

VIET NAM INTERNET NETWORK INFORMATION CENTER

REPORT ON
VIET NAM INTERNET RESOURCES 2017



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Director of Viet Nam Internet Network Information Center

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Introduction

The *“Report on Viet Nam Internet Resources”* was first introduced in 2012 and since has become an annual publication, would provide Internet resource statistics and development results in Viet Nam. In 2017, Viet Nam Internet Network Information Center (VNNIC), in collaboration with the Information and Communications Publishing House, continued to publish the *“Report on Viet Nam Internet resources 2017”*.

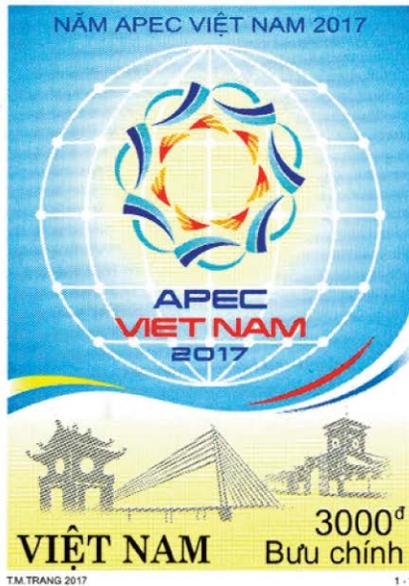
The highlight of year 2017 is the synchronization of the legal document system to empower the management and operation of “.vn” domain name transfer process. Besides, the new fee band stipulated by the Circular No. 208/2016/TT-BTC dated November 10th 2016 by Ministry of Finance has lowered the cost to use and the price of “.vn” ccTLD, also raising the commercial value of the domain. VNNIC also established and operated the registration service management system with EPP protocol for the Vietnamese Internationalized Domain Name (IDN) under the Registry-Registrar model, creating the competitive environment among Registrars that would provide Vietnamese IDN services for better quality.

2017 also witnessed the gradually increasing IPv6 deployment in the country, bringing Viet Nam to the 5th position in the list of top Asia countries with highest IPv6 adoption rate.

We expect that the *“Report on Viet Nam Internet resources 2017”* would continue to benefit the policy authorities from all reference of information and knowledge; to support enterprises and businesses to catch the popular trend of Internet resource development in Viet Nam, for better market research and activities. Any comment or feedback for this report is definitely welcome.

Thank you!

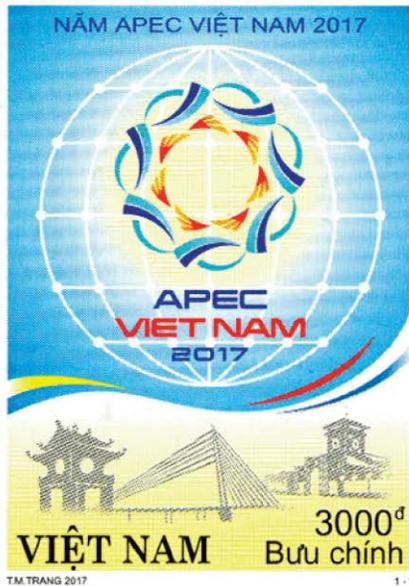
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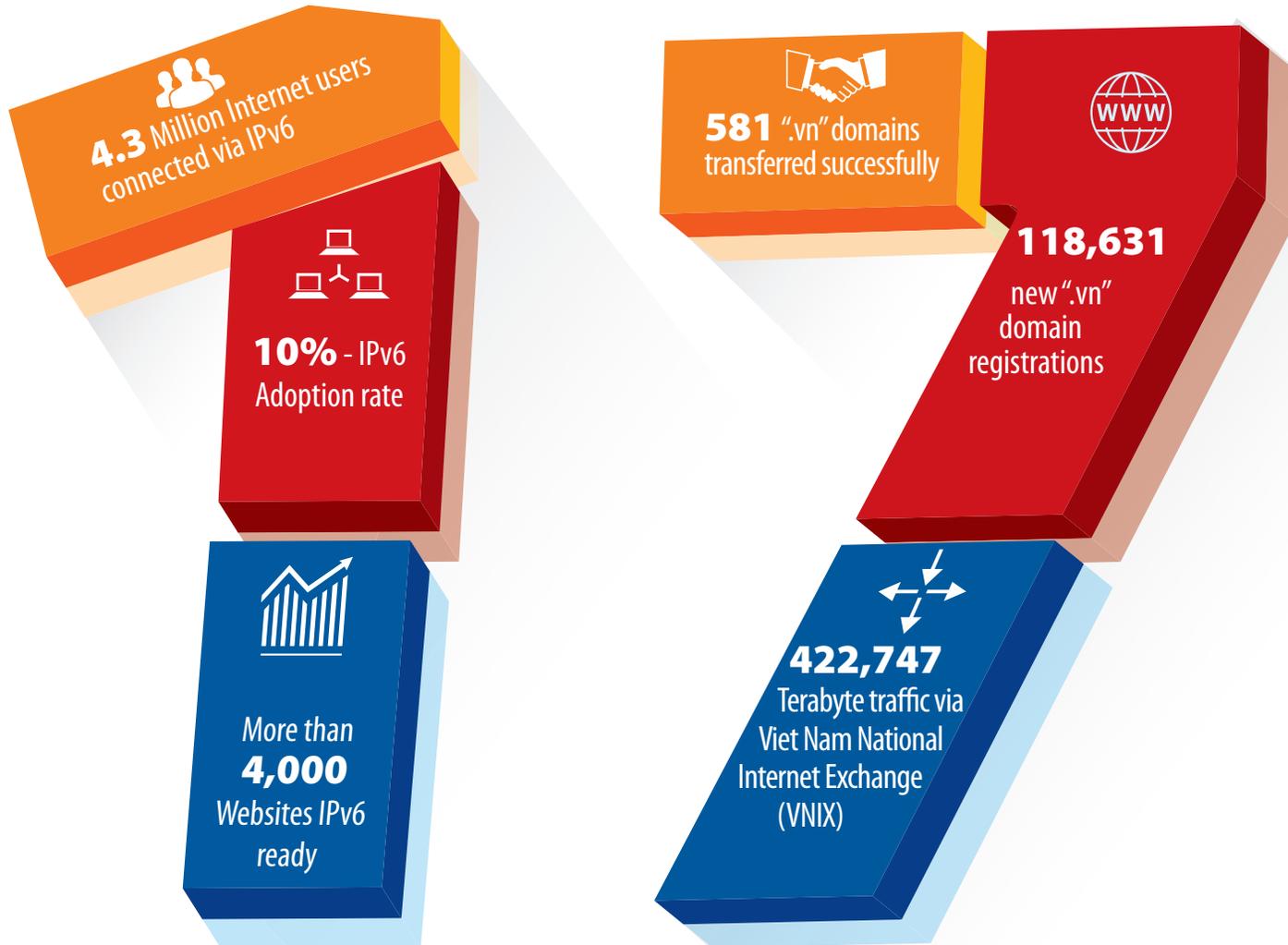


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VNNIC 2017 IN FIGURES



INTERNET RESOURCE STATISTICS IN VIET NAM 2017



1. ASCII “.VN” COUNTRY CODE TOP LEVEL DOMAIN NAME

1.1 Development trend and advantage of ccTLDs

A country code top-level domain (ccTLD) is an Internet top-level domain generally used or reserved for a country, sovereign state, or territory identified with a country code in the ISO-3166, in which “.vn” stands for Viet Nam ccTLD.

Becoming a prominent trend in the Internet space, most ccTLDs enjoy a large domestic market share advantage, with specific local targets all over the world. Using ccTLDs could benefit from search engines for country-based search results depending on the IP addresses of users.

In addition to the geographical value, using “.vn” domain name has secured the safety and sufficiency for the Internet community in Viet Nam with more updated domain services. For instance, from the beginning of 2017, VNNIC officially deployed the DNSSEC and launched the Registry Lock service for “.vn” in order to protect the domain against attack threats or unauthorized, unwanted or accidental changes.

Besides, the transfer of the right to use domain names assigned without auction was legally empowered to protect the lawful right of users.

1.2 “.vn” ccTLD in the region and in the world

“.vn” ccTLD has kept the first position in the number of registered domains in the ASEAN region since 2011, as well as reaching the 7th place in Asia’s top 10 ccTLDs with highest number of registrations (see Table 1).

Table 1: Ranking of some ccTLDs in Asia*Unit: Domains*

Rank	Country/Territory	ccTLD	Number of registrations
1	China	.cn	20,868,593
2	India	.in	2,009,048
3	Japan	.jp	1,483,779
4	Korea	.kr	1,044,481
5	Iran	.ir	918,644
6	Taiwan	.tw	723,758
7	Viet Nam	.vn	422,601
8	Malaysia	.my	327,109
9	Hongkong	.hk	278,844
10	Indonesia	.id	242,867
11	Singapore	.sg	177,684
12	Kazakhstan	.kz	132,871
13	Thailand	.th	67,188
14	Arab Saudi	.sa	50,917
15	Sri Lanka	.lk	32,697

Source: APTLD Member Statistics and Growth Report October 2017

1.3. “.vn” new registrations in 2017

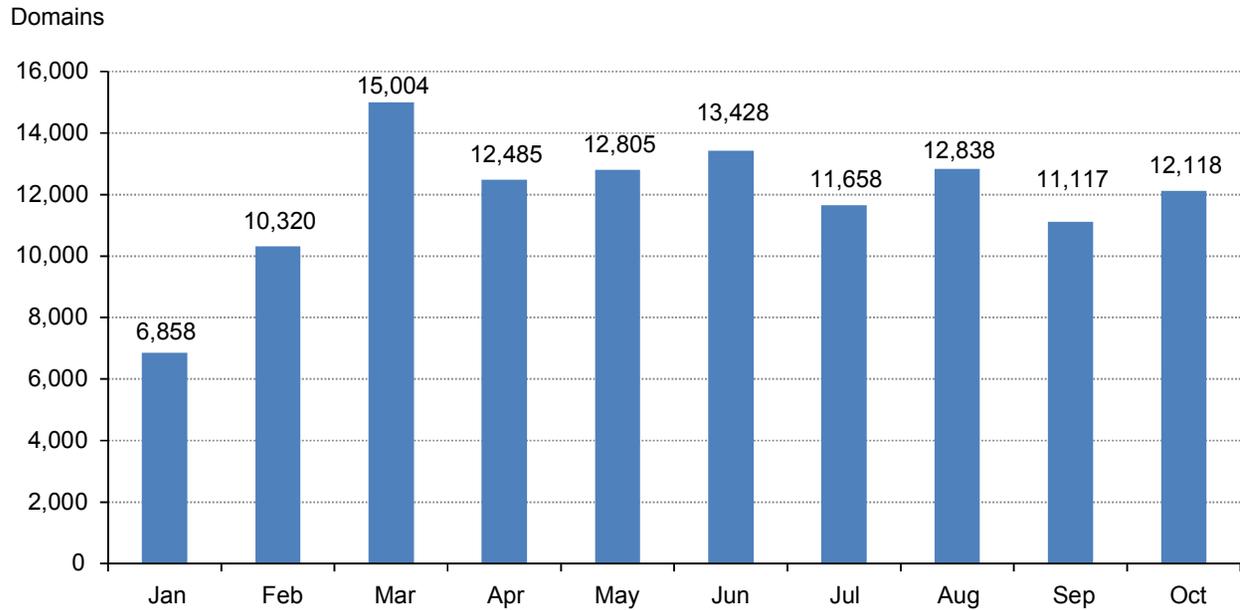


Figure 1: “.vn” domain name new registration during 2017

By October 2017, the number of new registrations in 2017 reached 118,631 domain names, increasing 111.8% in comparison with last year’s period. This achievement reflected the continuing development of “.vn” among the global domain industry thanks to new domain fee band according to Circular No. 208/2016/TT-BTC, EPP services and other value added services. This is also resulted from the efforts of VNNIC and the Registrars with the promotional activities for “.vn” ccTLD, such as enhancing the service quality for customers, strengthening the relationship with customers, improving the image of “.vn” via campaigns .etc.

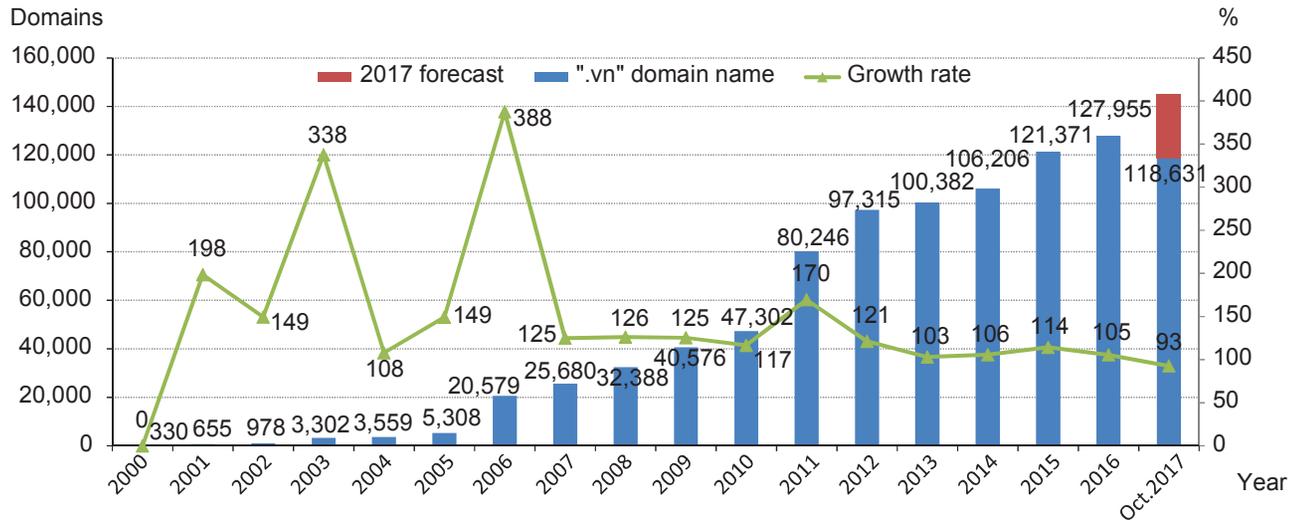


Figure 2: ".vn" ccTLD new registrations over the years

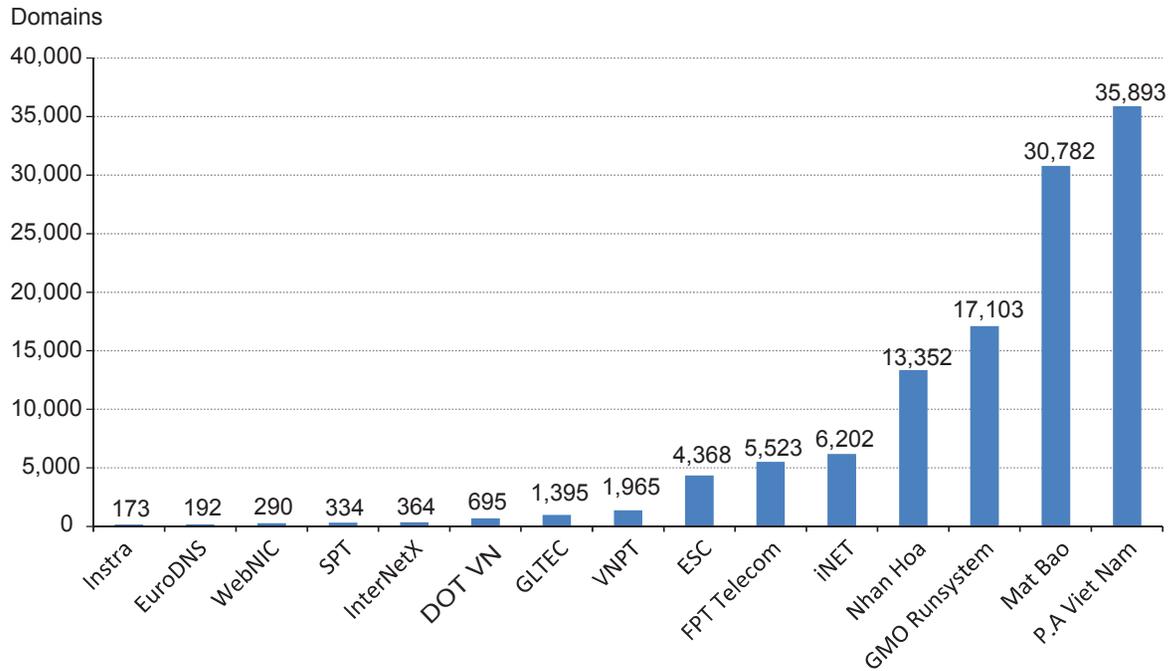


Figure 3: New registrations by Registrars in 2017 (updated to October 31st, 2017)

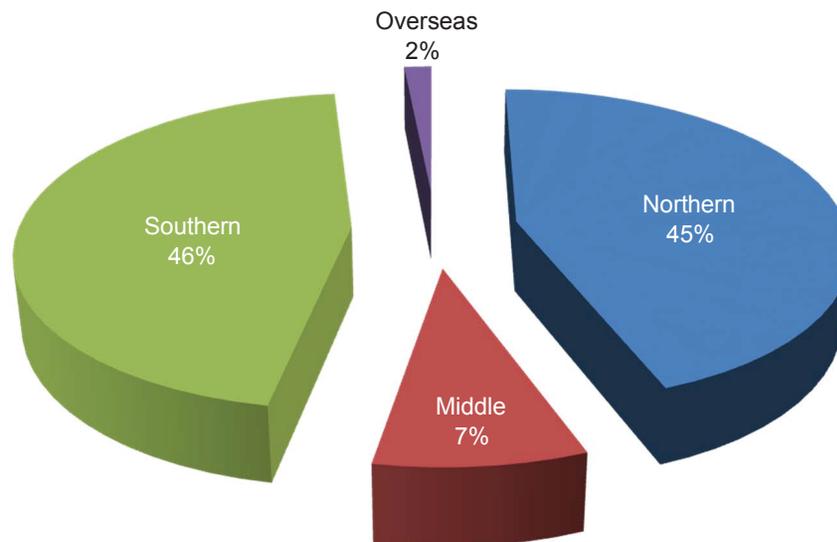


Figure 4: New registrations by geographical area

In 2017, there was not remarkable change to the new registration rate of the 4 regions: the North, the South, the Middle and abroad. Ho Chi Minh city and Ha Noi city are still having the highest number of “.vn” new registrations in 2017.

Table 2: New registrations by provinces and cities under the central government (updated to October 31st, 2017)

No.	Province/city	“.vn” registration	No.	Province/city	“.vn” registration
1	An Giang	265	5	Bac Lieu	67
2	Ba Ria - Vung Tau	754	6	Bac Ninh	733
3	Bac Giang	581	7	Ben Tre	380
4	Bac Kan	35	8	Binh Dinh	764

No.	Province/city	“.vn” registration	No.	Province/city	“.vn” registration
9	Binh Duong	1,438	29	Ho Chi Minh city	44,508
10	Binh Phuoc	262	30	Hoa Binh	276
11	Binh Thuan	363	31	Hung Yen	655
12	Ca Mau	118	32	Khanh Hoa	1,059
13	Can Tho city	565	33	Kien Giang	338
14	Cao Bang	43	34	Kon Tum	75
15	Da Nang city	2,503	35	Lai Chau	29
16	Dak Lak	527	36	Lam Dong	816
17	Dak Nong	78	37	Lang Son	105
18	Dien Bien	50	38	Lao Cai	222
19	Dong Nai	1,594	39	Long An	438
20	Dong Thap	196	40	Nam Dinh	929
21	Gia Lai	304	41	Nghe An	1,208
22	Ha Giang	41	42	Ninh Binh	402
23	Ha Nam	442	43	Ninh Thuan	187
24	Ha Noi city	42,103	44	Phu Tho	419
25	Ha Tinh	457	45	Phu Yen	182
26	Hai Duong	822	46	Quang Binh	267
27	Hai Phong city	1,527	47	Quang Nam	587
28	Hau Giang	76	48	Quang Ngai	388

No.	Province/city	".vn" registration	No.	Province/city	".vn" registration
49	Quang Ninh	513	57	Thua Thien - Hue	339
50	Quang Tri	147	58	Tien Giang	358
51	Soc Trang	89	59	Tra Vinh	310
52	Son La	84	60	Tuyen Quang	83
53	Tay Ninh	231	61	Vinh Long	180
54	Thai Binh	730	62	Vinh Phuc	585
55	Thai Nguyen	410	63	Yen Bai	171
56	Thanh Hoa	1,231			

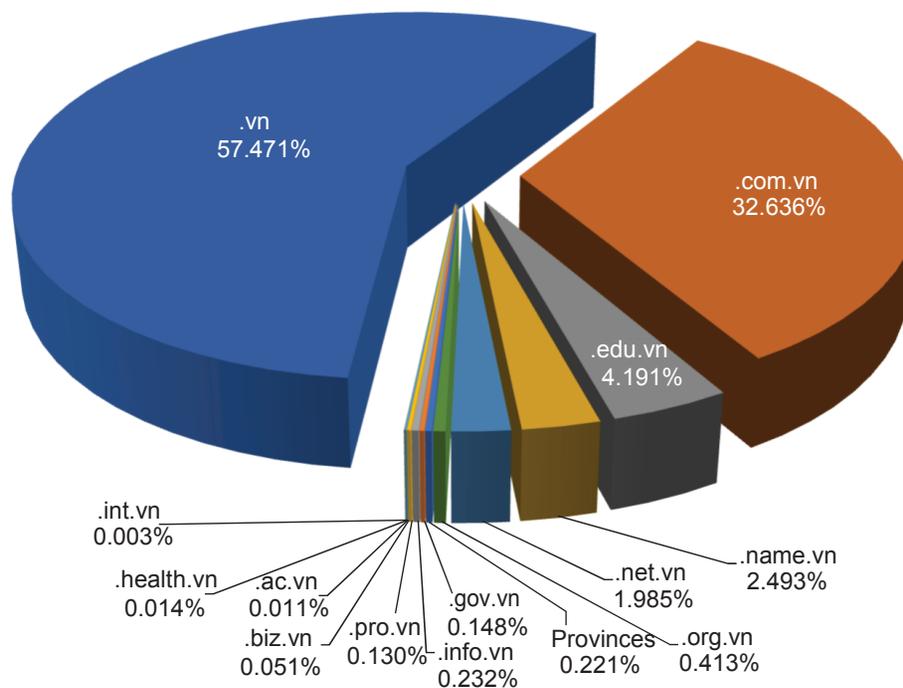


Figure 5: New registrations by extension in 2017 (updated to October 31st, 2017)

1.4 “.vn” growth over the years

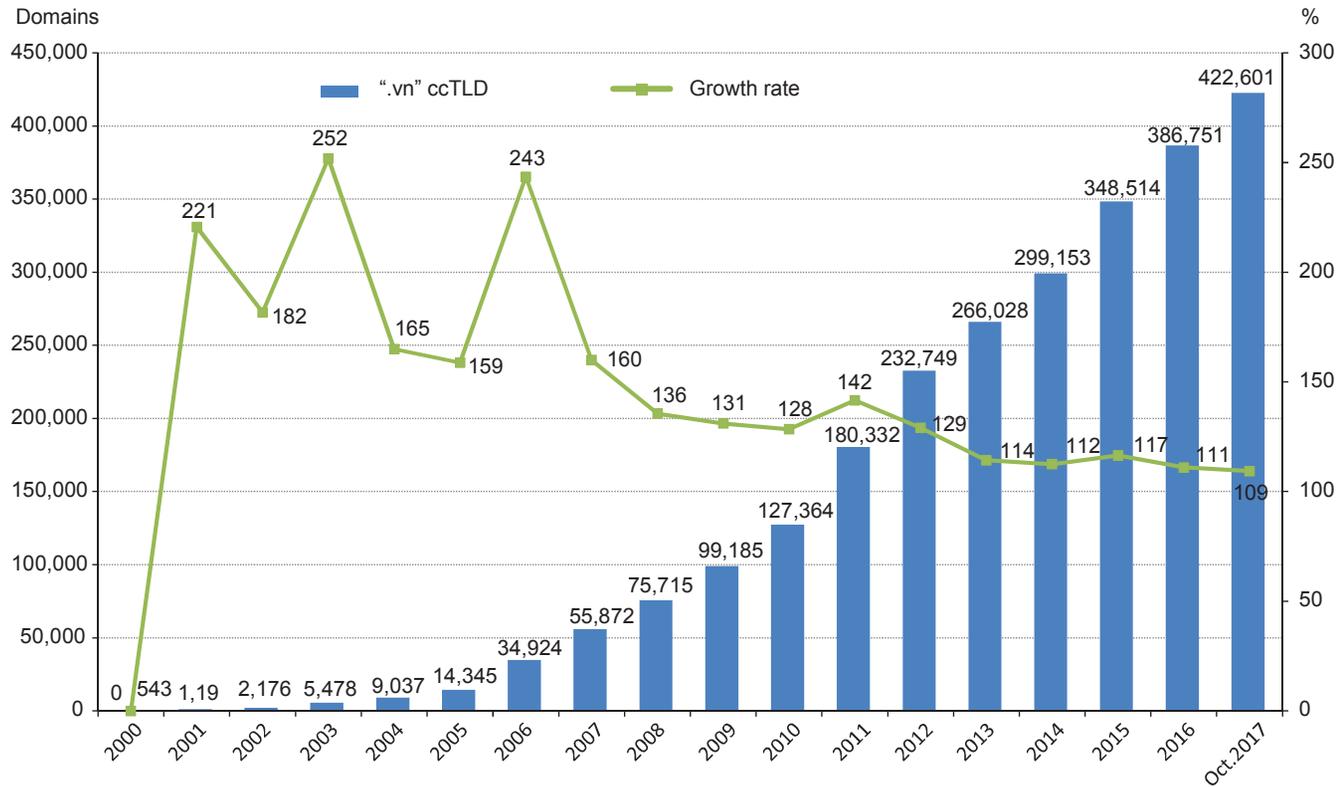


Figure 6: Cumulative number of “.vn” domain name registration and growth rate over the years

By October 2017, the growth rate of “.vn” increased stably to 110.5% in comparison with the same period last year. This development, among the ccTLDs in the region, demonstrated the prospect of a promising future of “.vn” domain name and registrants’ loyalty.

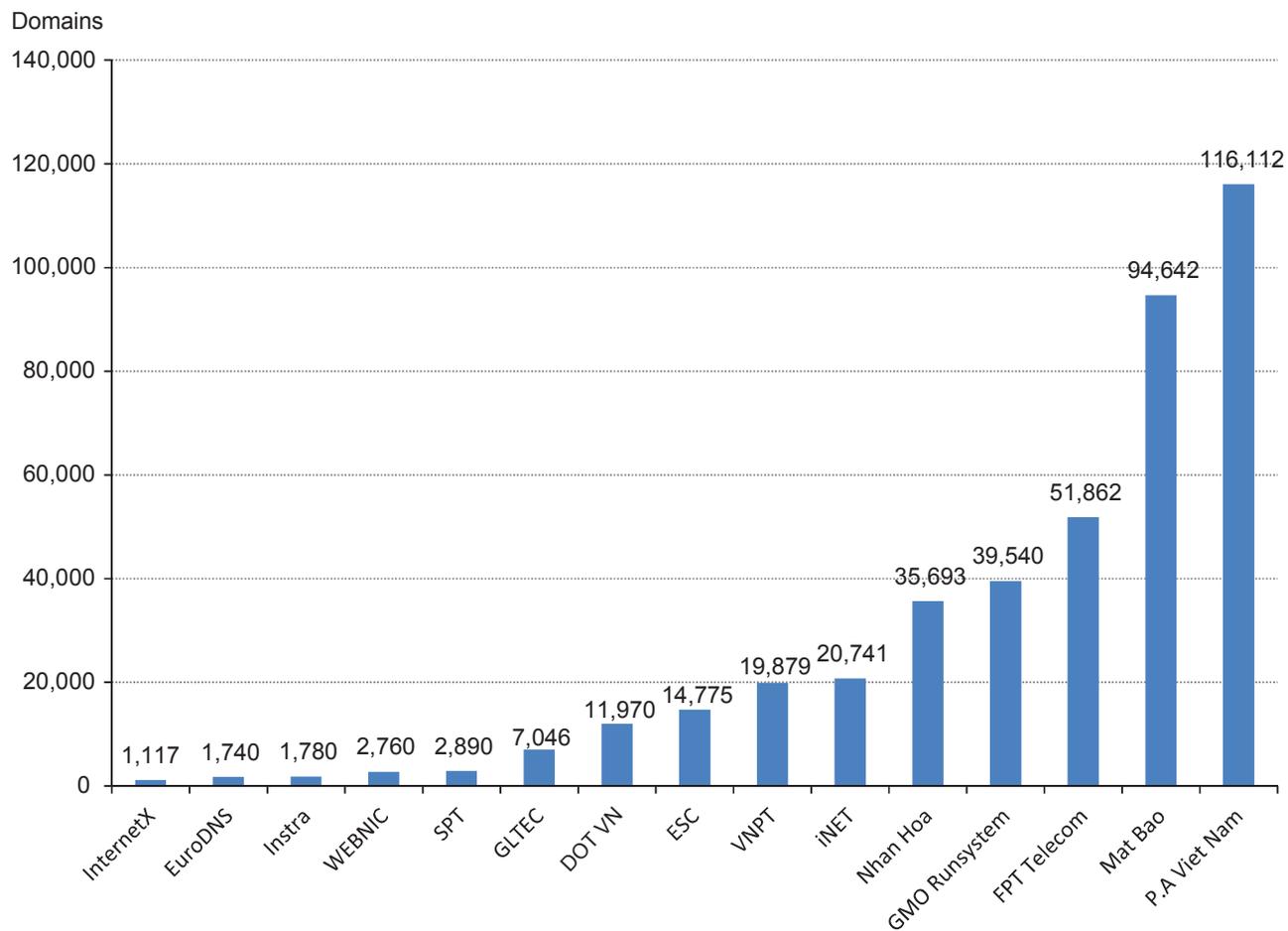


Figure 7: Cumulative number of “.vn” domain name by Registrars (updated to October 31st, 2017)

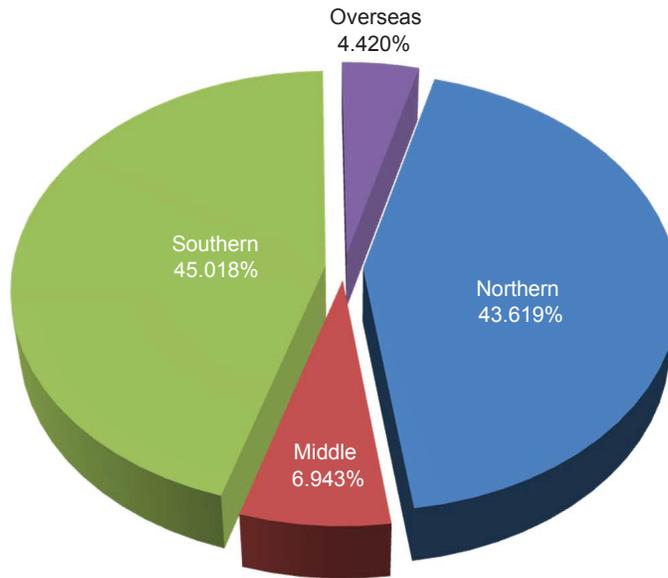


Figure 8: Cumulative number of ".vn" domain name by geographical area

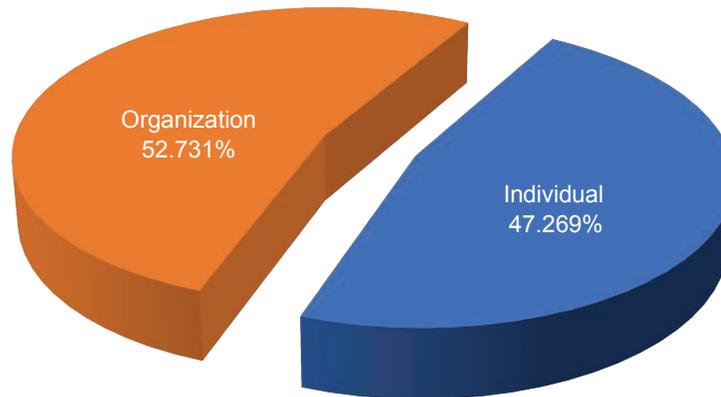


Figure 9: Cumulative number of ".vn" domain name by registrant type

Table 3: Total “.vn” domain name by provinces and cities under the central government

No.	Province/city	“.vn” count	.gov.vn count	No.	Province/city	“.vn” count	.gov.vn count
1	An Giang	848	8	23	Ha Nam	1,207	19
2	Ba Ria - Vung Tau	2,853	13	24	Ha Noi city	154,221	647
3	Bac Giang	1,539	19	25	Ha Tinh	1,107	32
4	Bac Kan	108	12	26	Hai Duong	2,423	13
5	Bac Lieu	205	10	27	Hai Phong city	5,415	43
6	Bac Ninh	2,324	11	28	Hau Giang	240	3
7	Ben Tre	1,119	11	29	Ho Chi Minh city	159,379	137
8	Binh Dinh	2,055	20	30	Hoa Binh	699	10
9	Binh Duong	5,783	24	31	Hung Yen	2,053	16
10	Binh Phuoc	765	35	32	Khanh Hoa	3,398	51
11	Binh Thuan	1,083	14	33	Kien Giang	1,093	15
12	Ca Mau	357	7	34	Kon Tum	237	11
13	Can Tho city	2,236	19	35	Lai Chau	90	5
14	Cao Bang	119	14	36	Lam Dong	2,165	17
15	Da Nang city	7,685	33	37	Lang Son	289	8
16	Dak Lak	1,631	30	38	Lao Cai	528	11
17	Dak Nong	210	5	39	Long An	1,693	9
18	Dien Bien	190	26	40	Nam Dinh	2,671	15
19	Dong Nai	5,447	30	41	Nghe An	3,072	42
20	Dong Thap	739	11	42	Ninh Binh	1,271	14
21	Gia Lai	732	10	43	Ninh Thuan	462	6
22	Ha Giang	153	5	44	Phu Tho	1,068	17

No.	Province/city	“.vn” count	.gov.vn count
45	Phu Yen	493	16
46	Quang Binh	784	20
47	Quang Nam	1,851	86
48	Quang Ngai	1,022	11
49	Quang Ninh	1,966	25
50	Quang Tri	511	27
51	Soc Trang	400	6
52	Son La	247	16
53	Tay Ninh	750	4
54	Thai Binh	2,007	7

No.	Province/city	“.vn” count	.gov.vn count
55	Thai Nguyen	1,359	25
56	Thanh Hoa	3,324	56
57	Thua Thien - Hue	1,197	12
58	Tien Giang	1,071	10
59	Tra Vinh	788	6
60	Tuyen Quang	290	27
61	Vinh Long	475	7
62	Vinh Phuc	1,655	11
63	Yen Bai	389	11

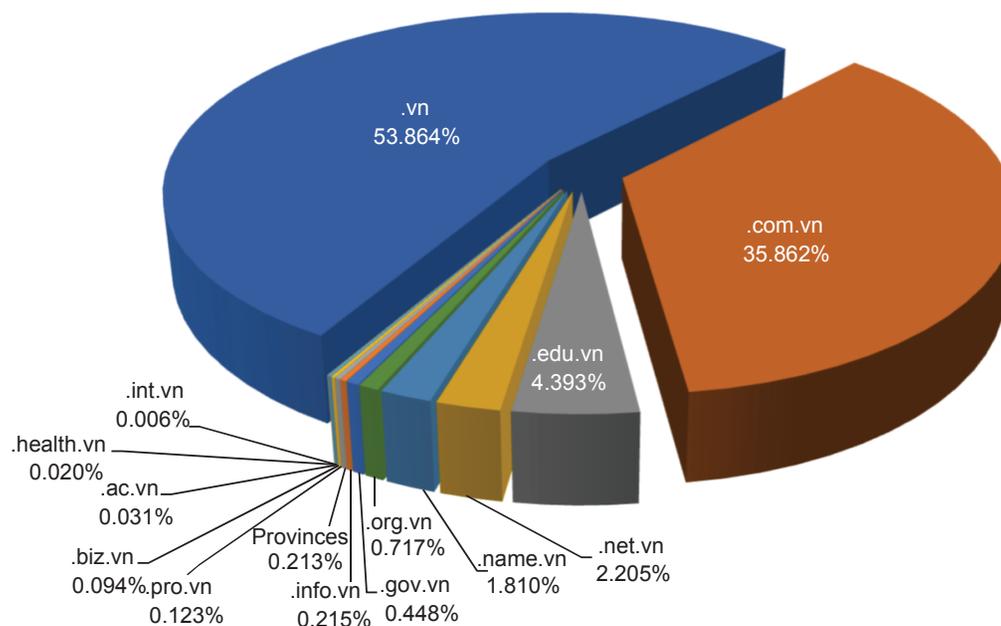


Figure 10: Cumulative number of “.vn” domain name by extension

1.5. New services added to “.vn” domain name in 2017

1.5.1. Registry Lock Service

Registry Lock is a service that provides an extra layer of security against domain name hijacking by locking the domain name at registry level, preventing the domain name from being deleted or transferred or any domain name information from being altered. Before 2017, VNNIC provided this service without any cost for domain names related to sovereign and national benefits according to Section 1 Article 8 Circular No. 24/2015/TT-BTTTT. There were 2,305 domain names falling into this category.

In 2017, VNNIC has been supporting some “.vn” domain name Registrars to experiment with locking domain service for Registrants. By October 2017, there were 5,930 “.vn” domain names registered with locking domain service by Registrars.

1.5.2. Domain transfer

Since June 1st, 2017, the transfer has been made official for the “.vn” domain names assigned without auction. Registrants can easily execute the sale, transfer the right to use legally and still keep the lawful right. The transaction should be secured and the domain service is not interrupted during the transaction.

By October 2017, the number of domain names with complete transfer transaction was 581 by almost all domestic Registrars.



Figure 11: Domain transfer by types of parties in the transaction

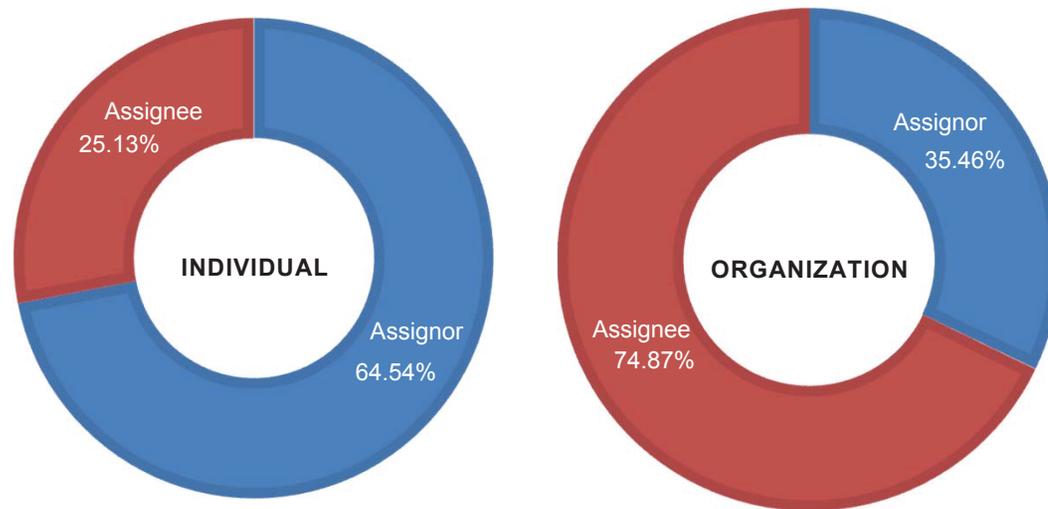


Figure 12: Domain transfer by registrant

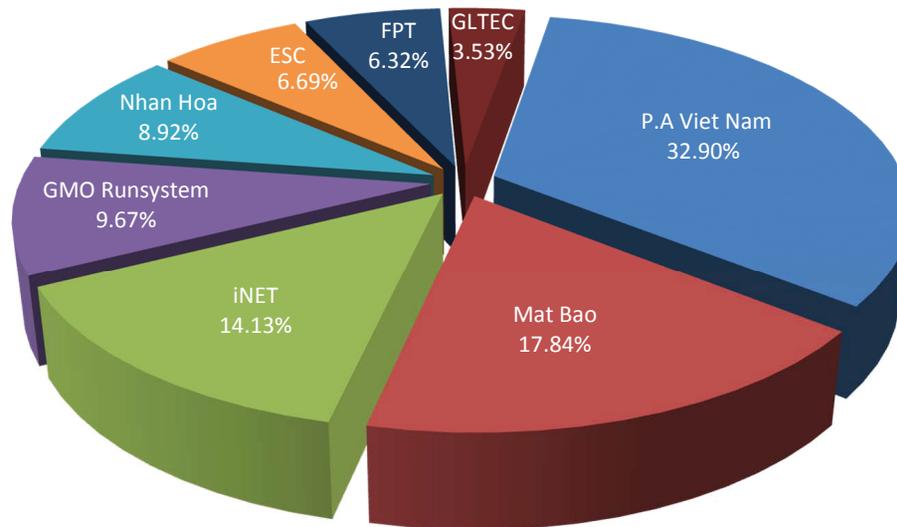


Figure 13: Domain transfer by Registrars

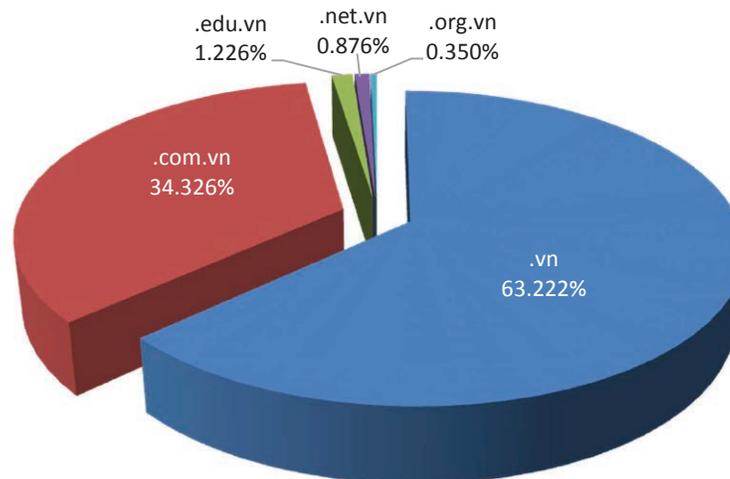


Figure 14: Domain transfer by extension

1.5.3. DNSSEC deployment on the national DNS

On December 20th, 2016, DNSSEC was officially launched on the national “.vn” DNS servers, marking a milestone of the development of Internet infrastructure in Viet Nam, with better preparation for e-commerce and e-government application.

1.6. Top 20 “.vn” ASCII domain names most queried on the national DNS

Table 4: Top 20 “.vn” ASCII domain names most queried on the national DNS

No.	Domains name	No.	Domains name	No.	Domains name
1	google.com.vn	8	mecon.vn	15	viettinbanksc.com.vn
2	dantri.com.vn	9	zing.vn	16	sanxehot.vn
3	viettel.com.vn	10	eva.vn	17	xem.vn
4	vnpt.vn	11	viettelidc.com.vn	18	nhanhoa.com.vn
5	cict.com.vn	12	yahoo.com.vn	19	ica.net.vn
6	24.com.vn	13	thanhnien.com.vn	20	kienthuc.net.vn
7	navavina.com.vn	14	tripadvisor.com.vn		

2. VIETNAMESE INTERNATIONALIZED DOMAIN NAME (VIETNAMESE IDN)

2.1. Change in the Vietnamese Internationalized domain name (Vietnamese IDN) management model in 2017

Change in the domain fee band

Since January 1st, 2017, in accordance with the Circular No. 208/2016/TT-BTC, registration fee of Vietnamese Internationalized Domain Name (IDN) still stays at 0 VND, while the renewal fee should be 20,000 VND/year (less than

1 USD) to cover the administration cost. The price for value added services for the Vietnamese IDN would be decided by the Registrars and market demand.

Change in the management model

In 2017, VNNIC completed and brought the registration service management system of Vietnamese IDN in accordance with EPP standards into effect. Now registrants could contact “.vn” Registrars to register the Vietnamese IDN, instead of dealing directly with VNNIC previously. There are now 6 Registrars to provide IDN services, including iNet, GMO-Z.com Runsystem, P.A Viet Nam, DOT VN, Nhan Hoa and ESC.

2.2. Vietnamese IDN growth in 2017

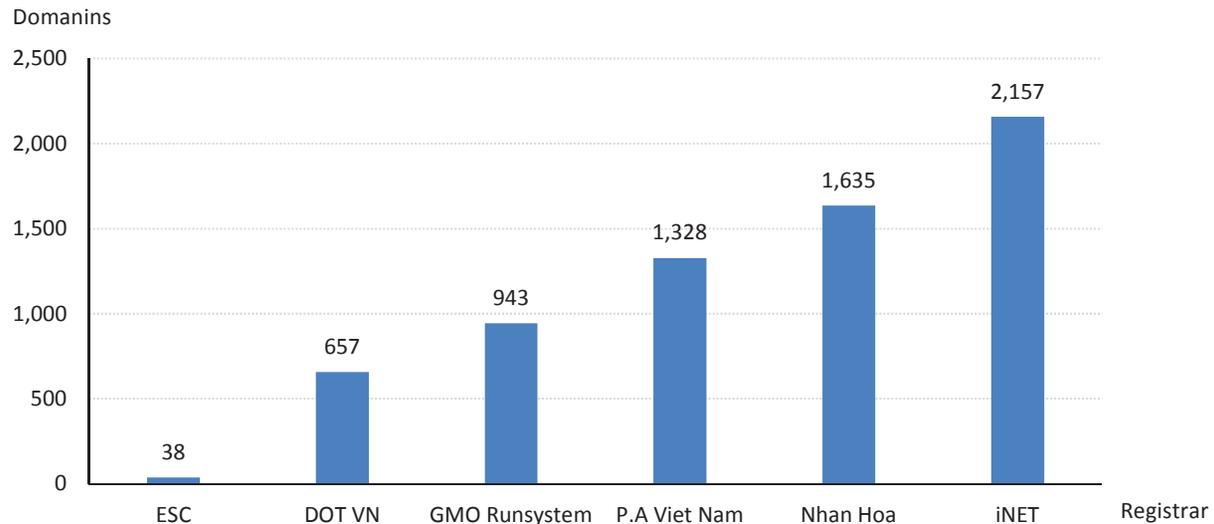


Figure 15: New IDN Registrations by Registrars

Year 2017 witnessed the breakthrough of Vietnamese IDN with major changes in fee band and adoption of ASCII “.vn” domain policies and management model, together with its value added services (Registry Lock service, domain name transfer of rights without auction, DNSSEC).

By October 31st 2017, new IDN registrations reached 6,770 domain names. The whole namespace came further to the practical use of IDN. Thanks to new service management system, more competition was created among “.vn” Registrars to provide IDN services to the public, in which they had to improve technical systems and service quality to meet the requirements and demand of customers.

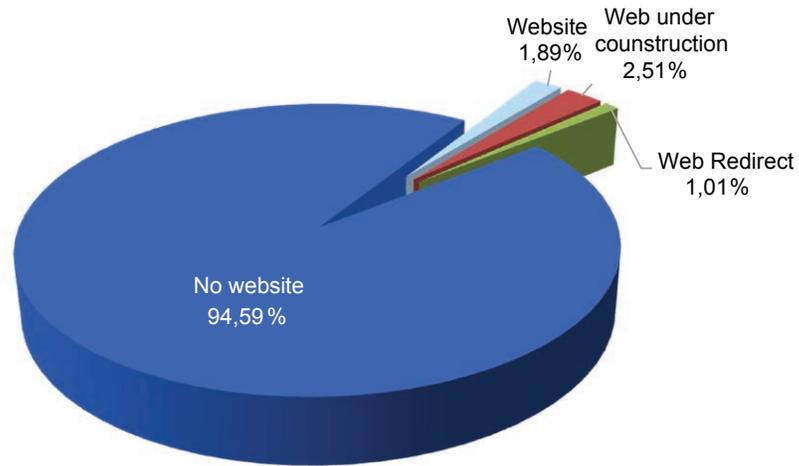


Figure 16: Vietnamese IDN with website rate

.vn

.com.vn

.edu.vn

.net.vn

.name.vn

.org.vn

.info.vn

.province

.pro.vn

.gov.vn

.biz.vn

.ac.vn

.int.vn

.health.vn

3. “.VN” DOMAIN NAME USAGE IN 2017

■ No IP address
 ■ Not connection
 ■ Parking domain
 ■ Web Error
■ Web Redirect
 ■ Web under construction
 ■ Website
 ■ Undefined

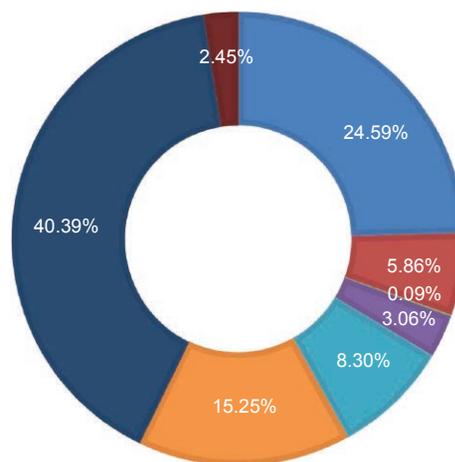


Figure 17: “.vn” usage rate (Updated to October 31st, 2017)

Table 5: Status of extentions in the “.vn” namespace

Extension	Pending Delete	No IP address	Not connection	Parking domain	Web Error	Web Redirect	Web under Construction	Undefined	Web Site
.vn	2,262	54,801	12,656	194	7,254	18,473	32,277	3,404	96,320
.com.vn	1,356	40,932	9,584	199	4,543	14,139	22,585	2,195	56,029
.net.vn	120	2,626	859	6	246	800	1,351	118	3,193
.org.vn	12	575	195	2	88	194	362	47	1,557
.gov.vn	3	108	87	0	71	118	172	42	1,293
.int.vn	0	13	2	0	1	2	3	1	2
.edu.vn	210	2,600	894	0	543	1,001	2,168	274	10,873
.pro.vn	3	129	25	0	22	43	75	7	216
.ac.vn	2	30	10	0	4	9	18	1	58
.name.vn	173	1,485	324	0	102	64	5,120	41	343
.biz.vn	3	160	30	0	13	49	50	4	89
.health.vn	4	34	13	0	4	5	9	1	14

Extension	Pending Delete	No IP address	Not connection	Parking domain	Web Error	Web Redirect	Web under Construction	Undefined	Web Site
.info.vn	20	293	55	0	24	91	129	15	282
[provinces].vn	16	144	48	0	30	76	130	12	443
Total									170,712

Table 6: The quality of Local Hosting Service and Overseas Hosting Service in the “.vn” namespace

Extension	Local Hosting						Overseas Hosting					
	Not connection	Web Error	Parking Domain	Web Redirect	Web under construction	Website	Not connection	Web Error	Parking Domain	Web Redirect	Web under construction	Website
.vn	10,277	5,522	0	11,640	27,602	80,393	2,379	1,732	194	6,833	4,674	15,926
.com.vn	8,160	3,588	0	9,689	19,814	48,201	1,423	955	199	4,450	2,771	7,828
.net.vn	816	194	0	599	1,225	2,751	42	52	6	201	126	442
.org.vn	166	77	0	138	318	1,347	29	11	2	56	44	210
.gov.vn	84	69	0	113	166	1,237	3	2	0	5	6	56
.int.vn	1	1	0	1	0	2	1	0	0	1	3	0
.edu.vn	761	400	0	799	1,883	8,911	133	143	0	202	285	1,962
.pro.vn	23	15	0	22	60	190	2	7	0	21	15	26
.ac.vn	8	3	0	4	12	52	2	1	0	5	6	6
.name.vn	289	81	0	45	5,080	238	35	21	0	19	40	105
.biz.vn	19	12	0	19	42	78	11	1	0	30	8	11
.health.vn	12	4	0	3	8	13	1	0	0	2	1	1
.info.vn	47	14	0	47	114	216	8	10	0	44	15	66
[provinces].vn	43	25	0	66	115	388	5	5	0	10	15	55
Total						144,017						26,694

4. INTERNATIONAL DOMAIN NAMES

4.1. The list of International Domain Name Registrars in Viet Nam

Table 7: The list of International Domain Name Registrars in Viet Nam

No.	Name	Website	No.	Name	Website
1	GLTEC Corporation	gltec.com.vn		Vi Nam Informatics	
2	DOT VN INC Joint Stock Company	it.vn	11	Technology Solution and Business Company Limited	vinabits.com.vn
3	Online Solutions Company Ltd	esc.vn	12	Hong Son Technology Joint Stock Company	viethost.net
4	Nhan Hoa Software Company Limited	nhanhoa.com	13	Viet Nam., Isc	vietnap.vn
5	Vietnext	vietnext.vn	14	Viet Solution E-Commerce Company Limited	vietsol.net
6	Mat Bao Corporation	matbao.vn	15	L.p.vn Informatics - Design Co., Ltd	lpvietnam.com
7	NetNam Corporation	netnam.vn	16	Trang Web Vang Company	trangwebvang.com
8	Tan Duc Technical Development and Trading Joint Stock Company	tdt-tanduc.com	17	Ht&Ecom Online Business Development Company Limited	htecom.vn
9	Viet Arrow Company	vietarrow.com	18	Vipcom Company Limited	vipcom.vn
10	PA Viet Nam Company Limited	pavietnam.vn	19	SGC Company LTD	sgc.vn

No.	Name	Website
20	Minhtriet Network Administrator Company Limited	adonlead.com
21	New Vision Technology Service Trading Company Limited	vdata.vn
22	Bachkim Network Solution Joint Stock Company	bkns.vn
23	GMO-Z.COM Runsystem Joint Stock	runksystem.net
24	IM Develop and Investment Corporation	imgroup.vn
25	INET Corporation	iNET.vn
26	Viet Khanh Company	telnetvn; vietkhanh.net
27	Nguyen Ngoc Thanh Trading Limited Company	tnd.vn
28	Digistar Company Limited	digistar.vn
29	Digital Storage Company Limited	123host.vn

No.	Name	Website
30	Digital World Data Online Company Limited	tgs.com.vn
31	Huu Nhan Online Solutions Company Limited	huunhan.vn; hnvietnam.vn
32	Online Data Services Joint Stock Company	ods.vn
33	Viet Nam Future Technology Joint Stock Company	ftech.vn
34	VIETWEB	vietweb.vn
35	Viet Hosting Company	viethosting.com
36	Viet Nam Online Software Solutions Joint Stock Company	vinaweb.vn
37	April Sea Information Technology Company Limited	maprilis.com.vn
38	Viet Nam Multimedia Service Joint Stock Company	vmms.vn
39	Vinahost Company Limited	vinahost.vn

4.2. International domain name statistics in Viet Nam

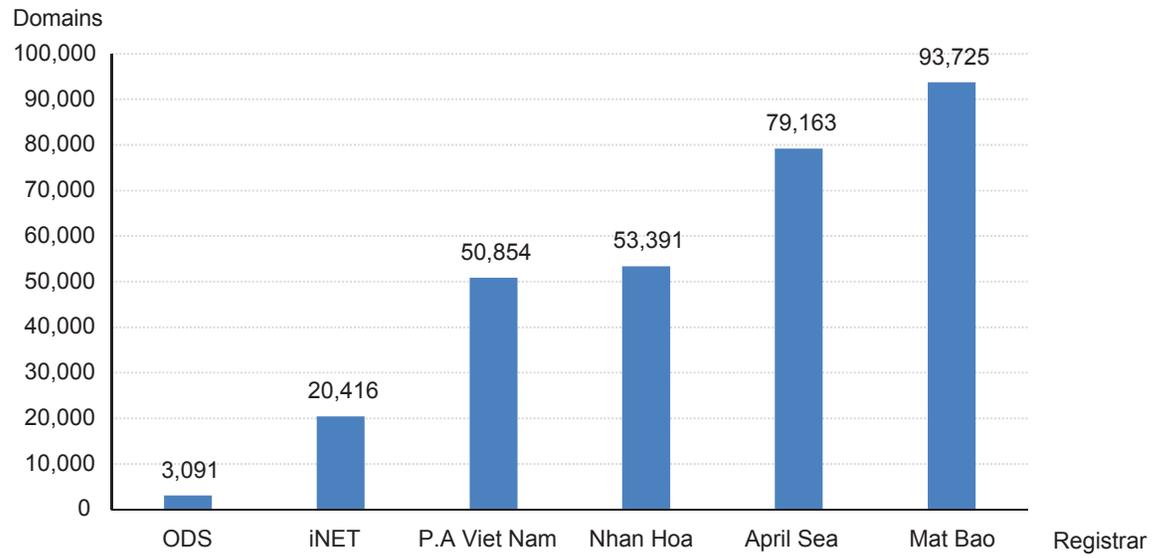
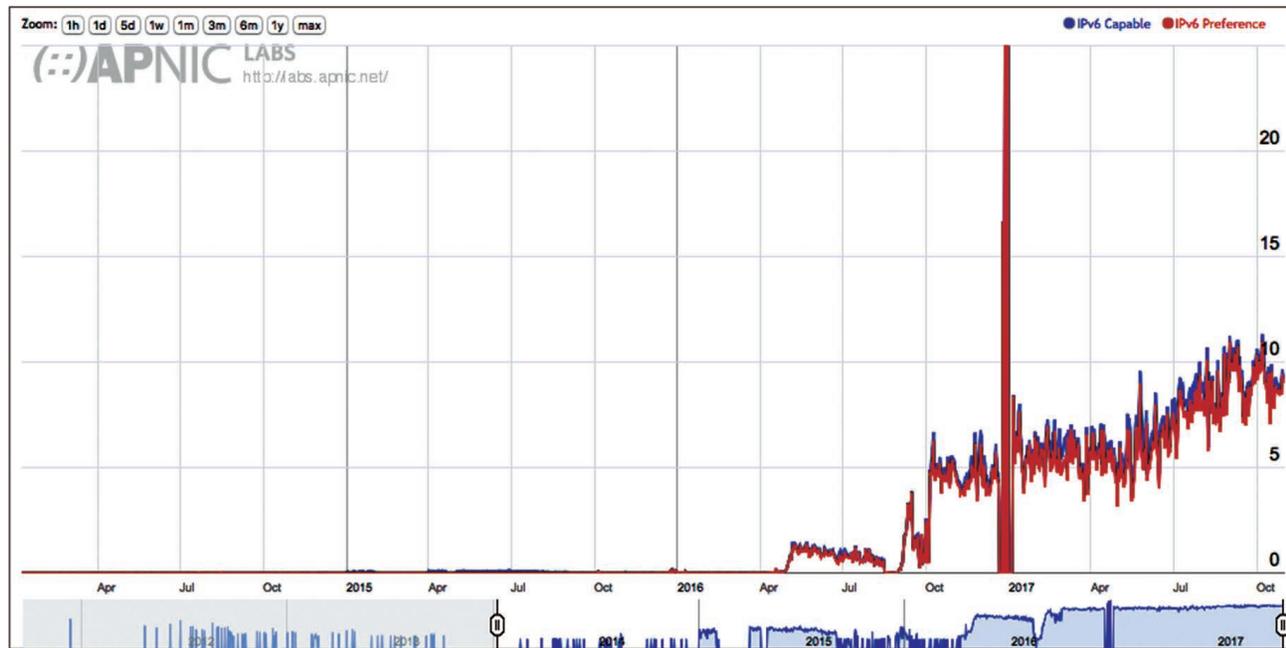


Figure 18: International domain name statistics

5. NUMBER RESOURCES (IP ADDRESS/ AUTONOMOUS SYSTEM NUMBER)

5.1. IPv6 deployment in Viet Nam in 2017



Source: APNIC

Figure 19: Use of IPv6 for Viet Nam

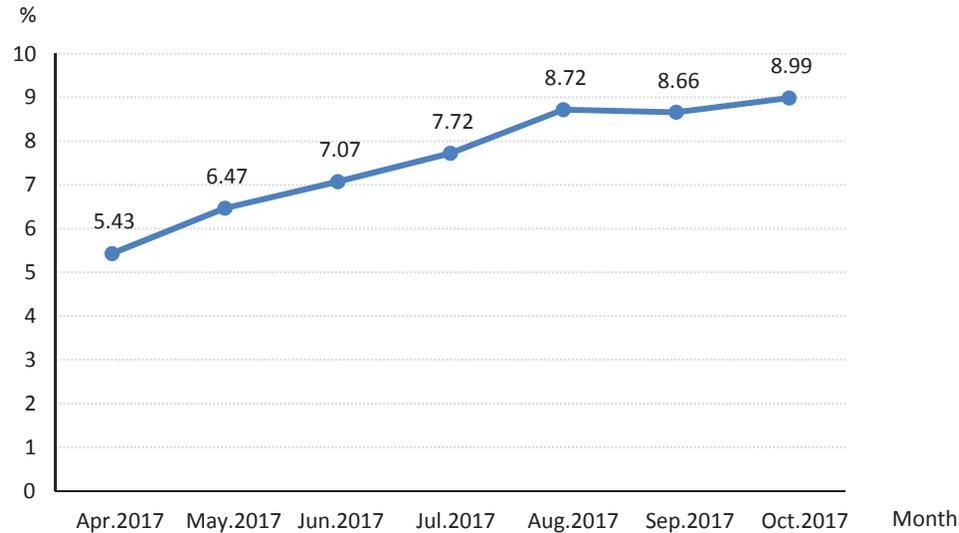


Figure 20: IPv6 user rate growth during 2017

IPv6 adoption rate in Viet Nam rose considerably since April 2016. According to APNIC statistics, by October 2017, IPv6 adoption rate of Viet Nam reached about 10% (almost 4.3 million IPv6 users), standing at the third place in the ASEAN region (after Malaysia and Thailand), the fifth in Asia (after India, Japan, Malaysia and Thailand).



(Source: Cisco)

Figure 21: Viet Nam IPv6 user rate growth

Table 8: IPv6 adoption rate by ISPs (updated on October 31st, 2017)

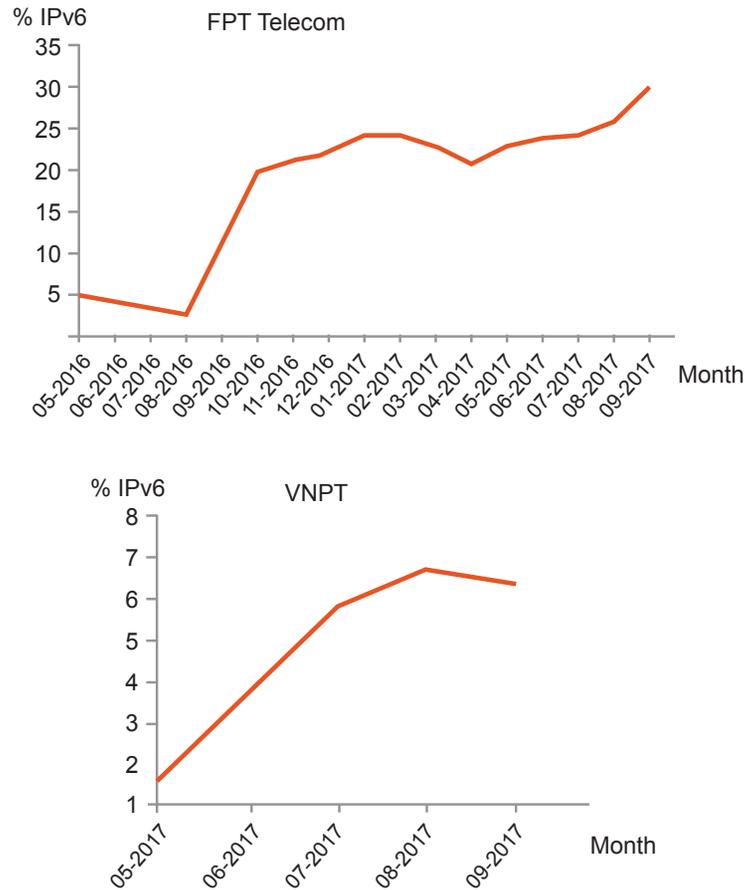
No.	ASN	ISP	IPv6 adoption rate
1	AS18403	FPT Telecom	34.61%
2	AS45899	VNPT Group	7.92%
3	AS38732	CMC Telecom	1.20%
4	AS38731	Viettel CHT	0.28%
5	AS24173	NetNam	0.40%
6	AS45538	ODS	0.18%

No.	ASN	ISP	IPv6 adoption rate
7	AS45544	Superdata	0.09%
8	AS131429	MobiFone	0.05%
9	AS24085	QTSC	0.02%
10	AS45543	SCTV	0.07%
11	AS7552	VIETTEL Group	0.02%
12	AS7602	SPT	0.03%
13	AS38247	VIETNAMOBILE	0.01%
14	AS38726	VTC DIGICOM	0.02%
15	AS24088	HANOITELECOM	0.00%
16	AS45557	VNTT	0.03%
17	AS45539	VTCWLB	0.02%
18	AS45896	MobiFone Global	0.07%

Source: APNIC

Two major ISPs including FPT Telecom and VNPT have achieved great results in IPv6 deployment:

- By July 2017, FPT Telecom provided IPv6 services to about 882,230 FTTH subscribers. Till October 31st, 2017, international traffic via IPv6 of FPT Telecom reached 34.61% (source: APNIC).
- By July 2017, VNPT had deployed IPv6 for more than 500.000 FTTH subscribers in 22 provinces and cities; piloted the 4G LTE service on IPv6; international traffic via IPv6 climbed from 0.03% in January 2017 to 7.92% at the end of October 2017 (source: APNIC).



Source: World IPv6 Launch

Figure 22: IPv6 deployment of FPT Telecom and VNPT (by October 31st, 2017)

In the content area, VnExpress was the first to move their main content page to IPv6 with 13 Websites successfully transitioned, including the main Website: Vnexpress.net; domestic IPv6 traffic reached 6.5%, while international traffic reached 13% with 1,034,000 users accessing over IPv6 per day.

5.2. IPv6 Enabled Websites List

In 2017, there were 4,156 IPv6 Enabled Websites within “.vn”, as follows:

No.	Extension	Number of domains
1	.gov.vn	19
2	.edu.vn	530
3	.com.vn	973
4	.net.vn	66
5	.name.vn	16
6	.org.vn	44
7	.vn	2,508
Total		4,156

Table 9: IPv6 Enabled Websites List

No.	Site	Organization
1	Mic.gov.vn	Ministry of Information and Communications (MIC)
2	Vnnic.vn	Viet Nam Internet Network Information Center (VNNIC)
3	Vietnamipv6ready.vn	Viet Nam Internet Network Information Center (VNNIC)
4	Ipv6event.vn	Viet Nam Internet Network Information Center (VNNIC)
5	2012.Ipv6event.vn	Viet Nam Internet Network Information Center (VNNIC)
6	2013.Ipv6event.vn	Viet Nam Internet Network Information Center (VNNIC)
7	2014.Ipv6event.vn	Viet Nam Internet Network Information Center (VNNIC)
8	2015.Ipv6event.vn	Viet Nam Internet Network Information Center (VNNIC)
9	2016.Ipv6event.vn	Viet Nam Internet Network Information Center (VNNIC)
10	ccklbinhduong.gov.vn	Department of Agriculture and Rural Development Binh Duong Province

No.	Site	Organization
11	qlclbinhduong.gov.vn	Department of Agriculture and Rural Development Binh Duong Province
12	ccttbvtvbinhduong.gov.vn	Department of Agriculture and Rural Development Binh Duong Province
13	ttnbinhduong.gov.vn	Department of Agriculture and Rural Development Binh Duong Province
14	cctlbinhduong.gov.vn	Department of Agriculture and Rural Development Binh Duong Province
15	bqlrphbinhduong.gov.vn	Department of Agriculture and Rural Development Binh Duong Province
16	bqldannptntbinhduong.gov.vn	Department of Agriculture and Rural Development Binh Duong Province
17	vdpbinhduong.gov.vn	Department of Agriculture and Rural Development Binh Duong Province
18	financepublishinghouse.gov.vn	Finance Publishing House
19	nhaxuatbanbotaichinh.gov.vn	Finance Publishing House
20	nxbtc.gov.vn	Finance Publishing House
21	sachnxbtc.gov.vn	Finance Publishing House
22	nhaxuatbantaichinh.gov.vn	Finance Publishing House
23	nxbtcotaichinh.gov.vn	Finance Publishing House
24	xuatbantaichinh.gov.vn	Finance Publishing House
25	xbtc.gov.vn	Finance Publishing House
26	xbtaichinh.gov.vn	Finance Publishing House
27	xuatbantc.gov.vn	Finance Publishing House

IPv6 enabled Websites should be applied for IPv6 W/W Logo of IPv6 Forum. Viet Nam already has 33 Websites which were certified.

Table 10: List of Websites with IPv6 Ready Logo

No.	Website	Organization
1	www.vnnic.vn	Viet Nam Internet Network Information Center (VNNIC)
2	Vietnamipv6ready.vn	Viet Nam Internet Network Information Center (VNNIC)
3	ipv6event.vn	Viet Nam Internet Network Information Center (VNNIC)

No.	Website	Organization
4	2014.ipv6event.vn	Viet Nam Internet Network Information Center (VNNIC)
5	2015.ipv6event.vn	Viet Nam Internet Network Information Center (VNNIC)
6	2016.ipv6event.vn	Viet Nam Internet Network Information Center (VNNIC)
7	www.fshare.vn	FPT Telecom
8	fsend.vn	FPT Telecom
9	billingonline.ivoice.com.vn	FPT Telecom
10	office365.fpt.vn	FPT Telecom
11	www.startalk.vn	FPT Telecom
12	abcplay.net	FPT Telecom
13	mix166.com	FPT Telecom
14	ods.fpt.net	FPT Telecom
15	truyenhinh.fpt.vn	FPT Telecom
16	fpt.vn	FPT Telecom
17	ipv6.fpt.vn	FPT Telecom
18	member.hcm.fpt.vn	FPT Telecom
19	member.fpt.vn	FPT Telecom
20	ipv6.hcmc.netnam.vn	NetNam Corporation
21	www.hcmc.netnam.vn	NetNam Corporation
22	hcmc.netnam.vn	NetNam Corporation
23	go6.vn	NetNam Corporation
24	tunnelbroker.netnam.vn	NetNam Corporation
25	www.ipv6.net.vn	NetNam Corporation
26	www.netnam.vn	NetNam Corporation
27	usth.edu.vn	Ha Noi University of Science and Technology

No.	Website	Organization
28	vfossa.vn	VFOSSA
29	hfh.com.vn	The French Hospital of Ha Noi
30	virror.hanoilug.org	Viet Nam mirror for FLOSS
31	vntt.com.vn	Viet Nam Technology & Telecommunication JSC
32	viettelidc.com.vn	Viettel IDC
33	www.vietnamhosts.com	Tinh Thong Corporation

Source: IPv6 Forum

5.3. Cumulative numbers of IP addresses and ASNs

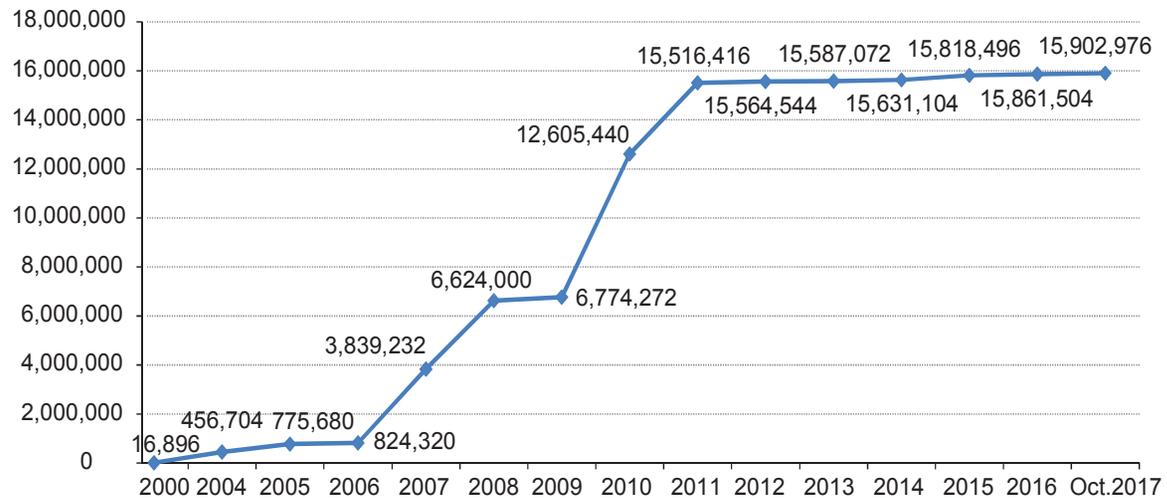


Figure 23: IPv4 growth over the year

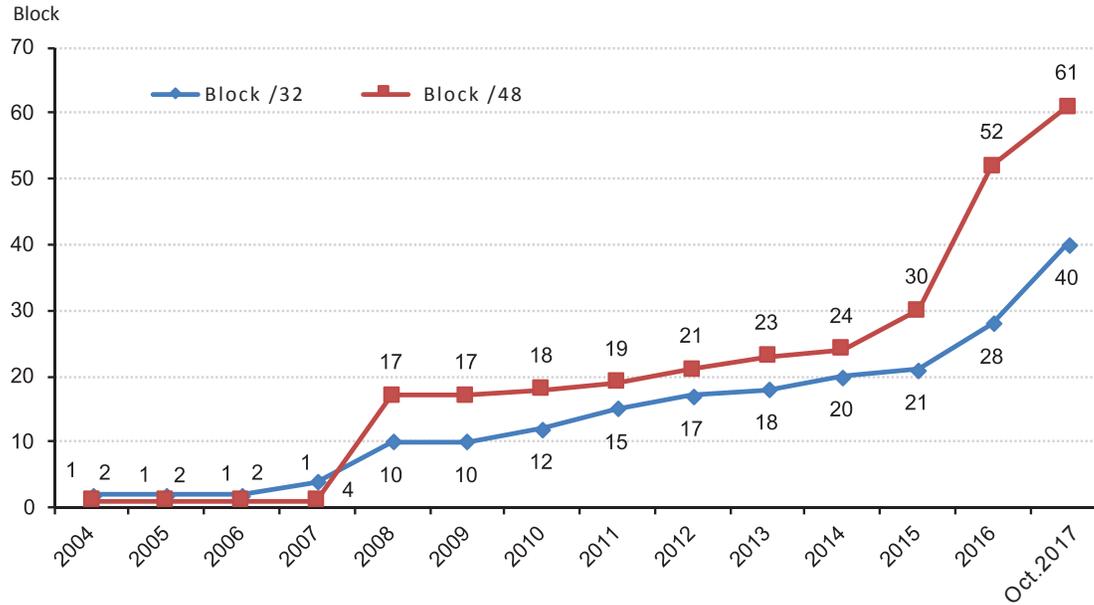


Figure 24: IPv6 growth over the years

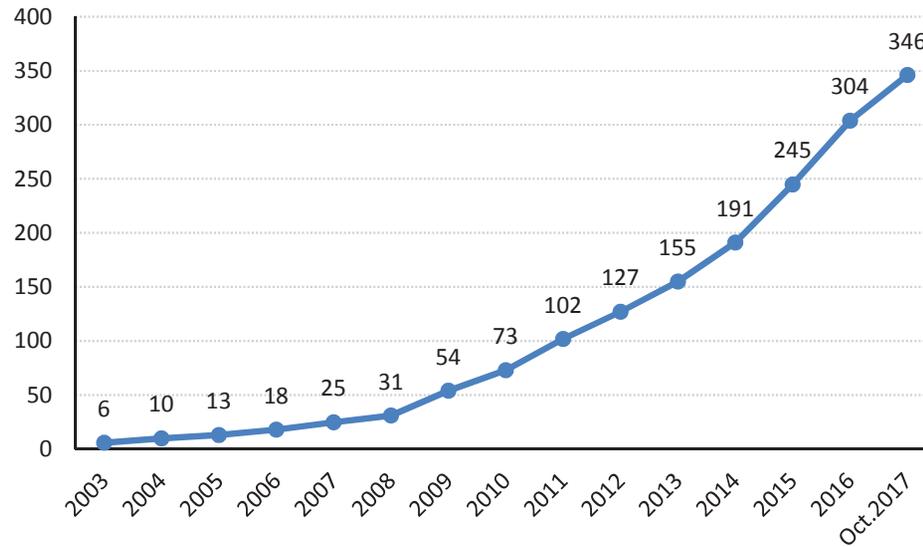


Figure 25: Cumulative IP members over the years

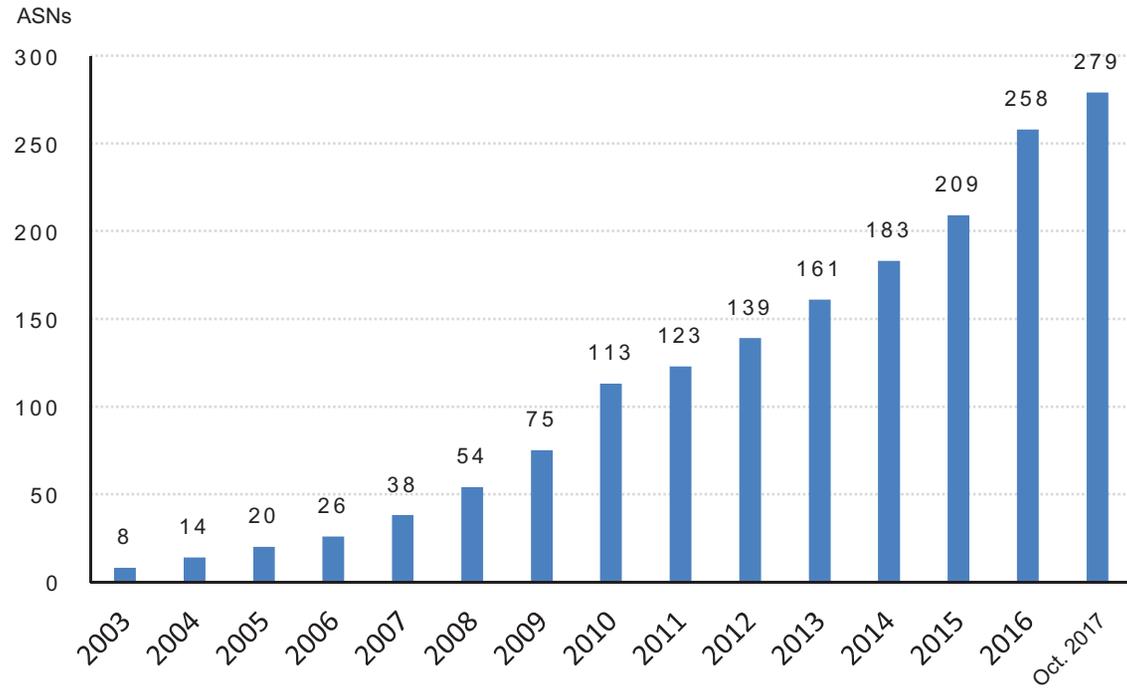


Figure 26: Cumulative ASNs over the years

VIET NAM NATIONAL INTERNET EXCHANGE – VNIX



Internet Exchange Point (IX) which is a physical infrastructure plays a crucial role for the development of Internet, allows different type of independent networks to interconnect using the IP and exchange Internet data traffic between independent networks (ASN).

Viet Nam National Internet eXchange (VNIX) was established in November, 2003 to develop, enhance and improve the quality and security of Internet in Viet Nam. The legal framework for the management of Internet connection and operation of VNIX was promulgated in the Decree No. 72/2013/ND-CP on July 15th, 2013, on the management, provision and use of Internet services and Internet Information. VNIX is operated according to BGP layer 2, supports IPv4/IPv6 dual stack with Router Server (RS) managing routing information exchange with participants' routers between which Internet traffic exchanges directly. Any information is updated on the website <https://vnnic.vn/vnix>.

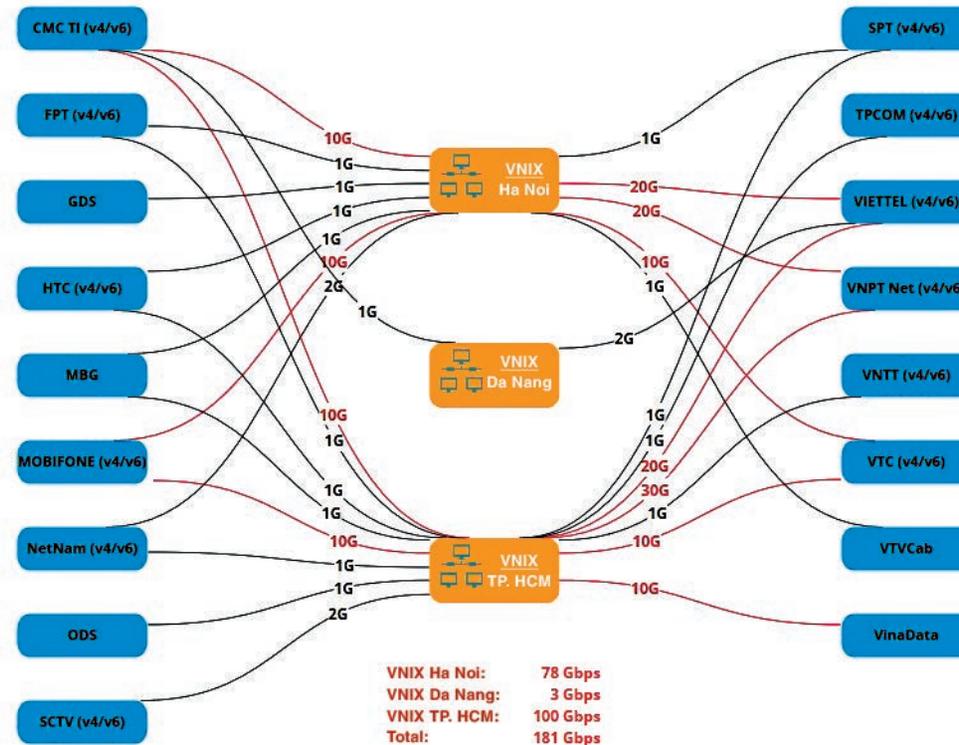


Figure 27: VNIX connection

Throughout the development, VNIX has been contributing greatly to the growth of Internet in Viet Nam, via 3 regions: the North (Yen Hoa and Hoa Lac Hi-Tech Park in Ha Noi city), the Middle (An Don industrial zone in Da Nang city) and the South (Tan Thuan export processing zone in Ho Chi Minh city).

1. VNIX MEMBERS

Starting from 02 members (VNPT and Viettel) at the beginning in 2003, VNIX now has 17 members (including the major ISPs in Viet Nam) with connection bandwidth reaching 181Gbps.

Table 11: Members of VNIX

No.	Member	VNIX Ha Noi	VNIX Ho Chi Minh	VNIX Da Nang
1	VNPT-NET	20 Gbps	30 Gbps	
2	VIETTEL	20 Gbps	20 Gbps	02 Gbps
3	CMC TI	10 Gbps	10 Gbps	01 Gbps
4	MOBIFONE	10 Gbps	10 Gbps	
5	VTC Intecom	10 Gbps	10 Gbps	
6	VinaData		10 Gbps	
7	NetNam	02 Gbps	01 Gbps	
8	GDS	02 Gbps		
9	SCTV		02 Gbps	
10	FPT TELECOM	01 Gbps	01 Gbps	
11	SPT	01 Gbps	01 Gbps	
12	HTC	01 Gbps	01 Gbps	

No.	Member	VNIX Ha Noi	VNIX Ho Chi Minh	VNIX Da Nang
13	MOBIFONE Global	01 Gbps	01 Gbps	
14	ODS		01 Gbps	
15	VNTT		01 Gbps	
16	VTVCAB	01 Gbps		
17	TPCOM		01 Gbps	

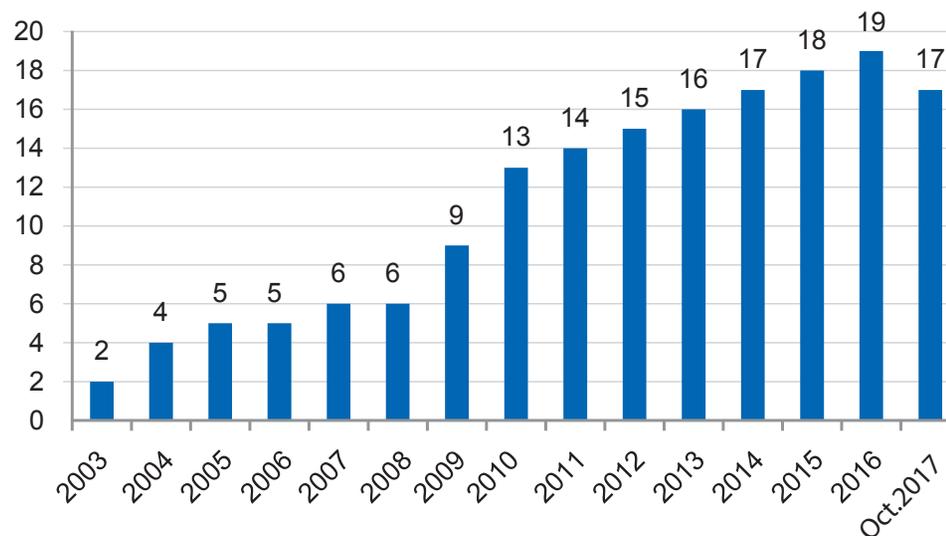


Figure 28: Number of VNIX members over the years

2. CONNECTION BANDWIDTH

VNIX has played an important role in establishing the stable infrastructure for the national Internet and information systems, saving costs for ICT enterprises, .etc. VNIX connection bandwidth reached 181Gbps, with many members having huge connection bandwidth such as VNPTNet (50G), VIETTEL (42G), CMCTI (21G), VTC and MBF (20G), in which VIETTEL and CMCTI connected to three VNIX points in Ha Noi city, Ho Chi Minh city and Da Nang city.

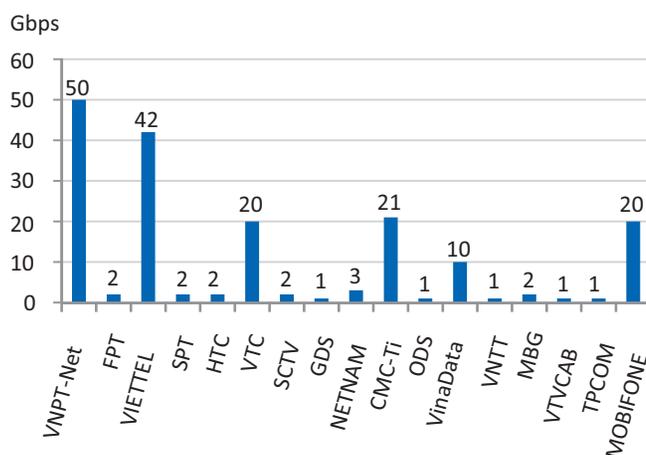


Figure 29: Bandwidth of VNIX members (Gbps)

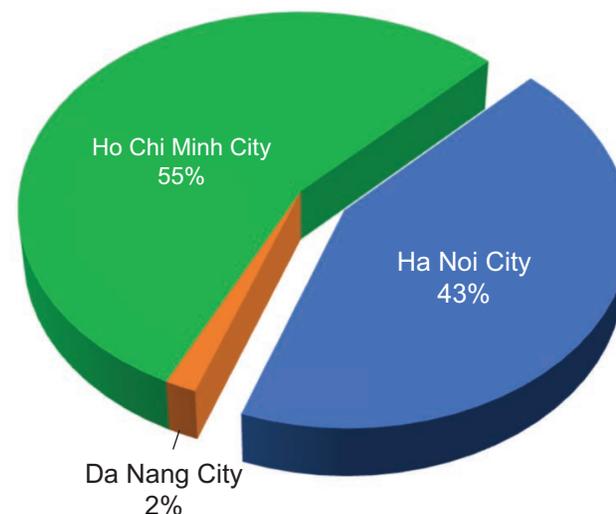


Figure 30: Percentage bandwidth by area

In order to satisfy the demand of Internet development, as well as enhance availability, capacity, compatibility, safety and service quality, VNIX could support any SFP/SFP+ types of FC port up to 1G, 10G, 40G, 100G.

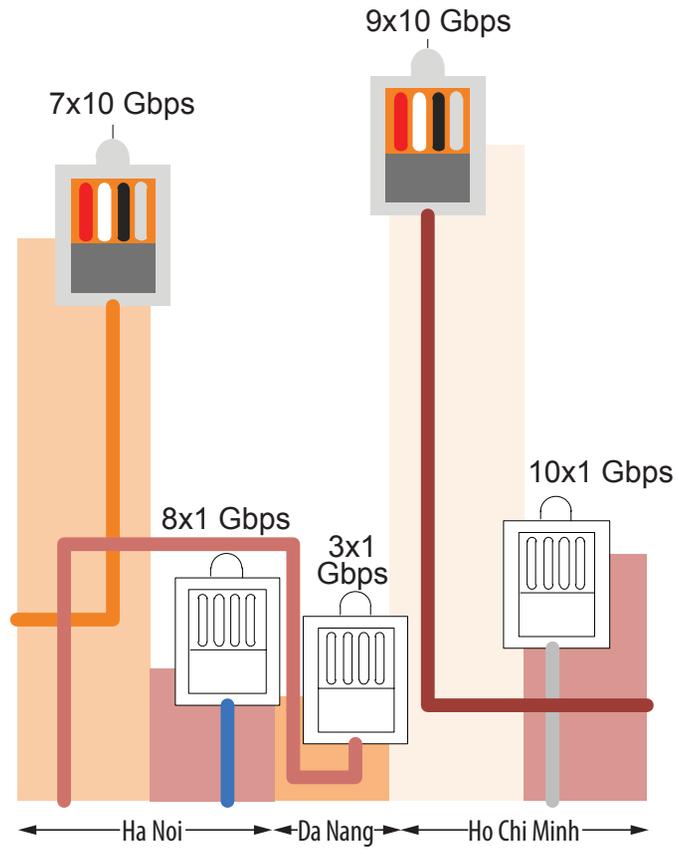


Figure 31: Number of ports of VNIX members

3. TRAFFIC VIA VNIX

By October 31st 2017, VNIX members had exchanged 432,893,653 Gigabyte via the system. Within 10 months of 2017, the traffic via VNIX reached 54,374,087.35 Gigabyte with weekly average traffic reaching 1,359,352 Gigabyte.

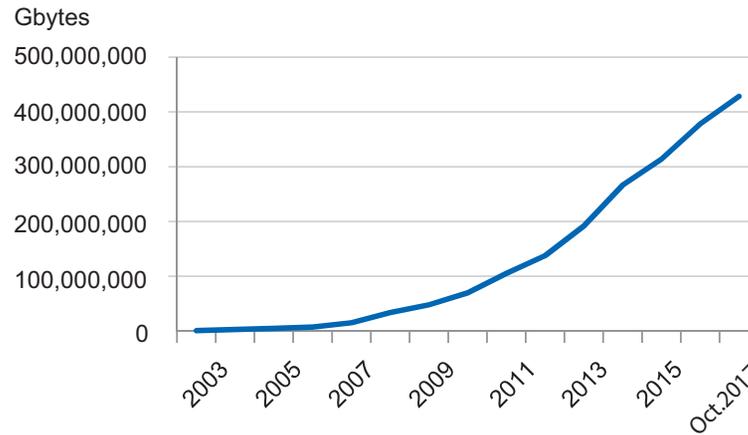


Figure 32: Cumulative Inbound traffic volume via VNIX (by October 2017)

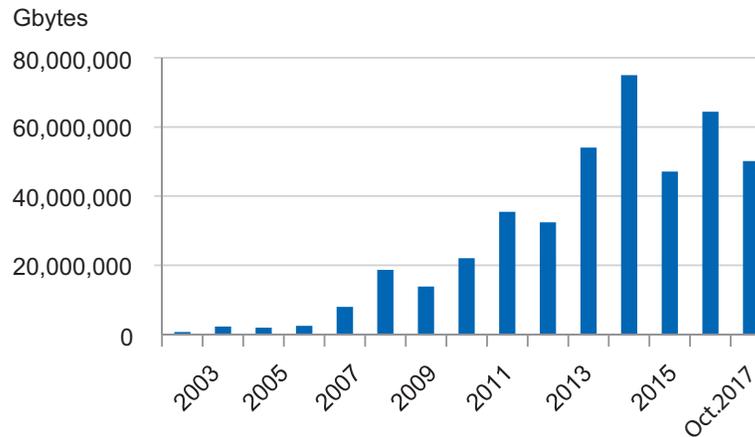


Figure 33: Annual Inbound traffic volume via VNIX (by October 2017)

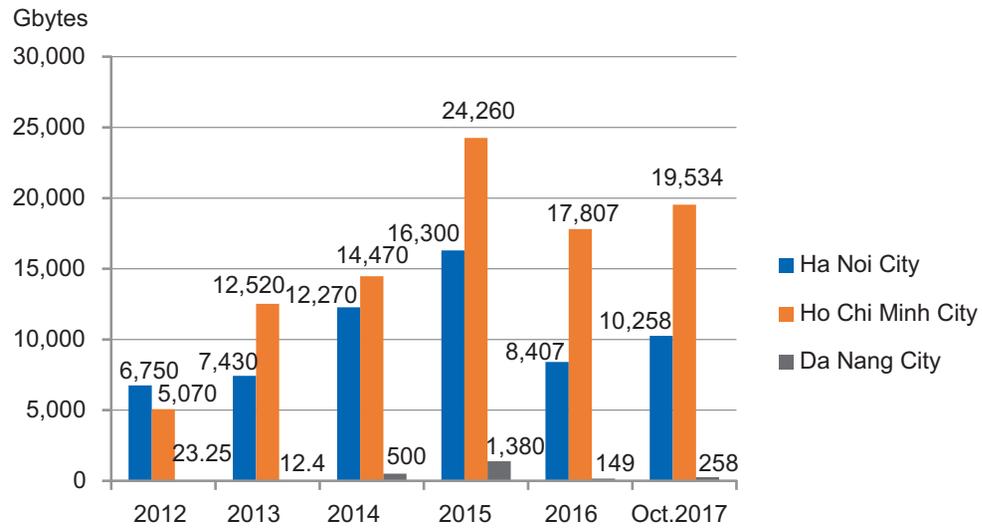


Figure 34: Max peak of traffic via VNIX (Gbytes)

With four VNIX points in Ha Noi city (Yen Hoa, Hoa Lac), Da Nang city and Ho Chi Minh city, the highest traffic of all was in Ha Noi city with 65.23%, followed by Ho Chi Minh city (34.45%) and Da Nang city (0.32%).



Figure 35: Percentage traffic via VNIX points (Updated to October 31st, 2017)

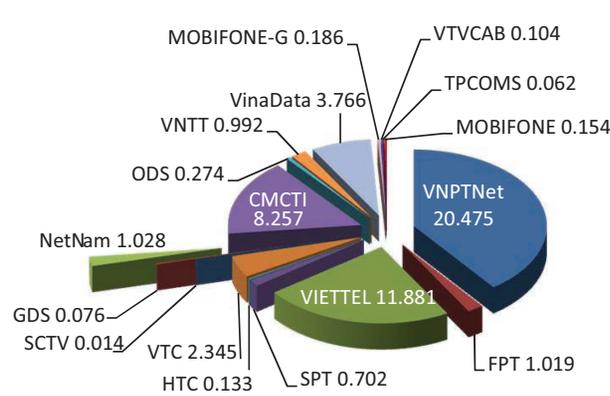


Figure 36: Inbound traffic of VNIX members in 2017 (PB)

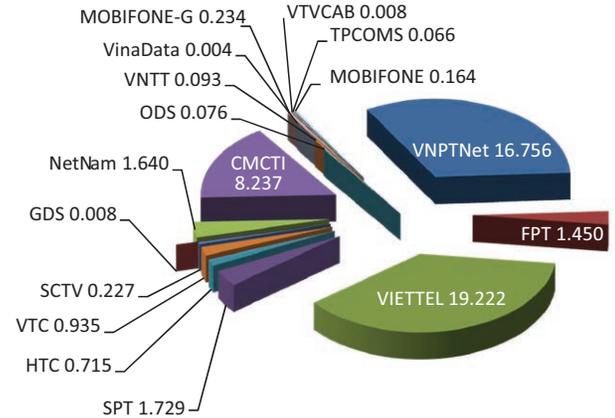


Figure 37: Outbound traffic of VNIX members in 2017 (PB)

4. IPv4/IPv6 TRAFFIC VIA VNIX

Since April 2013, VNIX officially supported IPv6 service. Until now, there have been 12/17 members of VNIX to have IPv6 traffic (VNPT, Viettel, FPT, CMCTI, HTC, MBF, NetNam, SCTV, SPT, VTC, TPCOM, VNTT).

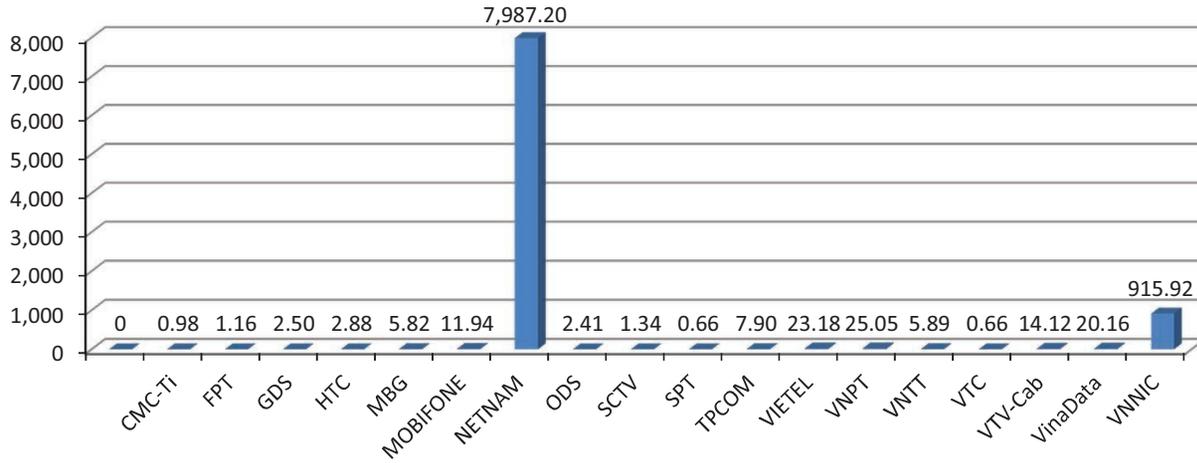


Figure 38: IPv6 IN traffic by VNIX members (Mbytes)

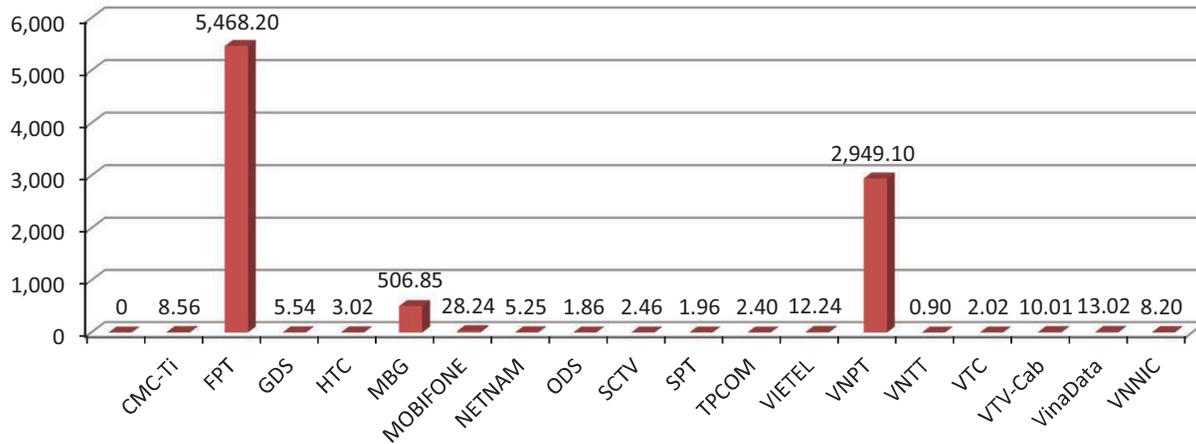


Figure 39: IPv6 OUT traffic by VNIX members (Mbytes)

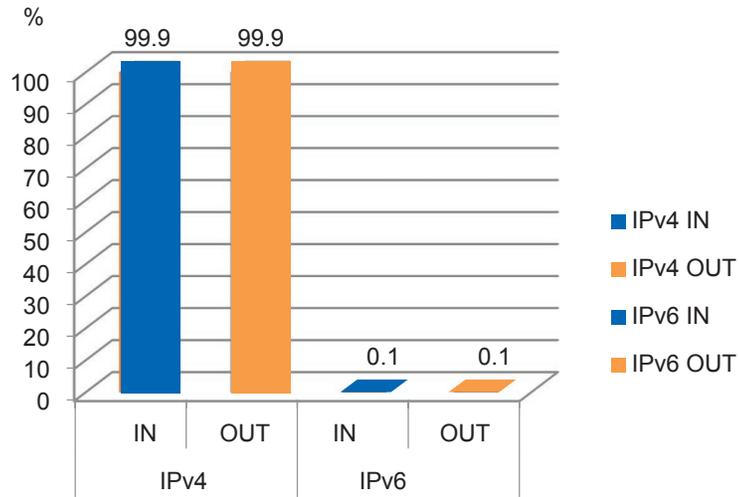


Figure 40: Percentage IPv4- IPv6 traffic via VNIX

5. SERVICE TRAFFIC VIA VNIX

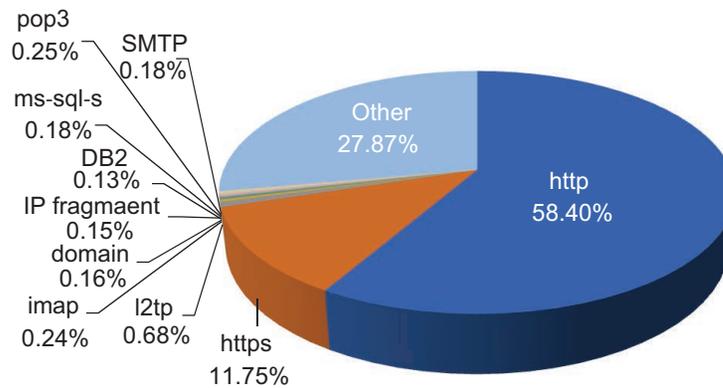


Figure 41: Percentage of 10 services with highest IN traffic via VNIX

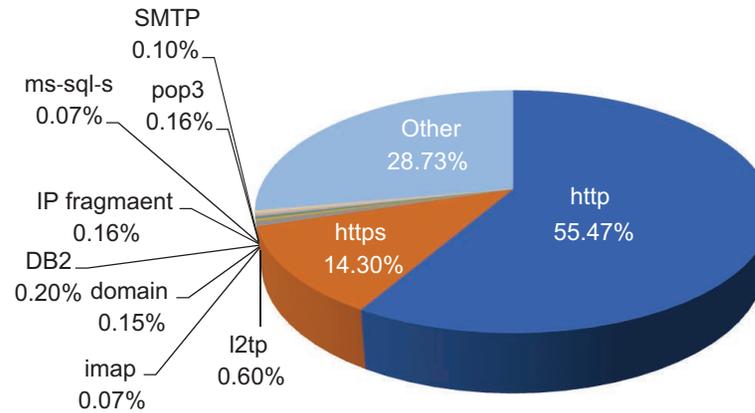


Figure 42: Percentage of 10 services with highest OUT traffic via VNIX

6. IPv4/IPv6 PREFIX ADVERTISED VIA VNIX

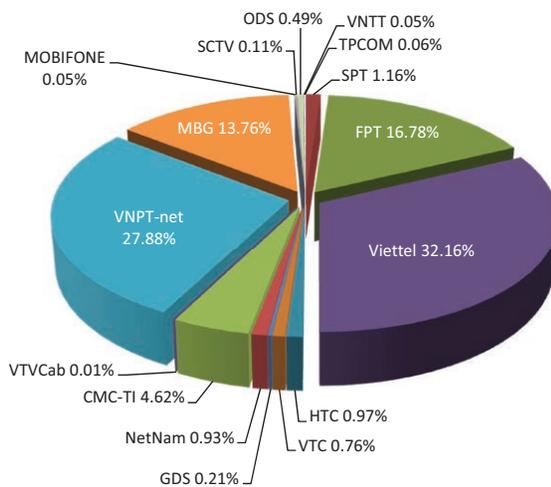


Figure 43: Percentage Prefix IPv4 advertised via VNIX

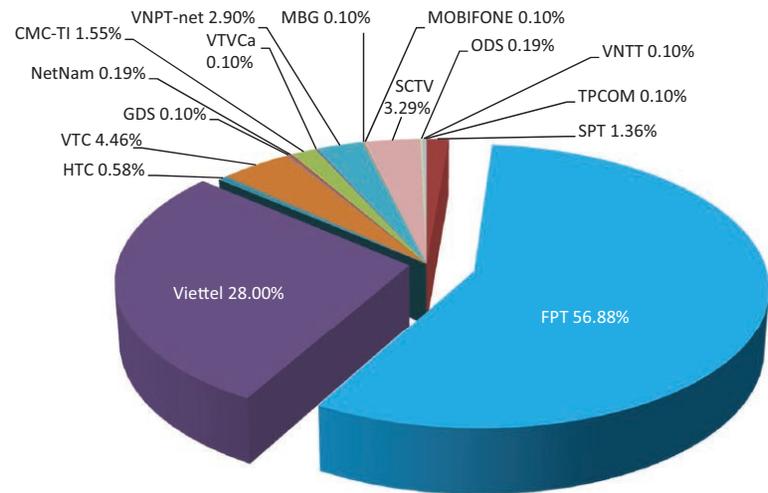


Figure 44: Percentage Prefix IPv6 advertised via VNIX

ABOUT VNNIC



VNNIC - FUNCTIONS AND RESPONSIBILITIES

On April 28th, 2000, Viet Nam Internet Network Information Center (VNNIC) was established under the Department General of Posts and Telecommunications according to the Decision No. 372/QĐ-TCBD with the purposes of “strengthen the management of Internet in general, including systematic and planned modernization and specialization of the Internet resource management activity, promoting the fair use among enterprises and integration into the global and regional Internet, in accordance with international standards”.

- All functions, tasks and power of VNNIC are currently stipulated by the Decision No. 1756/QĐ-BTTTT dated Oct 13st, 2017 by the Minister of Information and Communications, including:
 - Allocating, assigning, suspending, revoking Internet addresses (IP) and Autonomous System Number (ASN) at national level; inspecting, supervising the allocation, registration, and use of IP, ASN by organizations and individuals;
 - Managing the registration of use and suspension, revocation and withdrawal of “.vn” domain names and other domains assigned to Viet Nam by international Internet organizations via VNNIC.
 - Establishing, managing and operating the national Domain Name System (DNS) servers, Viet Nam Internet Exchange (VNIX); participating in the implementation of technologies related to Internet resources and IP;
 - Selecting and signing contract with “.vn” domain name Registrar; promoting the registration and use of “.vn”;
 - Receiving reports, managing domain information and monitoring activities of providing registration, renewal service and use of domain names assigned to Viet Nam;
 - Collecting, managing and using the fees of registration and use of Internet resources in accordance of regulations;
 - Training and improving the professional knowledge on internet resources under the assignment of the Minister of MIC;
 - Executing the international cooperation in the backup operation of “.vn” domain system; registering and managing Viet Nam’s Internet resources with international institutions; promoting the Internet in Viet Nam;
 - Collaborating with authorities in the execution and inspection of orders by MIC towards the international domain name Registrars in Viet Nam, ISP, in order to prevent the distribution of international domain names with Vietnamese law infringing Websites;
- Securing the protection of the national DNS, VNIX;
- Providing related services to Internet resources, IT and participating in appropriate activities.

VNNIC IN 2017

From February 27th to March 2nd, 2017, the Asia Pacific Regional Conference on Operational Technologies - APRICOT) was hosted for the first time in Ho Chi Minh city, Viet Nam, under the support of the Ministry of Information and Communications (MIC), with the collaboration of VNNIC, Asia Pacific Internet Association (APIA), Asia Pacific Network Information Center (APNIC), the Viet Nam Internet Association (VIA) and NetNam Corporation. The conference attracted more than 600 attendees while more than 140 attendees for the workshops, far exceeding the expectation as well as the number of previous event.



APRICOT 2017

March 1st, 2017, VNNIC hosted for the first time the APTLD 71 meeting with more than 100 participants from 25 members and 10 international and regional Internet organizations.



APTLD 71

May 3rd, 2017, VNNIC, in cooperation with ICANN, hosted the media brief on IDN trend and development, to promote the growth of IDN against the barrier of languages.



Media Briefing on IDNs and future of Internet

May 5th, 2017, on the occasion of the National IPv6 Day 2017, The IPv6 Task Force hosted the conference “IPv6 and Internet of Things” to deeply analyze the important role and vital relationship between IPv6 and Internet of Things, together with sharing experience among enterprises, and organizations about IPv6 deployment.



National IPv6 Day 2017 – “IPv6 and Internet of Things”

From May to June 2017, VNNIC, under the assignment of the Ministry of Information and Communications, hosted several training workshops and conferences on the topic of law and regulations on international domain names in VietNam. The participants had the chance to discuss the enforcement of legal document stipulated by the Ministry to ensure the lawful business, as well as support the rights of the registrants of those domains.



“Law and regulations on international domain names in Viet Nam” workshop held on May 26th, 2017 in Ha Noi city



“Law and regulations on international domain names in Viet Nam” workshop held on June 9th 2017 in Ho Chi Minh city

From May to September 2017: VNNIC hosted the training workshop series to improve the capacity of the staff at “.vn” Registrars, especially on the topic of domain fee band and domain transfer change in 2017. Also, VNNIC would like to collaborate with the Registrars to promote “.vn” domain services.



“.vn” domain name CEO Registrars Conference on May 11st, 2017



Workshop on “.vn” domain name transfer on May 25th, 2017



VNNIC cooperates with Nhan Hoa Registrar to provide professional training for domain name system “.vn” (June 6th, 2017)



VNNIC cooperates with Mat Bao Registrar (September 19th, 2017) and P.A Viet Nam Registrar (September 23rd, 2017) open workshop “Improve knowledge and professionalism “.vn” domain”



VNNIC open workshop “Improve knowledge and professionalism “.vn” domain for Registrars in Ho Chi Minh city (September 18th-21st, 2017)

From July to August 2017: The national IPv6TF of which VNNIC acts as the standing committee pushed the activities of hosting IPv6 training workshops for the Party, Government entities, in order to execute the implementation plan for those bodies, with the main target of E-Government and online public services



Workshop on “IPv6 Deployment for the Party, Government entities” in Da Nang city (July 12th-14th) and in Ho Chi Minh city (August 21st-23rd)



VNNIC together with Department of Central posts and Telecommunications held workshop on “IPv6 Deployment for the Party, Government entities” in Ha Noi city (July 26th-27th)”

August 24th, 2017: VNNIC hosted the 2017 annual meeting of IP members to deliver the new policies and regulations on the management of IP/ASN, promotion of IPv6 deployment and improvement of effective IP/ASN usage.



VNNIC's IP member annual meeting 2017

August 25th, 2017: After the success of 2016 VNIX-NOG meeting, VNNIC continued to host the VNIX-NOG conference in HCMC with the participation of about 100 attendees from VIA, Local ISPs, APNIC, ISOC, JANOC, Google etc. The meeting was based on the idea of a Network Operators Group (NOG) forum where engineers, technical officers could share information, knowledge, and experience within the IT and network area.



VNIX- NOG Conference 2017

From 19th to 22nd September, 2017: VNNIC, in collaboration with LANIC under the agreement between the Ministry of Information and Communications (Viet Nam) and the Ministry of Post and Telecommunications (Laos), conducted the IPv6 training workshop for engineers of major ISPs, government authorities in the IT sector of Laos. On this occasion also, VNNIC and LANIC had the bilateral meeting on the Internet resource management field, focusing on IPv6 experience, DNSSEC, domain names, and VNIX of VietNam. The training workshop really strengthened the relationship between VNNIC and LANIC, as well as the two Ministries in general.



IPv6 training workshop for Laotian engineers and staffs in Vientiane in September 2017

