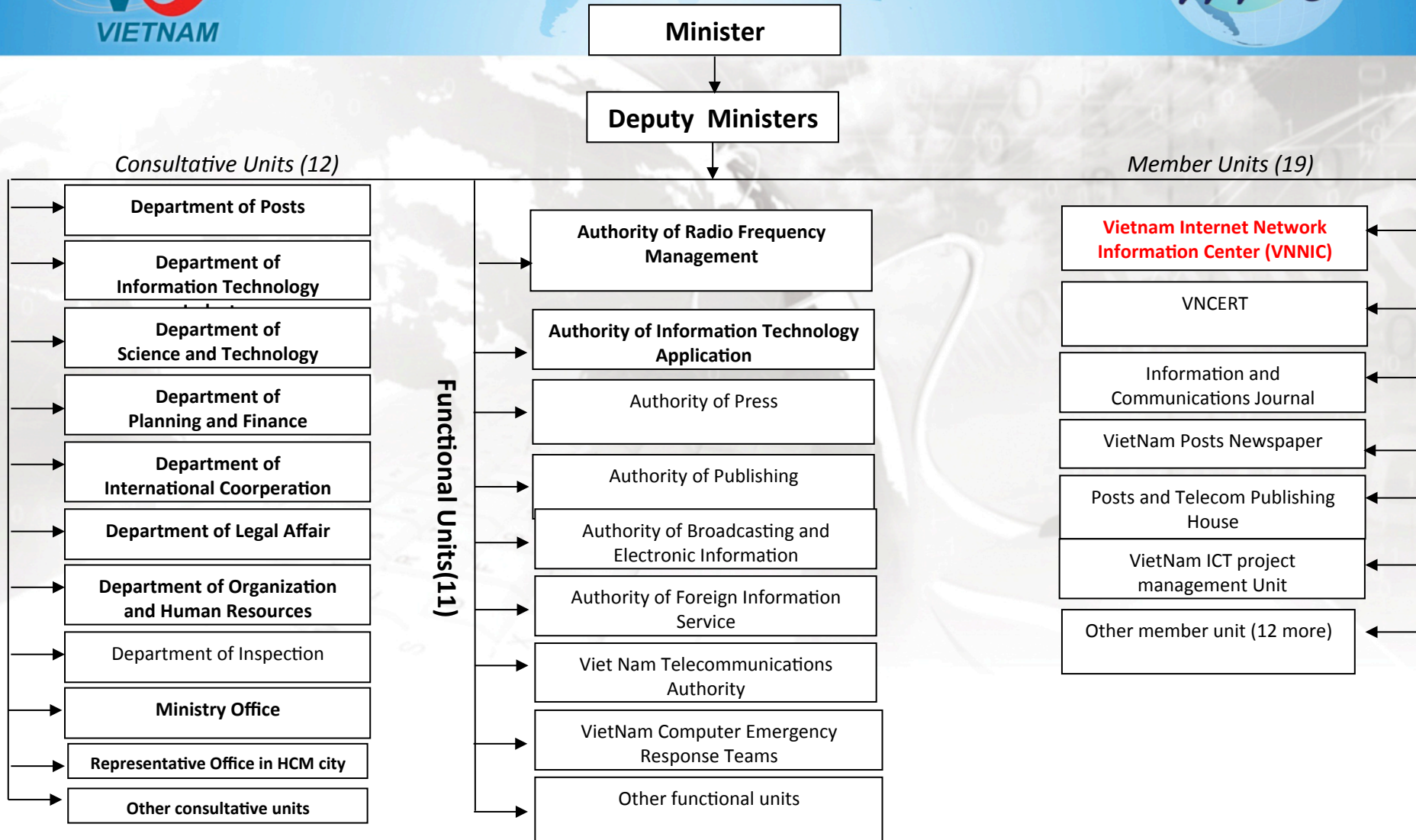# UPDATE ON
IPv6 DEPLOYMENT IN VIETNAM

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Outline

- Introduction about MIC and VNNIC
- Internet penetration in Vietnam
- IPv6 Promotion activities in Vietnam
- Vietnam National action plan on IPv6
- IPv6 readiness and services in Vietnam

MIC ORGANIZATION STRUCTURE

Minister

Deputy Ministers

Consultative Units (12)

Functional Units (11)

Member Units (19)

- Department of Posts
- Department of Information Technology Industry
- Department of Science and Technology
- Department of Planning and Finance
- Department of International Coorperation
- Department of Legal Affair
- Department of Organization and Human Resources
- Department of Inspection
- Ministry Office
- Representative Office in HCM city
- Other consultative units

- Authority of Radio Frequency Management
- Authority of Information Technology Application
- Authority of Press
- Authority of Publishing
- Authority of Broadcasting and Electronic Information
- Authority of Foreign Information Service
- Viet Nam Telecommunications Authority
- VietNam Computer Emergency Response Teams
- Other functional units

- **Vietnam Internet Network Information Center (VNNIC)**
- VNCERT
- Information and Communications Journal
- VietNam Posts Newspaper
- Posts and Telecom Publishing House
- VietNam ICT project management Unit
- Other member unit (12 more)

- Vietnam Internet Network Information Center (VNNIC):
  - A member unit of the Ministry of Information and Communication.
  - Founded in 2000
  - Located in Hanoi (HQ) & 02 branches (HCMC & Da Nang City)
- Functions & duties:
  - Country code top level domain name registry (.VN)
  - National Internet Registry in Vietnam
  - VNIX operator
  - Play the role as standing committee of National IPv6 Task Force.

Internet users (35% population) and number of ccTLD domain name .VN

Vietnam Internet penetration goal
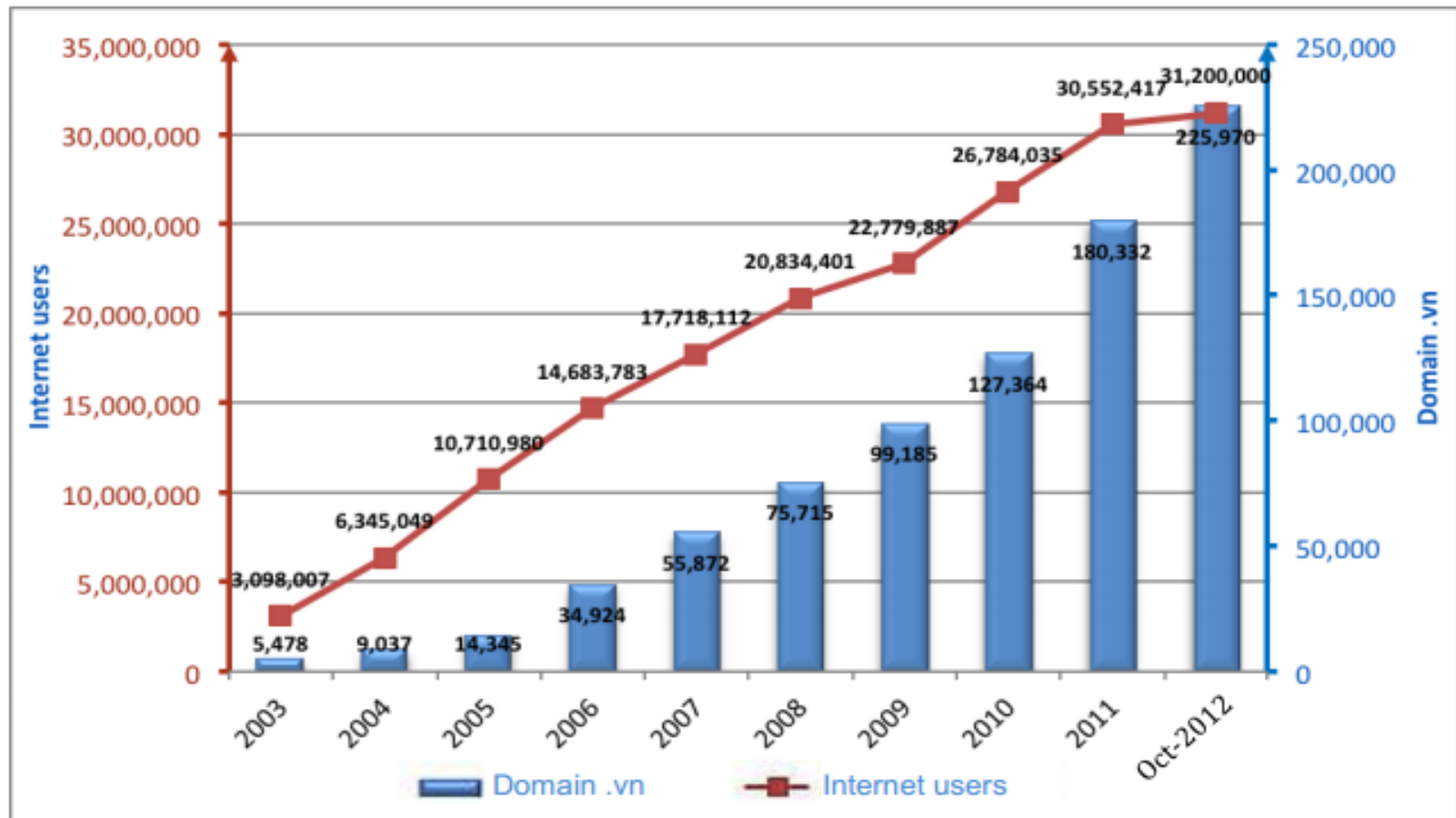
2015

2020

Acording to Vietnam National Telecom Master Plan toward 2020, Vietnam get 40 to 45% of Internet penetration in 2015 / 55-60% in 2020.

IPV6 PROMOTION IN VIETNAM

- Policies for IPv6 Deployment.
- Vietnam National IPv6 Action Plan.
- Activities of National IPv6 Task Force.

Policies for IPv6 Deployment

- 6 May, 2008, the Minister of Information and Communications has issued directives No. 03/2008/CT-BTTTT on the promotion of IPv6 address.
  - Assigned to the management units and ISPs three basic tasks: to propagate and disseminate awareness about the importance of using IPv6; quickly deploy, use and provide services based on IPv6 and strengthen research and training activities on IPv6.
  - A milestone in the process IPv6 deployment in Vietnam.

Policies for IPv6 Deployment

- 6 January, 2009, the Minister of Information and Communications has issued Decision No. 05/QD-BTTTT establishment Vietnam National IPv6 Task Force with the task of research, plans and schedule for implementing the transition of IPv4 to IPv6 in Vietnam.

- 29 March, 2011, Minister of Information and Communication has issued Vietnam National action plan on IPv6 which determine the objectives, specific roadmap for transition to IPv6 in Vietnam.

Policies for IPv6 Deployment

- Most recently: Decree No. 72/2013/ND-CP dated July 15, 2013 of the Government on management, provision and use of Internet services and online information

  - **Article 18. Promote the IPv6 technology application.**

  1. IPv6 technology is in the list of prioritized high technologies. The research, production, and import of equipment, software, and IPv6 technology application shall be given incentives and support according to the Law on High technologies.

  2. Internet service providers are encouraged to invest in the development of network systems using IPv6 technology.

  3. When state agencies invest in or procure new equipment connected to the Internet, they must ensure that the equipment supports IPv6 technology as prescribed by the Ministry of Information and Communications.

  4. The Ministry of Information and Communications shall cooperate with relevant Ministries and agencies in formulating policies on the support for and the plan for ensuring all telecommunications and IT equipment and software that are produced in Vietnam and imported to Vietnam support IPv6 technology, aiming to totally stopping the production and import of equipment and software programs that do not support IPv6 technology.

  5. The Ministry of Education and Training shall provide guidance on the IPv6 technology application into the training programs of universities and colleges that provide training in information technology and telecommunications.

National IPv6 Task Force

-> **Establishment:** 6th Jan 2009 (a decision by the Minister of Information and Communications)

-> **Members:**

+ Headed by HE Mr. Le Nam Thang - Deputy Minister
+ Other members from MIC

+ Major local ISPs

+ VNNIC is the standing committee of the TF

-> **Functions:** carrying out research, planning IPv6 deployment and roadmap for v4 – v6 transition in Vietnam.

National IPv6 Action Plan

Vietnam National IPv6TF

Preparation Stage (2011 – 2012)

Implementation Phase (2013 – 2015)

Accomplishment Phase (2016 - to 2019)

- Preparation Stage (2011 – 2012):
  - Make the assessment of the network; forming the national IPv6 test network; implementation of IPv6 test and performed extensive training of human resources
  - Vietnamese ISPs shall issue their own IPv6 action plan, follow on National plan on IPv6.

- Implementation Phase (2013 – 2015):
  - Transition from IPv4 networks to simultaneously support IPv4 and IPv6; forming national IPv6 network infrastructure; and provide testing IPv6 services to end users.

- Accomplishment Phase (2016 - to 2019):
  - Ensure the stable operation of Internet in Vietnam with IPv6-based technology.

National IPv6 Task force Activities

Vietnam IPv6 Day and annual IPv6 event

Since 2012, an IPv6 event was held annual - Vietnam IPv6 Day was set to 6 May.

3 dimensions with 16 criteria:

1. **Enterprise's awareness measurement:**

- Staff's knowledge of IPv6

- Establishment of IPv6 working group or taskforce

- Issue IPv6 master plan or roadmap

- Has IPv6 prefix been allocated

2. Enterprise's network assessment: Core network; Core router (equipment); Access network; Access equipment; Host, server support IPv6?

3. Enterprise's IPv6 deployment activities:

- IPv6 testing activities

- IPv6 prefix broadcast

- IPv6 domestic connection

- IPv6 international connection

- DNS system support IPv6

- Website support IPv6

- Dual stack within enterprise's LAN

Results: 43 local ISP and CP participated (3 ISPs with full 16 criteria ready: VNPT, VIETTEL, NETNAM; 6 others with 10/16 criteria ready; The remaining were very low ready percentage)

- Tunnel broker:
  - Netnam: over 20000 tunnel has been created
- DNS servers: Over 90 servers (dual stack)

NUMBER OF DNS QUERIES BREAKDOWN BY RECORD TYPE
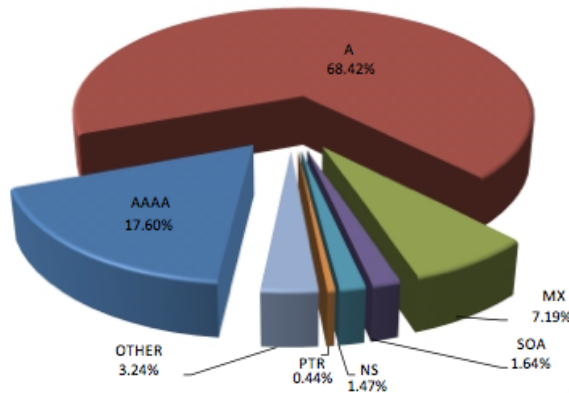
Figure 41: Number of DNS queries breakdown by Record Type
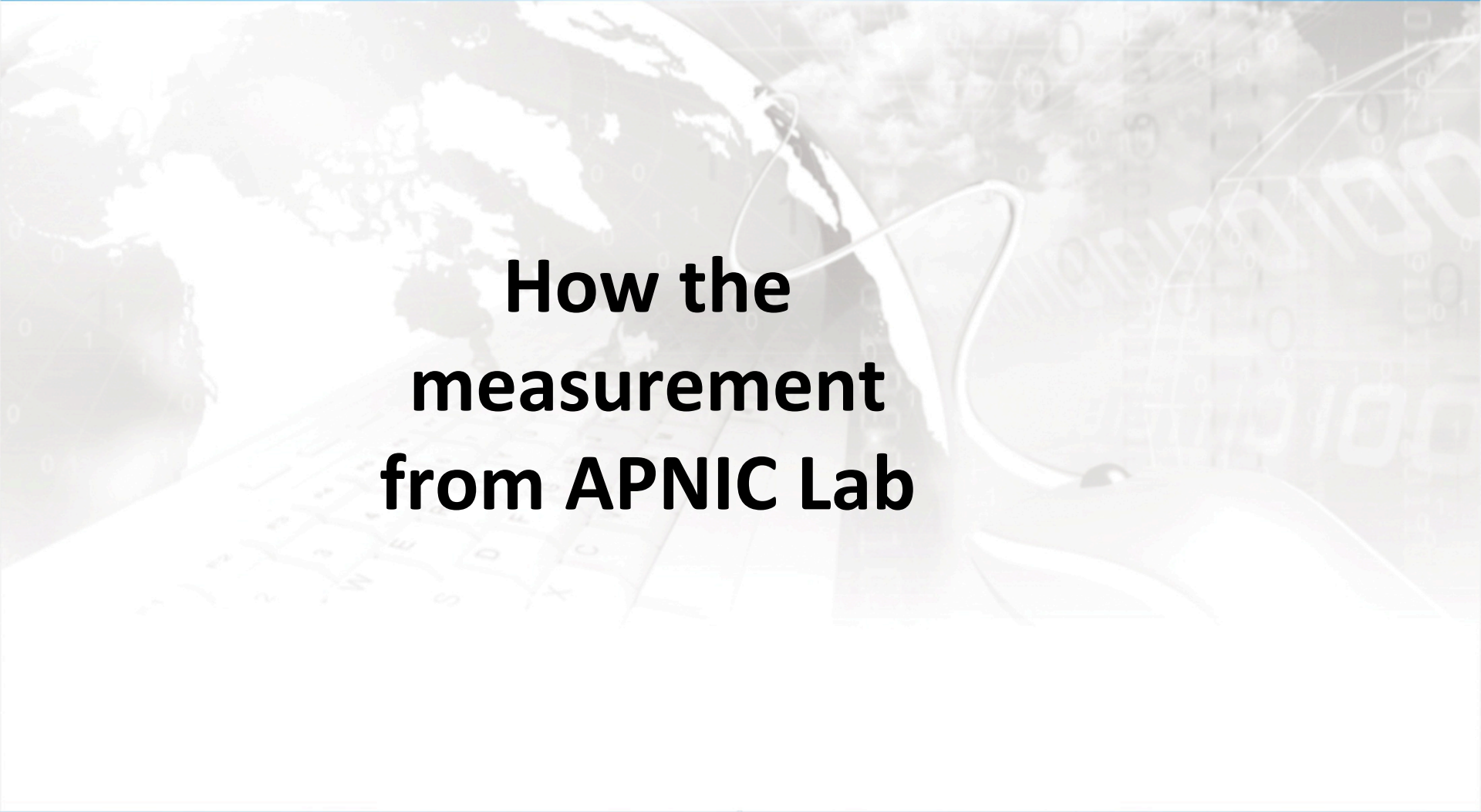
NUMBER OF AAAA (IPv6) RECORD QUERIES OVER YEAR
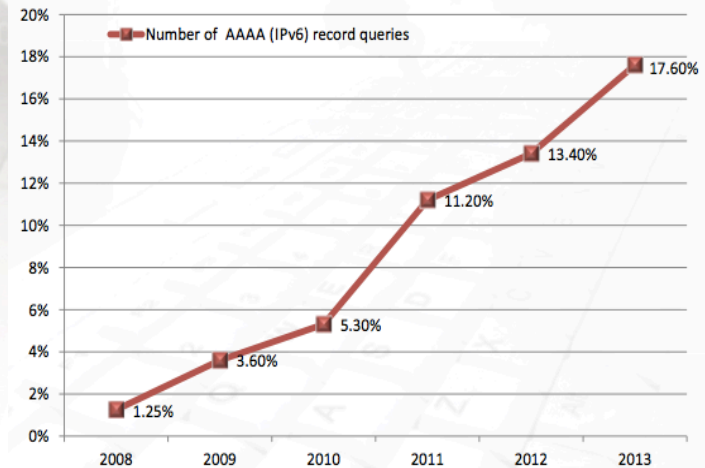
Figure 42: Number of AAAA (IPv6) record queries over year

- AAAA query: 17.6%,
- DNS query traffic through VNIX: max is over 3Mb, avg: 1.5Mb

- Website: over 70 websites was activated – dual stack)
  - Social network: http://go.vn
  - Ministry of Information and Communications – MIC: http://www.mic.gov.vn
  - Including online shopping, file sharing, online payment website (http://paygat.vtv.vn; online shopping: http://ohay.vn; http://gmua.vn;)
- CPE: some local vendor: Viettel ADSL Modem, FPT HD box, VNPT HD box/ADSL modem (not yet provided in the market).
- End-user: not yet
- Mobile 3G: not yet
- → Some positive results gained in deploying IPv6 in Vietnam but still a lot of things needed to be done (Especially in application and end-user device supporting IPv6)
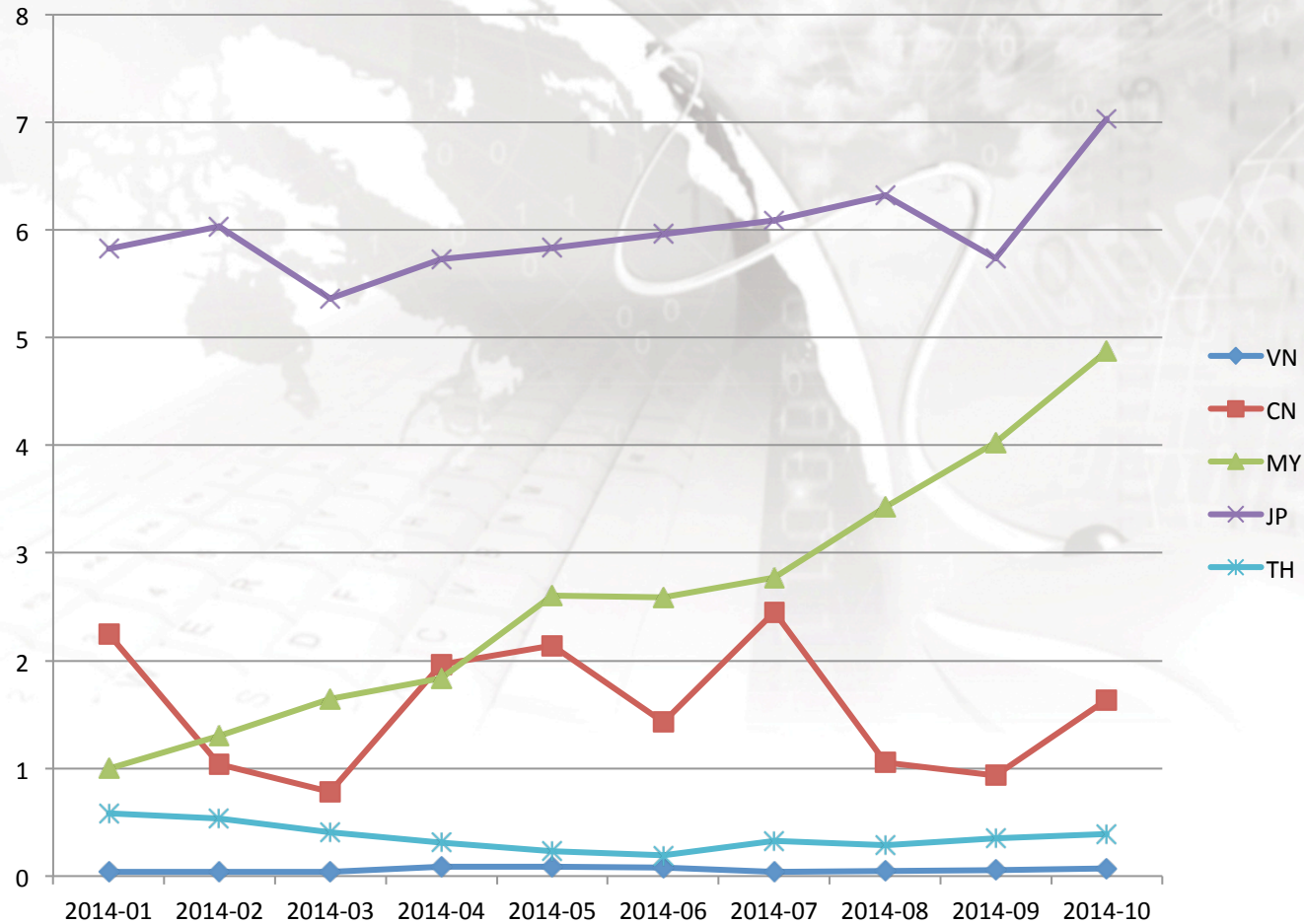
How the measurement from APNIC Lab

% of IPv6 capable in 2014

Way ahead on IPv6 Promotion
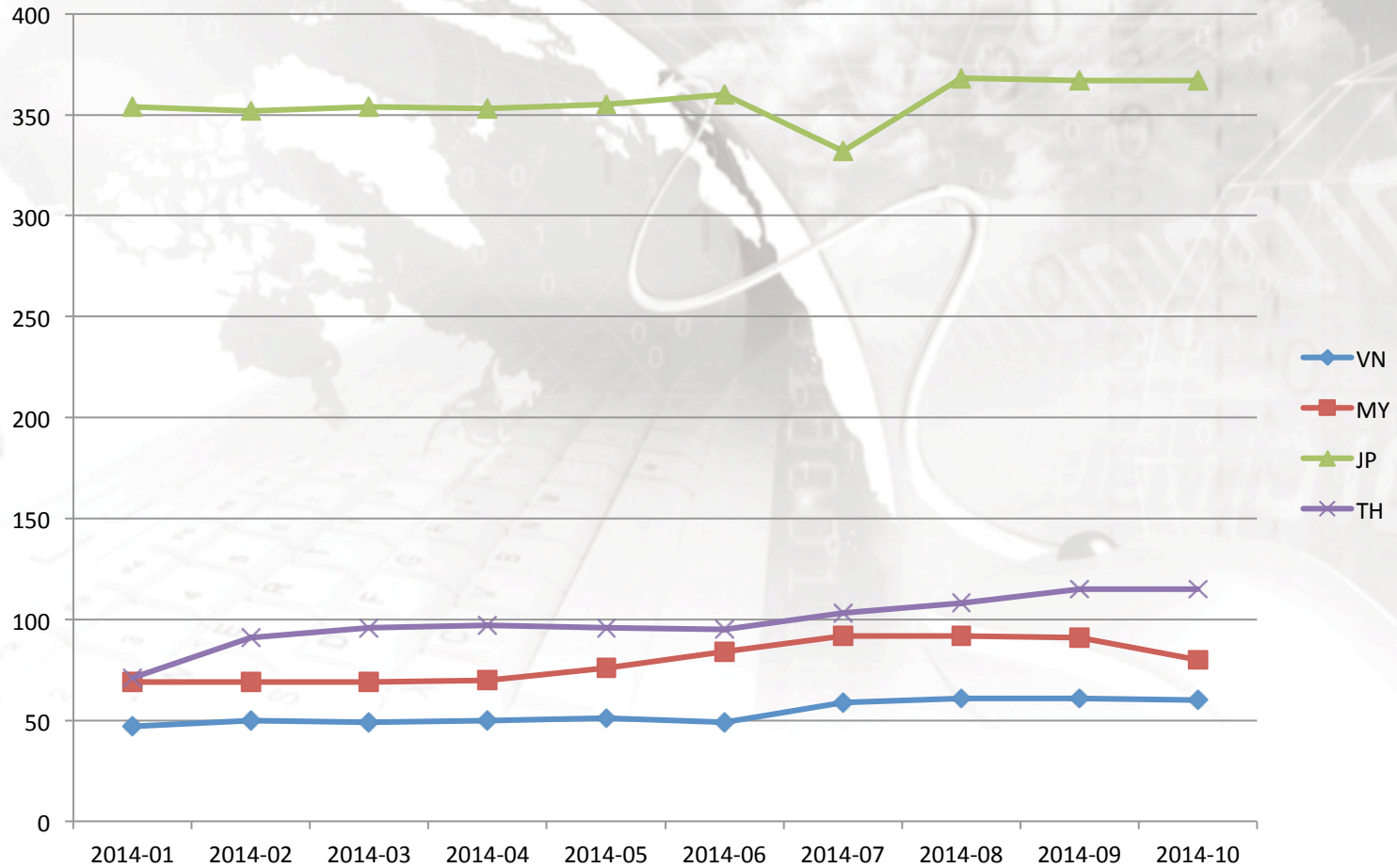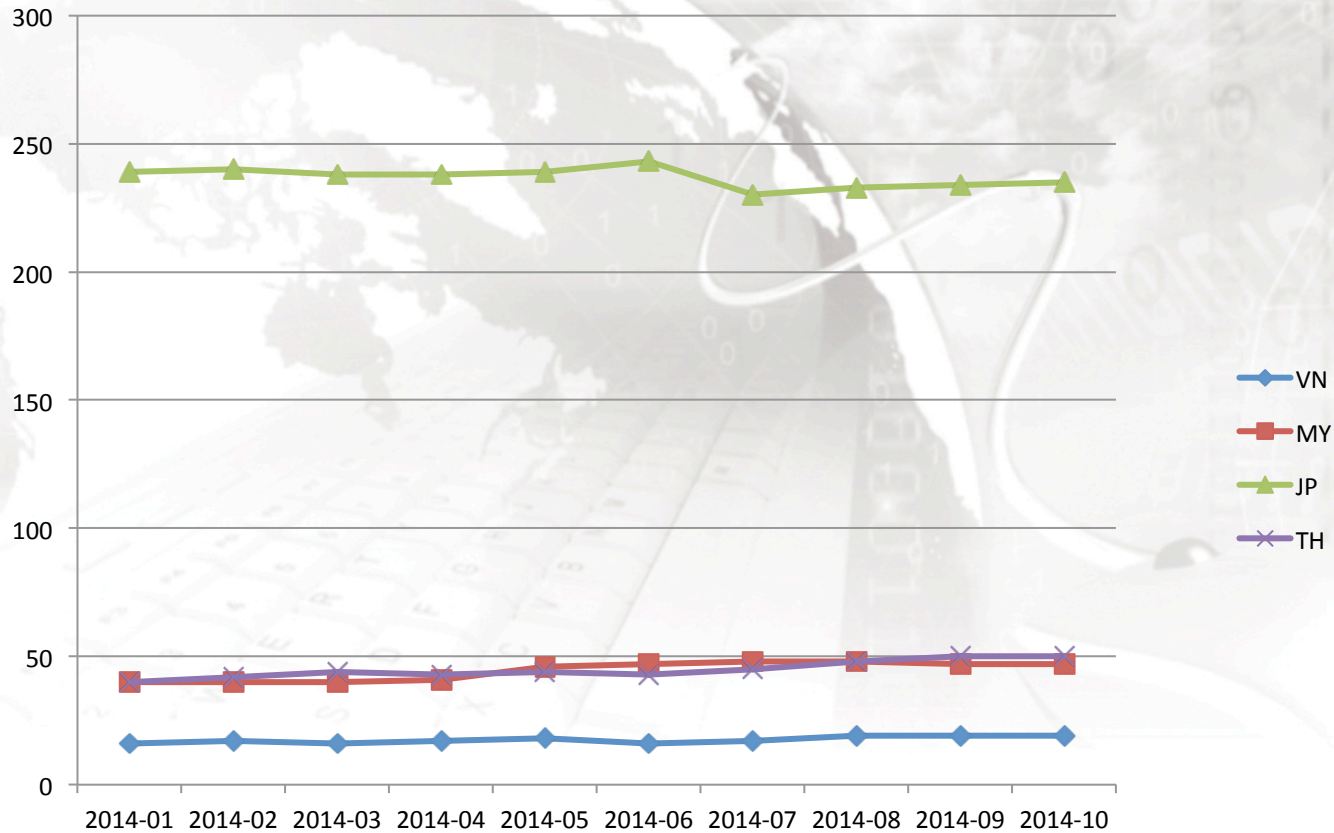
- **National IPv6 Task force** will continue to play leading role in IPv6 deployment and some onsite inspections to be carried out **to ensure the National action plan work well** within ISPs.

- Improve measurement method.

- Promote IPv6 deployment:
    - Human resource
    - Equipment
    - Content

- More focusing on provide IPv6 for end-user (access network), online content and mobile network.

- Operating IPv6 ready logo lab and program.

Thank you very much!