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#### Mayumi Ono Nov. 2020

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         vupcr"><input type="text" name="q" size="13%" maxlength="50000" value="</pre>
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Experience the Edge

### Japan Internet Landscape

Top 10 ISPs (around 80%) + more than 100 ISPs all over the country

- Over 900 AS Numbers
- 4 major Internet eXchanges
- Various International Transit ISPs
- Carrier neutral data centers

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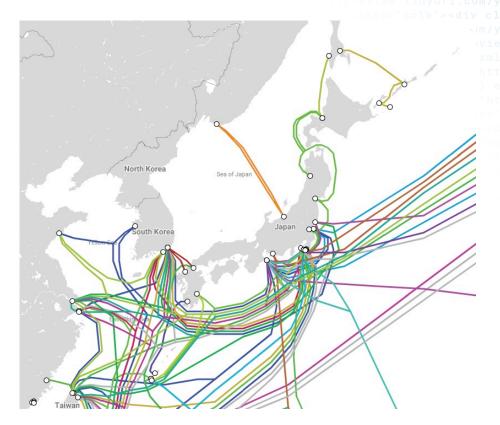
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## **Japan Internet Landscape**

- Top 10 ISPs (around 80%) + more than 100 ISPs all over the country
- Over 900 AS Numbers
- 4 major carrier neutral Internet eXchanges
- Various International Transit ISPs
- Carrier neutral data centers
- Many Trans-Pacific cable systems

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## **Japan Internet Meeting Landscape**

- JANOG Meeting: 2 times a year + (over 1000 attendees)
- 4 different IX User Meetings:
   JPIX / JPNAP / BBIX / EIE
   more than 6 / year (100-200 attendees)
- Other domestic internet events: a few times a year

Total: more than 10 domestic ISP/Internet meetings a year



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## Variations of industries use Internet as it's infra "footer" > Variations of industries use Internet as it's infra "footer" > Variations of industries use Internet as it's infra "footer" > Variations of industries use Internet as it's infra "footer" > Variations of industries use Internet as it's infra "footer" > Variations of industries use Internet as it's "infra "footer" > Var



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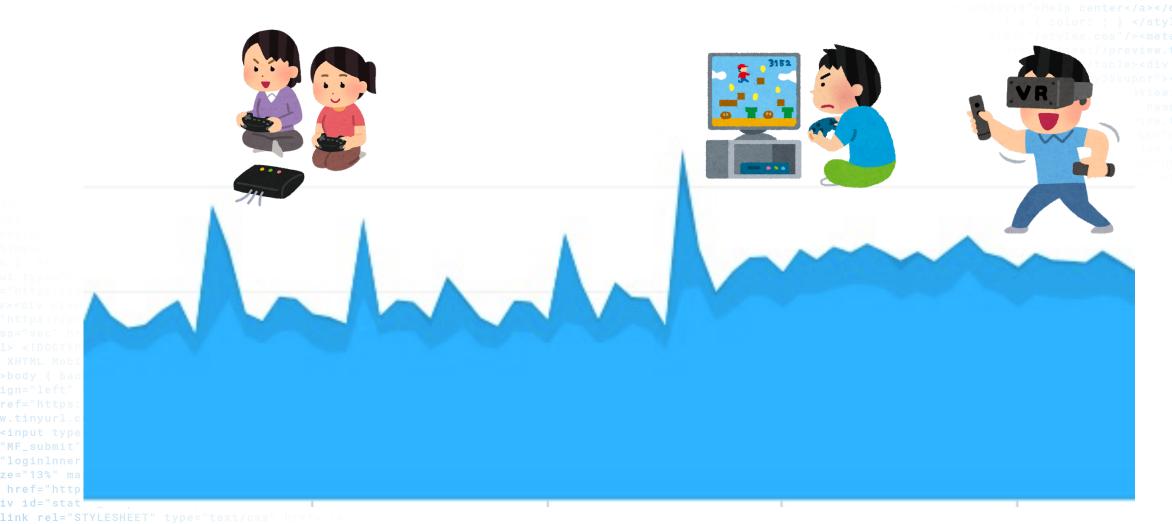








## Online Game updates / new release traffic of /></form></display="center"><</td>





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#### **Contents Develoery Network**

CDN: Platform to deliver contents to eyeballs

CDN's Customer: Contents owners

Deliver cached origin contents per demand from end-users.

Gap of industry communications





# Traffic Increase associated with COVID-19 redivative in Lock-down/Stay-home

- OS/Software Update (as usual)
- More Social Media
- More OTT/Video Content (Download / long tail contents)
- More Online Streaming
- More Online games (online game app update)
- More eCommerce
- + Work From Home
- + Video Conferencing / Video chat / Online socializing
- + E-learning/E-Schooling
- Inner"><div class="a+" Sports/Live/Event Streaming
  "https://preview.tinyuri



# Traffic Increase associated with COVID-19 on the control of the co

Some government, etc. requested OTT/CDN to reduce traffic

#### Responses against traffic increase:

- Video contents bitrate adjustment (w/Content owner's support)
- Per content traffic shaping (w/ Content owner's support)
- Download timing adjustments (w/ Content owner's support)
- Pre-downloading of large size game data (w/ Content owner's support)
- Emergency capacity upgrades, etc. (w/ ISP, IX, data center, carrier, etc. support)



## Key to improve growth of Internet traffic situation (#8593; political com/y35vupor">Terms & amp; Polithes</a>

Communication: Feedback (to & from)

ISPs / Transits / IXs
Cloud serivces
OTT / Content providers
CDNs
Data Centers
Government





CSP **CDN ISP** 

## CONECT

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