Internet Insights
TOKYO & OSAKA , Japan 2021
<HKNOG10.0>

BBIX, Inc.
Haruki Ishu

Today’s Agenda

1. Self introduction

2. Japan Internet Industry
   ① Tokyo
   ② Osaka

3. Challenge is ahead

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Introduction

Haruki Ishu (伊集 治基)

- **Career**

  2008 – NTT West (Sales Data Analysis of Optical Fiber etc...)
  2016 – NTT SmartConnect (DC Commercial)
  2019 – BBIX

- **Job functions**

  Head of Sales for Japanese market, and in charge of South Korea market.

- **Private**

  2 babies' Dad

Long Career in Osaka and Love OSAKA☺

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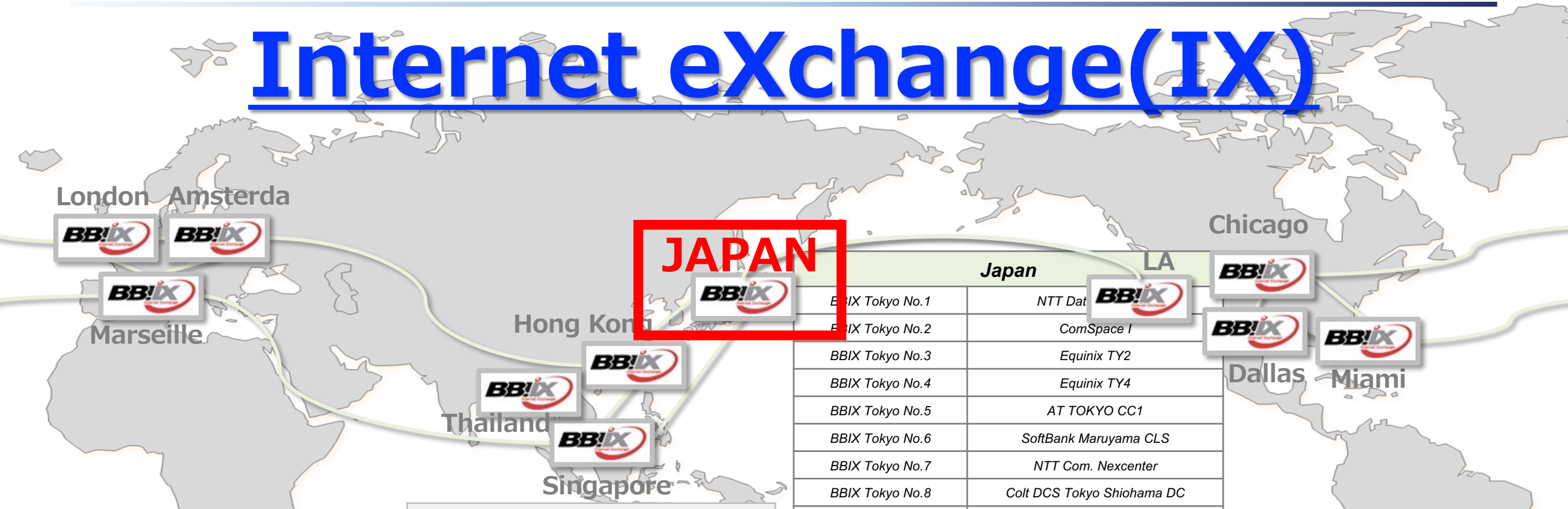
Main Business is...

Internet eXchange(IX)



The Netherlands	
BBIX Amsterdam	Interxion AMS9

The United Kingdom	
BBIX London	Telehouse Docklands North 2

France	
BBIX Marseille	Interxion MRS2

Hong Kong	
BBIX Hong Kong No.1	Mega-i
BBIX Hong Kong No.2	Equinix HK1

Singapore	
BBIX Singapore	Equinix SG1

Thailand	
BBIX Bangkok No.1	True IDC N. Muang Thong
BBIX Bangkok No.2	CAT Tower BangRak

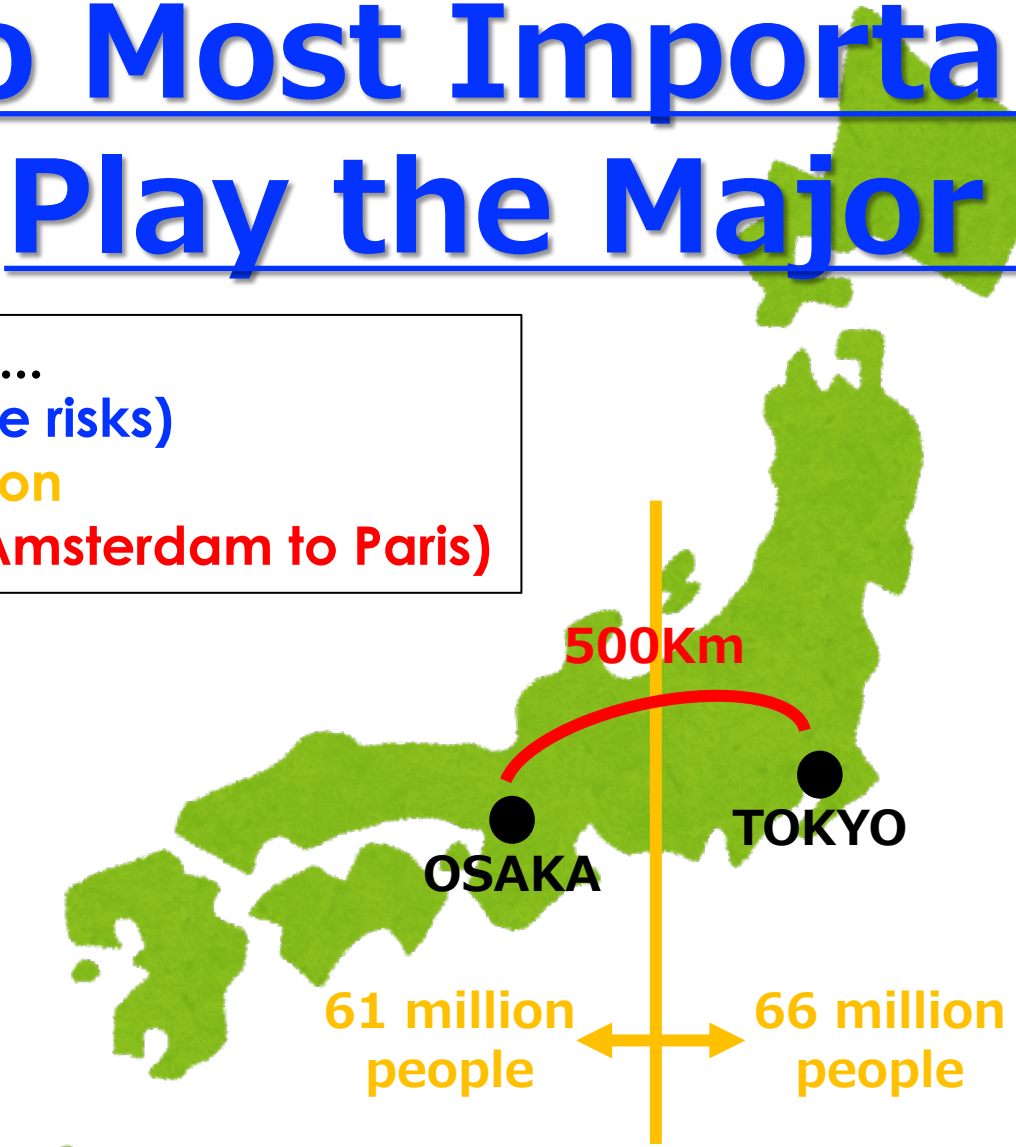
Japan	
BBIX Tokyo No.1	NTT Dat
BBIX Tokyo No.2	ComSpace I
BBIX Tokyo No.3	Equinix TY2
BBIX Tokyo No.4	Equinix TY4
BBIX Tokyo No.5	AT TOKYO CC1
BBIX Tokyo No.6	SoftBank Maruyama CLS
BBIX Tokyo No.7	NTT Com. Nexcenter
BBIX Tokyo No.8	Colt DCS Tokyo Shiohama DC
BBIX Tokyo No.9	Colt DCS Inzai 1 DC
BBIX Tokyo No.10	SCSK netXDC Chiba Center
BBIX Tokyo No.12	SoftBank Tokyo No.4 Data Center
BBIX Sendai (*)	TOHKnet Sendai Central DC
BBIX Osaka No.1	NTT DATA Dojima
BBIX Osaka No.2	Equinix OS1
BBIX Osaka No.3	NTT Telepark Dojima Building 2
BBIX Osaka No.4	AT TOKYO DC12
BBIX Fukuoka (*)	QTnet Fukuoka No.3 Data Center
BBIX Okinawa	FRT Data Center (iDC)

The United States	
BBIX LA	CoreSite LA1
BBIX Chicago	Equinix CH1
BBIX Dallas	Equinix DA6
BBIX Miami	Equinix MI1

JAPAN Internet Industry

Two Most Important Cities Play the Major Role

Why? What I think are...
①Diversity(earthquake risks)
②Population distribution
③Distance(500km = Amsterdam to Paris)



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IXPs‘ capacity – Global City Ranking

Rank	City	Total Capacity (Mbps)		Growth Ratio
		2020/11/8	2018/4/1	
1	Amsterdam	52,801,925	32,217,325	163.89%
2	Frankfurt	49,000,723	29,106,025	168.35%
3	São Paulo/SP	44,377,748	35,176,583	126.16%
4	London	35,485,636	24,725,348	143.52%
5	Tokyo	34,628,920	16,581,420	208.84%
6	Singapore	22,103,600	7,977,700	277.07%
7	Hong Kong	18,057,090	6,994,610	258.16%
8	New York	16,269,050	6,026,133	269.97%
9	Stockholm	15,060,410	11,239,010	134.00%
10	Seattle	14,866,900	6,960,715	213.58%
11	Ashburn	13,834,680	7,068,204	195.73%
12	Osaka	13,353,000	3,342,000	399.55%
13	Chicago	12,942,604	7,199,884	179.76%
14	Moscow	12,403,863	4,936,708	251.26%
15	Warsaw	11,421,014	4,633,450	246.49%
16	Johannesburg	10,663,608	3,813,228	279.65%
17	Paris	10,113,230	4,883,972	207.07%
18	Dallas	9,804,300	4,255,300	230.40%
19	Atlanta	8,436,300	3,364,640	250.73%
20	Los Angeles	7,950,800	4,702,900	169.06%
21	San Jose	6,449,101	3,311,300	194.76%

(Calculated from PeeringDB)

Tokyo is ranked No.1 in APAC

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Tokyo – Current Internet Players

	TOKYO	ISP /Carrier	Contents
Total	**320**	**177**	**143**
JAPAN	**156**	**122**	**34**
North America	**70**	**5**	**65**
USA	69	5	64
Canada	1	0	1
APAC	**67**	**39**	**28**
China	12	2	10
Hong Kong	12	4	8
Indonesia	7	7	
Australia	7	4	3
Philippines	6	4	2
South Korea	5	3	2
Singapore	5	2	3
Taiwan	4	4	
Thailand	3	3	
Vietnam	3	3	
Malaysia	1	1	
Sri Lanka	1	1	
Mongolia	1	1	
EU・Middle East	**27**	**11**	**16**
England	9	5	4
France	5	1	4
Netherland	5		5
Russia	3	3	
Switzerland	1	1	
Austria	1		1
Czech	1		1
Luxembourg	1		1
UAE	1	1	

Asian Carriers

Chinese & HK Contents

European Contents

From all over the World!

(Number of ASNs listed in PeeringDB, and connected to IXPs (surveyed by Ishu, 2021.1.4))

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Asian Data Exchange Hub - TOKYO!!

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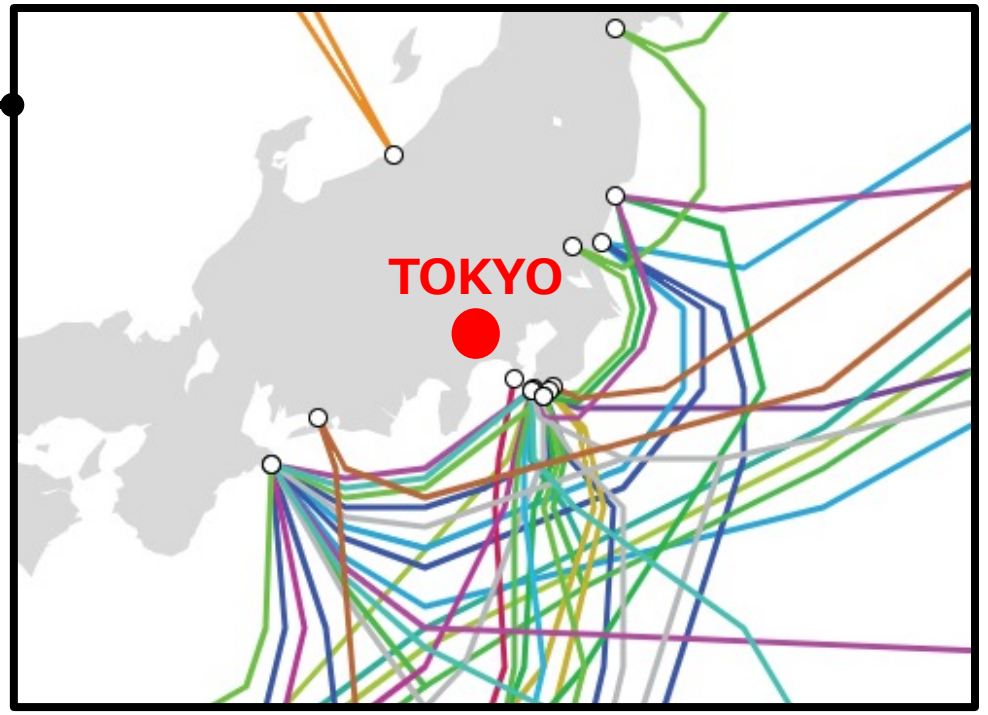
Why Tokyo?

①Infrastructure choices

- Datacenters
- Submarine cables
- Dark Fibers
- IXPs



②Location

- between Asia and US

③Community

- JANOG
- Local NOG
- IXPs' meetings

JANOG

QUNOG
九州沖縄ネットワーク・オペレーターズ・グループ

北陸ISP勉強会

ENOG

TDNOG

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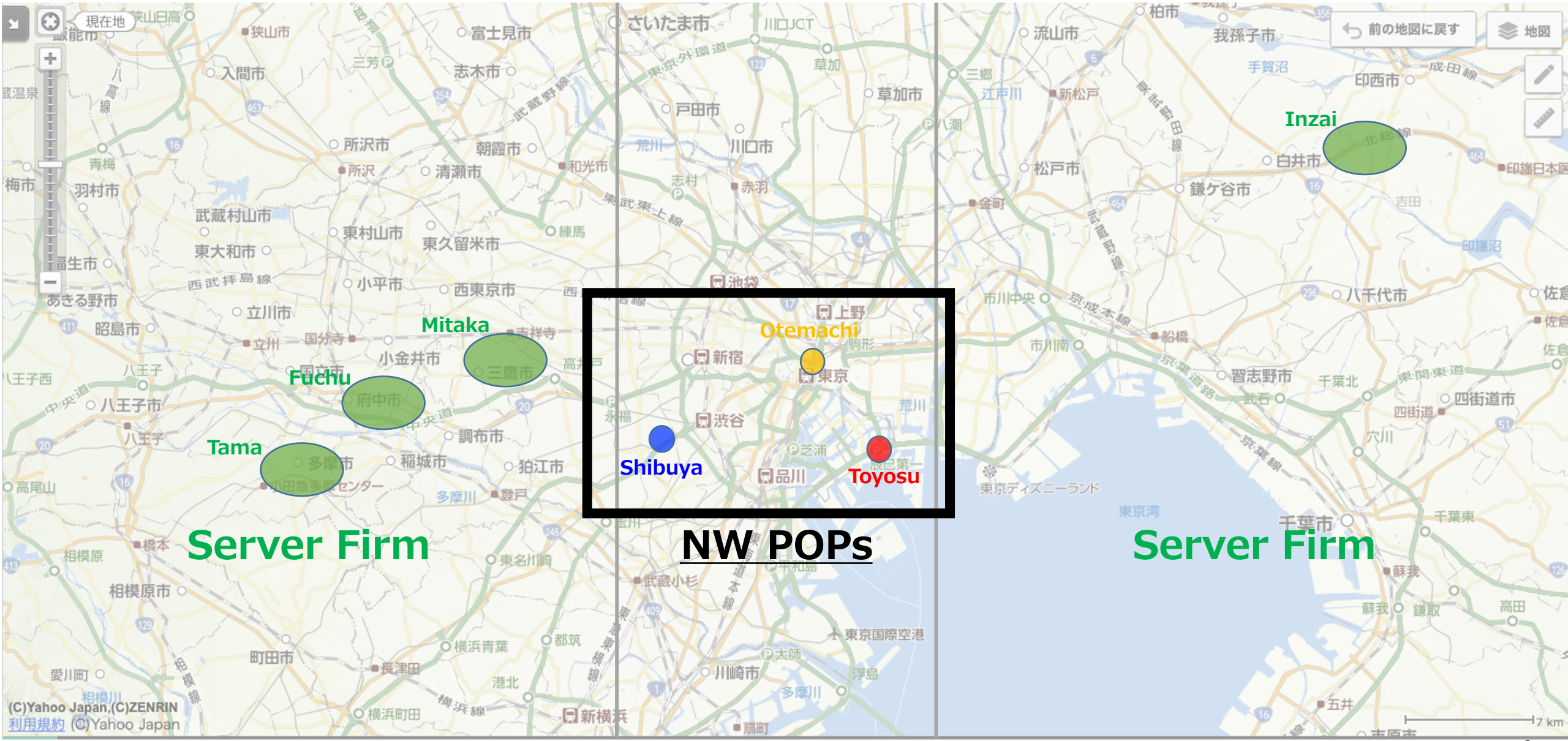
Datacenters in TOKYO



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Let’s move to...

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20	Los Angeles	7,950,800	4,702,900	169.06%
21	San Jose	6,449,101	3,311,300	194.76%

(Calculated from PeeringDB)

Osaka has achieved
Approx. 400%
in capacity growth

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Osaka – Current Internet Players

	OSAKA	ISP /Carrier	Contents
Total	**105**	**73**	**32**
JAPAN	**82**	**72**	**10**
North America	**20**	**1**	**19**
USA	19	1	19
Canada	0		0
APAC	**3**	**0**	**3**
China	2		2
Hong Kong	1		1
Indonesia			
Australia			
Philippines			
South Korea			
Singapore			
Taiwan			
Thailand			
Vietnam			
Malaysia			
Sri Lanka			
Mongolia			
EU・Middle East	**0**	**0**	**0**
England			
France			
Netherland			
Russia			
Switzerland			
Austria			
Czech			
Luxembourg			
UAE			

FEW Asian Providers

NO European Providers

Less than TOKYO, especially from APAC and EU.

(It's still on the way!)

(Number of ASNs listed in PeeringDB, and connected to IXPs (surveyed by Ishu, 2021.1.4))

(Quoted from PeeringDB,2020)

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Those factors are getting better & better in Osaka

①Infrastructure choices

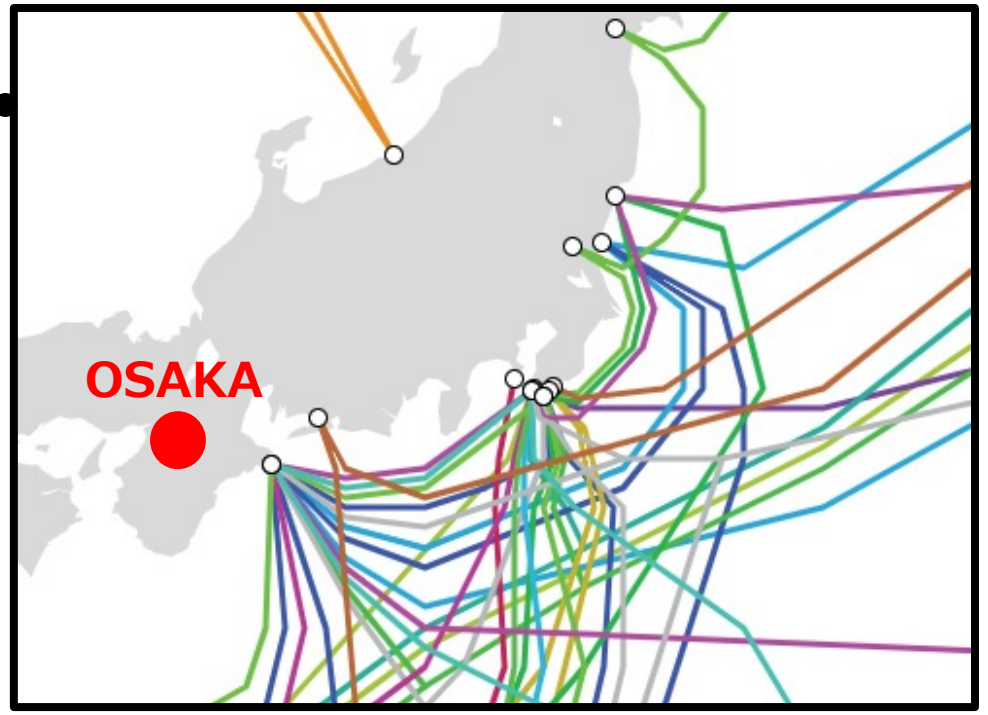
- Datacenters
- Submarine cables
- Dark Fibers
- IXPs

②Location

- between Asia and US

③Community

- JANOG
- Local NOG
- IXPs' meetings



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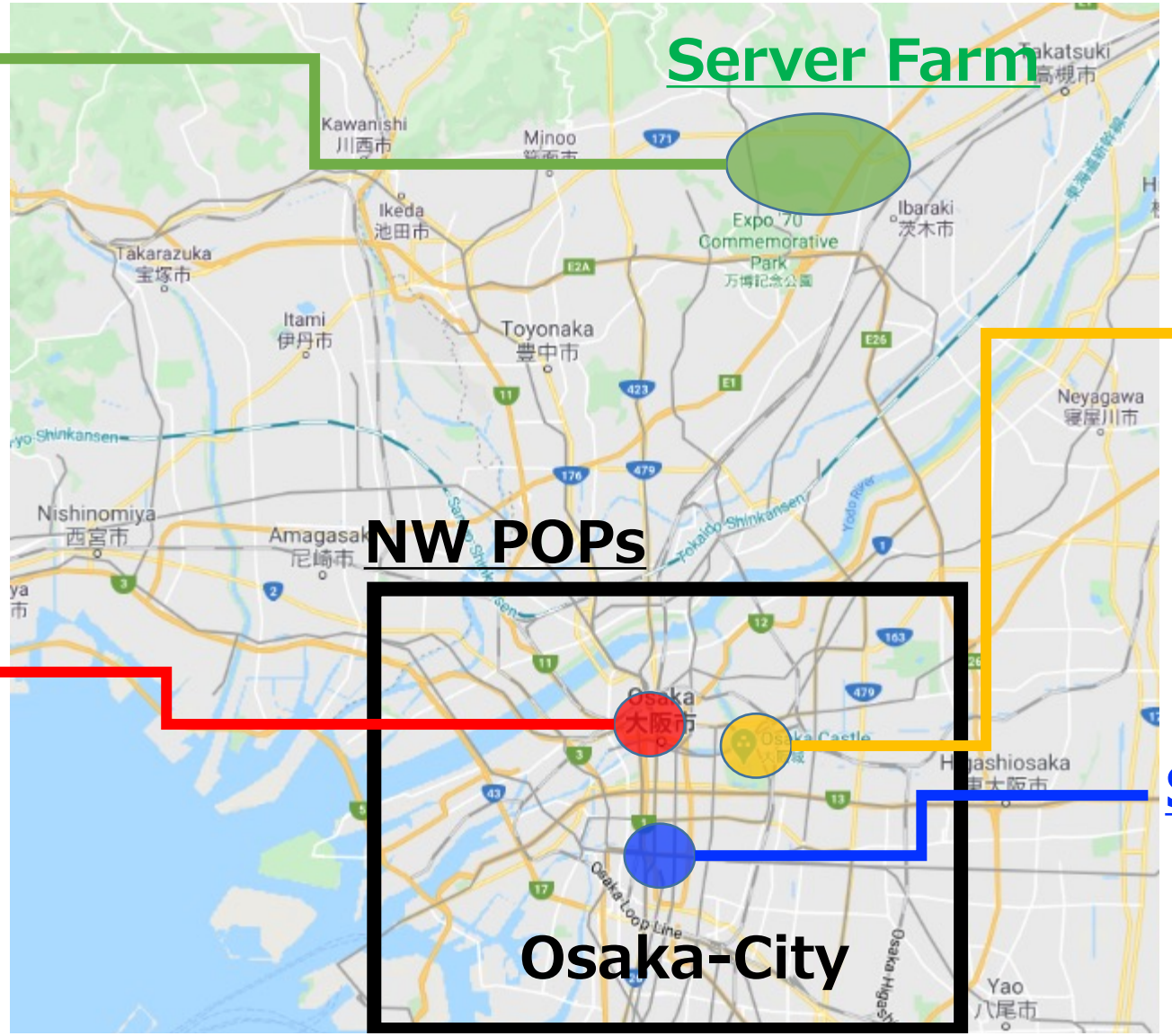
Datacenter

Ibaraki/Saito
NTT Com
Digital Realty



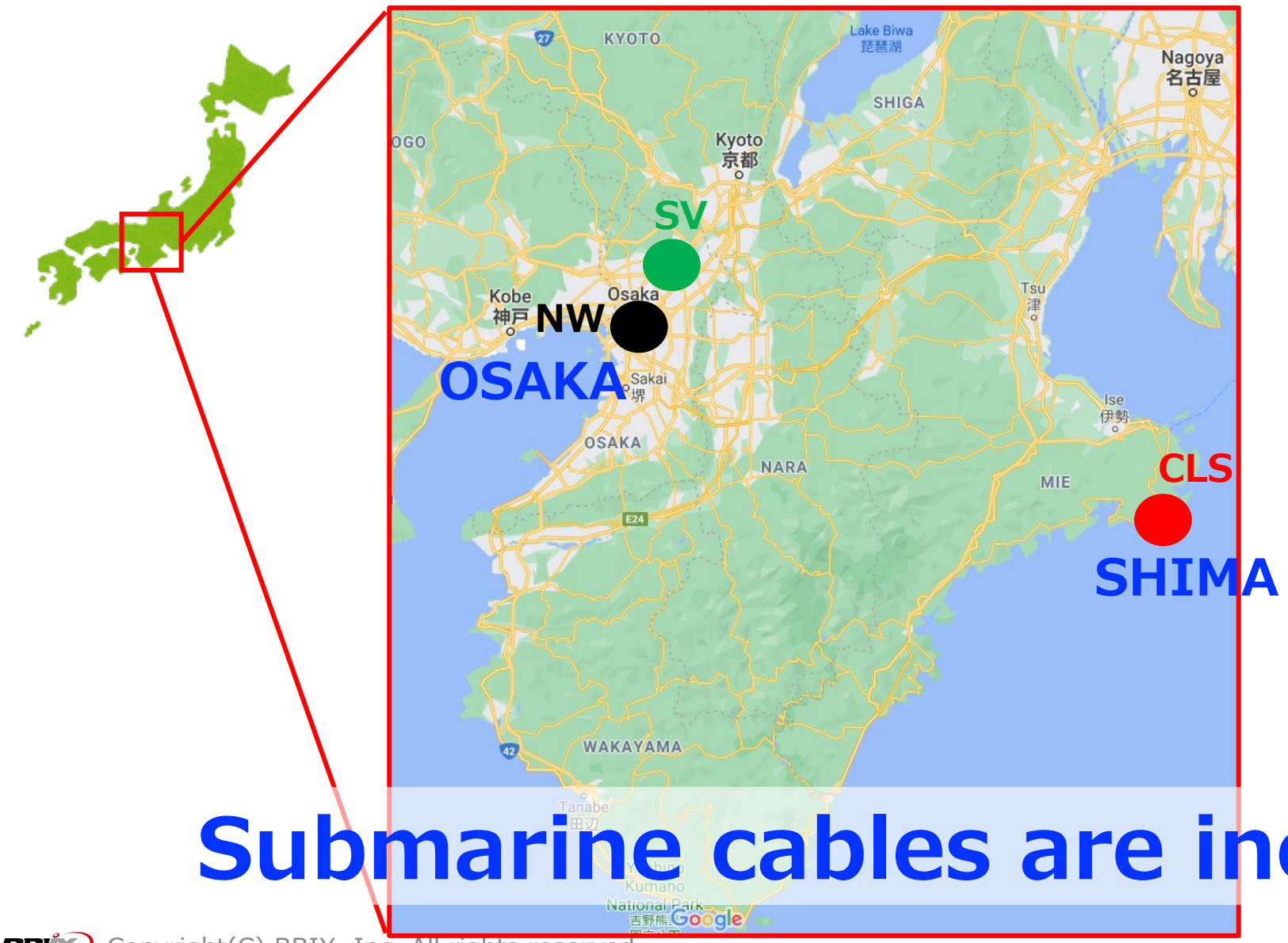
Shiromi
KDDI
JPIX

Dojima
NTT Group
JPIX JPNAP BBIX

Shinsai-bashi
Equinix
EIE JPIX JPNAP BBIX

More and more New Datacenters are planned

Submarine Cable



Submarine Cable List

◆Asia

APG
AJC
EAC-C2C
SJC2(2021Q4)

◆US

Faster
JUS_South
PC-1_South
Jupiter(2020)

Submarine cables are increasing

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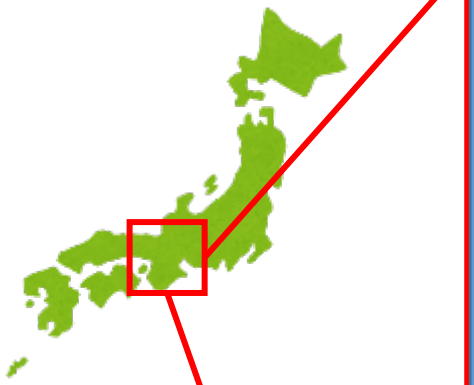
Osaka - Shima Cable(Local loop)



Presentation only

Local Loop Provider

NTT communications
Colt
Arteria
TOKAI communications
Kintetsu Cable Network
ZTV
And so on…

For more accurate routes, please check with the local loop providers.

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②Location

- **between Asia and US**

③Community

- **JANOG**
- **Local NOG**
- **IXPs' meetings**

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Local Peering event
~Osaka Peering Festival~

- Held from 2016 as a Meeting to activate Peering in Osaka.
- It's a big event with over 100 participants.
- Held every year in May.
  (Postponed due to Covid-19☹)
- This event is run entirely by volunteers.
- Unfortunately JPN language only (for now)

Osaka Peering FESTIVAL

https://peering.osaka/

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What's the Next? : Trying with Regional Dispersion

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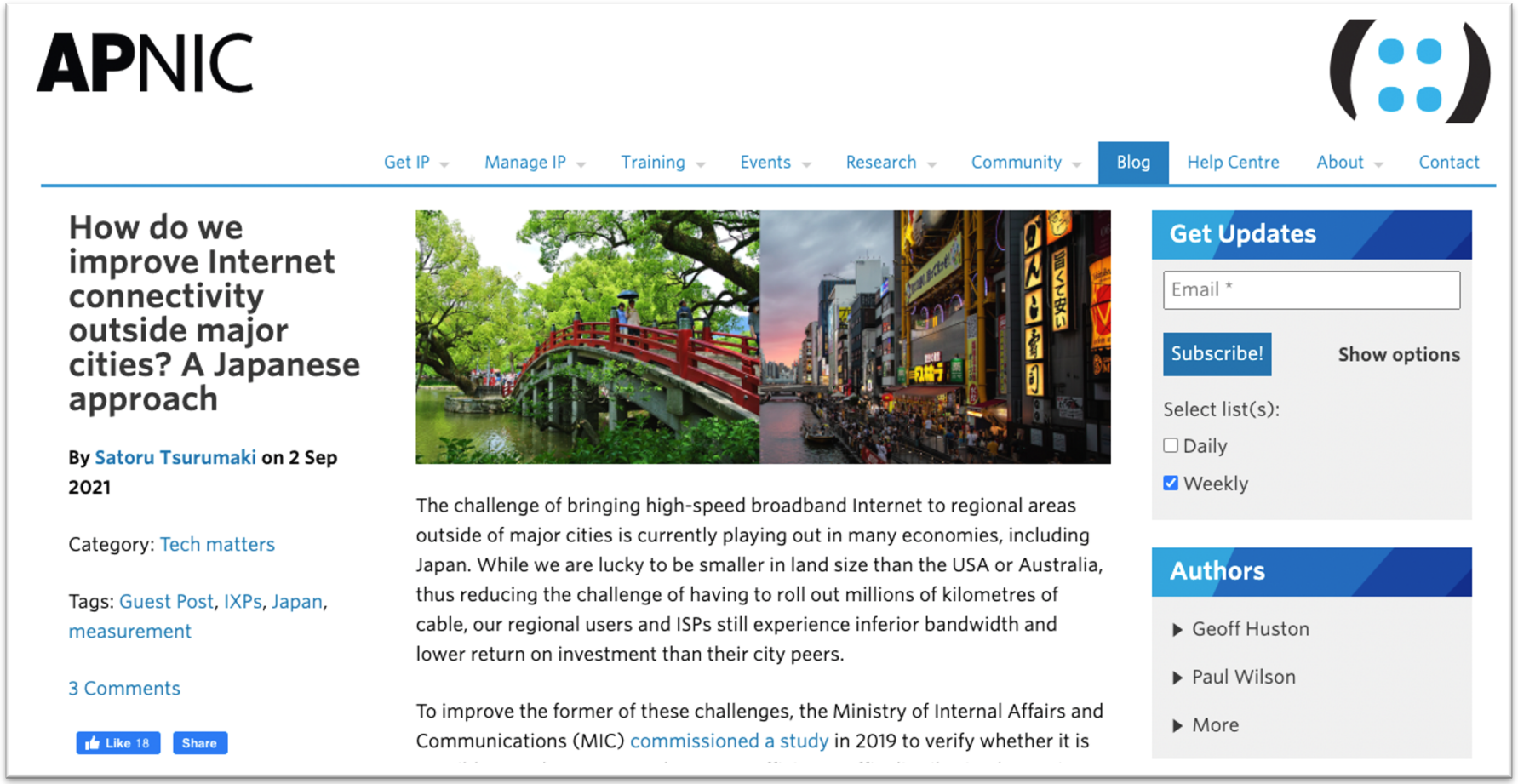
FYI : Further detail

How do we improve Internet connectivity outside major cities? A Japanese approach
By Tatoru Tsurumaki-san



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What is in it for Hong Kong

With such a Japan Internet landscape introduction, I hope it:

- Gives the idea that which country in Asia plays the major role when plan go abroad
- Helps to identify which cities to target first when enter Japan market
- Provides factors (e.g. Infrastructure, Location etc.) to be considered when decide network deployment in Japan
- Brainstorms the players to form a strategic business decision base on the nature of Japan
- Diversifies the future developments of Japan Internet
- Shares the local communities which Hong Kong players or friends might be interested to participate ☺

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