Summary of IPv6 Readiness Measurement BoF

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Introduction of the BoF

- Motivation
  - To monitor the status of the IPv6 migration process,
  - Each measurement provides its own insights of IPv6 readiness in specific aspects.
  - The methods and criteria among measurements are different, which may lead to different outcomes and interpretations.
- Aim
  - To share the knowledge and methodology on measuring the IPv6 readiness, and
  - To call for collaboration with the AP Internet community on the consensus building of the IPv6 readiness measurement,
  - To analyze the data, and the results can be used as an important reference for government and industry in AP region

Presentation given

▶ IPv6 readiness measurements have been conducted by different groups, including APNIC, RIPE, NZ IPv6 Task Force, IAjapan, TWNIC, and so on.

▶ Around 40 attendees

▶ Five measurement metrics have been discussed in the BoF

  ▶ Measurement of IPv6 Readiness in Taiwan, Ai-Chin Lu

  ▶ NZ IPv6 Measurement, Dean Pemberton

  ▶ JP IPv6 Measurement, Tomohiro Fujisaki

  ▶ IPv6 Development in China, Zhiqiang Li

  ▶ APNIC IPv6 Measurement, Geoff Huston

Measurement methodologies

- ▶ Measurement Criteria of TW
  - ▶ Network Traffic, number of ISP with IPv6 allocations and BGP4 Routing, IPv6 services, user availability, DNS queries, and number of IPv6-enabled products.
- ▶ Measurement methodologies of NZ
  - ▶ Network Traffic, ASes announcing v6 prefix, IPv6 services, user availability, and DNS queries.
- ▶ Measurement Criteria of JP
  - ▶ ASes announcing v6 prefix, IPv6 services, user availability, DNS queries, and number of IPv6-enabled products.
- ▶ Measurement Criteria of China
  - ▶ Number of ISPs with IPv6 allocations and BGP4 Routing, IPv6 services, and DNS queries.
- ▶ Measurement Criteria of APNIC
  - ▶ ASes announcing v6 prefix and User availability.

Summary of different Measurement methodologies

| Criteria	TWNIC	New Zealand IPv6 TF	CNNIC	APNIC	JP(IPv6PC, IAJapan, Intec)
Network Traffic	in/out of Taiwan				
	IPv6 Tunnel Broker	v6 traffic flows from ISPs			
IPv6 allocation and BGP advertisement	# of ISP with IPv6 allocations and BGP4 Routing	By AS number	# of ISP with IPv6 allocation	By AS umber	By AS number
Service (DNS, Web, E-mail) availability of ccTLD	Servers of .tw	Servers of .nz			Servers of .jp
		Top 20 .nz web	Top 1,000 .cn web		Top 500 .jp web
User availability via specific website	7 registrar's websites	referred to APNIC		Google	IAjapan
DNS query to specific ccTLD	DNS query to .tw	DNS query to .nz	DNS query to .cn		DNS Query to .jp
Number of IPv6-enabled products	IPv6 Ready Logo Phase II				IPv6 Ready Logo Phase II

Network Traffic
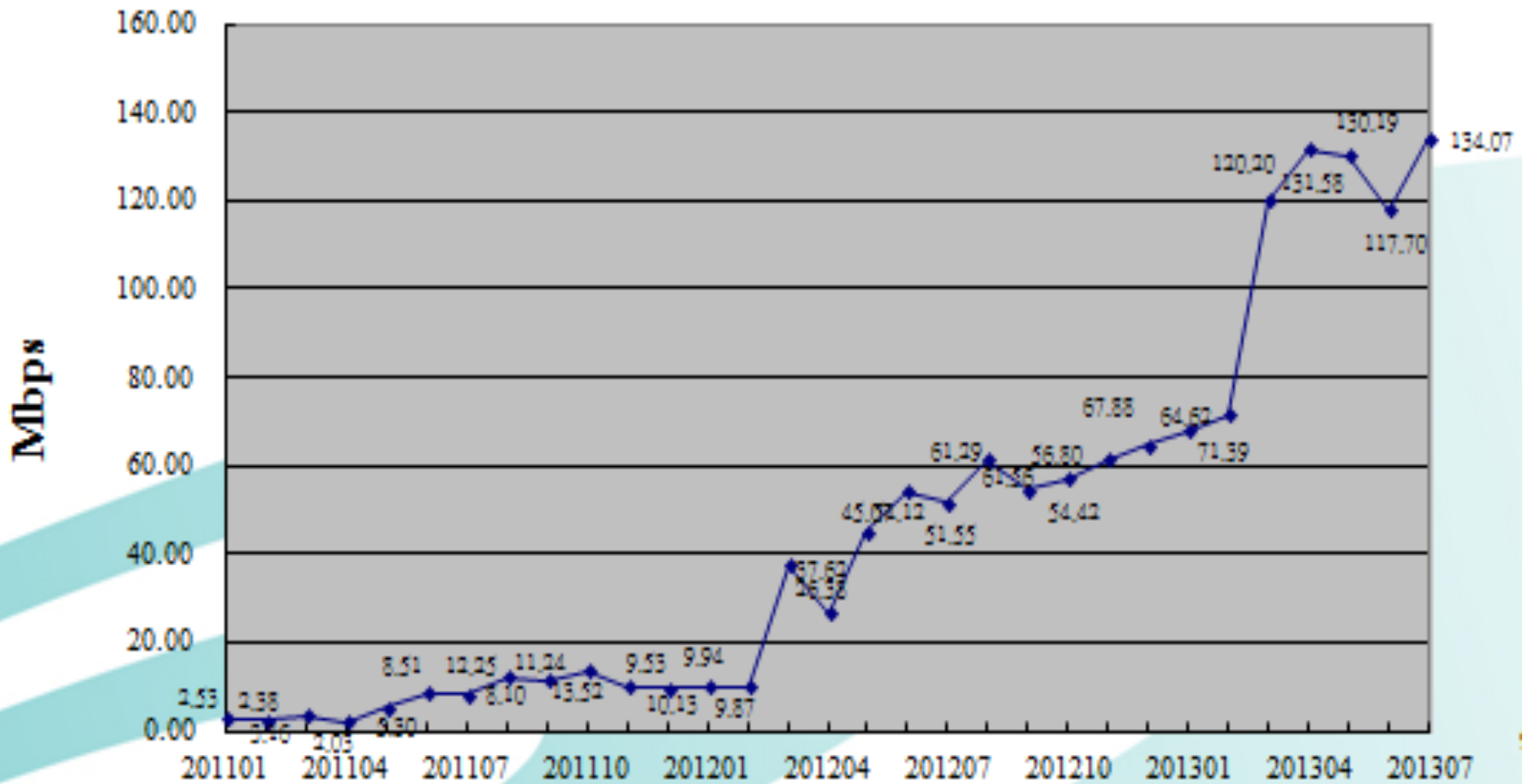
Via 10 IPv6 Tunnel Brokers provided by TWNIC

IPv6 allocation and BGP advertisement
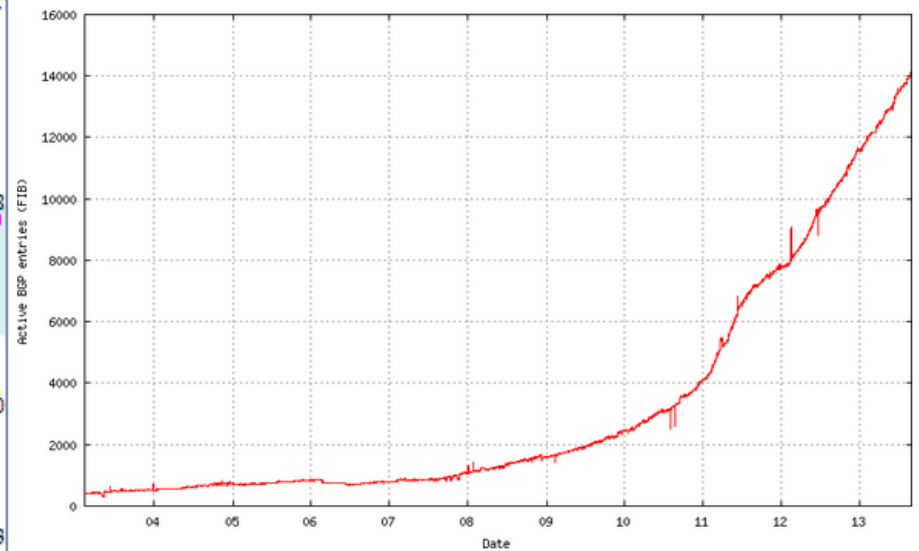

RIPE NCC
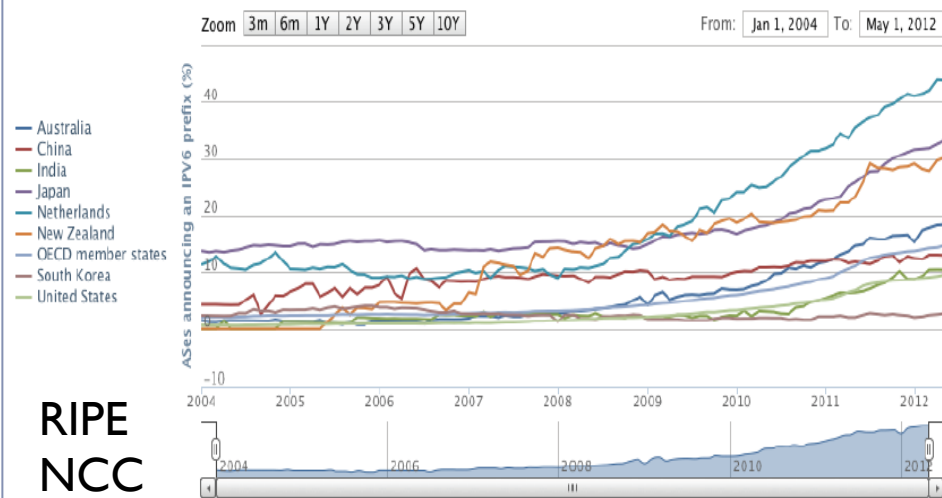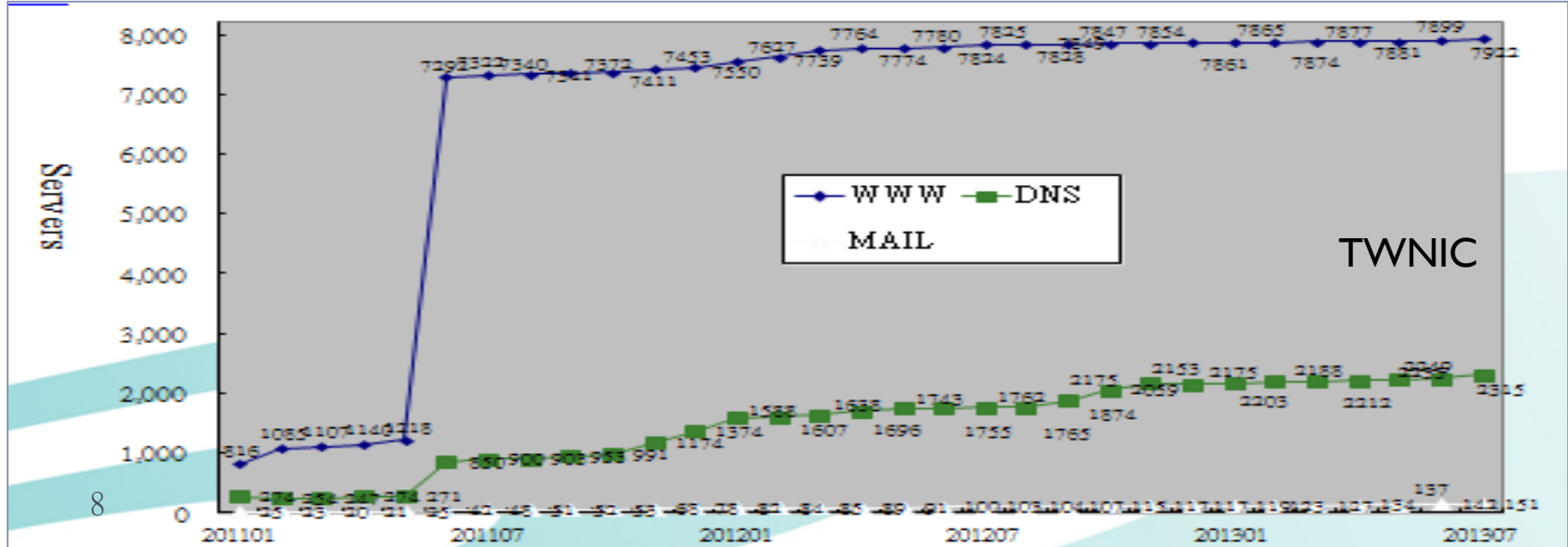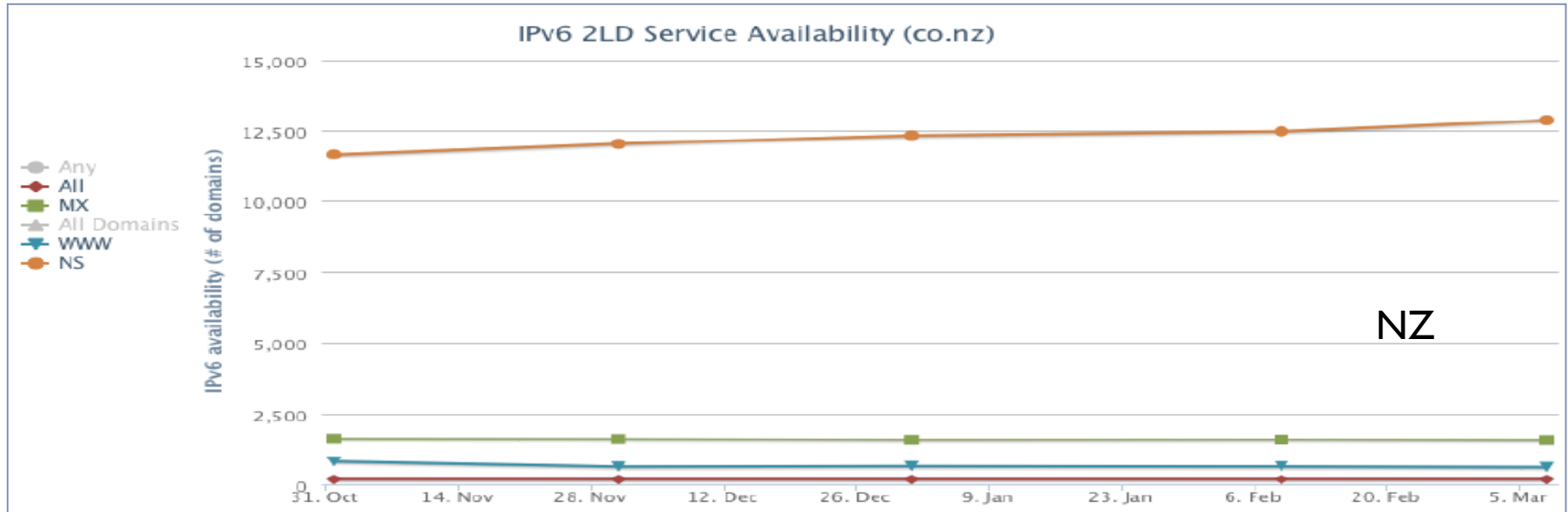
IPv6 penetration rate : Internet backbone

The number of IPv6 enabled of Transit AS in BGP routing tables.
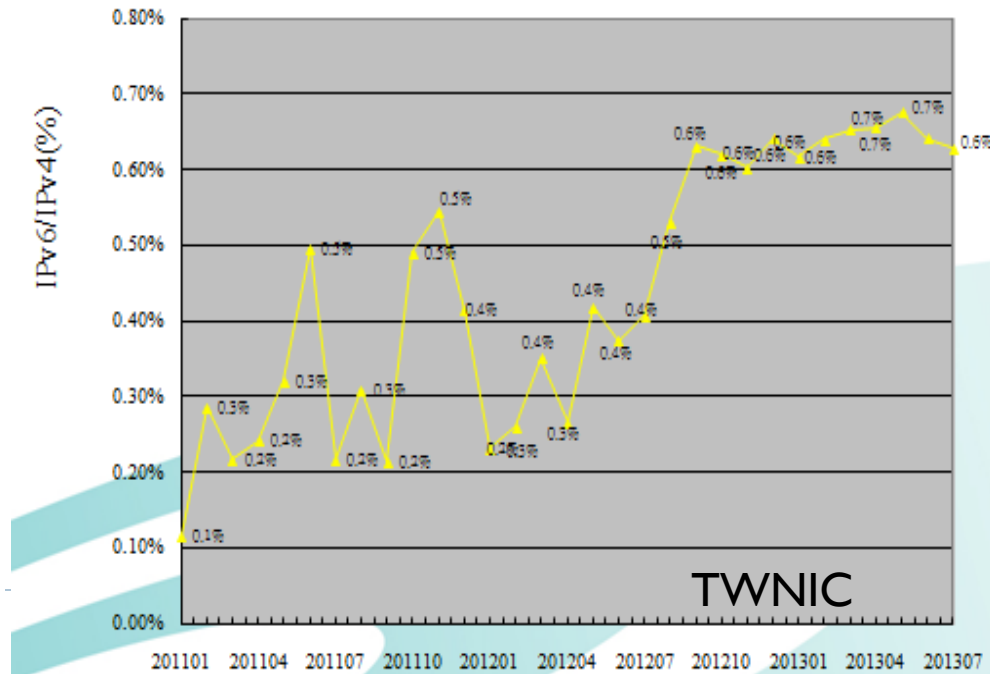
JP
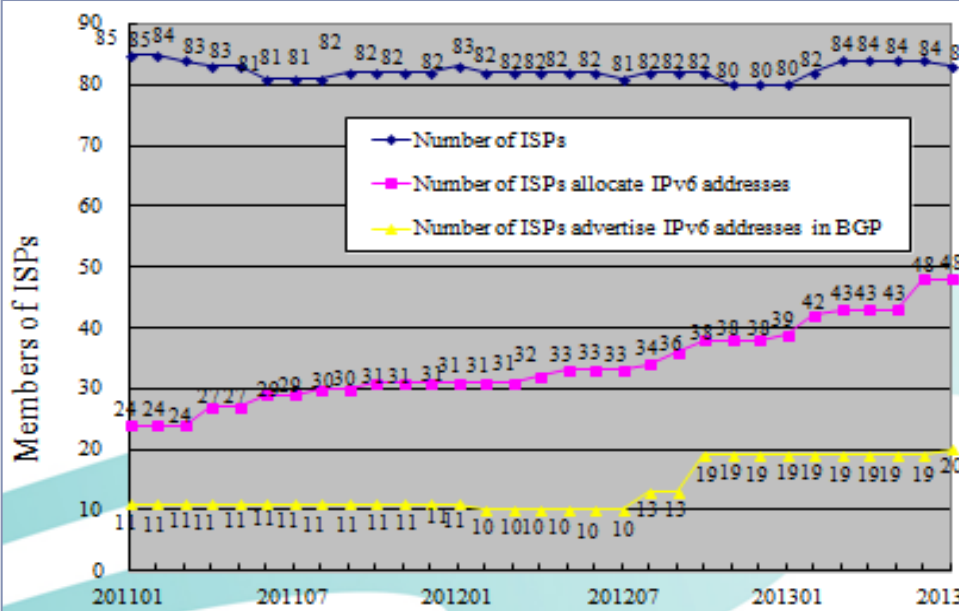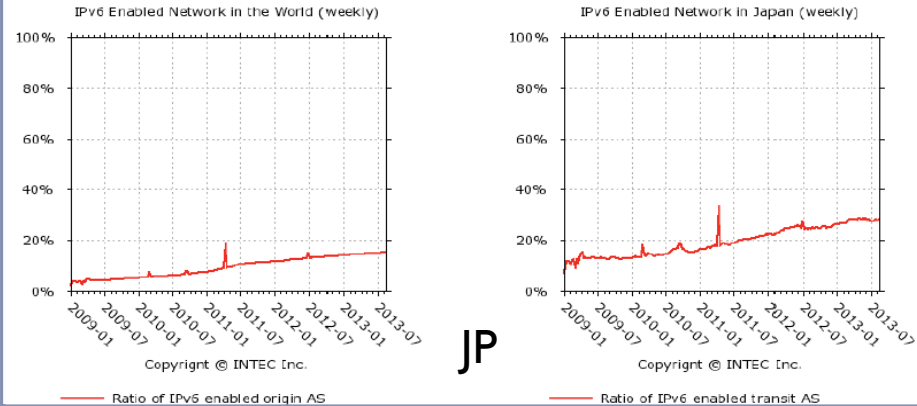
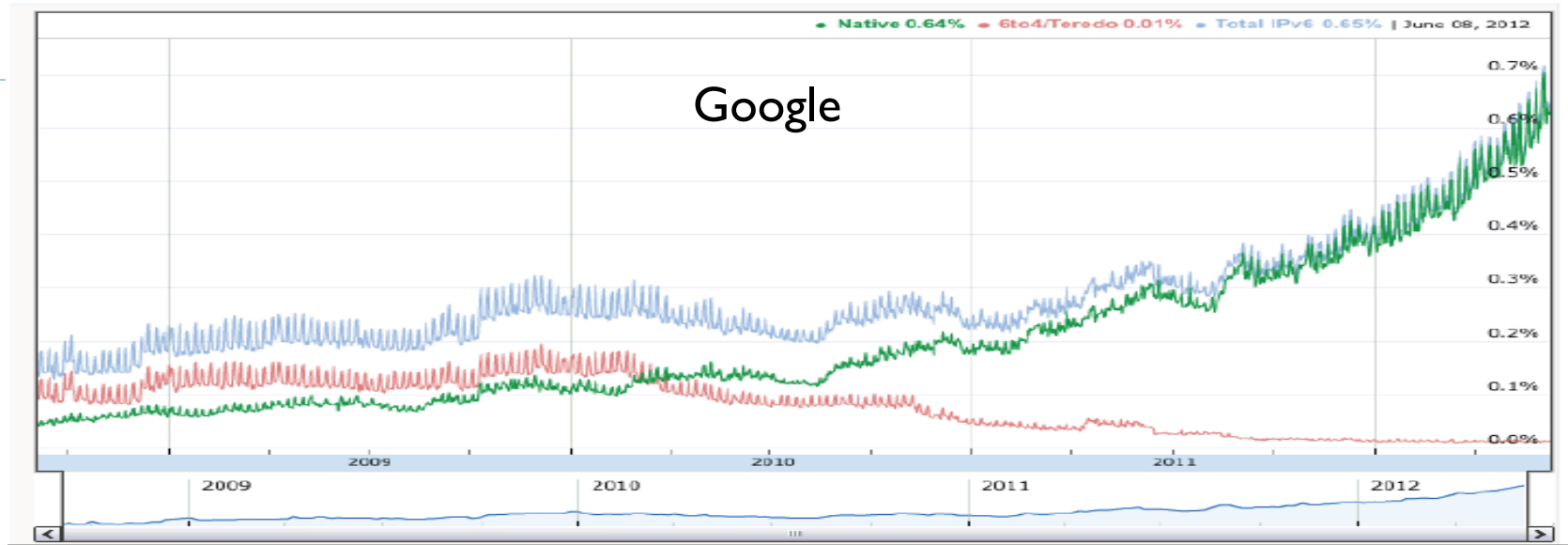Active BGP entries (FIB)

TWNIC

APNIC

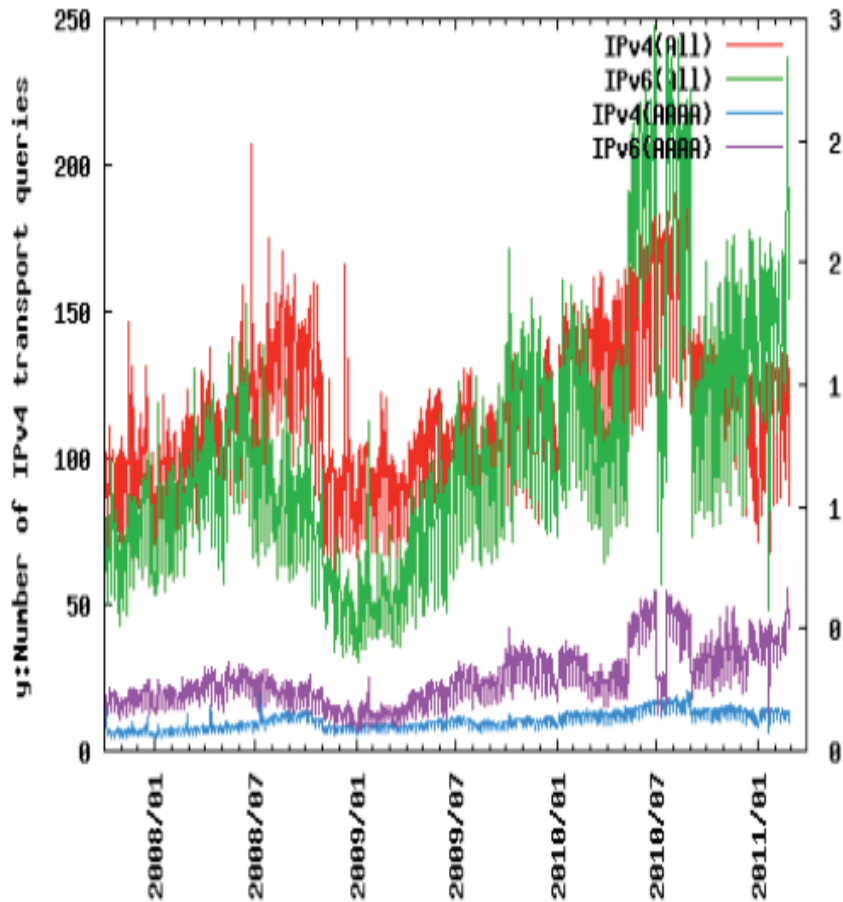# Service availability of ccTLD

User availability via specific website

Google
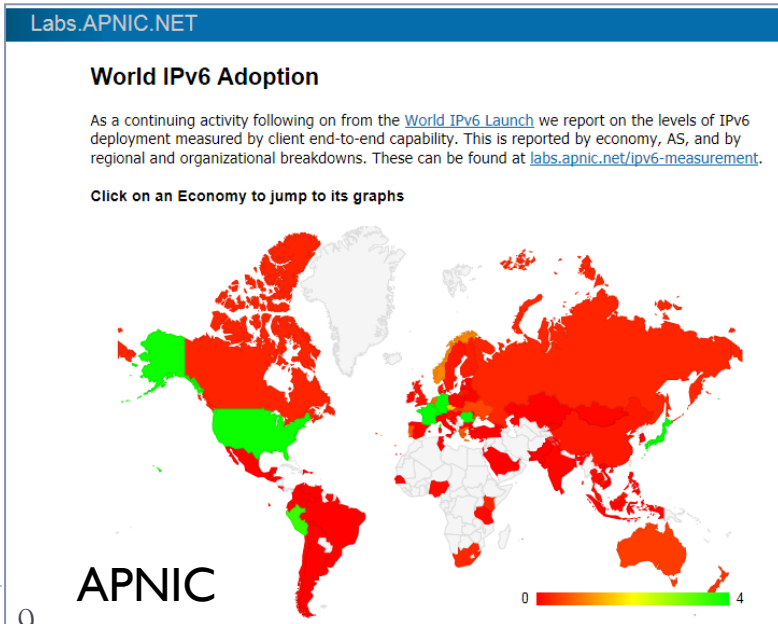
APNIC

TWNIC

DNS query to specific ccTLD

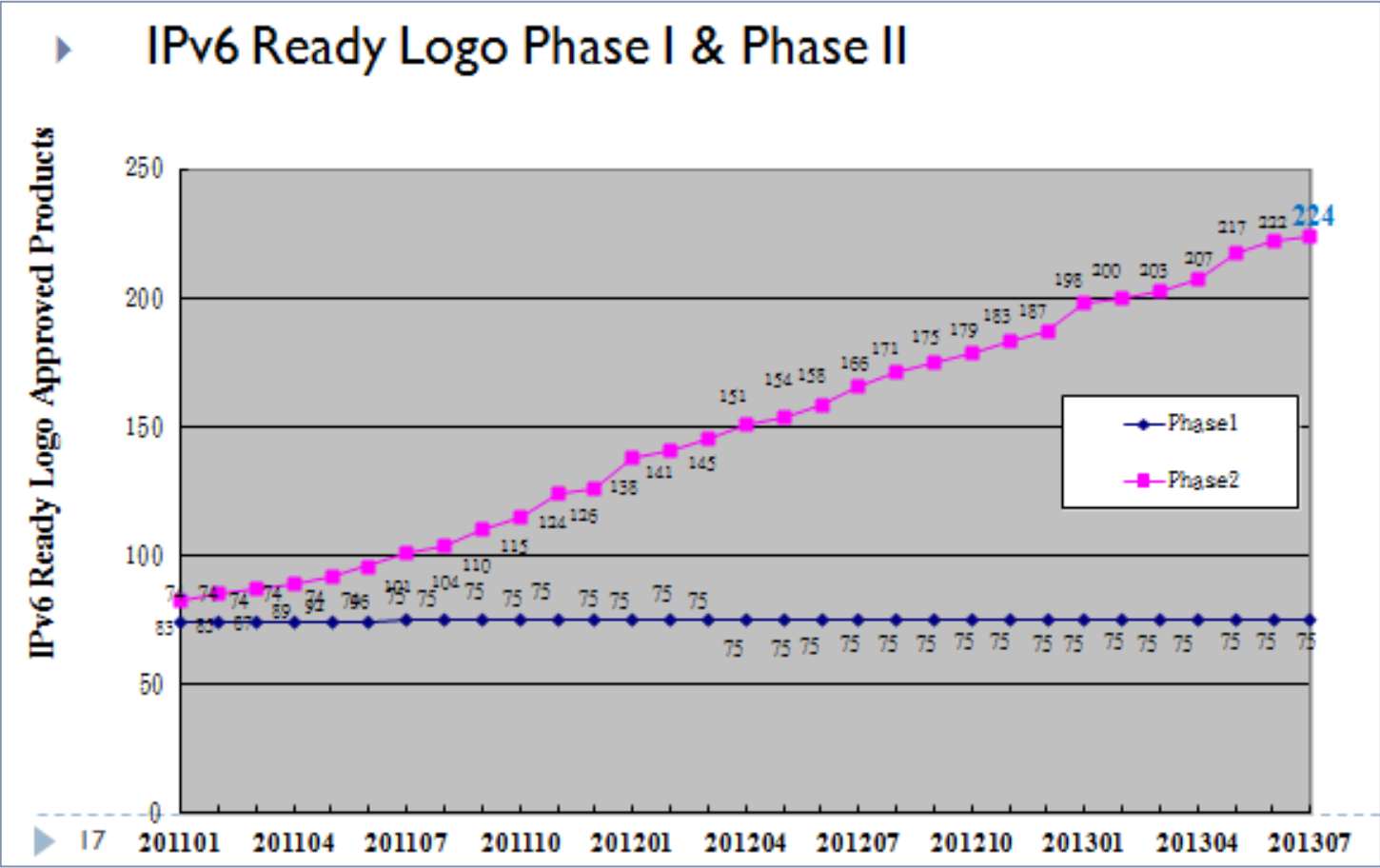DNS queries to .jp DNS servers

DNS quries to 11 .tw DNS servers

JP
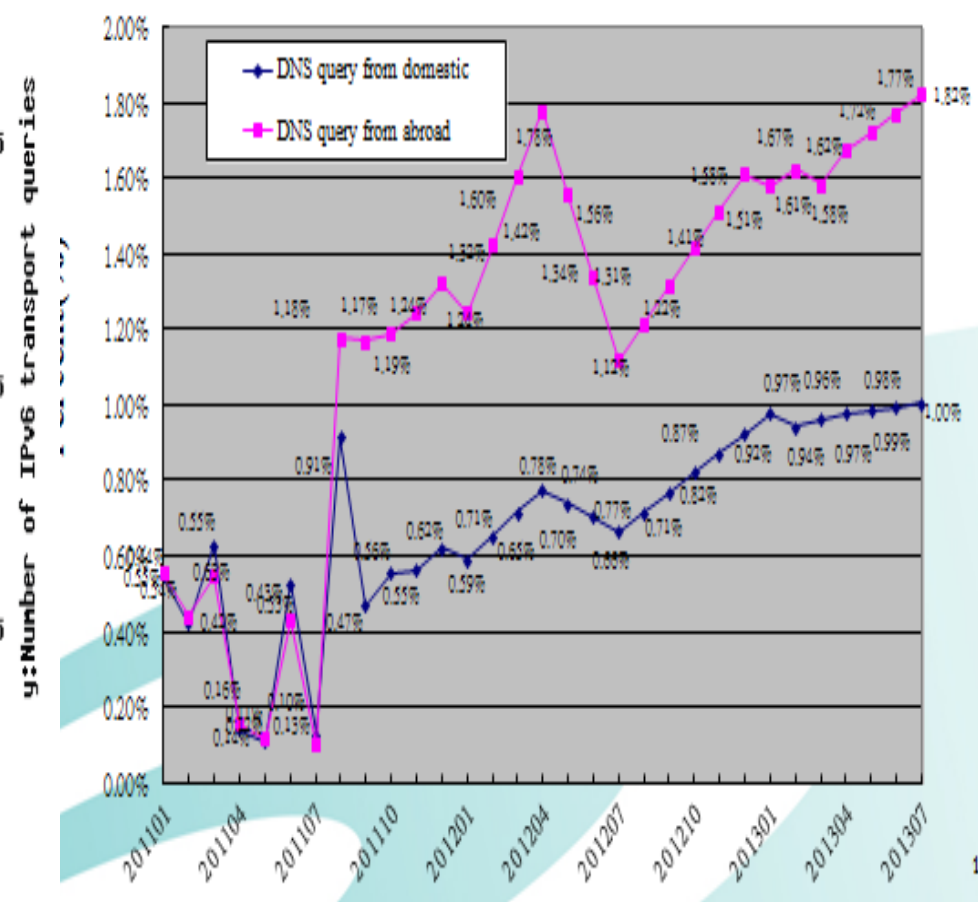
TWNIC

Number of IPv6-enabled products

TWNIC

Future Work

- Mailing List
  - v6readiness@apnic.net
- Website
  - v6readiness.apnic.net
- Possible Technical Program
  - Schema of the v6readiness database
  - Collection mechanism of v6readiness criteria
  - Visualization of v6readiness profile