VIETNAM INTERNET NETWORK INFORMATION CENTER (VNNIC)

REPORT ON

VIETNAM INTERNET RESOURCES 2013

(PUBLISHED: DEC-2013)

VIETNAM INTERNET NETWORK INFORMATION CENTER (VNNIC)

REPORT ON VIETNAM INTERNET RESOURCES 2013

Vietnam Internet Network Information Center (VNNIC)
http://www.vnnic.vn

VIETNAM INTERNET NETWORK INFORMATION CENTER (VNNIC)

REPORT ON

VIETNAM INTERNET RESOURCES 2013

(PUBLISHED: DEC-2013)

CONTENTS

INTRODUCTION

In 2012, the first edition of the Report on Vietnam Internet resources was published by Vietnam Internet Network Information Center (VNNIC), providing information about the growth, development and the characteristics of Vietnam's Internet resources. This first release was highly appreciated by the community because of its general portrayal of the overall paranoma of the Internet development in Vietnam.

In 2013, the second edition of the report provides more information and data analysis in-depth about the development of Internet resources, and some additional information about Internet in Vietnam, to share with the community the relationship between the usage of Internet resouces and Internet activities.

IMPORTANT EVENTS

THE GOVERNMENT ISSUES DECREE NO. 72/2013/NĐ–CP ON MANAGEMENT, PROVISION AND USE OF INTERNET SERVICES AND INTERNET INFORMATION

On 15th July 2013, the Prime Minister promulgated the Decree No. 72/2013/NĐ–CP on management, provision and use of Internet services and Internet information, which creates a legal framework to promote Vietnam Internet Development.

This Decree took effect from 1st September 2013, replacing the Decree No. 97/2008/NĐ-CP on 28th August 2008. The Decree regulates the Internet services and Internet resources; principles of management, provision & use of Internet information; management of news websites and social networks; provision of information services on mobile networks; management of online games; and assurance of information safety and information security.

MINISTRY OF INFORMATION AND COMMUNICATIONS PUBLISHES THE VIETNAM ICT WHITE BOOK 2013

On 16th September 2013, the Ministry of Information and Communications published the Vietnam ICT White Book 2013. This was the 5th edition of the White Book that the National Steering Committee of ICT and the Ministry of Information and Communications cooperated with related agencies to establish and publish.

The White Book 2013 provided information and data in the field of Information & Communication Technology including: Information Technology and Communications Infrastructure, Information Technology Industry, Postal, Telecommunications, Broadcasting, Information Technology Applications, Human Resources; Information Security, Legal Documents Legislation; Strategies, Plans, Programs and National projects on Information Technology and Communications; the International cooperation activities; prominent information technology and media events, and professional sectors figures.

4

5

VIETNAM FINISHES THE PHASE 1 AND LAUNCHES THE PHASE 2 OF VIETNAM NATIONAL IPv6 ACTION PLAN

On 16th April 2013, the National IPv6 Task Force hosted the conference to review the Phase 1 and launched the Phase 2 of Vietnam National IPv6 Action Plan. Mr. Le Nam Thang - Deputy Minister of the Ministry of Information and Communications – Head of the Task Force chaired the event which were attended by members of the Task Force, including Vietnam Internet Network Information Center (VNNIC), the National Steering Committee on ICT, Department of ICT of other ministries & major ICT enterprises in Vietnam, etc.

According to the evaluation of the Task Force, Phase 1 (2011-2012) of the Action Plan basically met the proposed targets. The most important result achieved in Phase 1 was improving the basic awareness about IPv6. All major ICT enterprises and large organizations with IT infrastructure has participated in VNNIC's training programs on IPv6, which has led to greater recognization of the importance of IPv6 deployment. The National DNS server system and VNIX system could operate stably with IPv6. Vietnam were ready for Phase 2 (2013 – 2015) with the following targets: migrating IPv4 network into simultaneously supporting IPv4 with IPv6, and forming national IPv6 infrastructure , and providing IPv6 pilot service to users.

VIETNAM IPv6 DAY – LAUNCHING IPv6

On 6th May 2013, Vietnam Internet Network Information Center (VNNIC) – Standing Committee for Vietnam IPv6 Task Force hosted the Conference "Vietnam IPv6 Day", on behalf of Ministry of Information and Communications, at Intercontinental Asiana Saigon Hotel, Hochiminh city.

The conference attracted the participation of approximately 500 representatives from local authorities and the IT sector, policy makers, international experts, equipment and service providers.. One of the remarkable sessions of the conference   was the "Vietnam IPv6 launch", joined by Ministry of Information and Communications (MIC), VNNIC, and major ISPs in Vietnam in order to officially introduce the National IPv6 network.

On this day, the National IPv6 network was officially announced, when Internet businesses, website owners, equipment manufacturers that participated in the program was ready to connect and offer IPv6 services to customers. In particular, the Ministry of Information and Communications is the first agency to deploy IPv6 on Ministry's official website (http://www.mic.gov.vn). IPv6 was also deployed on social network (http://go.vn) of Vietnam Multimedia Corporation (VTC). As of November 2013, there were 34 Vietnamese agencies, organizations, businesses (including 02 ministries) deploying IPv6; 09 ISPs already had IPv4/IPv6 connection to Vietnam National Internet Exchange (VNIX) including: VNPT, Viettel, Netnam, FPT Telecom, SPT, VTC, SCTV, VNTT, CMC, Telecom. Vietnam IPv6 resources and critical infrastructure are ready for transition from IPv4 to IPv6 in accordance with Vietnam National IPv6 Action Plan.

IMPORTANT EVENTS

IMPORTANT EVENTS

VIETNAM JOINS ccNSO AND OFFICIALLY BECOMES MEMBER OF ICANN

On 20th November 2013, Vietnam officially becomes the 143th member of the country code Names Supporting Organisation (ccNSO) of Internet Corporation for Assigned Names and Numbers (ICANN). Vietnam Internet Network Information Center (VNNIC) was on behalf of Ministry of Information and Communications of Vietnam to participate in as a member of ccNSO.

ccNSO, one of seven supporting organizations of ICANN, which was established in 2003, supports ICANN in building global policies directly related to country code top level domain. Joining ccNSO will help Vietnam deeply involve into the process of research and policy development related to international Internet resources, which contributes to the general operating activities of global Internet network, enhance international cooperation as well as improve Vietnam's position, the opportunity and ability to protect national interests.

VNNIC CELEBRATES 10 – YEAR ESTABLISHMENT AND DEVELOPMENT OF VIETNAM NATIONAL INTERNET EXCHANGE (VNIX)

On 11th August 2013, at the headquarter of the Ministry of Information and Communications – 18 Nguyen Du, Ha Noi, Vietnam – Vietnam Internet Network Information Center (VNNIC) hosted a conference on "Meeting of VNIX members and celebrating 10 – year establishment and development of VNIX". 10 years ago, on 11th August 2013, the Ministry of Post and Telematics (currently known as Ministry of Information and Communications) decided to establish VNIX, which marked a milestone for the development of Vietnam Internet Network.

Over 10 years of establishment and development, VNIX has made an important contribution to the development of Internet in Vietnam including: connecting ISPs at many points; ensuring Internet security; redundancy for IPS networks; reducing connectivity costs; reducing service costs; promoting deployment of IPv6 during IPv4 exhaustion; and officially forming the National IPv6 network.

PART 1:
VIETNAM INTERNET RESOURCES

OVERVIEW

During 16 years of development, the Internet resources (domain name ".vn", IP address, ASN) have grown considerably, serving as an important factor that benefits the development of the Internet in Vietnam.

By Oct 2013, the number of domain names ".vn" was 261,256, and reached an average annual growth rate of 172% over a long period of time, despite the effect of the global and local economic crisis.
Since 2011, domain name ".vn" has always been the most registered domain name in the South East Asia region.
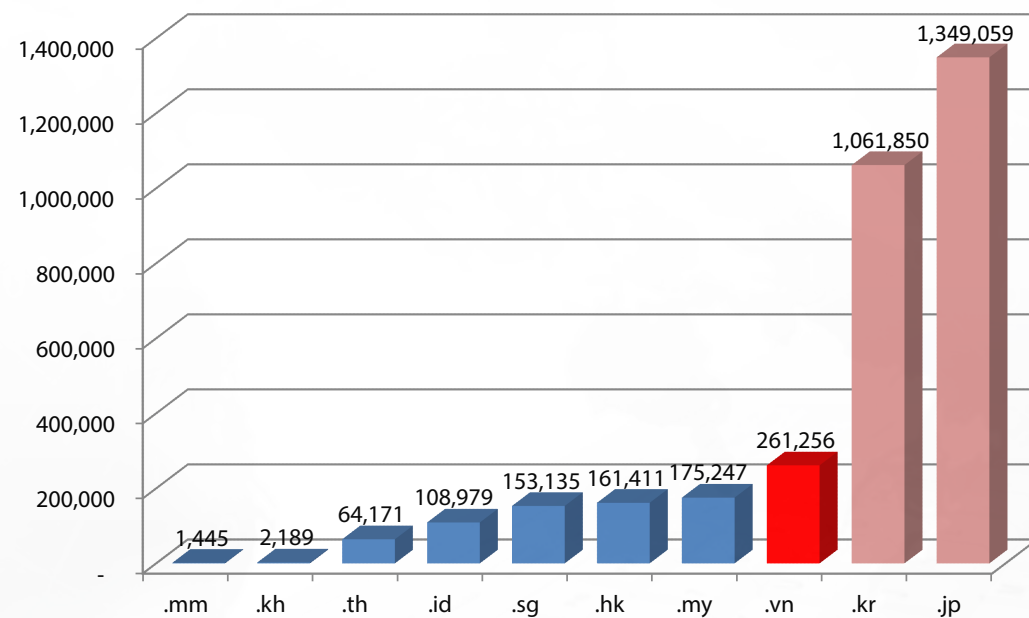

Figure 1: *The number of some ccTLDs in the region.*
(Source: www.vnnic.vn; www.nic.mm; www.all.in.th; www.pandi.or.id; www.sgnic.sg;
www.hkdnr.hk; www.mynic.net; www.nic.ad.jp; http://isis.kisa.or.kr; http://jprs.co.jp/en/stat/)

".vn" ccTLD got notable advantages in being protected by Vietnamese laws, registrants are fully guaranteed on their rights of using the registered domains; being served by a reliable and safe ".vn" Domain Name System (DNS); therefore, in Vietnam, the ".vn" ccTLD gains the dominance in comparison with international domain names (including gTLDs and other ccTLDs). In 2013, ".vn" ccTLD always kept the positive growth, while sometimes gTLDs showed the negative growth because the number of revoked domains exceeded the amount of newly registered ones.
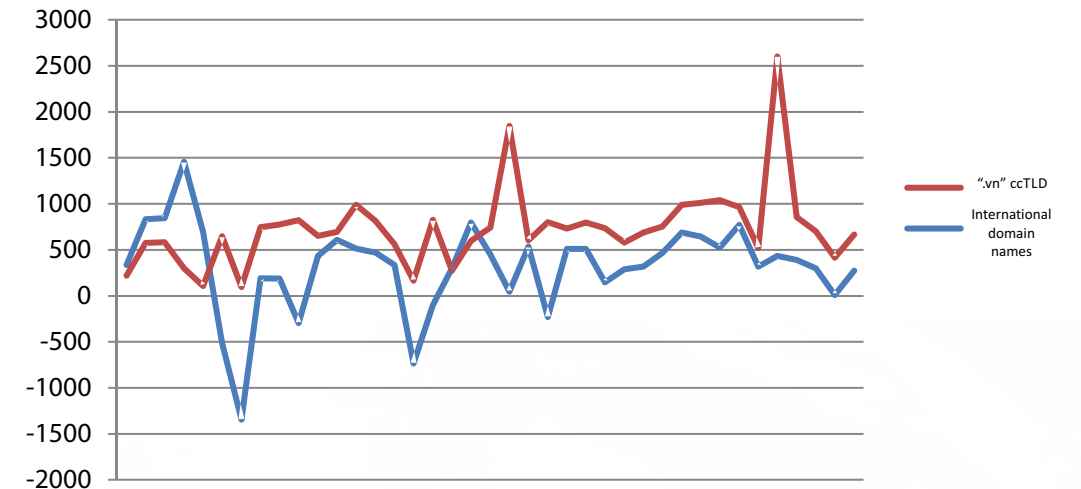
Figure 2: *The development of ".vn" domain name and international domain names in Vietnam.*

As for IP address, by Oct 2013, the number of IPv4 was 15,576,832. Vietnam continued to rank the second in the ASEAN, the 8th in Asia and the 25th in the world. The IPv6 deployment was officially started with the Vietnam IPv6 Launch on May 6th 2013.

Recently, more and more organizations have registered their own ASN and independent IP blocks, which means the diversification and development of Internet networks.

Figure 3: *Broadband subscribers & ".vn" domain name*
(Source : www.vnta.gov.vn; www.vnnic.vn)

".VN" COUNTRY CODE TOP LEVEL DOMAIN

MILESTONES AND THE HISTORY OF ".VN" ccTLD

Management policies have been being improved continuously, creating a number of strong momenta for the development of ".vn" ccTLD.

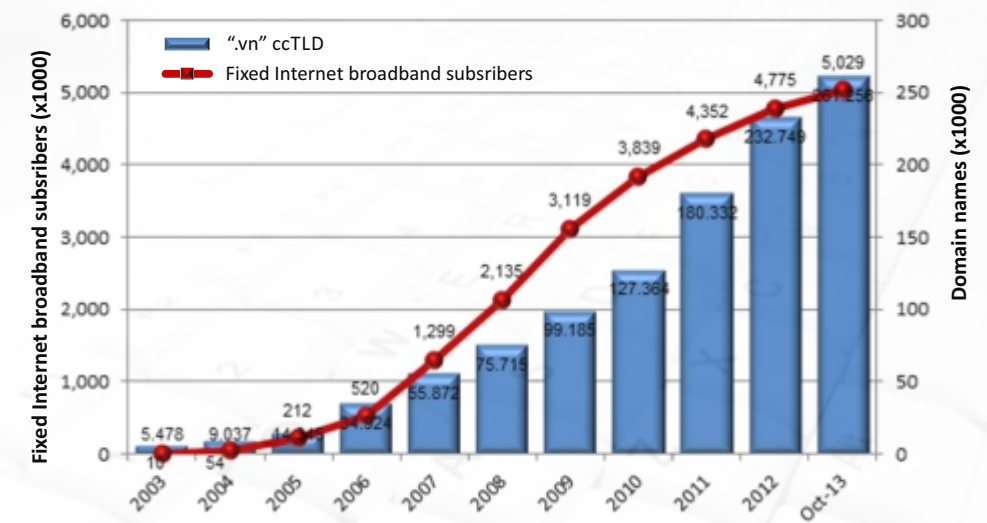| 01/12/1997	The first ".vn" domain name was registered
2003	Registry – Registrar model was applied. Hi-tek Co was the first ".vn" registrar accredited by VNNIC. The number of registrations was 3,302, increasing by 338% of that of the previous year.
15/08/2006	The second level domain name under ".vn" was opened for public registration. The number of registrations in this year doubled the total amount of the previous years.
13/01/2010	The number of ".vn" ccTLD reached 100,000. ".vn" ccTLD was the second ccTLD in the ASEAN region .
10/01/2011	The registration and maintenance fee reduced by an average of 30%, and 1-2 character third level domain names under generic second-level domain name ".vn" ccTLD was opened for public registration. The number of new registrations was 80,246, nearly doubled that of year 2010 ".vn" became the largest ccTLD in ASEAN.
09/05/2012	The number of ".vn" ccTLD domain name reached 200,000, ".vn" ccTLD continuing to be the biggest in the ASEAN region
11/2013	The number of ".vn" was 261,256. VNNIC officially became a member of country code name supporting organization – ICANN ccNSO.
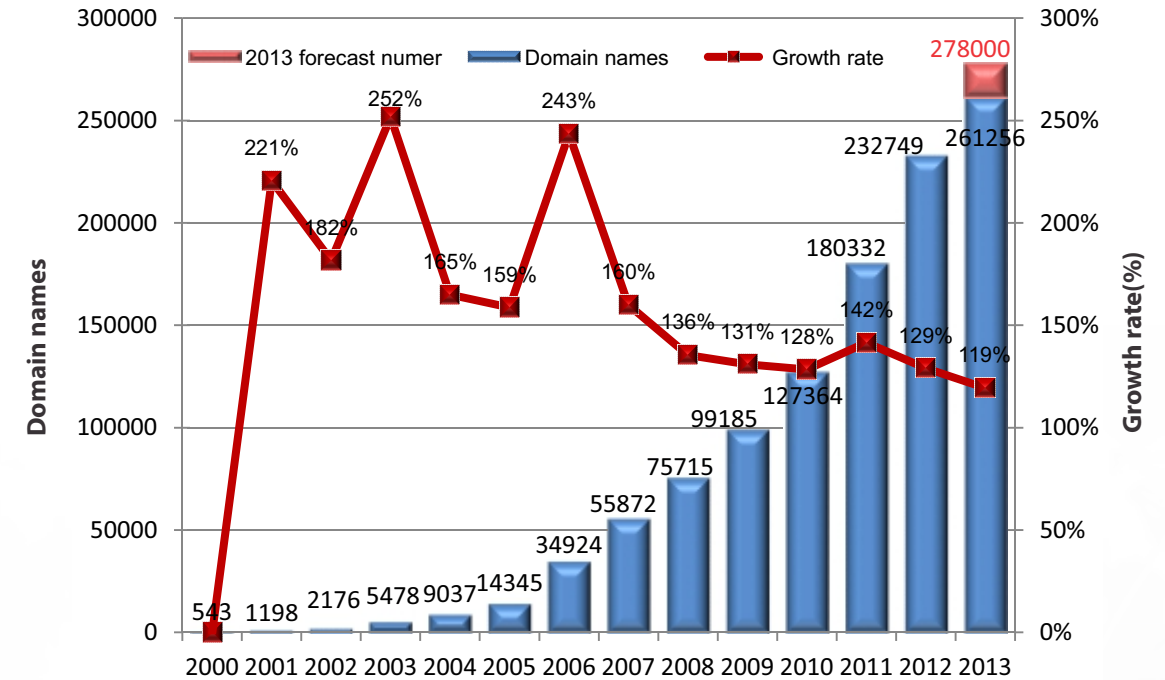
Figure 4: ".vn" over the years and growth rate.
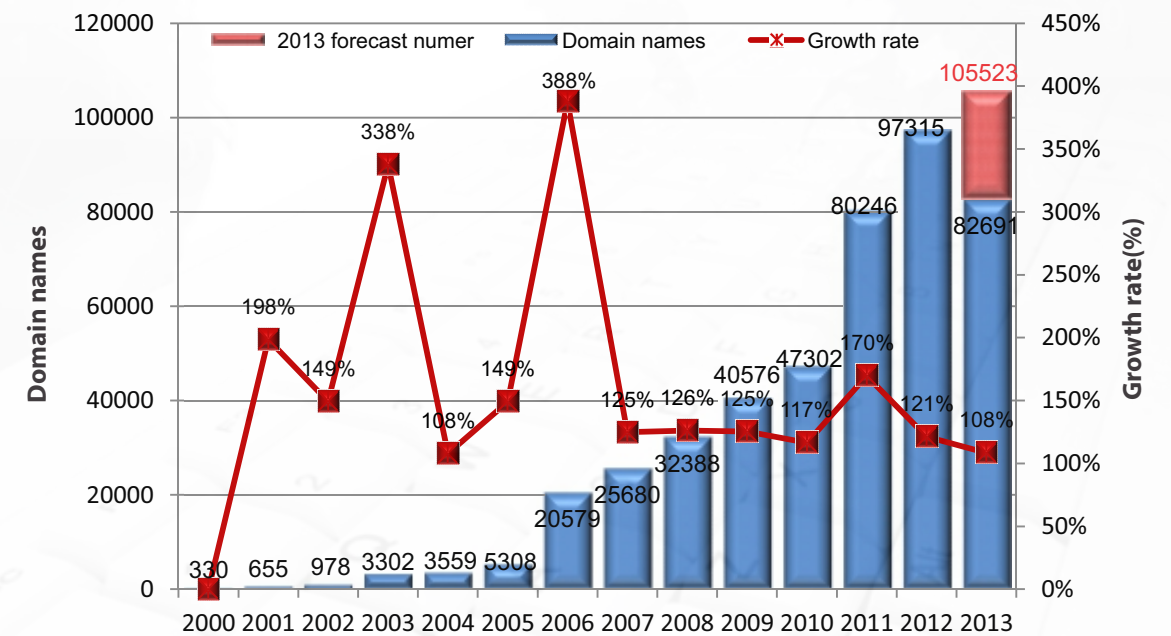
Figure 5: Registrations over the years and growth rate

I

I

14

15

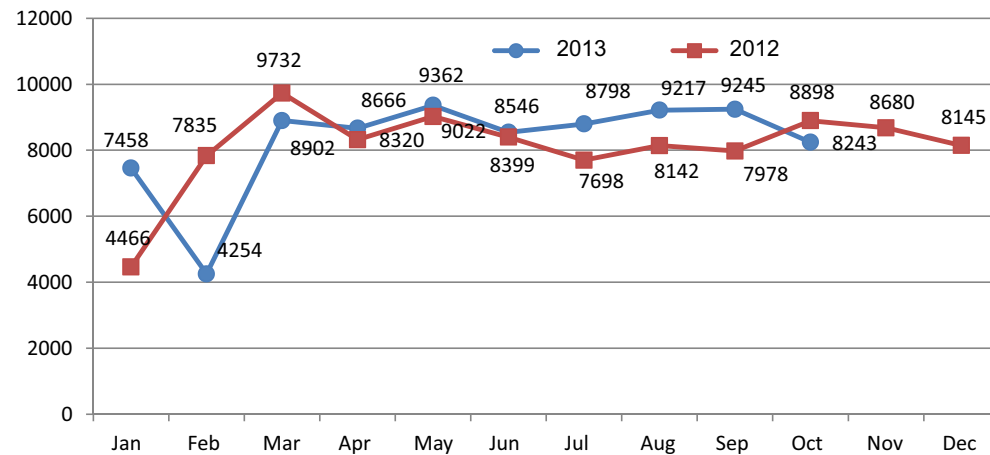## DOMAIN NAME REGISTRATION IN YEAR 2012 & 2013

Figure 6: Registrations by month (year 2012 and 2013)

At the beginning of 2013, as a result of the economic downturn in Vietnam and all over the world, the growth of .vn was considered to be lower than the similar growth of 2012. At that moment, VNNIC and the registrars decided to have promotional activities for ".vn" ccTLD, such as the series of conference with the theme of "Protecting Vietnamese trademark and brand name with ".vn" ccTLD", strengthen the relationship with customers, and improve the service quality for customers.

Achievements could be seen in the increasing number of new registration in the first 2 months of the second quarter of 2013. The average registration number of the second quarter of 2013 increased more 18% than that of the first quarter, which brought about the stable development of ".vn" ccTLD even during the downturn of the economy.
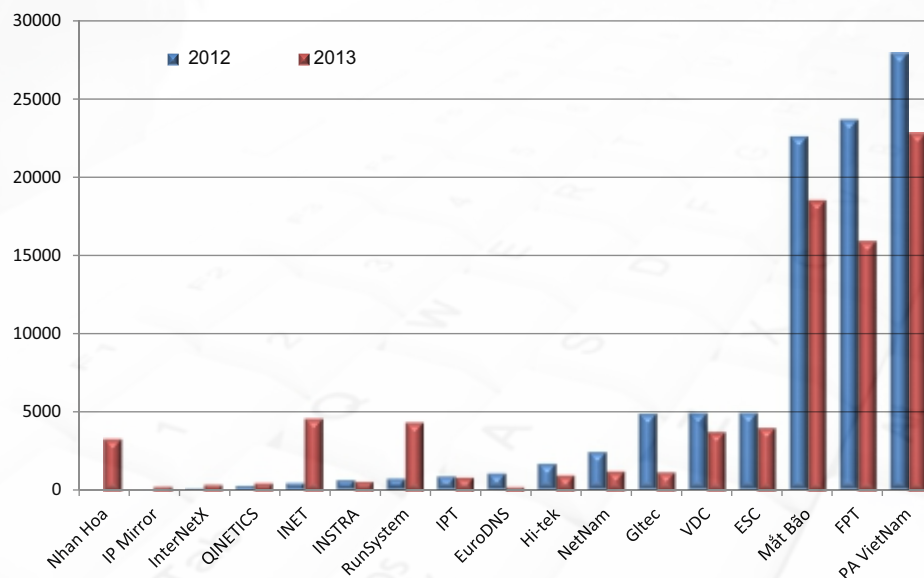
Figure 7: Registrations by registrar

The leading registrars would be P.A Vietnam, Matbao, FPT with the highest numbers of new registrations during 2012 and 2013. Three new registrars - iNet, GMO Runsystem and Nhan Hoa, all accredited in 2012 and early 2013- had significant growth in registrations.
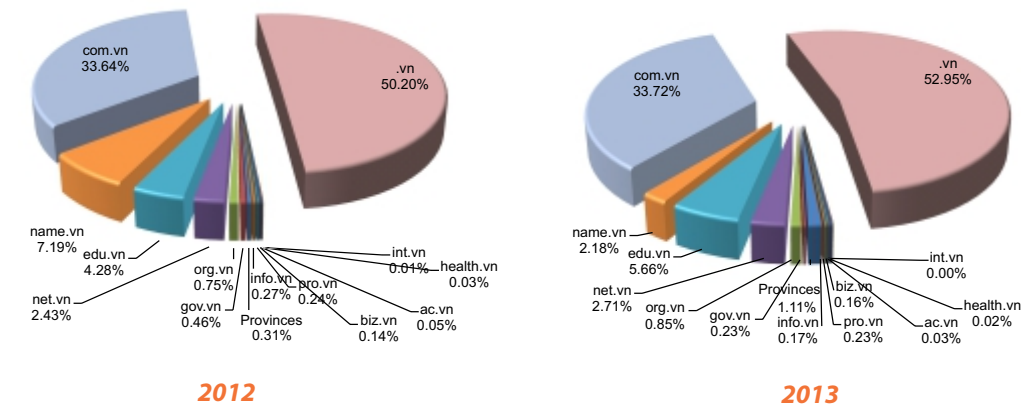
2012   *2013*

Figure 8: Registrations in 2012 & 2013 by extension

".com.vn" and ".vn" domain names continued to be dominant with approximately 86.67% of the total names registered. Compared with 2012, there was an slight increase in the percentage of ".vn" registered, from 50.20% in 2012 to 52.95% in 2013.

2012   *2013*
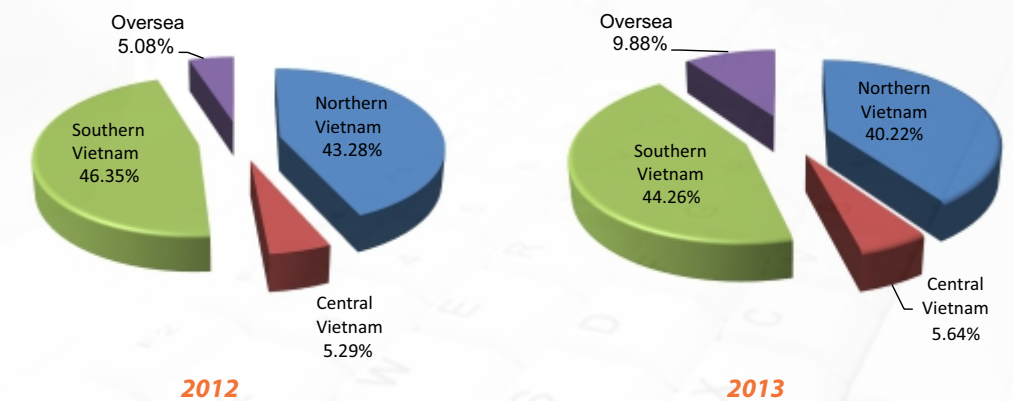
Figure 9: Registrations by geographical area

"VN" COUNTRY CODE TOP LEVEL DOMAIN

"VN" COUNTRY CODE TOP LEVEL DOMAIN

".VN" DOMAIN NAME BREAKDOWN

".VN" DOMAIN NAME BREAKDOWN BY EXTENSION
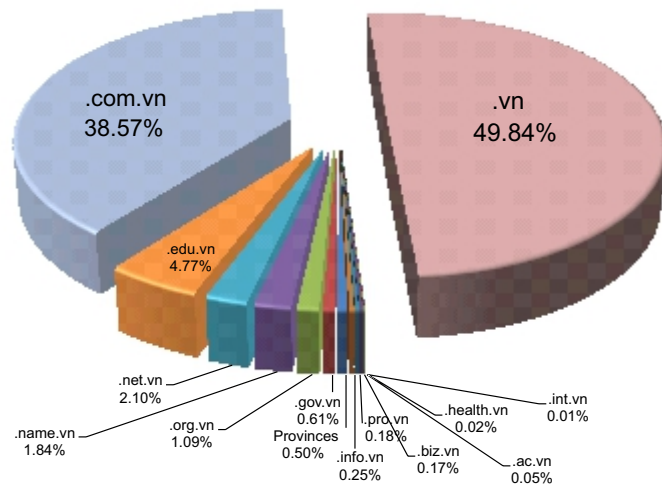
Figure 10: ".vn" domain name breakdown by extension

".VN" DOMAIN NAME BREAKDOWN BY REGISTRANT

60.3% of ".vn" domain names were registered by organizations, while 39.7% were registered by individual registrants. Accordingly, there was a fall in the share of organizational registrants (from 63.15% in 2012 to 60.3% in 2013), and the percentage of individual registrants increased slightly from 36.85% to 39.7%.
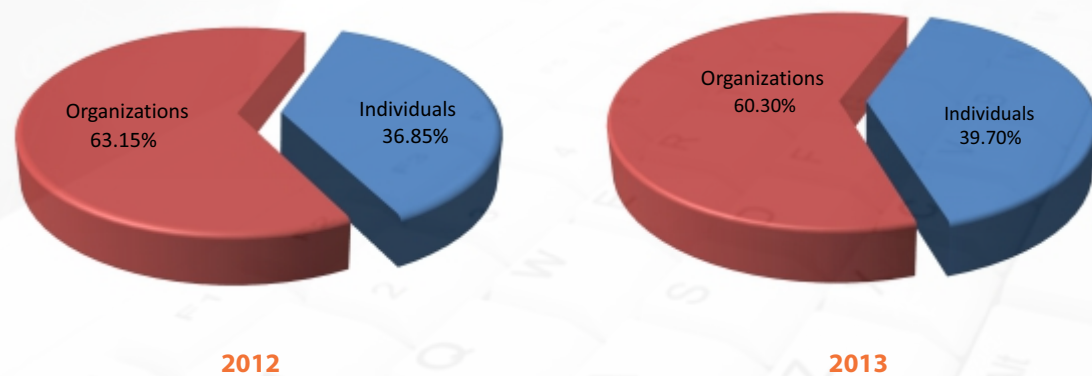
Figure 11: ".vn" domain name breakdown by registrant

".VN" DOMAIN NAME BREAKDOWN BY GEOGRAPHICAL AREA

Figure 12: ".vn" domain name breakdown by geographical area

1999 was the first time a ".vn" domain name registered by a foreign registrant, and since then, the market share of foreign registrants has still remained relatively small, only accounting for 7.65% of total ".vn" registrations.

Figure 13: Registrations by geographical area

".VN" DOMAIN NAME BREAKDOWN BY BUSINESS CATEGORY

According to the business category of registrants, the majority of ".vn" domain names were registered by commercial entities such as companies, groups, corperations (59.05%). The category of finance, banking, stock accounted for 0.65%. Educational institutions and schools accounted for 3.58%. The category of state authority bodies accounted for 0,85% of ".vn".

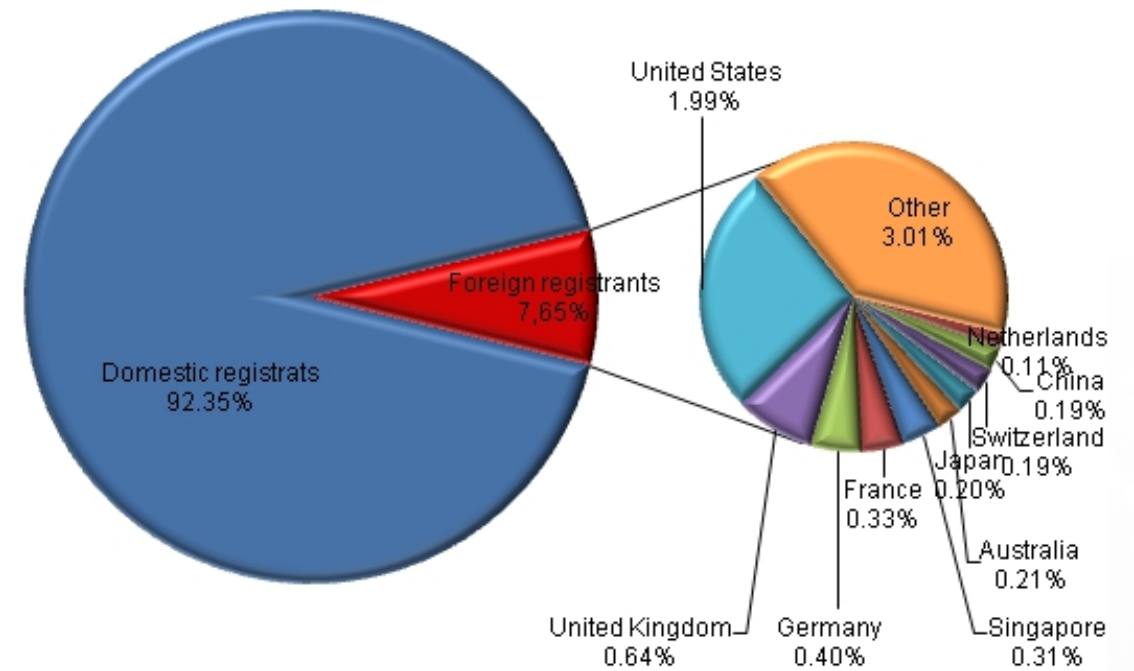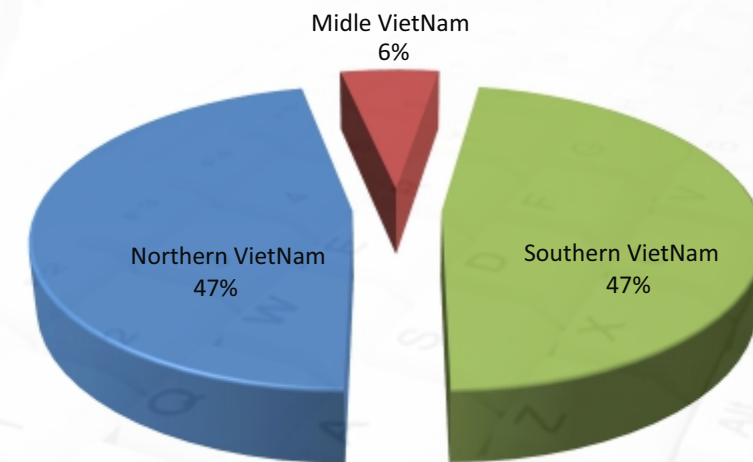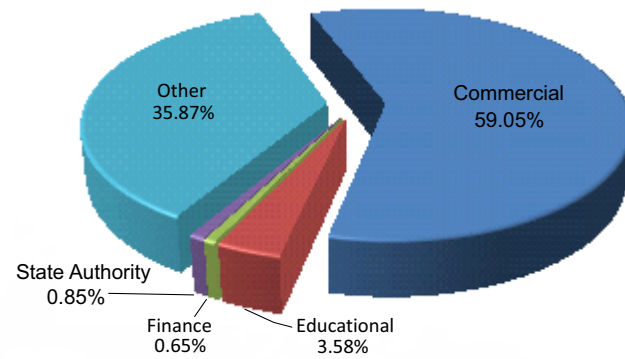*Figure 14: ".vn" domain name breakdown by business category of registrants*

THE LENGTH OF DOMAIN NAME

The average length of ".vn" domain name is 8.06 characters, while an average length of .com is 13.3, ".uk" is 13.84, ".fr" is 12.7. The number of domain names with average length of 4-10 characters dominates the ".vn" name space.
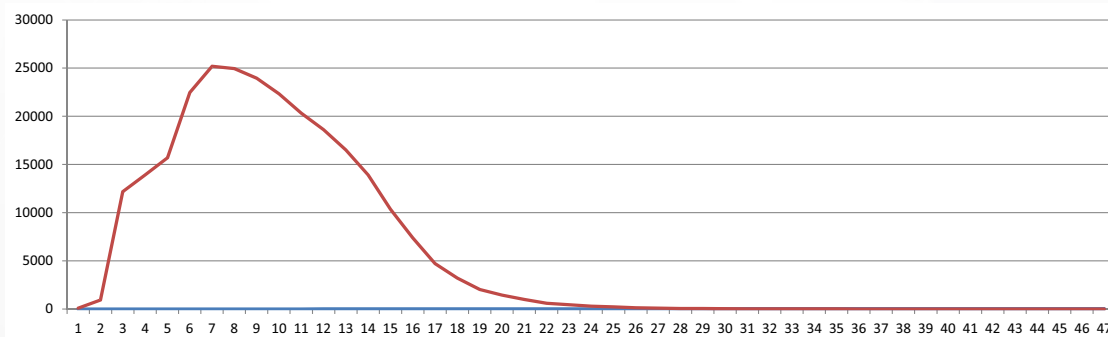
Figure 15: Domain name length of ".vn"
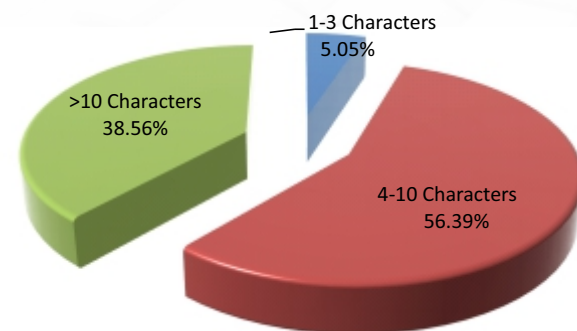
Figure16: Domain name breakdown by length

In the name space, there are 566 domains with all numbers. The following are the 10 longest domain names, with 38-47 characters.

No	DOMAIN NAME
1	indianajonesandthekingdomofthecrystalskullmovie.com.vn
2	creche-ecoles-college-francaise-europeenne.com.vn
3	indianajonesandthekingdomofthecrystalskull.com.vn
4	thcsnguyenbinhkhiem-trieuphong-quangtri.edu.vn
5	nganhangthuongmaicophanvietnamthuongtin.com.vn
6	crowneplazawesthanoihotelandresidences.com.vn
7	temasekinternationaladvisorssingapore.com.vn
8	crowneplazawesthanoihotelandapartment.com.vn
9	standardcharteredbank-vietnam-limited.com.vn
10	thcs-tonthatthuyet-vinhlinh-quangtri.edu.vn

The longest domain names ".vn"

DOMAIN NAME USAGE

Analysis of ".vn" domain name usage showed that 65.71% of ".vn" had active websites. About DNS server, 90.43% domain names use DNS hosting server with domestic IP addresses; 9.57% using DNS hosting server with oversea IP addresses.

Of all ".vn" domain names, 46.18% use the DNS hosting service of ".vn" accredited registrars, while 1% using owner's own DNS servers (DNS server with name is subdomain of superordinate domain) (90.23% with domestic IP and 9.77% with oversea IP) .
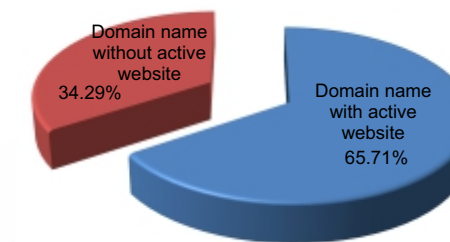
Figure 17: Registered domain names with active website
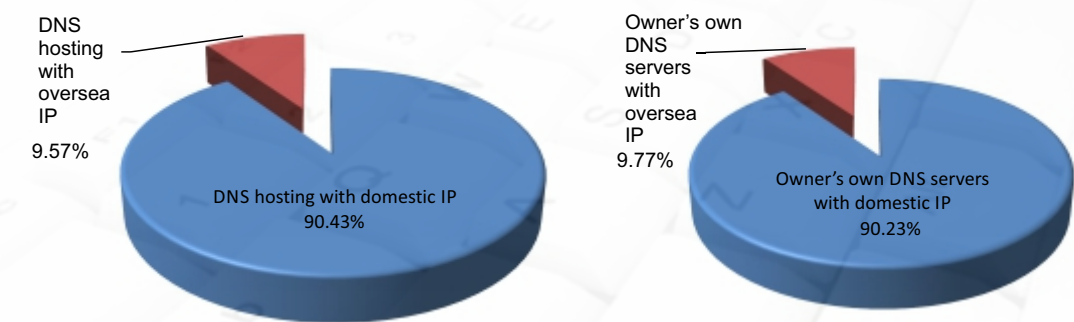
Figure 18: DNS hosting of ".vn" domain names

TOP 15 ".VN" DOMAIN NAME WEBSITES MOST QUERIED ON NATIONAL ".VN" DNS

SEPTEMBER 2013:

No	WEBSITE	NUMBER OF QUERIES
1	yahoo.com.vn	26,030,967
2	www.chotot.vn	17,447,817
3	www.vccorp.vn	12,048,815
4	www.google.com.vn	11,898,101
5	me.zing.vn	7,973,178
6	id.zing.vn	3,637,000
7	vtcgame.vn	2,294,706
8	admicro.vn	2,264,371
9	appstore.zing.vn	2,249,042
10	www.tvsi.com.vn	2,148,031
11	vipteen.com.vn	1,234,294
12	www.24h.com.vn	1,114,620
13	bongngo.vn	1,104,185
14	tvguide.htvc.vn	616,454
15	hdonline.vn	615,660

OCTOBER 2013:

No	WEBSITE	NUMBER OF QUERIES
1	yahoo.com.vn	20,318,676
2	www.chotot.vn	16,391,940
3	www.google.com.vn	10,606,401
4	www.vccorp.vn	10,531,852
5	me.zing.vn	7,227,395
6	iwin.net.vn	7,105,286
7	admicro.vn	2,645,047
8	www.tvsi.com.vn	2,473,841
9	vipteen.com.vn	2,089,184
10	appstore.zing.vn	2,048,052
11	24h.com.vn	2,010,512
12	ads.link.vn	1,539,196
13	whitehat.vn	1,331,612
14	hotdeal.vn	1,051,086
15	news.go.vn	1,014,076

THE ".VN" ACCREDITED REGISTRAR SYSTEM

By Oct 2013, there were 17 ".vn" accredited registrars (06 oversea registrars). The two latest registrars are Nhan Hoa Company (domestic) and IP Mirror (oversea).

"VN" COUNTRY CODE TOP LEVEL DOMAIN

"VN" COUNTRY CODE TOP LEVEL DOMAIN

I

I

MARKET SHARE OF REGISTRARS
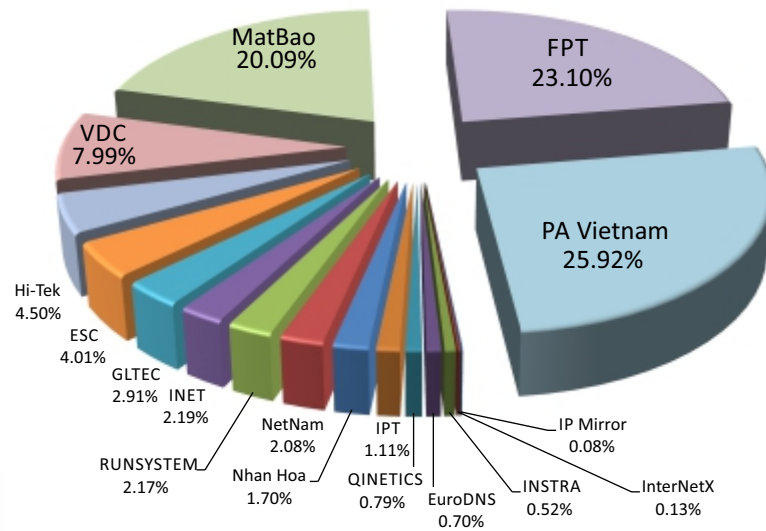
Figure 19: *Market share of registrars (Oct 2013)*

PA Vietnam, Matbao, FPT, VDC and Hitek were top 5 registrars of ".vn" domain name. The top 3 leading registrars accounted for 69.11% of the market.

FPT had the biggest market share in the Northern region, VDC had the biggest market share in the Middle region while the Southern region was dominated by PA Vietnam.

MARKET SHARE OF REGISTRARS IN THE NORTHERN REGION
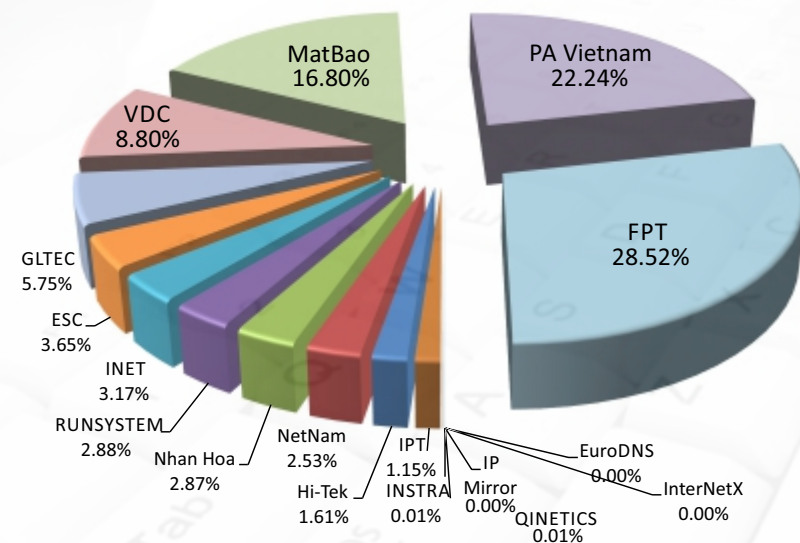
Figure 20: *Market share of ".vn"registrars in the Northern region*

MARKET SHARE OF REGISTRARS IN THE MIDDLE REGION
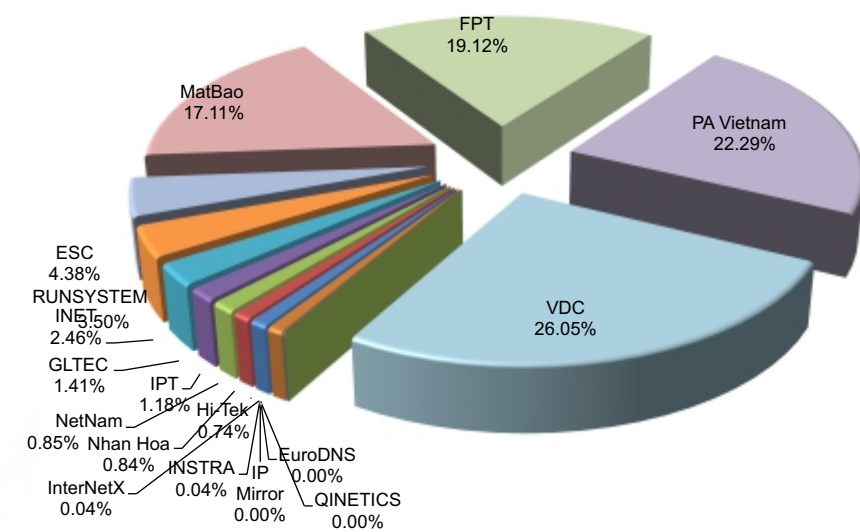
Figure 21: *Market share of ".vn"registrars in the Middle region*

MARKET SHARE OF REGISTRARS IN THE SOUTHERN REGION
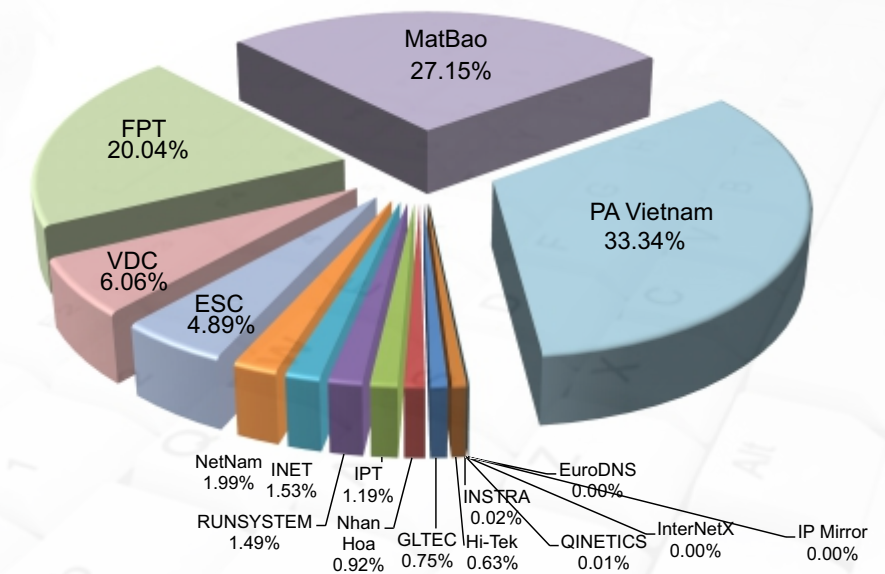
Figure 22: *Market share of ".vn"registrars in the Southern region*

INTERNATIONALIZED DOMAIN NAME (IDN.VN)

IDN.VN GROWTH RATE AND MILESTONES.

The Vietnamese Internationalized Domain Name (IDN.VN) is second level IDN under ".vn".

IDN.VN development process was associated with VNNIC research project in order to promote the Vietnamese language on the Internet. IDN.VN did not really attract users in its initial period. From the official launch in March 2007 to the end of December 2010, only 3,532 IDN.VN domain names was registered.

2001 Started working on IDN.VN

2003 Vietnamese IDN study research was awarded VIFOTEC third prize

2004 - 2006 Public trial registration

3/2007-12/2010 Official registration (limited for '.vn' ascii code domain name holders)

28/04/2011 Open for public registration without fee
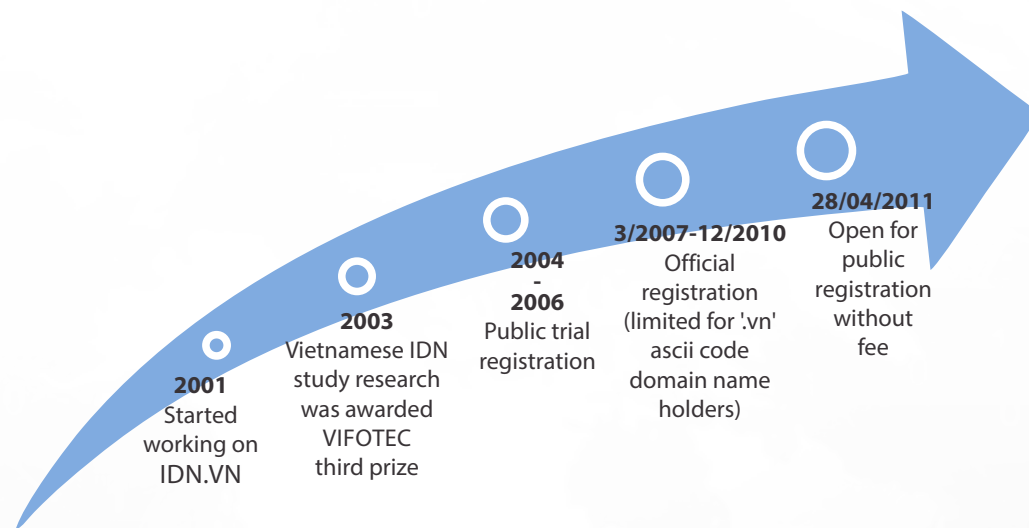
Figure 23: Milestones of IDN.VN

The free of charge registration period started from April 28th, 2011 marking a booming registration period. Within 04 months from April 28th 2011 to August 29th 2011, the number of registered IDN.VN domain names reached 360,357 which doubled the amount of ".vn" ccTLD registered during the previous 11 years. As of October 2013, the total number of registered IDN.VN domain names reached 936.729, of which 128.888 domain names had activated services.
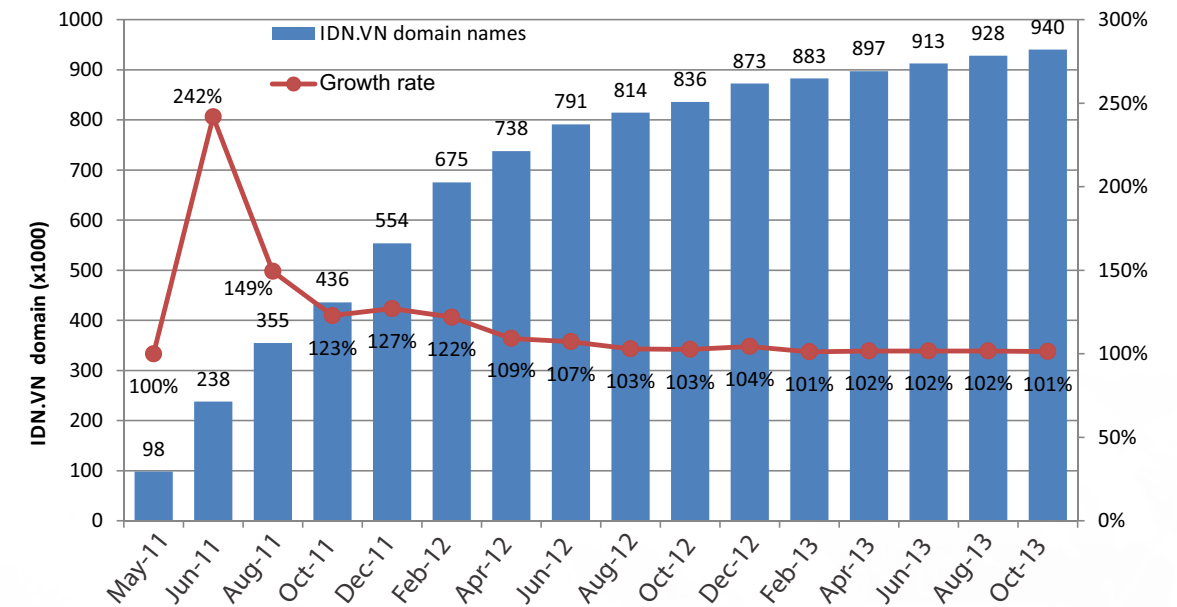
Figure 24: Development of IDN.VN

IDN.VN BREAKDOWN BY REGISTRANT AND GEOGRAPHICAL AREA
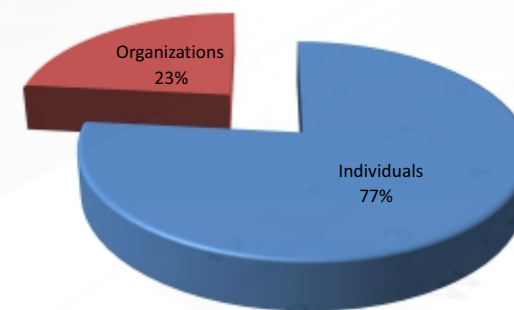
Figure 25: IDN.VN breakdown by registrant type
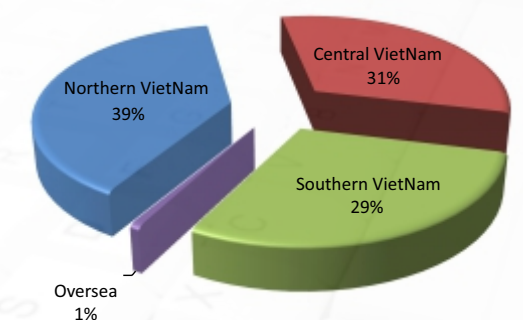
Figure 26: IDN.VN breakdown by geographical area

28

29

FREE SERVICES FOR IDN.VN:

At the moment, there are four free services for IDN.VN:

- Web Redirect
- Web Template
- DNS Hosting
- DNS Delegate
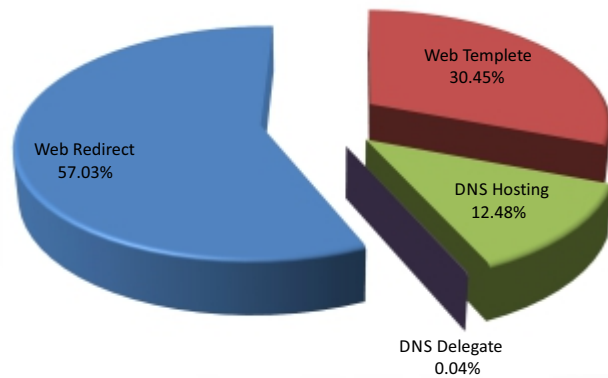
Figure 27: *Service usage breakdown by service*
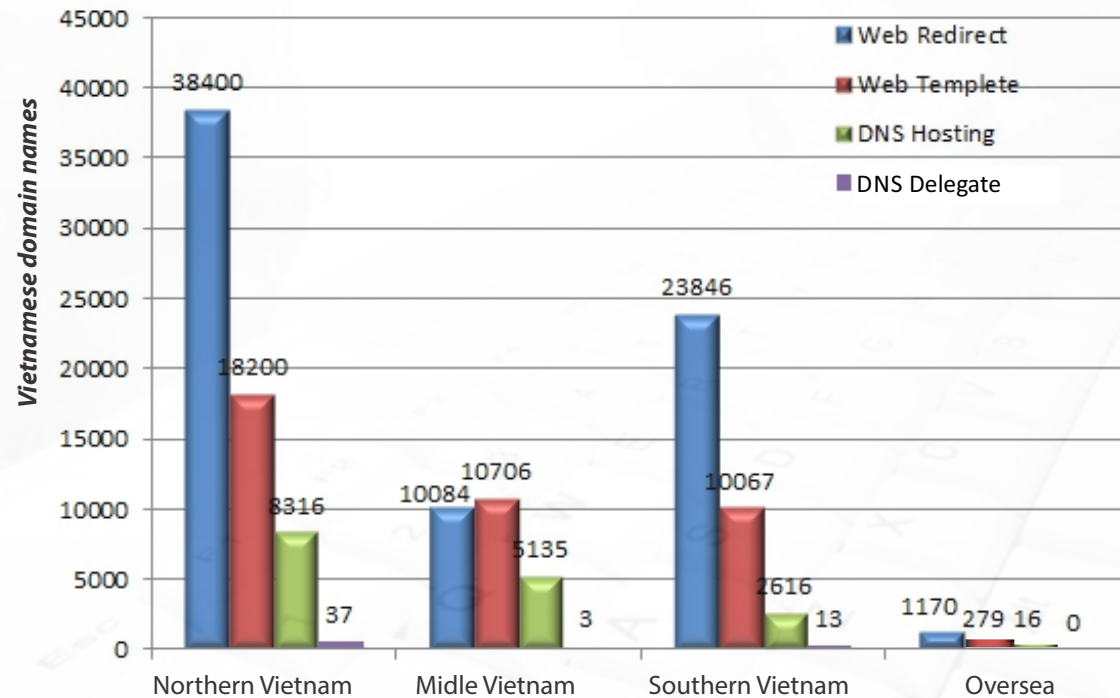
Figure 28: *Service usage breakdown by geographical area*

TOP 15 IDN.VN WEBSITES MOST QUERIED ON NATIONAL ".VN" DNS

SEPTEMBER 2013

| No	WEBSITE	NUMBER OF QUERIES
1	thíchháthò.vn	2,723,500
2	chốngthươngtích.vn	1,472,055
3	diễnđànvệtinh.vn	1,356,916
4	máytínhktc.vn	1,089,970
5	xetảidongfenggiárẻ.vn	424,447
6	cổphiếulướtsóng.vn	418,133
7	thợsửakhóa.vn	413,320
8	kinhdoanhsp-hóa.vn	327,509
9	thủyhảisảnhảiphượng.vn	284,005
10	trụđèn.vn	237,128
11	kênh14.vn	163,694
12	hùngloaviệtnam.vn	158,411
13	lớp10d1.vn	106,541
14	chúlùnthứ8.vn	106,042
15	đồchínhhãng.vn	95,253

OCTOBER 2013

No	WEBSITE	NUMBER OF QUERIES
1	hùngloaviệtnam.vn	4,553,731
2	thíchháthò.vn	2,006,032
3	thủyhảisảnhảiphượng.vn	1,449,383
4	chốngthươngtích.vn	1,245,632
5	bậtlửađộc.vn	779,674
6	máytínhktc.vn	621,774
7	diễnđànvệtinh.vn	605,668
8	thợsửakhóa.vn	312,167
9	bậtlửacaocấp.vn	298,052
10	đồchínhhãng.vn	259,565
11	kinhdoanhsp-hóa.vn	238,954
12	trụđèn.vn	191,081
13	học-hay.vn	143,379
14	họcláixehơi.vn	119,660
15	kênh14.vn	105,872
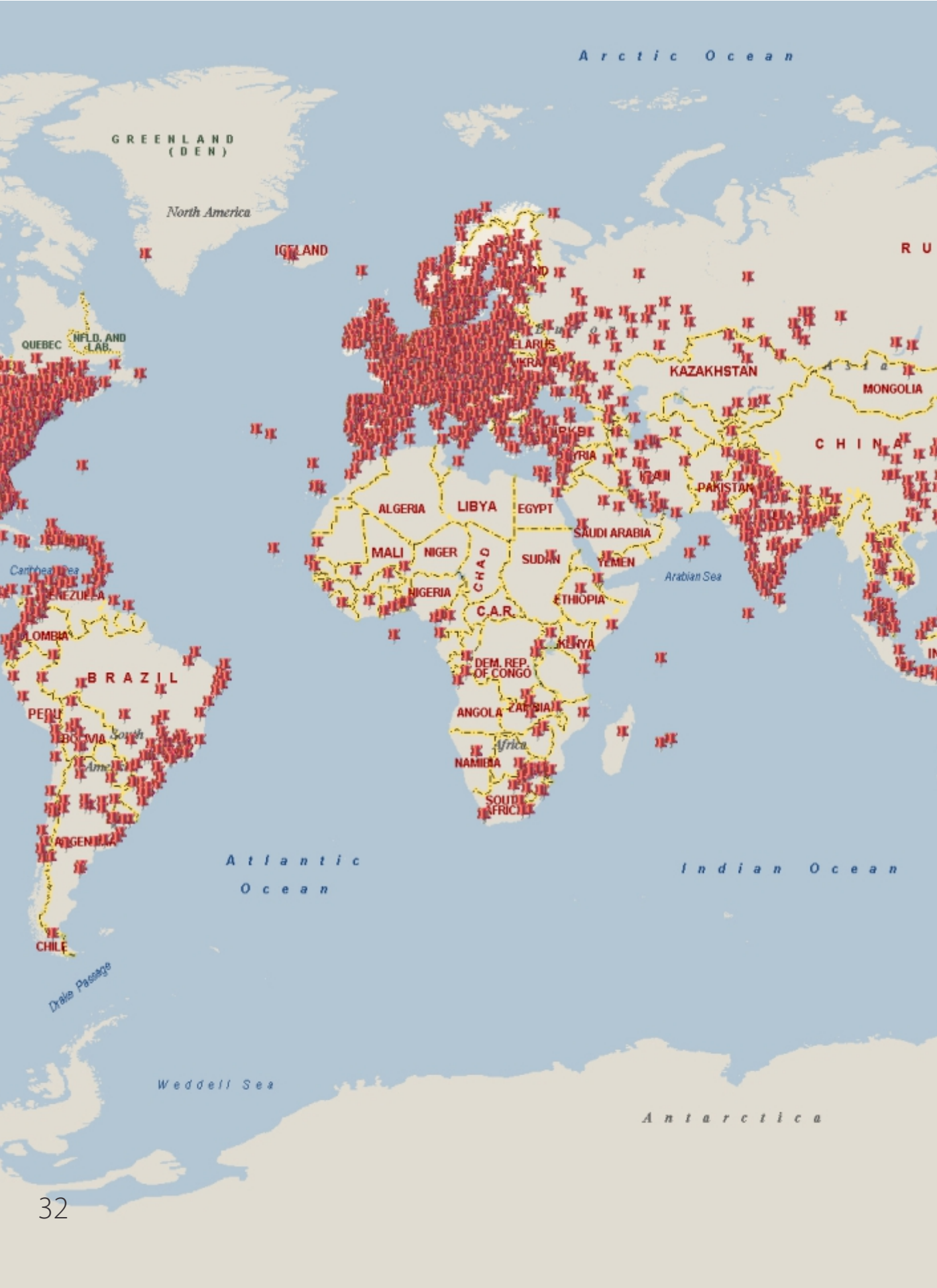
INTERNATIONAL DOMAIN NAMES USED IN VIETNAM

INTERNATIONAL DOMAIN NAMES USED IN VIETNAM

International domain names are domain names under the generic top – level domain (gTLD) and country code top – level domain names (ccTLD) other than the ".vn" ccTLD. This section of the report analyzes the indicators relating to the registration of international domain names by Vietnamese users. The analysis was based on data publicized on website www.webhosting.info and data collected from Vietnam national DNS server system.

REGISTRATION OF INTERNATIONAL DOMAIN NAMES IN VIETNAM

According to www.webhosting.info, as of October 2013, there were 213.652 international domain names registered by Vietnamese registrants. In Vietnam, in the early years of Internet activities, international domain name used to have a rapid growth period. However, the development of ".vn" domain name has gradually surpassed the growth of international domain names and a significant gap has been witnessed since 2010.

Figure 29: "vn" domain name registration vs. international domain name registration in Vietnam

Registration 2013
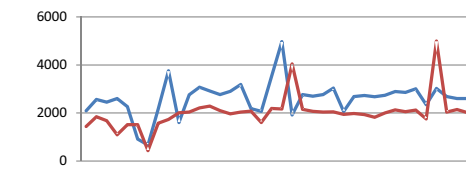
Domain name withdrawals 2013
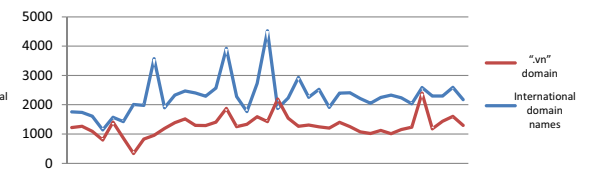
Real growth 2013
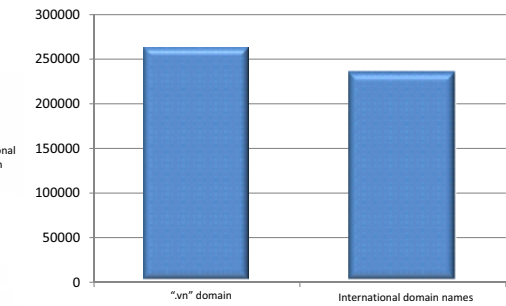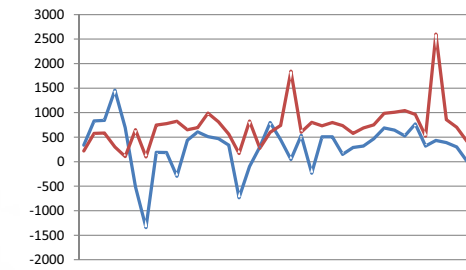
Figure 30: Some parameters of ".vn" domain names vs. international domain names in Vietnam

INTERNATIONAL DOMAIN NAME BREAKDOWN

Based on the analysis of data collected from Vietnam national DNS server system from September to November 2013, the information related to the usage of international domain name can be seen as follows:

gTLDs vs. OTHER ccTLDs

Other ccTLDs 29%

gTLDs 71%
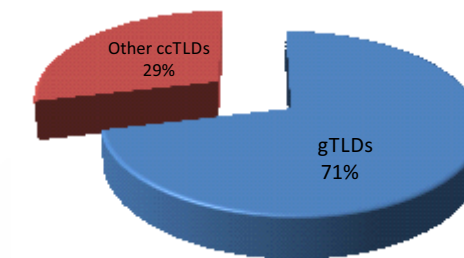
Figure 31. gTLDs vs. other ccTLDs

DOMAIN NAME BREAKDOWN BY EXTENSION
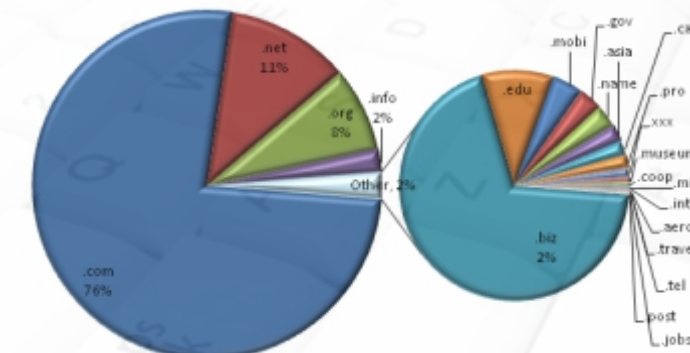
Figure 32. International domain name queries to the system by category

THE AVERAGE LENGTH OF THE DOMAIN NAME
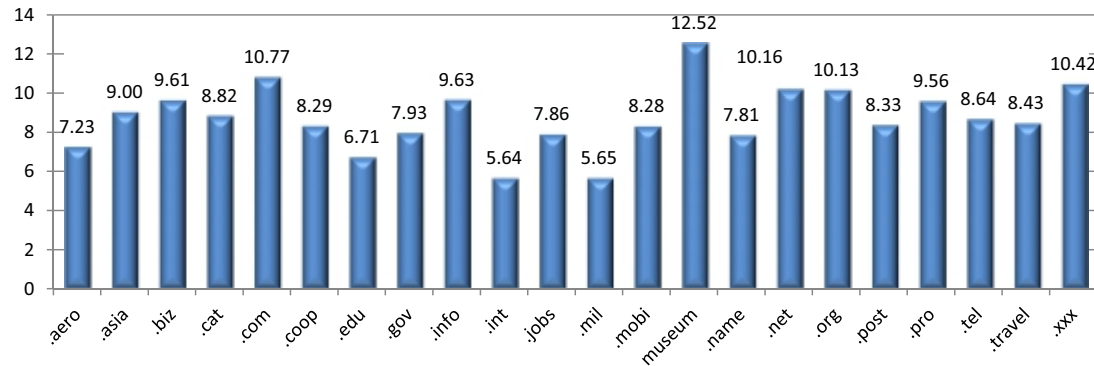
Figure 33. The average length of international domain name

INTERNATIONAL DOMAIN NAME USAGE

INTERNATIONAL DOMAIN NAMES WITH ACTIVE WEBSITES

For all international domain name queried to the Vietnam National DNS servers, from September to November 2013, 63.07% domain names had active websites. Among those domains, 3.09% domain names had websites with domestic IP addresses and 96.91% with oversea IP addresses.
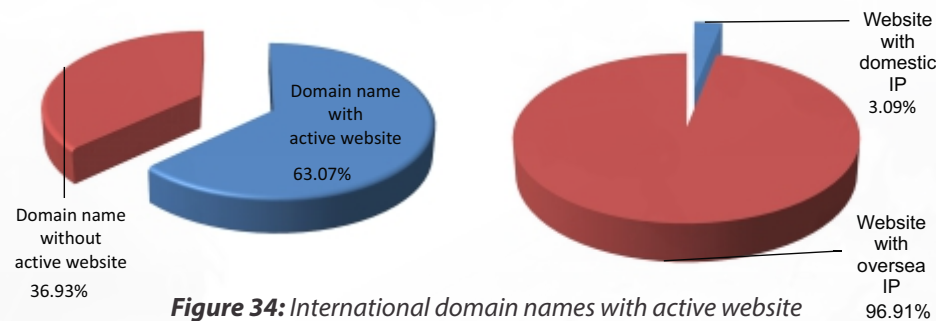
Figure 34: International domain names with active website

DNS HOSTING OF INTERNATIONAL DOMAIN NAMES

For all international domain name queried to the Vietnam National DNS servers from September to November 2013, there were 2.63% domain names using DNS servers with domestic IP addresses and 97.37% domain names using DNS servers with oversea IP addresses. Among those with domestic IP addresses, there were 27% domain names using DNS server of ".vn" accredited registrars.
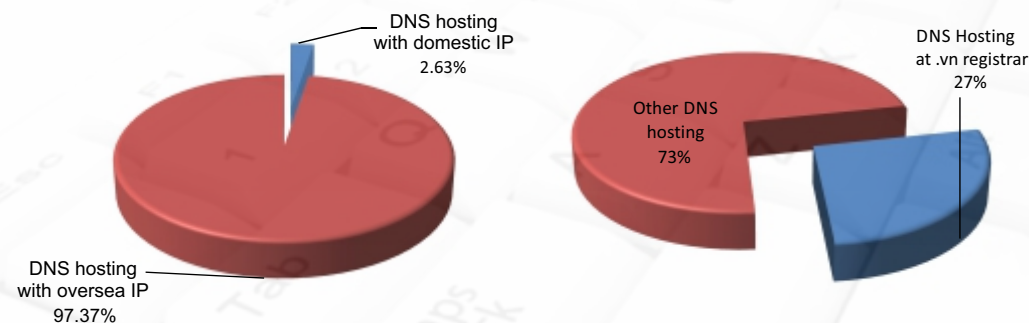
Figure 35: DNS hosting of international domain names

TOP 15 WEBSITES WITH INTERNATIONAL DOMAIN NAME MOST QUERIED ON NATIONAL ".VN" DNS

SEPTEMBER 2013

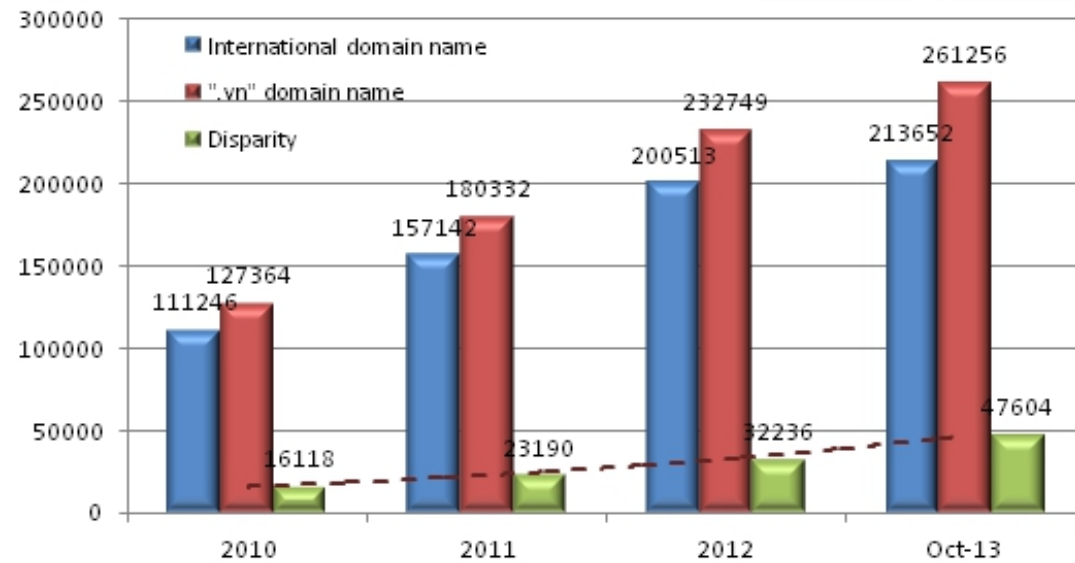| No	DOMAIN NAME	NUMBER OF QUERIES
1	google.com	55,196,139
2	yahoo.com	25,968,897
3	facebook.com	22,942,220
4	kaspersky.com	15,943,044
5	amazonaws.com	13,811,618
6	vlingo.com	11,196,908
7	aol.com	10,850,550
8	vnexpress.net	10,728,160
9	twitter.com	8,430,842
10	tplink.com	8,105,380
11	youtube.com	7,414,487
12	hotmail.com	7,027,563
13	doubleclick.net	6,801,930
14	microsoft.com	6,768,829
15	apple.com	6,709,011

OCTOBER 2013

No	DOMAIN NAME	NUMBER OF QUERIES
1	yahoo.com	39.418.096
2	google.com	36.854.360
3	amazonaws.com	19.886.208
4	facebook.com	16.755.111
5	kaspersky.com	15.624.261
6	vlingo.com	14.523.841
7	yourdomain.com	13.211.102
8	youtube.com	11.624.998
9	aol.com	10.374.451
10	irlwinning.com	10.230.551
11	vnexpress.net	9.983.033
12	admob.com	8.306.126
13	microsoft.com	8.291.932
14	apple.com	7.614.095
15	twitter.com	7.023.169

".VN" DOMAIN NAME SYSTEM (DNS)

".VN" DOMAIN NAME SYSTEM (DNS)

DNS is the critical infrastructure of the Internet. During 13 years of operation, the ".vn" DNS has always been in the highest stable and secure status. There are 07 clusters including 05 domestic and 02 oversea ones with more than 70 cities and 5 continents all over the world. ".vn" domain name system supports the latest technologies such as Anycast, Load balancing, IPv6.

".vn" domain name queries from users all over the world can be served very fast through the nearest DNS server in the system. In 2013, VNNIC deployed a domestic IPv6 DNS cluster. With 01 domestic IPv6 cluster and 02 oversea ones, Internet users can query ".vn" safely, stably and fast on both IPv4 and IPv6 networks. Furthermore, 02 high- performance recursive caching DNS systems have been implemented to support the local ISPs and Internet users to enhance the Internet access and quality of ".vn" and gTLD query.

Figure 36: *Distribution of ".vn" DNS servers*

DNS QUERY STATISTICS

NUMBER OF ".VN" CCTLD QUERIES

By the end of October, number of ccTLD ".vn" queries reached 65.086.151.694.
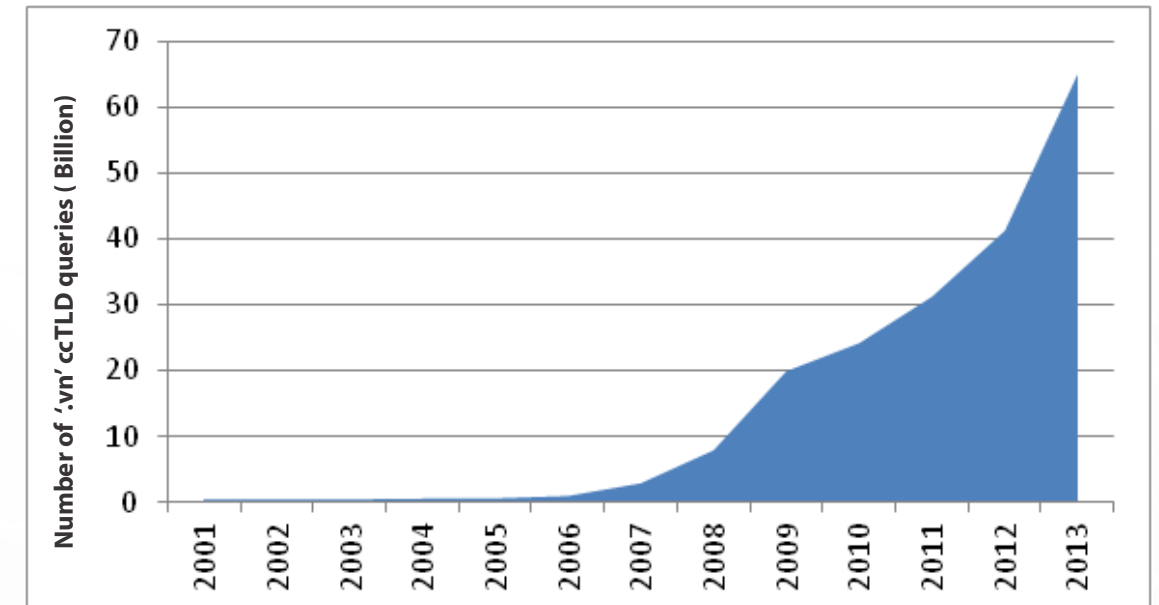
Figure 37: *Number of ".vn" ccTLD query*

Number of ".vn" vs gTLD queries

".vn" ccTLD 52.44%

gTLD 47.56%
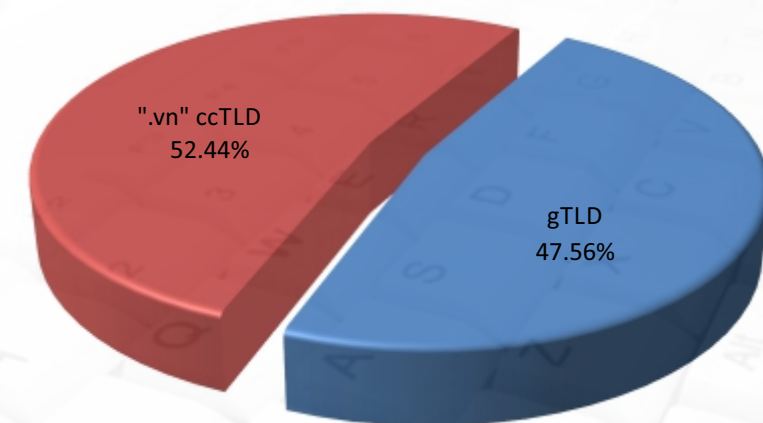
Figure 38: *Number of "vn" ccTLD queries vs gTLD (October 2013)*

NUMBER OF ".VN" QUERIES BREAKDOWN BY CATEGORY:
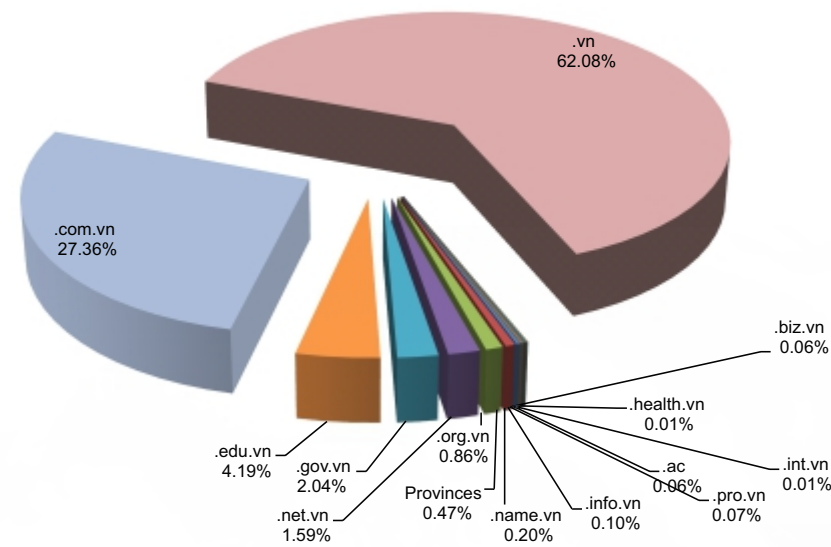
Figure 39: Number of "vn" ccTLD queries breakdown by category

NUMBER OF DNS QUERIES BREAKDOWN BY gTLD
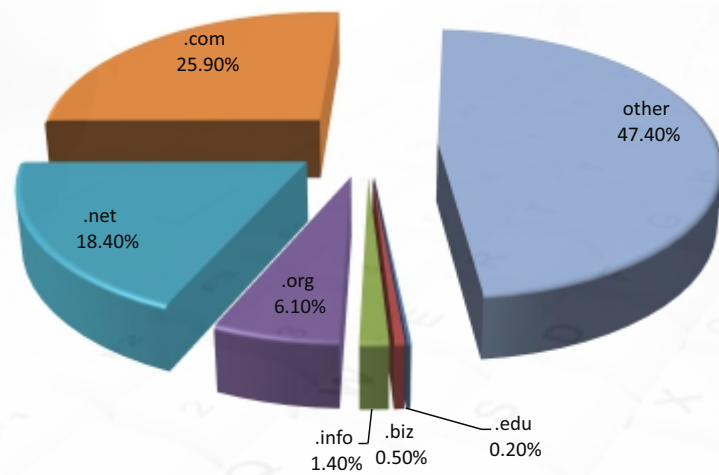
Figure 40: Number of DNS queries breakdown by gTLD

NUMBER OF DNS QUERIES BREAKDOWN BY RECORD TYPE
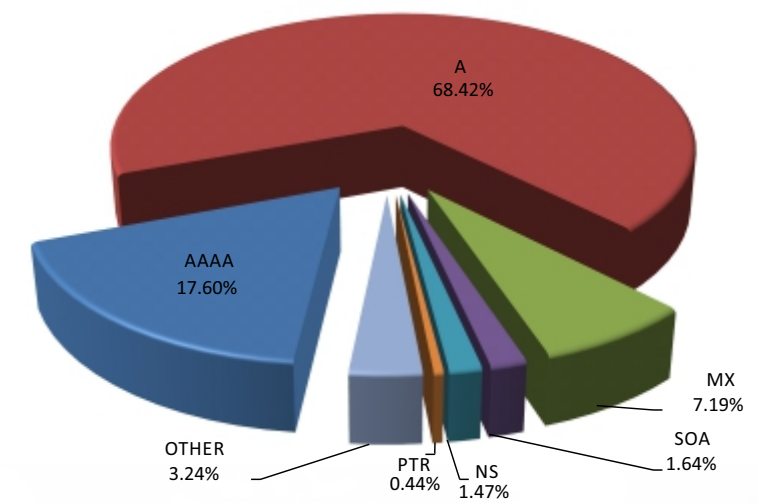
Figure 41: Number of DNS queries breakdown by Record Type

NUMBER OF AAAA (IPv6) RECORD QUERIES OVER YEAR
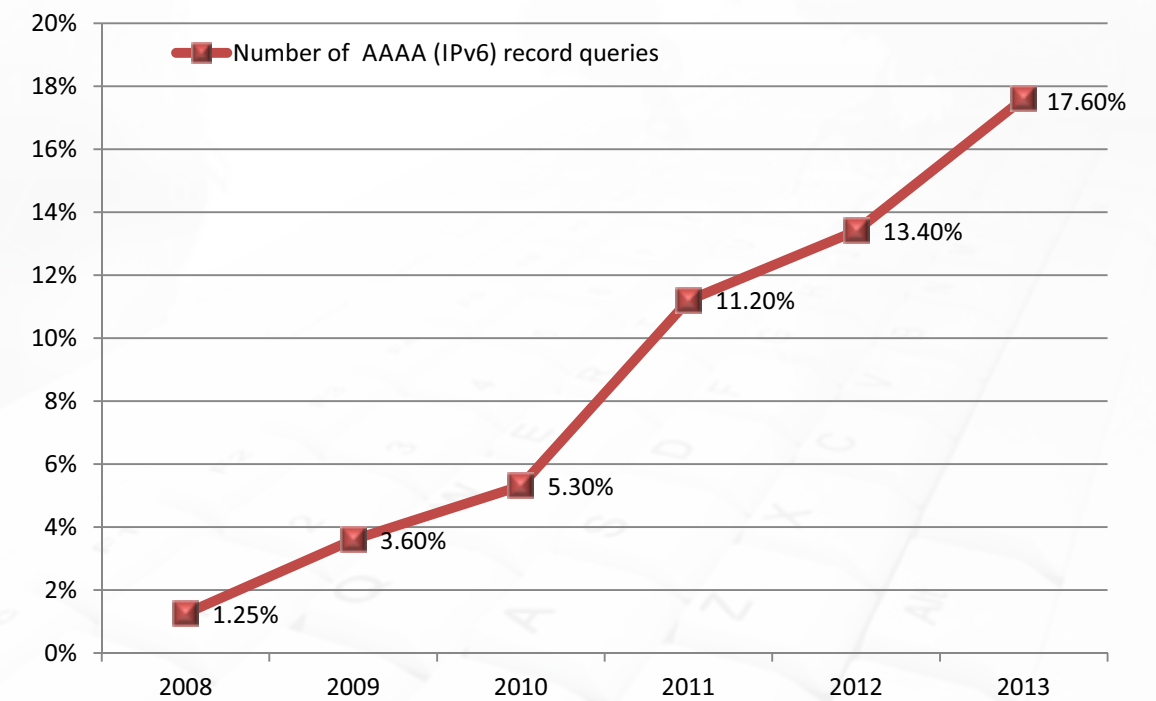
Figure 42: Number of AAAA (IPv6) record queries over year

INTERNET ADDRESS (IP) AND AUTONOMOUS SYSTEM NUMBER (ASN)

INTERNET ADDRESS GROWTH AND MILESTONES

On July 31st, 2003, VNNIC was recognized by APNIC as the National Internet Registry (NIR) of Vietnam. After that, number of IPv4 addresses in Vietnam grew significantly, especially from 2006 to 2011, which reflects Internet growth.

- Number of IPv4 addresses in Vietnam reached 1 million in 2007.
- Number of IPv4 addresses in Vietnam reached 10 million in 2010.
- Number of IPv4 addresses in Vietnam reached 15.576.832 by October 2013.

28/04/2000	Vietnam Internet Network Information Center (VNNIC), was founded to carry out the functions of managing, allocating, supcrvising and promoting the use of Internet domain names, addresses (IP), ASN in Vietnam
31/07/2003	VNNIC was recognized by Asia Pacific Network Information Centre (APNIC) as the National Internet Registry of Vietnam.
06/05/2008	The Minister of Information and Telecommunications issued Directive No. 03/2008/CT-BTTTT on Ipv6 deployment and promotion in Vietnam.
06/01/2009	The National IPv6 Task Force was established, headed by Deputy Minister of Information and Communications, VNNIC plays the role of Standing Commitee
03/02/2011	IANA announced the exhaustion of global IPv4 pool
29/03/2011	The Minister of Information and Telecommunications issued Vietnam National Ipv6 Action Plan.
15/04/2011	Asia - Pacific was the first region to run out of IPv4

On April 15th, 2011, Asia-Pacific Network Information Centre (APNIC) announced its IPv4 address pool reached the final /8, bringing the Asia Pacific region to the last stage of IPv4 exhaustion with the policy for the special distribution of APNIC's final /8. Under this policy, Asia Pacific organizations can each request one, and only one /22 (1024 addresses) of the final /8. In Vietnam, number of IPv4 grew stably, avaraging 29 IPv4 /22 blocks allocated per year. There are 24 IPv4 /22 blocks allocated during 10 first months of 2013, number of IPv4 was15.576.832 addresses in Vietnam.
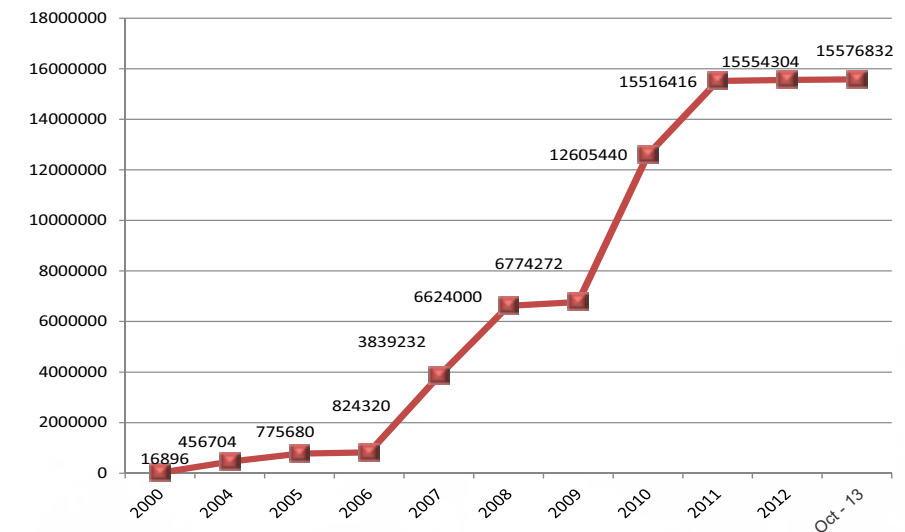
Figure 43: *IPv4 address growth over year*

In order to promote the IPv6, the Ministry of Information and Communications have issued many policies and regulations to support the deployment of IPv6 in Vietnam, some of which were the Directive No. 03/2008/CT-BTTTT on IPv6 deployment and promotion in Vietnam; Decision No. 05/QĐ-BTTTT on establishing IPv6 Task Force; the Vietnam National IPv6 Action Plan which determined the objectives and specific roadmap for a transition to IPv6 in Vietnam.

The National IPv6 Task Force has achieved many great results in the promotion of IPv6 deployment and May 6th was chosen as the annual Vietnam IPv6 Day.

By October, 2013, the number of IPv6 block allocated to Vietnam was 23 blocks /48 and 18 blocks /32.
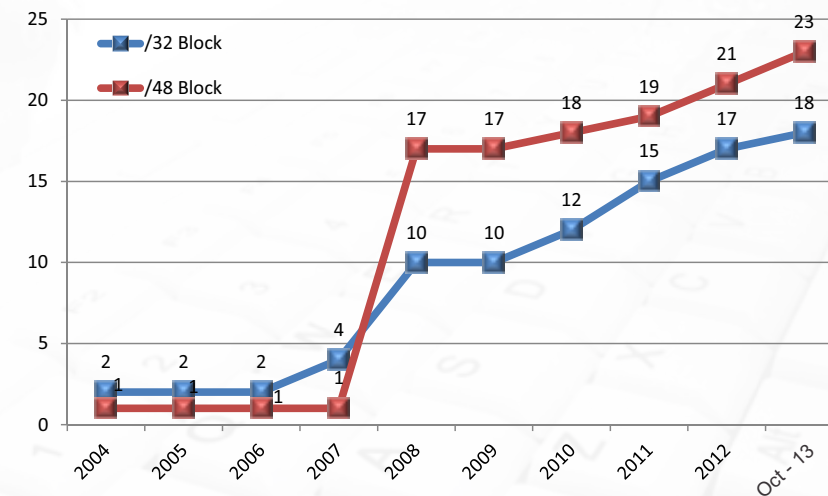
Figure 44: *Number of IPv6 in Vietnam over year*

INTERNET ADDRESS (IP) AND AUTONOMOUS SYSTEM NUMBER (ASN)

RANK OF COUNTRY (ECONOMY) FOR THE NUMBER OF IPV4 IN THE ASIA REGION

Rank of country (economy) for the number of IPv4 in the Asia (October, 2013 - source: http://resources.potaroo.net)

No	COUNTRY/ECONOMY	NUMBER OF IPV4 ADDRESSES
1	China	330.274.304
2	Japan	201.676.800
3	Republic of Korea	112.269.056
4	India	35.586.816
5	Taiwan	35.403.264
6	Indonesia	17.496.320
7	Turkey	16.224.768
8	**Vietnam**	**15.576.832**
9	Hong Kong	11.716.096
10	Iran	9.669.632
11	Thailand	8.574.464
12	Israel	7.549.184
13	Malaysia	6.365.440
14	Saudi Arabia	6.338.048
15	Singapore	6.265.600
16	Philippines	5.380.352
17	Pakistan	5.190.400
18	United Arab Emirates	3.190.400
19	Kazakhstan	2.719.744
20	Kuwait	1.937.920

Rank of country (economy) for the number of IPv4 in the ASEAN (October, 2013 – source: http://resources.potaroo.net)

No	COUNTRY/ECONOMY	NUMBER OF IPV4 ADDRESSES
1	Indonesia	17.496.320
2	**Vietnam**	**15.576.832**
3	Thailand	8.574.464
4	Malaysia	6.365.440
5	Singapore	6.265.600
6	Philippines	5.380.352
7	Campuchia	225.280
8	Brunei	197.120
9	Laos	57.856
10	Myanmar	29.696
11	Timor-Leste	4.096

IPV4 ADDRESS USAGE BY CATEGORY

Although there are 43% Telecommunications companies and ISPs members in the total of IP members, these members have 98,14% of IPv4 addresses in Vietnam.

Figure 45 : *IPv4 address usage category*

IPV6 ADDRESS USAGE BY CATEGORY

Telecommunications companies and ISPs members also registered 77% of total IPv6 in Vietnam.

Figure 46 : *IPv6 address usage by category*

VNNIC's IP MEMBERS

Figure 47: *Number of VNNIC's IP members over year*

INTERNET ADDRESS (IP) AND AUTONOMOUS SYSTEM NUMBER (ASN)

INTERNET ADDRESS (IP) AND AUTONOMOUS SYSTEM NUMBER (ASN)

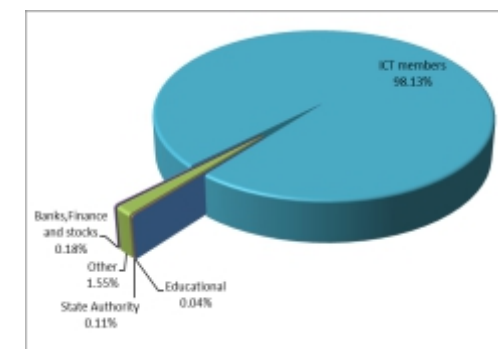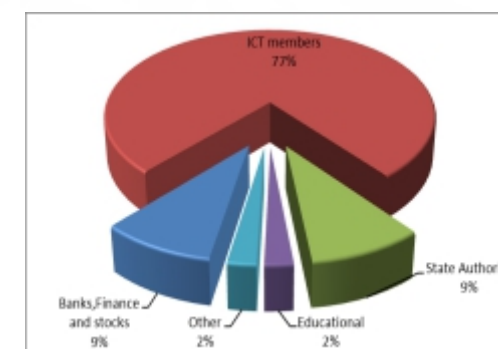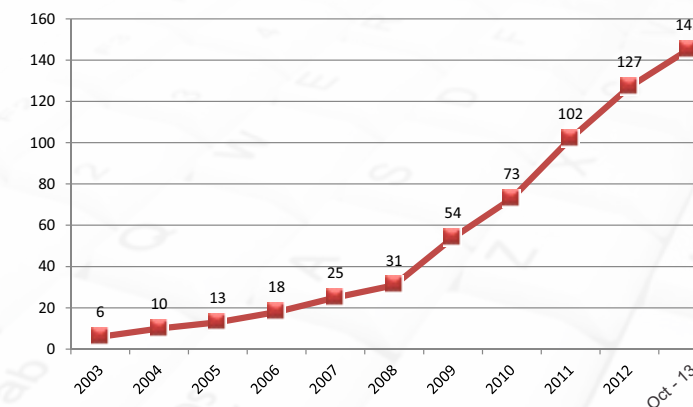From 2008 to now, the number of VNNIC's IP members grew fast, avaraging 24 members per year. In the first 10 months of 2013, there were 18 new IP members, and the number of VNNIC's members reached 145. In Asia Pacific region, VNNIC is one of NIR with a stable growth.
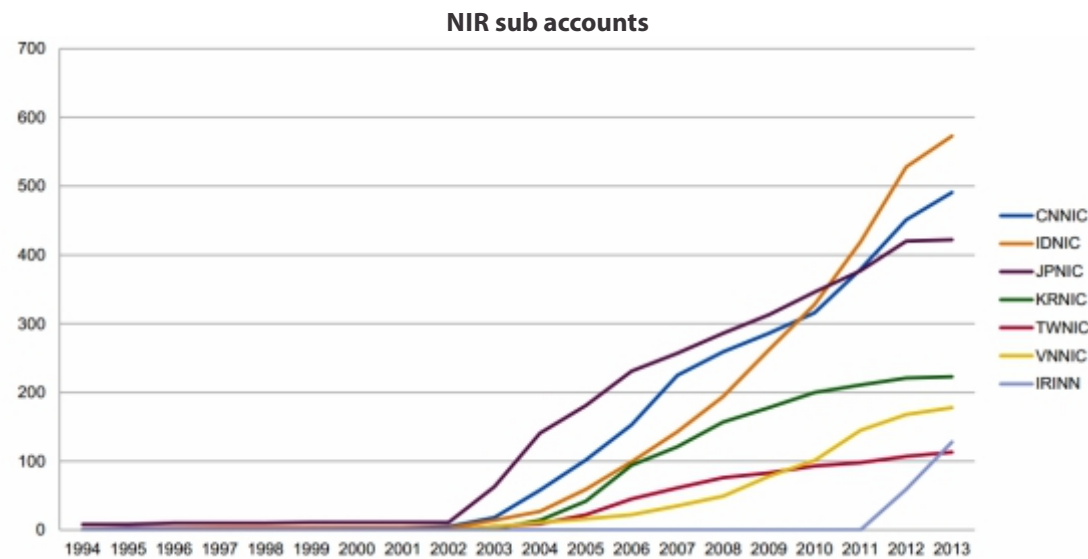

Figure 48: *Number of IP members in APAC region*
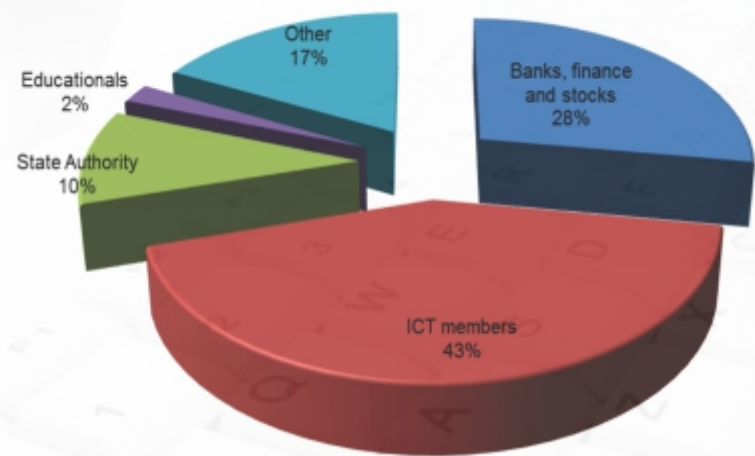*(Source: www.apnic.net)*

IP MEMBERS BY CATEGORY

Figure 49: *IP members by category*

IPV6 PROMOTION IN VIETNAM

In 2013, there are a great deal of actions on deploying IPv6 in Vietnam.

Stage 1: Preparation phase (2011 – 2012)
- Measuring the current situation and readiness status of local ISP networks with Ipv6
- Forming the national IPv6 testing network and implementing of IPv6 testing activities
- Propagandizing and training of ICT human resources on Ipv6

Stage2: Implementation phase (2013 - 2015)
- Transiting IPv4 networks in order to simultaneously support IPv4 and Ipv6
- Forming national IPv6 network infrastructure
- Providing testing IPv6 services to end users

Stage 3: Accomplishment phase (2016 - 2019)
- Complete IPv6 network and services; ensure the stable operation of Internet in Vietnam with IPv6-based technology
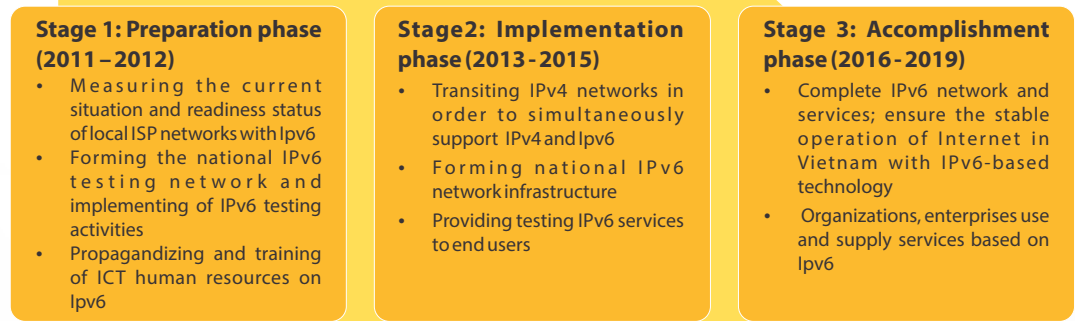- Organizations, enterprises use and supply services based on Ipv6

Figure 50: *Vietnam National IPv6 Action Plan*

There were many significant IPv6 events in 2013, with the introduction of Phase 2 of the National IPv6 Action Plan :

• *May 6th, 2013 – Vietnam IPv6 Day, Vietnam IPv6 Launch.*
The Ministry of Information & Communications, Vietnam Internet Netwrk Information Center (VNNIC) and pioneer ISPs (VNPT, Viettel, FPT Telecom, Netnam, VTC, SPT) joined to officially launch the National IPv6 network and IPv6 services. In particular, the Ministry of Information and Communications is the first agency to deploy IPv6 on Ministry's official website (http://www.mic.gov.vn). IPv6 was also deployed on social network (http://go.vn) of Vietnam Multimedia Corporation (VTC). As of November 2013, there were 34 Vietnamese agencies, organizations, businesses (including 02 ministries) deploying IPv6; 09 ISPs already had IPv4/IPv6 connection to Vietnam National Internet Exchange (VNIX) including: VNPT, Viettel, Netnam, FPT Telecom, SPT, VTC, SCTV, VNTT, CMC, Telecom.

• *Vietnam leaded the IPv6 ASEAN Project.*
In 2013, VNNIC was funded by ASEAN ICT Center to implement a project name "Promote the deployment of IPv6 for ICT SMEs". This project aims to provide ICT SMEs (including ISP, Internet carrier, internet content provider, datacenter operator, webhosting and API developer, software vendor, hardware vendor, mobile or wireless operator) with better understanding, awareness about IPv6 and how to make plan to migrate to IPv6 smoothly.

NATIONAL IPV6 NETWORK

The National IPv6 network was set up by connecting National DNS network, VNIX network and ISP networks on May 6th, 2013 (Vietnam IPv6 Launch). IPv6 services were officially provided to end users.
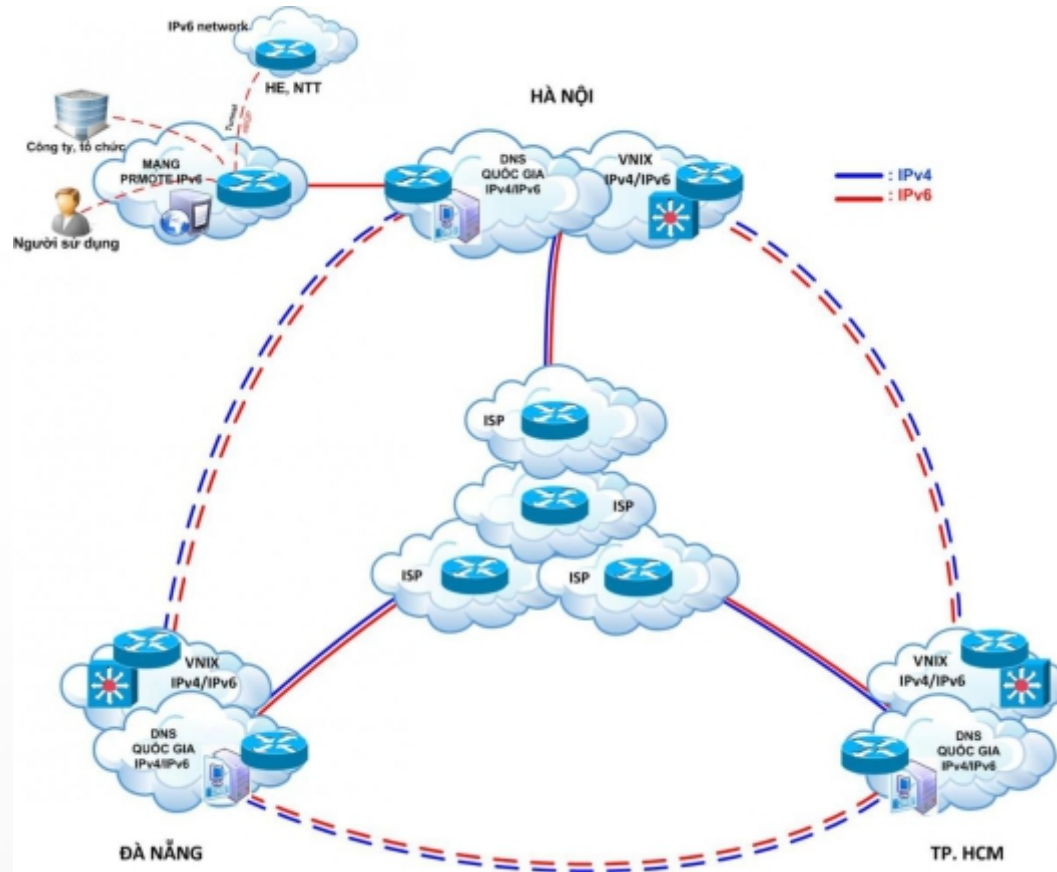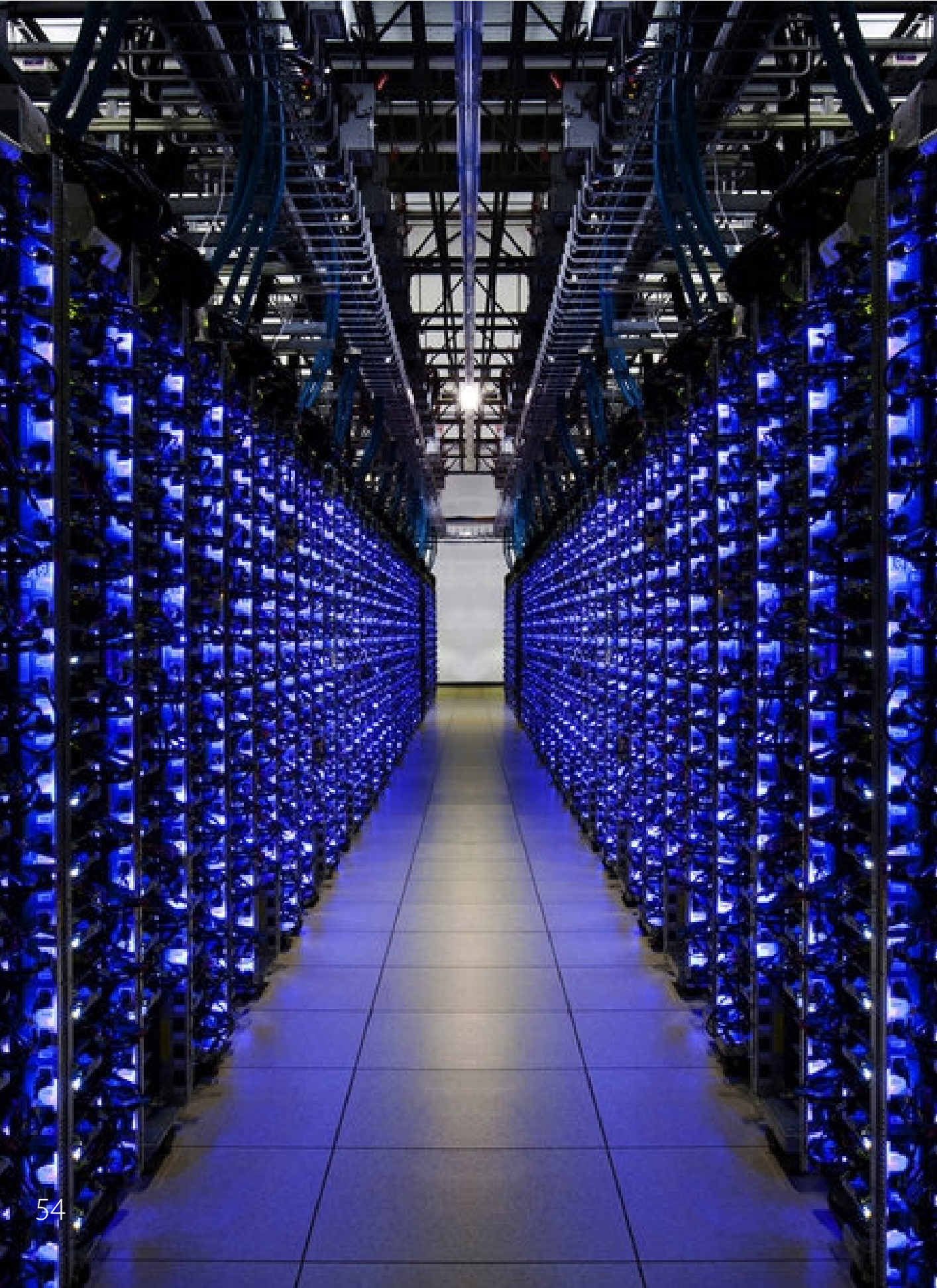

Figure 51: National IPv6 Network.

AUTONOMOUS SYSTEM NUMBER (ASN)

As of September, 2013, VNNIC allocated 165 Autonomous system numbers of which there are 56 4-byte ASNs. In the first 10 months of this year, there are 17 new allocated ASNs, number of ASN reached 165 in Vietnam.

PART 2:
INTERNET IN VIETNAM

THE DEVELOPMENT OF INTERNET IN VIETNAM

THE DEVELOPMENT OF INTERNET IN VIETNAM

On November 19th, 1997, Vietnam officially connected to the Internet, marking the start of an impressive development period of the Internet in Vietnam.

MILESTONE OF INTERNET IN VIETNAM

➤ **Year 1991:** Mr. Rob Hurle, professor at Australian National University (ANU), was the pioneer of Internet in Vietnam when he introduced his ideas with Vietnamese students and brought one modem to Vietnam.

➤ **Year 1992:** Mr. Rob Hurle, together with Mr. Tran Ba Thai, Institution of Information Technology – IOIT (Hanoi) experimented with connecting computers in Australia and Vietnam via phone line. The experiment succeeded and in 1992, the first email of IOIT was set up with the domain .au. to exchange information with Mr. Rob.

➤ **Year 1994:** with the sponsor from Australian government, Mr.Rob and his colleagues at ANU presented the History Department of Hanoi Technological University with ta computer with a modem, which connected to the Internet via .au.

➤ **Year 1995:** Mr. Rob and other partners at IOIT began the cooperation with VNPT to develop services.

➤ **Year 1994-1996:** Internet experiments at 4 places:

- **Year 1994:** IOIT together with ANU to develop and test VARENET.
- **Year 1994:** Information Center - Ministry of Science & Technology connected to Toolnet (Amsterdam - the Netherlands).
- **Year 1995:** Center of Science & Technology - Department of Science, Technology & Environment of Hochiminh city connected to Singapore, HCMCNET.
- **Year 1996:** VDC - VNPT connected to Sprintlink (US) from Hanoi and HCM city via two international port 64Kb/s.

➤ **Year 1997:** Vietnam officially connected to the global Internet.

➤ **February 1997:** The online version of Que huong Newspaper was uploaded to the Internet, with the support of VDC (6 articles of Que huong Newspaper).

➤ **March 1997:** Prime Minister approved the establishment of National Internet Management Department to control and coordinate the management and development of Internet service and network in Vietnam.

➤ **April 1997:** Decree No 21/CP issuing the provisional regulation on the management, establishment and use of Internet network in Vietnam. All organizations having an Internet network must gain the permission to connect to the Internet, without which the connection would be considered to be illegal.

➤ **November 1997:** National Internet Management Department launched the Internet service, issued the permission for internet service, internet connection providers and other providers. VNPT, Netnam and 3 other companies became the first ISPs in Vietnam.

➤ **December 1997:** Internet services were provided to public users.

➤ **February 1999:** Head of Department General of Post and Telecommunications issued the directive of development and management of mobile service on the Internet and other telecommunication service on the Internet. Allowed ISPs to test technology and mobile service on the Internet.

➤ **April 2000:** Establishment of Vietnam Internet Network Information Center (VNNIC).

➤ **October 2000:** Directive No 58-CT/TW on "accelerating the use and development of information technology for the cause of industrialization & modernization", "The national information network shall be developed to reach nationwide coverage. It will support large traffic, high speed, quality service with a cheap price, so that it can raise the rate of Internet users to become the same as the world's average".

➤ **February 2001:** Prime Minister approved the transfer of the role of management of Internet activities from Ministry of Science & Technology to Department General of Post and Telecommunications

➤ **August 2001:** Decree 55/2001/ND-CP on management, provision and use of Internet services issued to replace Decree No 21/CP

➤ **July 2002:** Prime Minister approved the general plan of IT application till 2005, in which the number of Internet users in 2005 should rise 10 times more than that of 2000.

➤ **November 2002:** Establishment of Ministry of Post and Telecommunication.

➤ **April 2003:** Internet, mobile fees decreased 10-40%.

➤ **Year 2003:** MegaVNN, Internet service via ADSL, introduced.

➤ **From 2001 to 2007:** the fees of telecommunication and Internet constantly went down. The number of Internet users increasing rapidly.

➤ **August 2008:** Decree 97/2008/ND-CP on the management, provision and use of internet services and electronic information on the Internet.

➤ **Year 2009:** ISPs provided cable Internet FTTH with download speed up to 10 Gigabit/s

➤ **October 2009:** Vinaphone introduced 3G service.

➤ **October 2010:** Vietnam Internet Association (VIA) established.

➤ **Novermber 2011:** National IPv6 Action Plan was issued.

➤ **May 2013:** National IPv6 network was launched. IPv6 services were officially provided for users.

➤ **July 2013:** The Government issued Decree No 72/2013/ND-CP on the management, provision and usage of Internet services and information on the Internet.

THE DEVELOPMENT OF INTERNET SUBSCRIBERS

The Internet services in Vietnam have become diversified and larger with many high quality services and considerable growth. During recent years, Internet connection via 3G has grown bigger and bigger, as a result of the advantages of the infrastructure
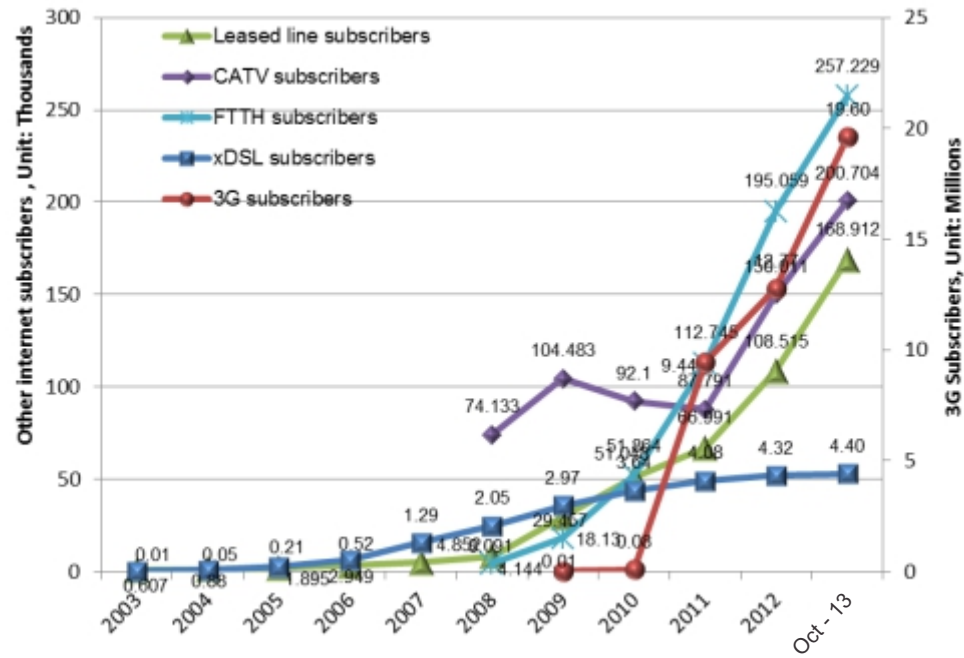

Figure 52: *Internet subscribers by category.*
(source: www.vnta.gov.vn, www.vnnic.vn)

INTERNET BANDWIDTH
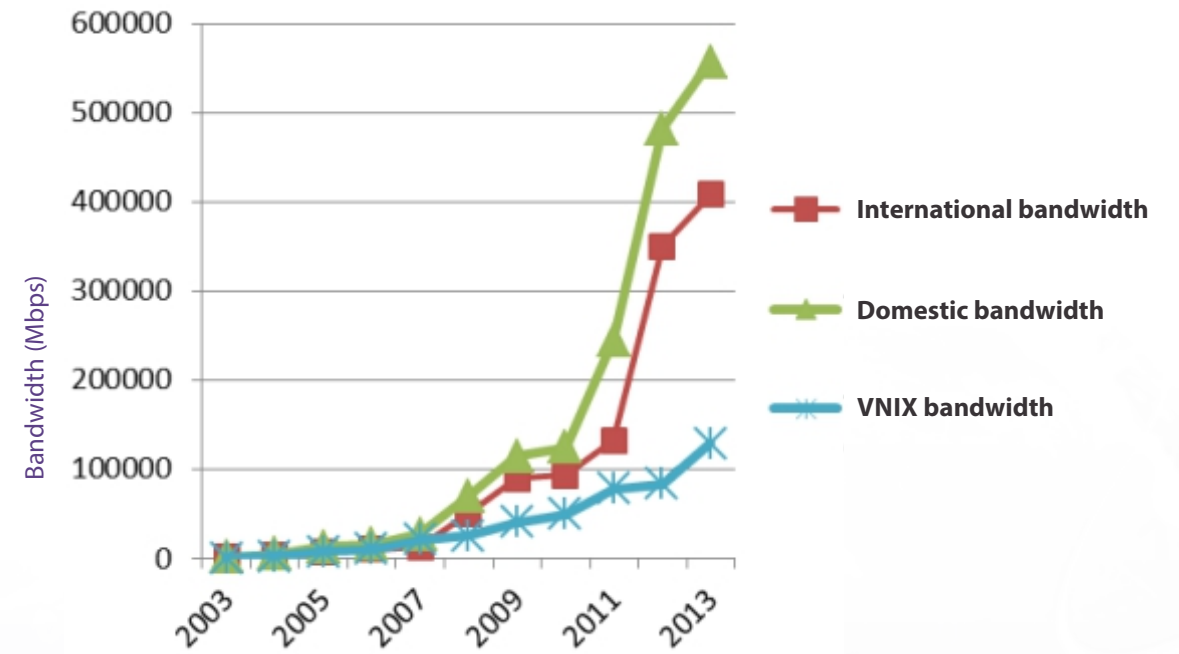
Figure 53: *Internet bandwidth in Vietnam*
(source: www.vnta.gov.vn, www.vnnic.vn)

58

59

MARKET SHARES OF ENTERPRISES

xDSL SUBSCRIBER
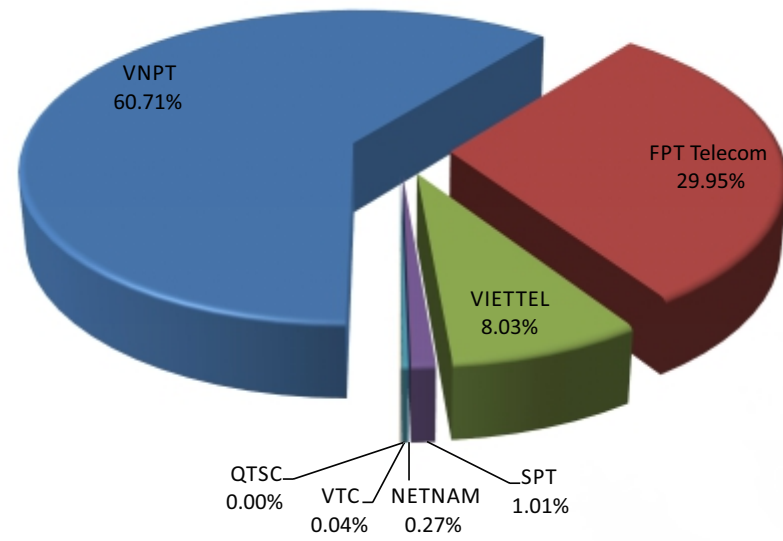
Figure 54: xDSL (Oct-2013)
(source: www.vnta.gov.vn)

LEASED LINE (256 KBPS)

Figure 56: Leased line (Oct-2013)
(Source: www.vnta.gov.vn)

DATA CARD - 3G

Figure 55: Data card 3G (Oct-2013)
(Source: www.vnta.gov.vn)

CATV SUBSCRIBER

Figure 57: CATV (Oct-2013)
(Source: www.vnta.gov.vn)

THE DEVELOPMENT OF INTERNET IN VIETNAM

II

FTTH

Figure 58: *FTTH (Oct-2013)*
(Source: www.vnta.gov.vn)

VIETNAM NATIONAL INTERNET EXCHANGE - VNIX

VIETNAM NATIONAL INTERNET EXCHANGE - VNIX

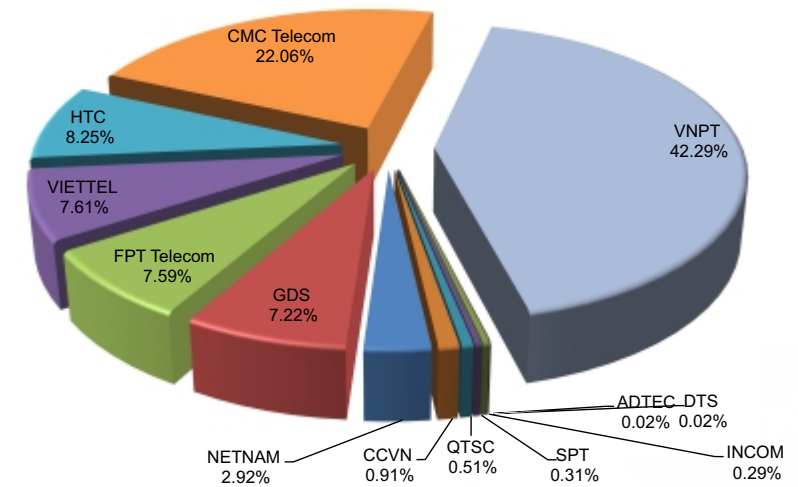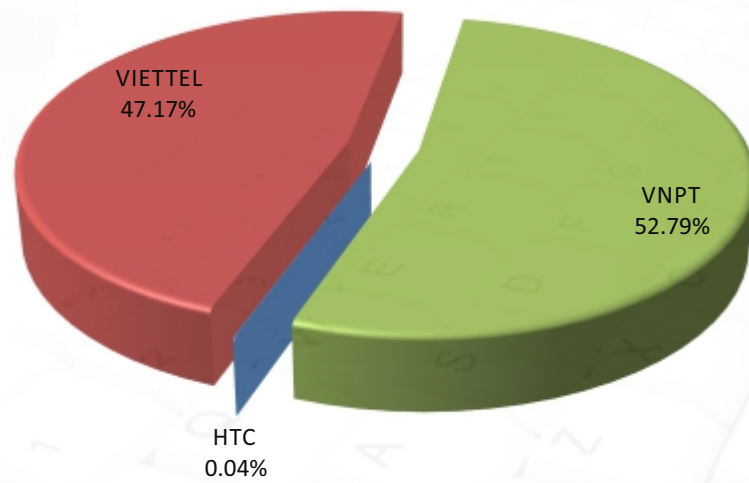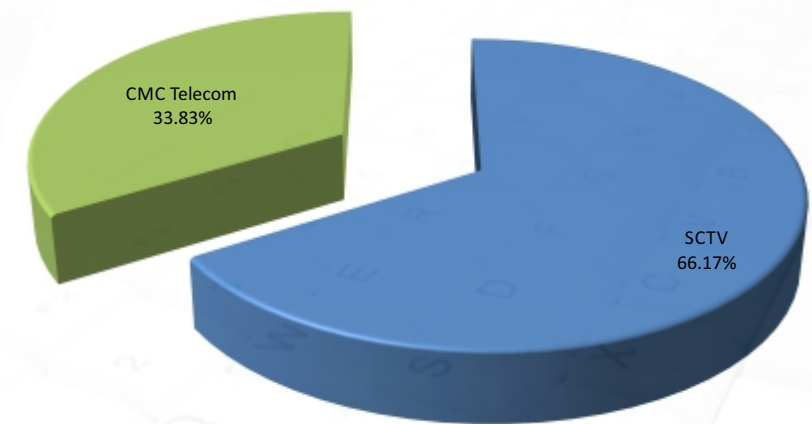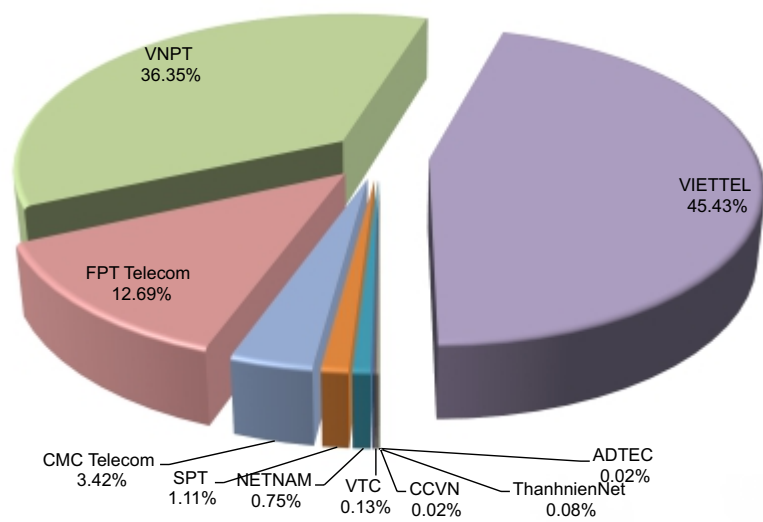During 2000s, the Internet in Vietnam was quite new with many difficulties for users such as slow connection speed and high charge. This was partly due to the insufficiency of international connection bandwidth, as well as the unfulfilled connection between ISPs. Therefore, in 2003, Ministry of Posts and Telecommunication (currently known as Ministry of Information and Communications - MIC) decided to establish the Vietnam National Internet Exchange to connect ISPs and operate on the non-profit basis. VNNIC was granted the duty to set up, manage and operate the VNIX.

After 10 years of development, VNIX has contributed greatly to the growth of Internet in Vietnam, interconnected domestic ISPs, ensured the stability of Internet services, and helped save the costs for ISPs . VNIX was also assessed as one of the most efficient national IXs in the region.

MILESTONES

| 2003	VNIX was established. The first exchange points in Hanoi with two first members were VNPT (VDC) and Viettel. Total bandwidth 2Mbps.
2004	Launch of second exchange point in HCM city. FPT were the 3rd member with port 1Gbps
2005	All members upgraded to 1Gbps (minimum requirement). This contributed to improving the Internet service.
2007	07/07 ISPs with infrastructure license connected to VNIX. Internet infrastructure was enhanced
2008	Support high speed connection 10Gbps. VNPT(VDC) was the first member to upgrade to 10Gbps.
2009	11 ISPs connected to VNIX. Decree 97/2008/NĐ-CP allowed all ISP to connect to VNIX to enhance connectivity and security of Internet in Vietnam
2010	Official launch of IPv6. VNIX ready for IPv6, support ISP connecting to form national IPv6 network
2012	Two more exchange points of VNIX in Danang and Hoa Lac - Ha noi
2013	Official launch of National IPv6 network. National IPv6 Network: based on VNIX, National DNS, ISPs. Services were officially provided to users.

GROWTH OF VNIX

At the moment, there are 17 ISPs connected to VNIX. VNIX is deployed at 03 major sites: Hanoi, Hochiminh city, Danang and 01 backup site at Hoa Lac. The total bandwidth is 130 Gbps.

The average periodical growth rate of VNIX was 1.37 times. During the first 6 months of 2013, this growth rate reached 1.55 times. Some major ISPs with high bandwidth: VNPT: 42G; Viettel: 32G; VTC: 20G; CMC Telecom 12G; VNG: 10G.

VNIX completely support IPv4//IPv6 dual stack. There are 10/17 ISPs with IPv4/IPv6 connections: VDC-VNPT, VTN-VNPT, Viettel, Netnam, FPT Telecom, SPT, VTC, SCTV, CMC Telecom, VNTT.
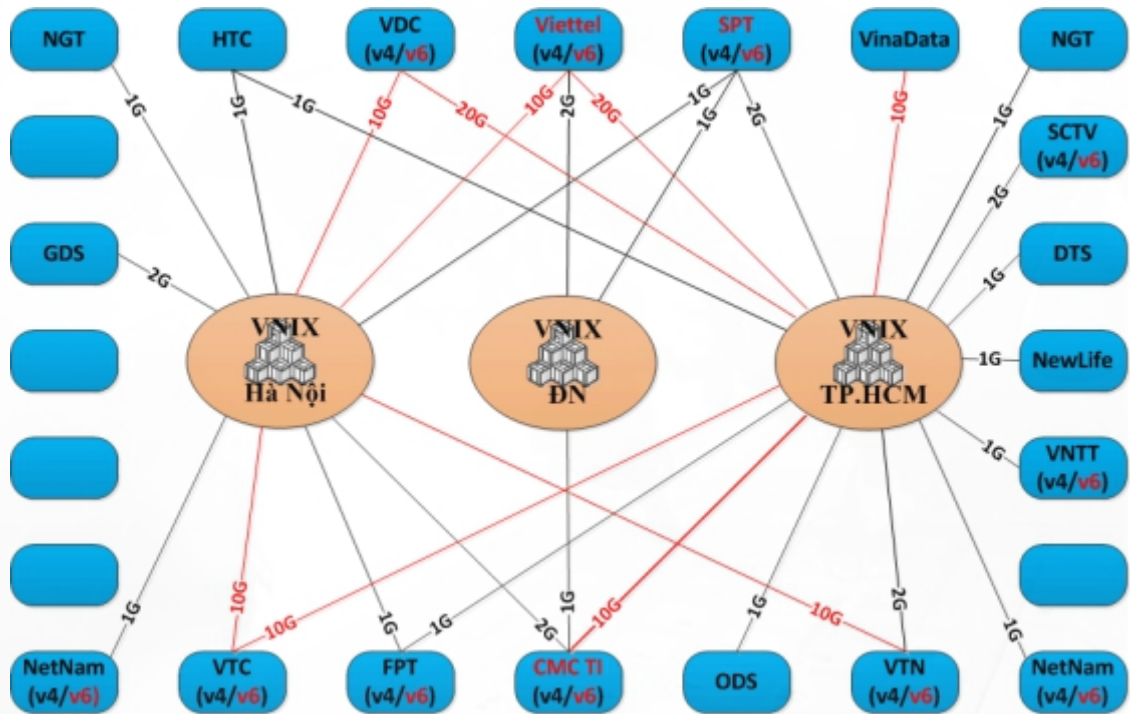
4 Exchange points	17 Members	10 IPv6 members	30 1Gbps Port	10 10Gbps Port	172.890 Tbytes exchanged

Figure 59: *VNIX Connectivity map*

BANDWIDTH AND TRAFFIC VIA VNIX

In 2013, VNIX connection bandwidth reached 130Gbps, nearly tripled the number of 2012 and equaled one third of the domestic traffic, traffic via VNIX continously increased over the years. There are 17 major ISPs connected and exchanged 172.890 Tbytes via VNIX
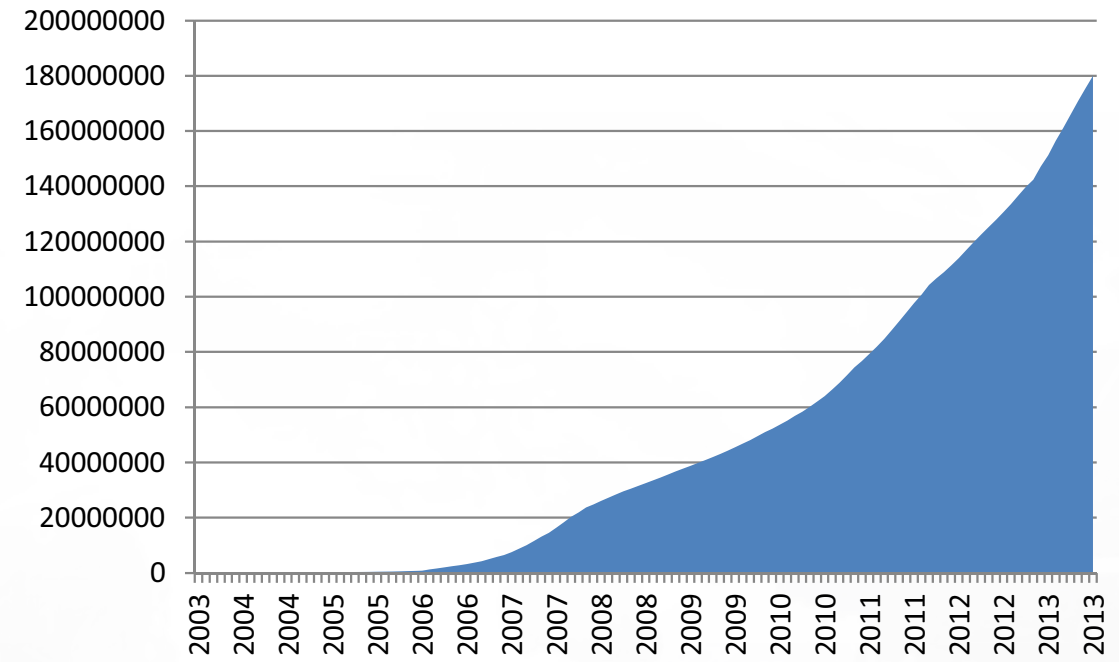

Figure 60: *Cumulative traffic via VNIX*

VNIX MEMBERS

VIETNAM INTERNET NETWORK INFORMATION CENTER (VNNIC)

Vietnam Internet Network Information Center (VNNIC), an affiliation to the Ministry of Information and Communications, was founded on 28th April 2000 to carry out the functions of managing, allocating, supervising and promoting the use of Internet domain names, addresses (IP), Autonomous System Numbers (ASN) in Vietnam (collectively called as "Internet resources"); providing Internet-related guidance, statistics on the Internet; and participating in international Internet activities.

Since its establishment, VNNIC has played an important role in the development of the Internet in Vietnam, serving as the source of information and guidance for Vietnamese Internet users, as well as promoting Vietnam's Internet development.

Remarkable milestones during the formation and development of VNNIC:

➢ **April 28th 2000:** Vietnam Internet Network Information Center (VNNIC) was established by the Department General of Post and Telecommunications (DGPT), the forerunner of Ministry of Information and Communications.

➢ **October 2000:** The functions of management and allocation of domain names, IP address and ASN in Vietnam officially taken over.

➢ **May 2001:** Became a member of Asia Pacific Top Level Domain Name Association (APLTD).

➢ **July 2001:** The functions of management and operation of DNS officially taken over, from VNPT. Completed the network and independent managed the national DNS.

➢ **November 2002:** Official name "Vietnam Internet Network Information Center" - VNNIC

➢ **March 2003:** Recognized by Asia Pacific Network Information Centre (APNIC) as the National Internet Registry of Vietnam, unique and independent management of IP addresses in Vietnam.

➢ **May 2003:** Officially providing Vietnam Internet statistics.

➢ **May 2003:** Decision No. 92/2003/QD-BBCVT on management and use of Internet resources – the first full legal document on Internet resource management which allowed individuals to register ".vn" domain names, replacing the temporary regulation documents promulgated by DGPT in November 1998 - submitted by VNNIC to the Minister of Post and Telecommunications for approval.

➢ **November 2003:** Vietnam Network Internet Exchange (VNIX) was established to exchange domestic Internet traffic, significantly improving the quality of Internet services in Vietnam.

➢ **April 2004:** Opening trial public registration for Vietnamese IDN (VIFOTECH award 2003).

July 2005: Opening the representative office in Danang City.

➢ **August 2005:** The Decision No. 27/2005/QĐ-BBCVT on management and use of Internet resources replacing Decision No. 92/2003/QD-BBCVT summited by VNNIC to the Minister of Post and Telecommunications for approval.

➢ **August 2006:** Officially opening public registration for second level domain name under ".vn".

➢ **May 2007:** Fully applying "Registry-Registrar" model for ".vn" with the basic principle of "first come, first served" in ".vn" registration. VNNIC only managed .vn database and operated national DNS

➢ **January 2008:** VNNIC's new building located in Yen Hoa, Cau Giay District, Hanoi opened.

➢ **March 2008:** Establishing VNNIC's branch in HoChiMinh City.

➢ **May 2008:** Setting up the National IPv6 pilot network.

➢ **December 2008:** The Circular No. 09/2008/TT-BTTTT on the management and use of Internet resources and the Circular No. 10/2008/TT-BTTTT on the settlement of disputes over Vietnam's country code domain name "vn", which completed the legal framework in the field of Vietnam Internet resource management summited by VNNIC to the Minister of Information and Communications for approval.

➢ **December 2008:** Deploying Anycast and dual-stack IPv4/IPv6 technologies for "vn" DNS.

➢ **January 2009:** The Vietnamese IPv6 Task Force was established, headed by Deputy Minister of Information and Communications, VNNIC plays the role of Standing Committee.

➢ **October 2009:** VNNIC's IDC project in Da Nang, Hanoi and Ho Chi Minh city kicked off.

➢ **January 2010:** The number of "vn" reached 100,000. Vietnam became the second biggest country in ASEAN in terms of using the ccTLD.

➢ **April 2011:** Opening public and free-of-charge registration for Vietnamese IDN, starting the booming period of Vietnamese IDN. For ".vn" domain name, Vietnam became the biggest country in ASEAN in terms of using the ccTLD

➢ **May 2012:** The number of ".vn" reached 200,000. Vietnam continued to be the biggest country in ASEAN in terms of using ccTLD.

➢ **May 2013:** VNNIC together with major domestic ISPs officially launched national IPv6 network, on "Vietnam IPv6 Day". National IPv6 network was built on national DNS, VNIX, ISPs' networks, in order to provide IPv6 services for users.

➢ **November 2013:** VNNIC officially became member of ccNSO - ICANN

During the 13 years of development and growth, VNNIC has affirmed its role of Internet resource management, contributing to the overall success of the Internet in Vietnam, deserving prizes and honors awarded by the State and Government. These achievements will be the stable foundation for VNNIC to keep continuous development in the future and find the suitable direction to balance the authority role and the international trend in the field of IT.

REPORT ON

VIETNAM INTERNET RESOURCES 2013

Vietnam Internet Network Information Center - Ministry of Information & Communications
Hoa Lac High-tech Park, Thach That District, Hanoi
http://www.vnnic.vn
info@vnnic.vn

Mailing Address
Vietnam Internet Network Information Center - Ministry of Information & Communications
18 Nguyen Du, Hanoi

Address:

Headquarters Ha Noi: VNNIC Buiding - Hoa Lac Hi-tech Park
Tel: 04 3556 4944
Fax: 04 3782 1462

Ho Chi Minh Office: 27 Nguyen Binh Khiem, District 1.
Tel: 08 3910 4280
Fax: 08 3910 4281

Da Nang Office: No 21, Road No 7, An Don Industrial Zone.
Tel: 0511 384 3043
Fax: 0511 384 3044