Peering Chronicles of Japan: the book Translated!

APIX#30

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We made the book in 2022

A book about
the history of peering in Japan

in Japanese language

ピアリング戦記

日本のインターネットを繋ぐ
技術者たち

小川晃通 著

Translated!

A book about
the history of peering in Japan

in English!

It's **Free**!
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Peering
Chronicles
of Japan
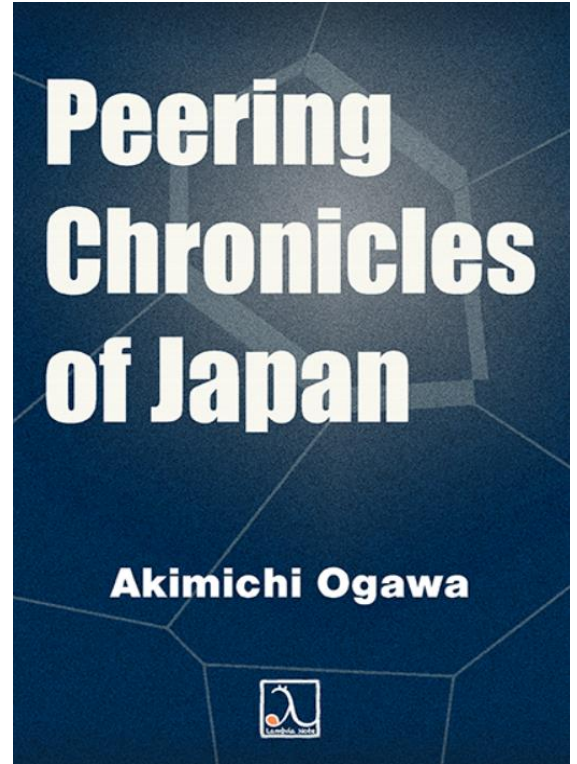
Akimichi Ogawa
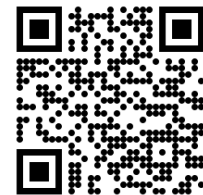
Why and how we made the book
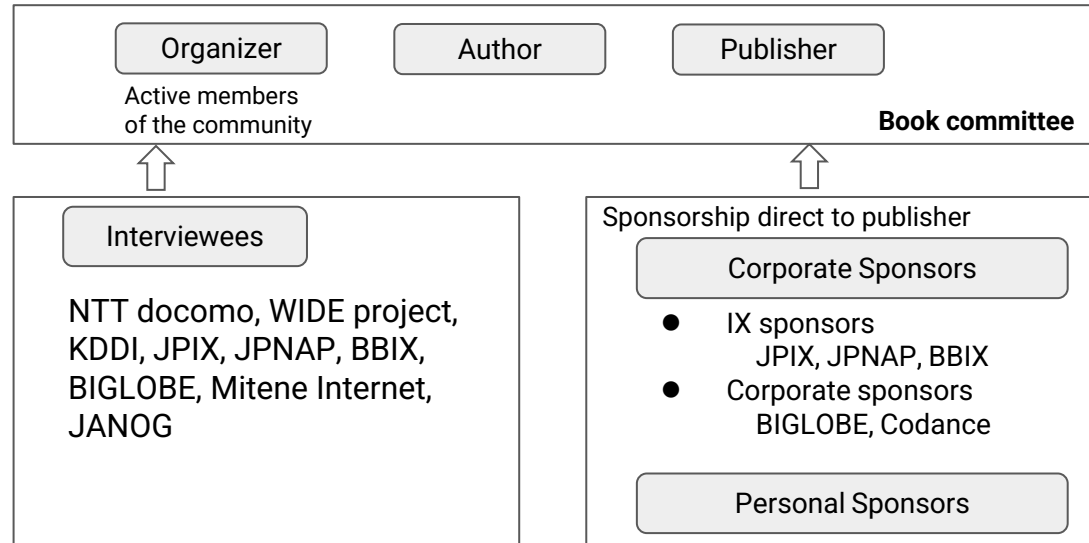
Why and how we made the book?
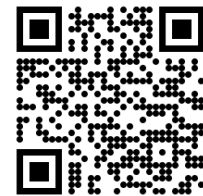
- Why?
  - We **wanted to record the history of various efforts of the local operators community** to make Japan as a hub of APAC (like SG and HK)
  - Also wanted not only a history book, but **a peering starter book** for newcomers (not to repeat the same mistakes)

- How?
  - **Interviewing key persons**, a tech-friendly writer wrote the book
    - *Key persons are too busy to write episodes by themselves*

Book project structure : NOG style

- Written by a tech friendly writer in collaboration with a publisher of the same nature
- Episodes were collected through interviews with key persons in this community

- It took 1 year and 10 months to make the book

Organizer	Author	Publisher

Active members of the community

Book committee

Interviewees

NTT docomo, WIDE project, KDDI, JPIX, JPNAP, BBIX, BIGLOBE, Mitene Internet, JANOG

Sponsorship direct to publisher

Corporate Sponsors

- IX sponsors
  JPIX, JPNAP, BBIX
- Corporate sponsors
  BIGLOBE, Codance

Personal Sponsors

Overview of this book

- Chapter 1   "The Peering battle behind the scenes"
    - **What is peering?   -- A brief tutorial about peering**
- Chapter 2   "Data centers and their location"
    - **Historical evolution of peering co-locations in Tokyo and Osaka**
- Chapter 3   "What an IX is and the difference between markets"
    - **Japanese IXPs histories**
- Chapter 4   "How to find your peer"
    - **Community and peering**
- Chapter 5   "Rise of content providers"
    - **Estimation of Japanese Internet traffic by industry/community**

    Each chapter includes some episodes talked by interviewees
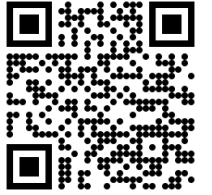
How we translated the book?

How I connected with this book?

- Knew and read the book for the first time during a training for new employees in JPIX.

- Showed my keenness to translate the book at Peering Asia 4 Bangkok.

- Submitted some translations to Toyama-san at APRICOT Manila and wished to work on quickly.

- Started working on with another volunteers, the author, the proposers and the publishers.

- After one year and a half, the book translated!

Photo taken at APRICOT Manila 2023

Task sharing

Miao

- finding-peering
- JANOG-peering
- NSPIXP
- Biglobe
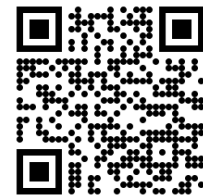- Proposers and author
- JPIX
- JPNAP
- BBIX
- Event

Ono-san

- Cloud-ix
- Datacenter
- IXP
- Hypergiants
- Abstract
- Dojima
- Introduction
- About chapter
- Osaka

Photo taken at Asia Peering Forum Sapporo 2023

NSPIXP

Network **S**ervice **P**rovider **I**nternet e**X**change **P**oint

● NSPIXP is the very first IX in Japan
It's an academic IX and launched by the WIDE project.

● NSPIXP-1: At a basement…somewhere in Tokyo
NSPIXP-2: At KDD Otemachi Bldg. in Tokyo
NSPIXP-3: Osaka
NSPIXP-6: The first IPv6 available IXP in Japan

● But…Why an IX was necessary in Japan?

NSPIXP
Network Service Provider Internet eXchange Point

NSPIXP

● **An interview to Professor Akira Kato**

　　-Interconnection between ISPs required approval from the Minister of Posts and Telecommunications at that time.

　　-In 1993, the communication between AT&T Jens and IIJ had to go through the US even though the users were in Japan.

　　-The RTT was high⋯The communication was inefficient⋯ The price of international circuits was high⋯

　　-It triggered an effort to exchange traffic within Japan. Thus, NSPIXP started in 1994.
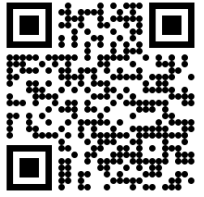
NSPIXP

● **Which ISPs first connected to NSPIXP?**
   -IIJ, InfoWeb (Fujitsu), AT&T Jens and WIDE.
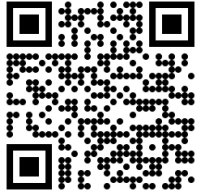
● **Any initial difficulties in the launch of NSPIXP?**
   -The cannibalization with the transit business.

   -"If there is a limit on circuit bandwidth, the traffic flowing from other network operators connected to the IX will be limited, so the business impact will also not be so big… …"

● **However, how to limit the bandwidth technically?**

NSPIXP

- **The difficulties in operating NSPIXP at that time.**

  (1) The routing protocol was not BGP4 but BGP3.

  (2) No '?' key to get help but check the heavy printed manuals.

  (3) An increasing need to upgrade the circuits.

  (4) Congestion occurred and power outage also happened…

  (5) Being a single point of failure was not great and NSPIXP2 started.

NSPIXP

- **How active was the interconnection among participants?**
  -WIDE never forced participants to interconnect.
  -Peering policies? Route Server?

- **How about the costs of running NSPIXP?**
  -Started asking for a participation fee to recover costs.
   However, a serious tax issue happened.

  -Should sign a contract with "Keio Engineering Foundation"
    if you wanted to use NSPIXP at that time…

  -Thus, commercial IXes (JPIX, JPNAP, BBIX) emerged…

IXP history in Japan

Major IXPs

Name	Founded	Shareholders
NSPIXP	1994	(WIDE project) - academic -
JPIX	1997	KDDI, ISPs
JPNAP	2001	NTT, IIJ, ISPs
BBIX	2003	Softbank
EIE (Equinix)	2007	Equinix

First IXP in Japan: NSPIXP - was hosted in a publisher's HQ building

KDDI Otemachi - the first popular interconnection facility

Photos from the book

CloudIX council
- Community of operators to 'democratize' peering, solve problems in Japan to make it easy for everyone to peer
- Led by members from BIGLOBE, IDC Frontier, NTT Docomo, and supported by BBIX

Culture differences between Japan and others?

- Each carrier has its own IXP.

- Sense of time is quite different.

- Close, but not close (Dojima issue in Osaka).

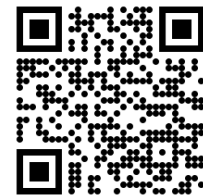- Disaster management is considered carefully.
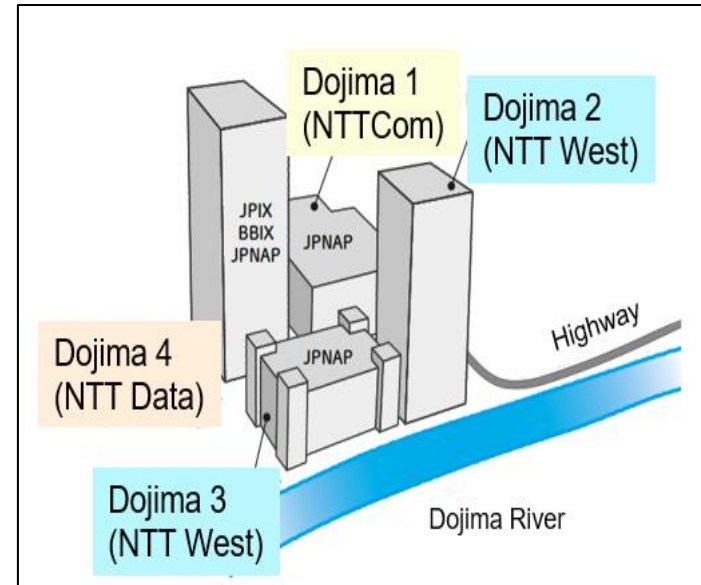
Excerpt from the book

Culture differences between Japan and others?

- Pay an invoice on time.

- Izakaya, a place for industry information exchange.

- Never say "NO" even you can't peer with others.

- Business manners and etiquettes are different.

Current and Future of IXP and Peering in Japan

Answers to the requests from the reviewers
- **Q1: Current trends in IXP connections?**
  - 4 commercial IXPs are competing with each other. Due to competitive market, peering cost becomes cheaper, so customers of IXP looks happy
- **Q2: How disaster management is handled and whether there is a backup?**
  - Buildings in Japan, including DCs, have earthquake-resistant and earthquake-isolation structures. IXPs are also thoroughly implementing redundant configurations of facilities and communication channels.
- **Q3: Observations for the future?**
  - The telecommunication market, especially IXP and peering market, will be as competitive as it is. However, competition still be severe, and trend from public peer (IXP) to private peer (PNI) goes on so IXP business in Japan may be very touch in near future.

Thanks!
Any questions and comments?

"Peering Chronicles of Japan"
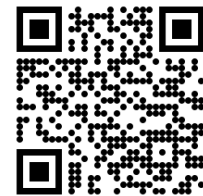-- Engineers who connect the Internet in Japan --
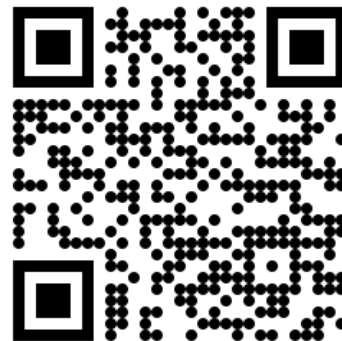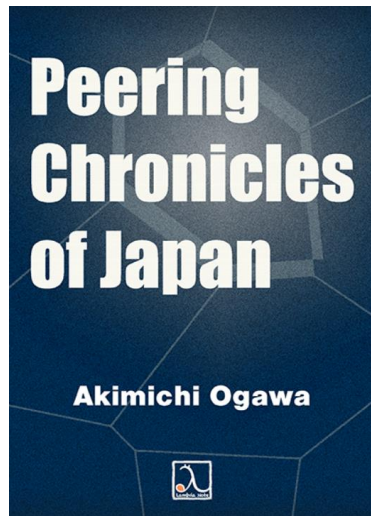
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The book organizing committee volunteers

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- Yoshiki Ishida
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- Shintaro Kojima
- Yutaka Kumamoto