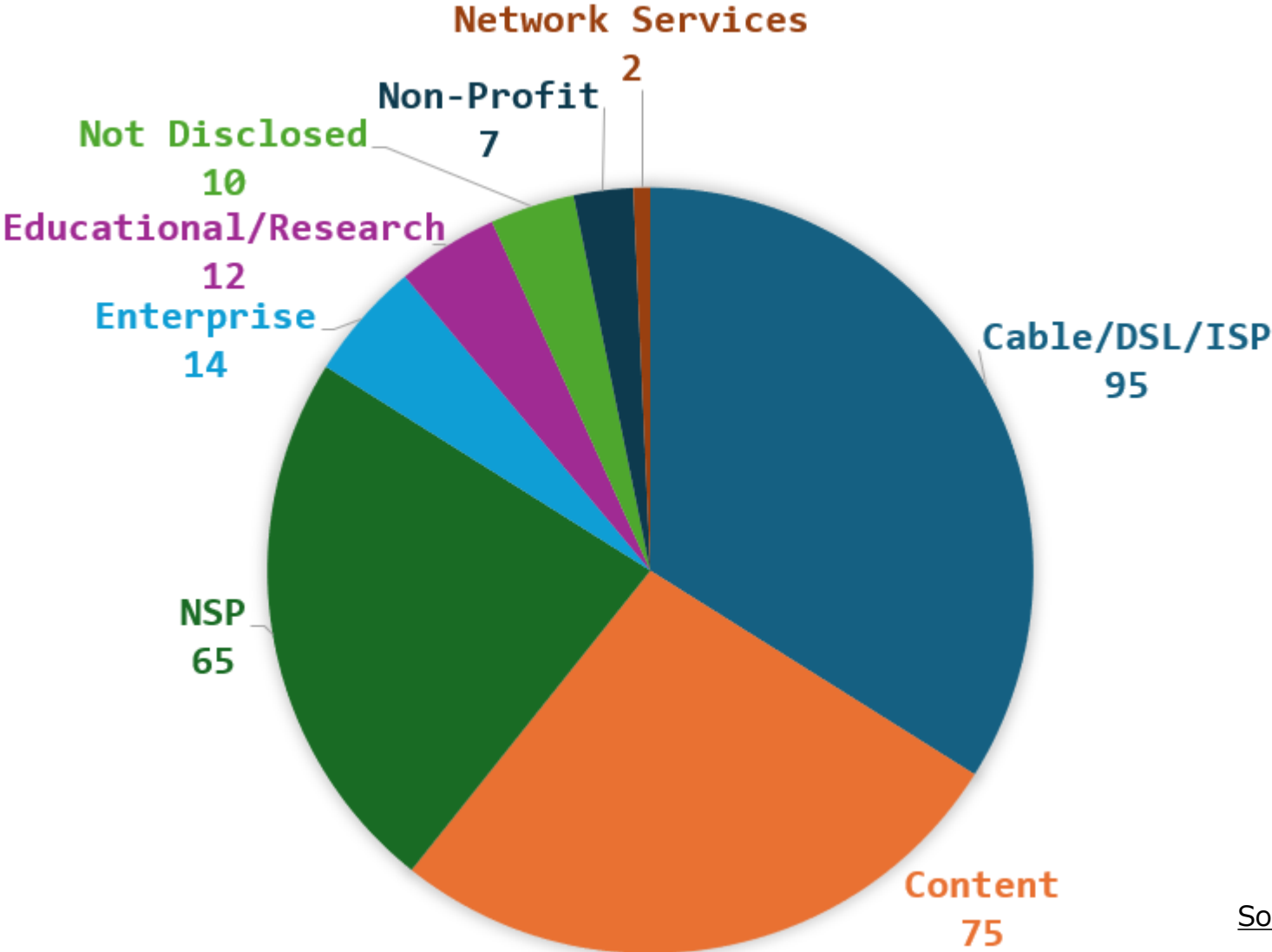


JPIX members overview (Economy in total)



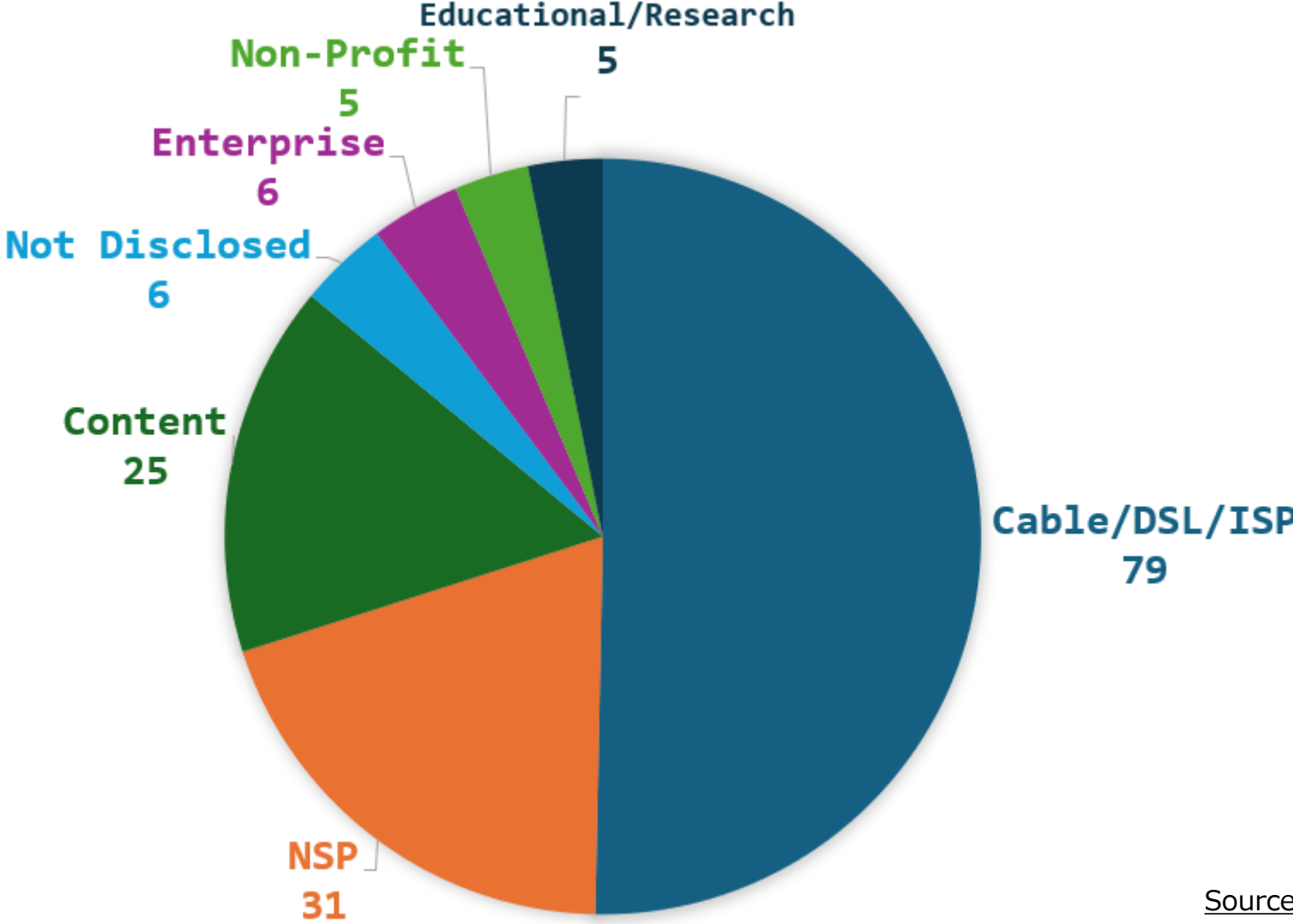
Source : PeeringDB

JPIX members overview (Network type in total)



Source : PeeringDB

JPIX members overview (Network type in only Japan)

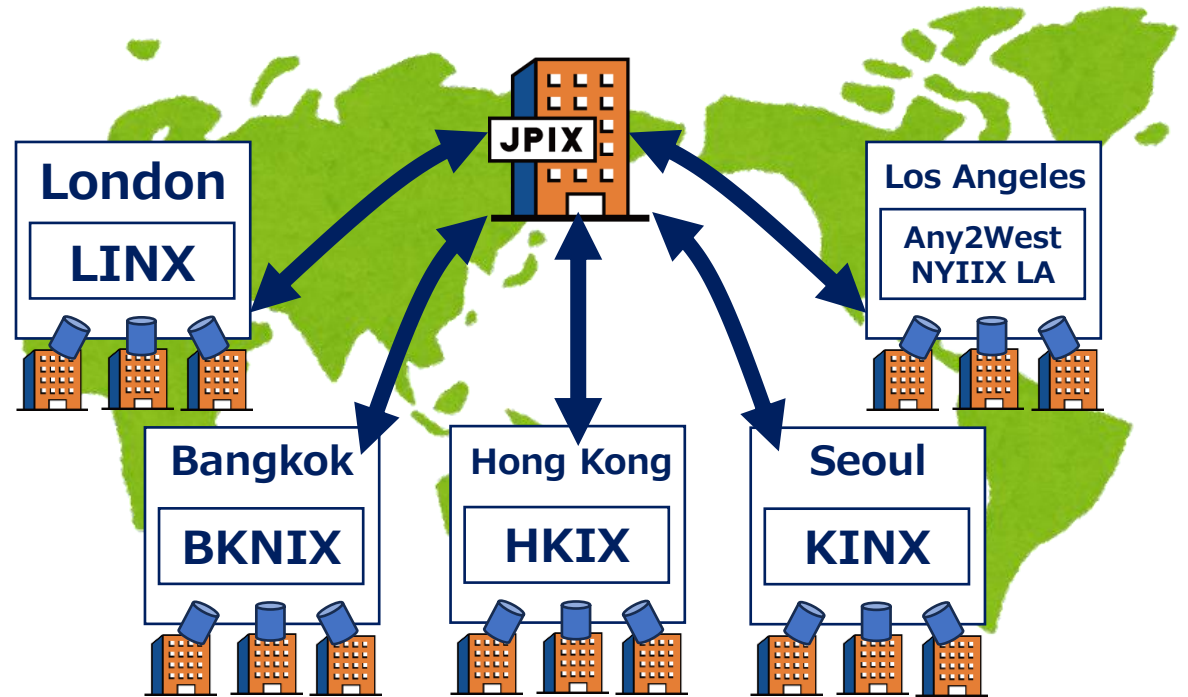


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History of global IX partnerships in JPIX

- 2018
 - CoreSite Any2West (Los Angeles, US)
 - NYIIX LA (Los Angeles, US)
 - HKIX (Hong Kong)
 - LINX (London, GB)
- 2021
 - KINX (Seoul, Korea)
- 2023
 - BKNIX (Bangkok, Thailand)



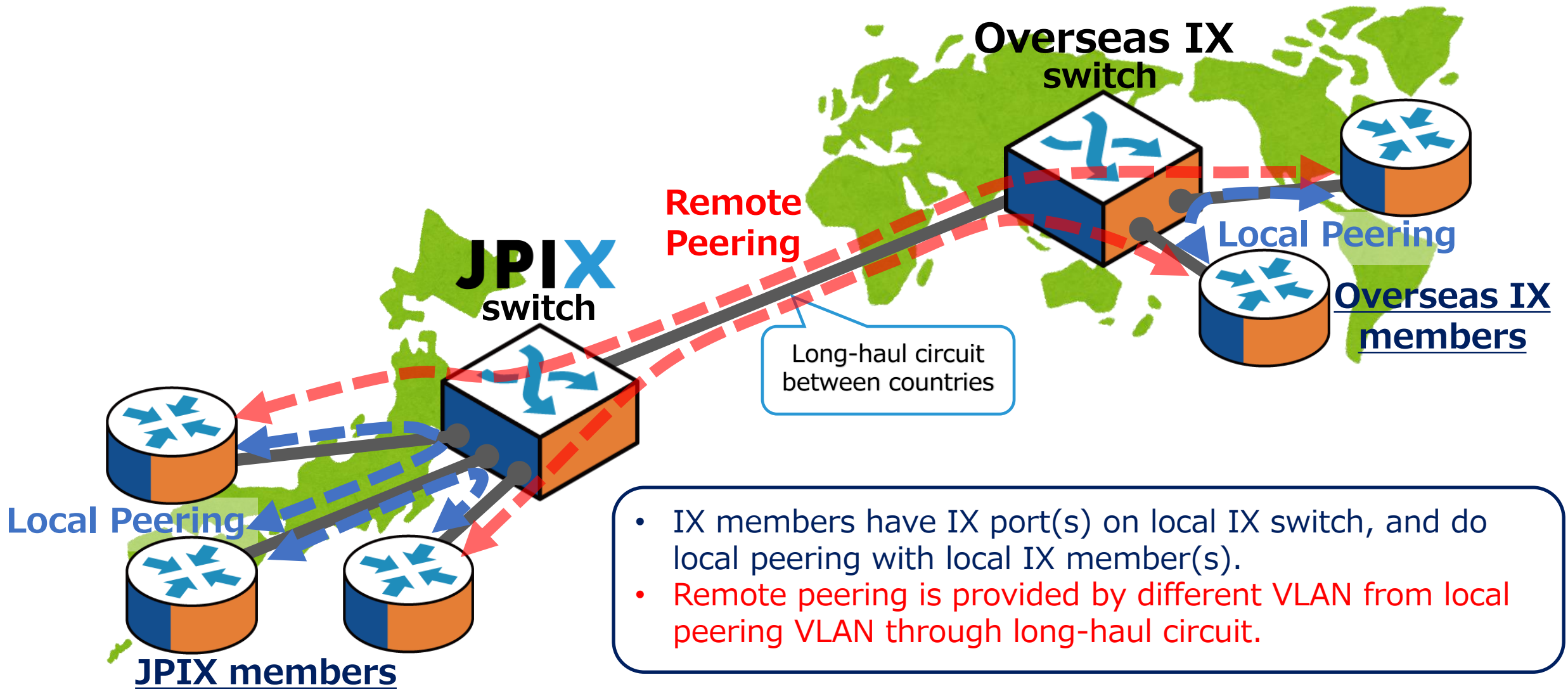
JPIX is providing overseas IXes connection for JPIX members as a remote peering service through these partnerships to IXes

Why provide remote peering for JPIX members **JPIX**

- Demand to peer with overseas networks that don't have PoP in Japan but have connections to overseas IXes.
- When JPIX members have an interest in building overseas PoP and connecting IX outside Japan, they will be able to know how much real traffic volume in advance.
- To maximize utilization of a JPIX member's port, by using not only public peering but also remote peering.

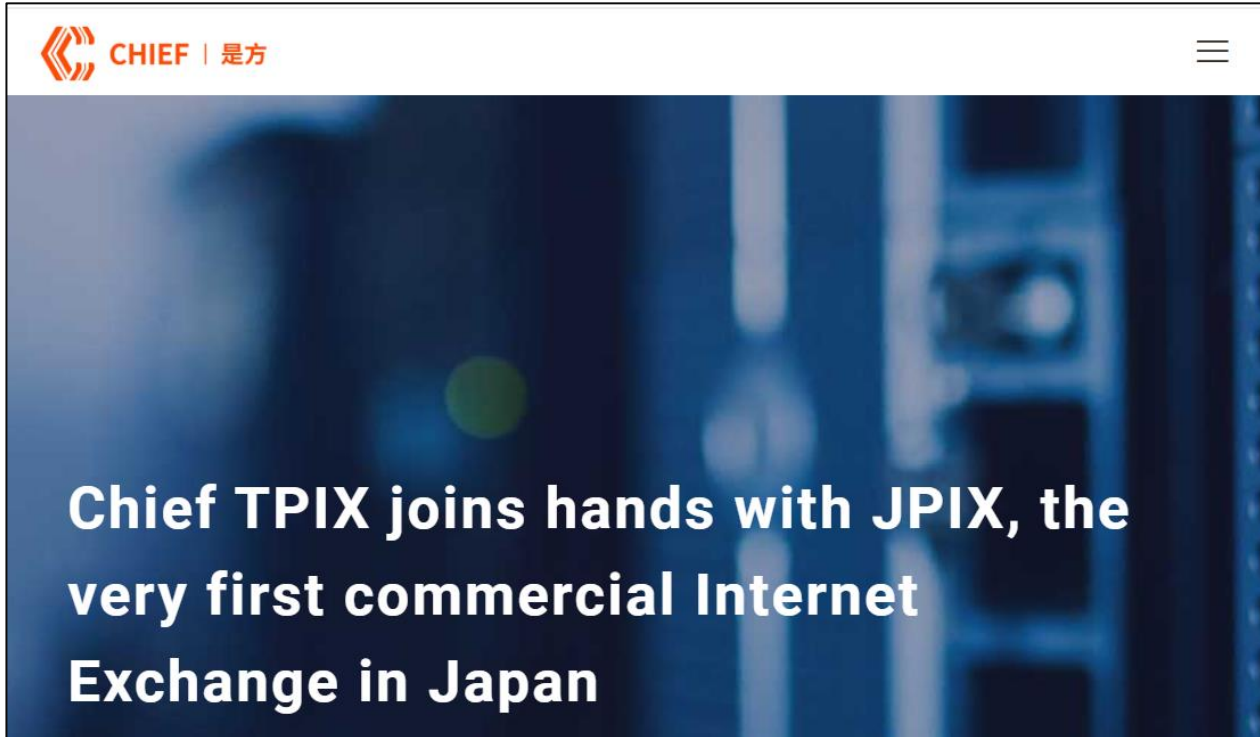
- High price of long-haul circuit and in-house cable
→ JPIX prepares circuit of connection to endpoint of overseas IX
- Legal confirmation of the contract with overseas IX
→ JPIX covers this by becoming a contractor
- Language barrier
→ Users can contact JPIX in Japanese
- Fluctuations in currency rates
→ JPIX will send users invoices in JPY as usual

Local Peering and Remote Peering

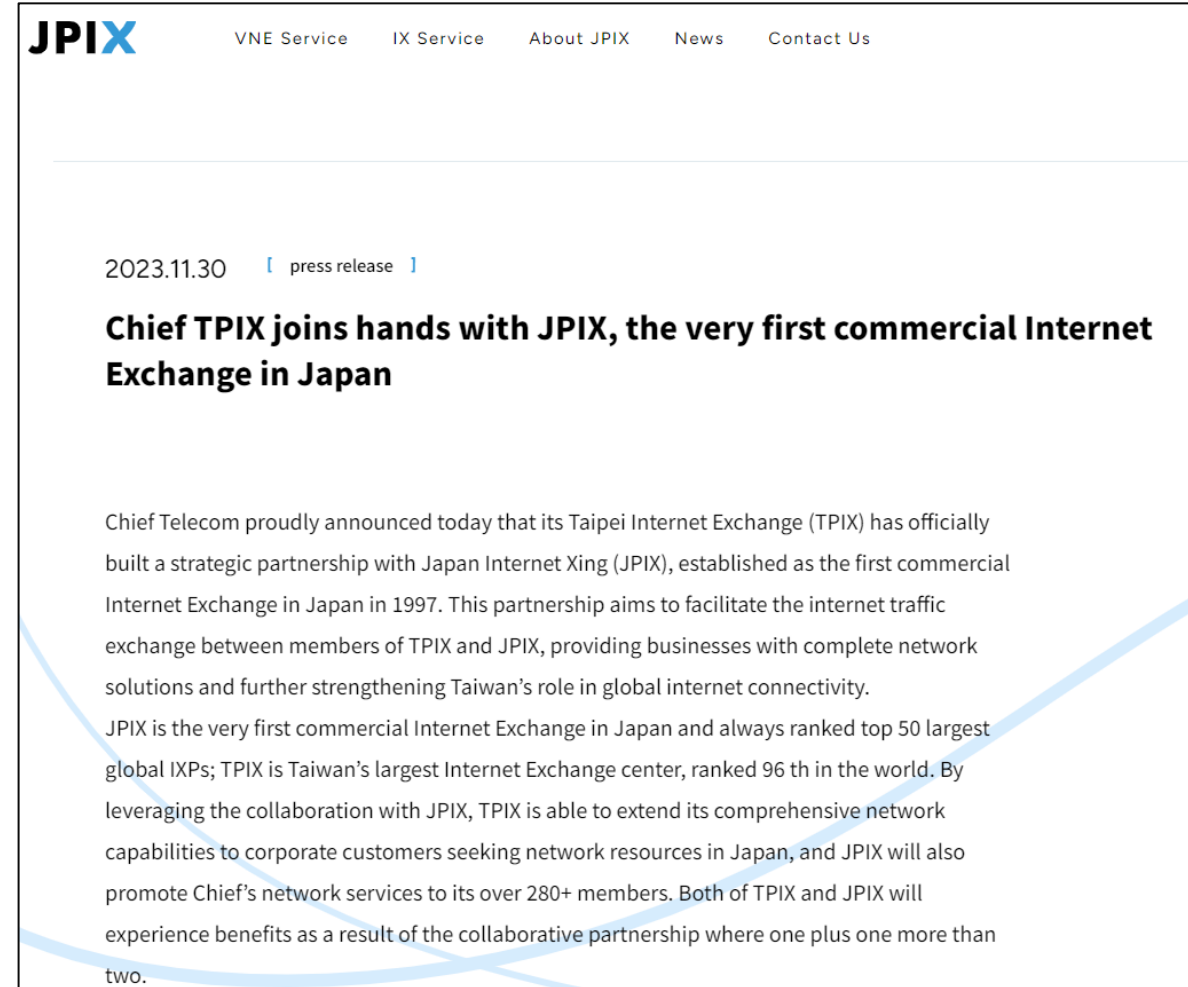


Good thing on tech/ops about IX partnerships **JPIX**

- When IX has a partnership with others, IX engineers on both sides could have an opportunity to discuss operations directly.
 - Equipment configuration
 - Monitoring network/port
 - Web portal for IX users
 - etc.
- This enables both IXes to improve their operation further and deepen the understanding of their operational culture in countries by sharing information.
- Of course, discussion in NOG meetings is important too. 😊



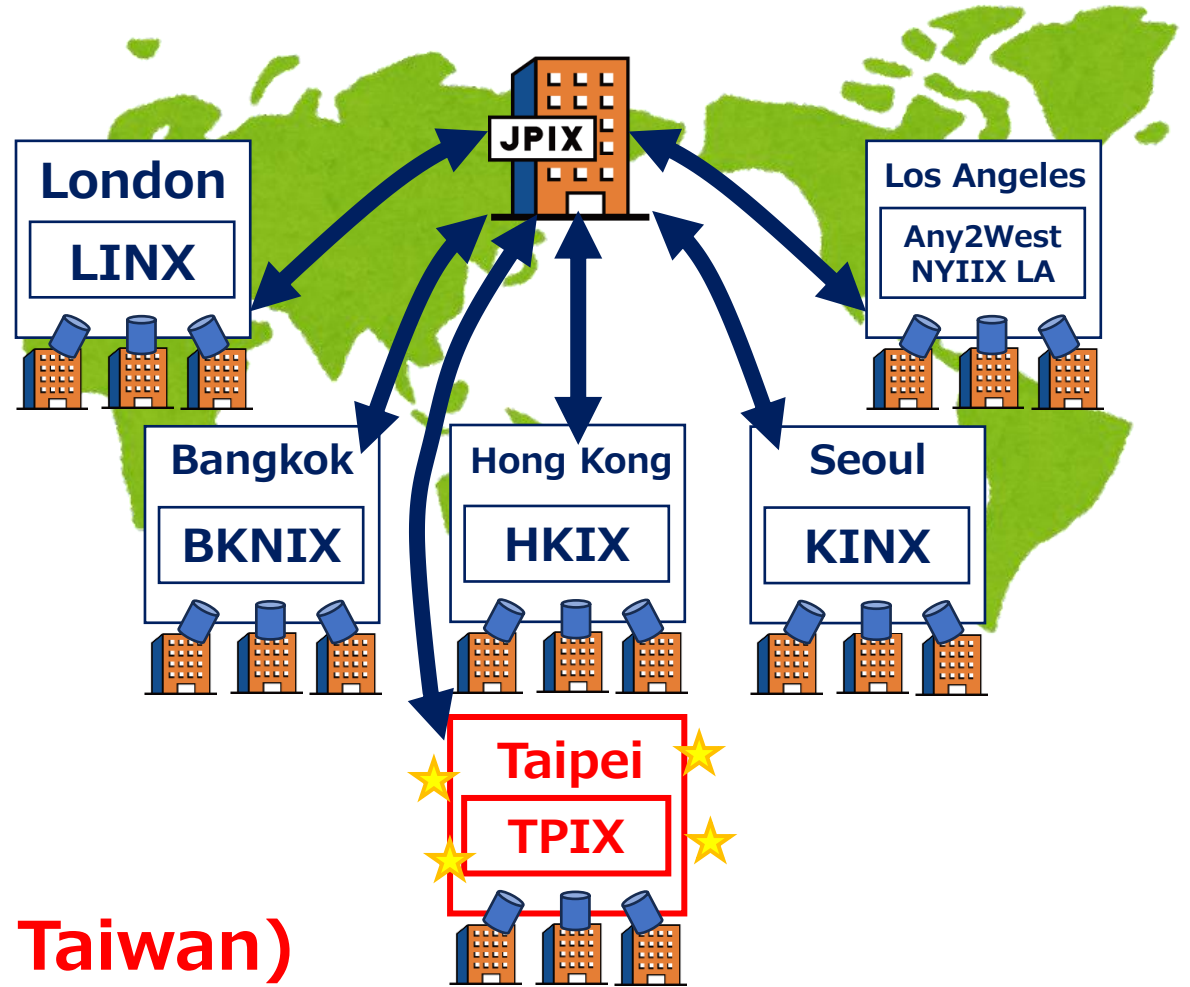
<https://en.chief.com.tw/news/20231129jpix/>



<https://www.jpix.ad.jp/en/news/#id4053>

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 - BKNIX (Bangkok, Thailand)
- **2023**
 - **Chief Telecom/TPIX (Taipei, Taiwan)**



- Partnership between IXes can enhance their service.
 - Providing your service would be available in the remote place.
- Partnership between IXes can improve their operation.
 - Exchanging technical and operational information/knowledge would be possible with each other.

What's Crossing Next?

JPIX