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REPORT ON VIET NAM INTERNET RESOURCES 2016

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Introduction

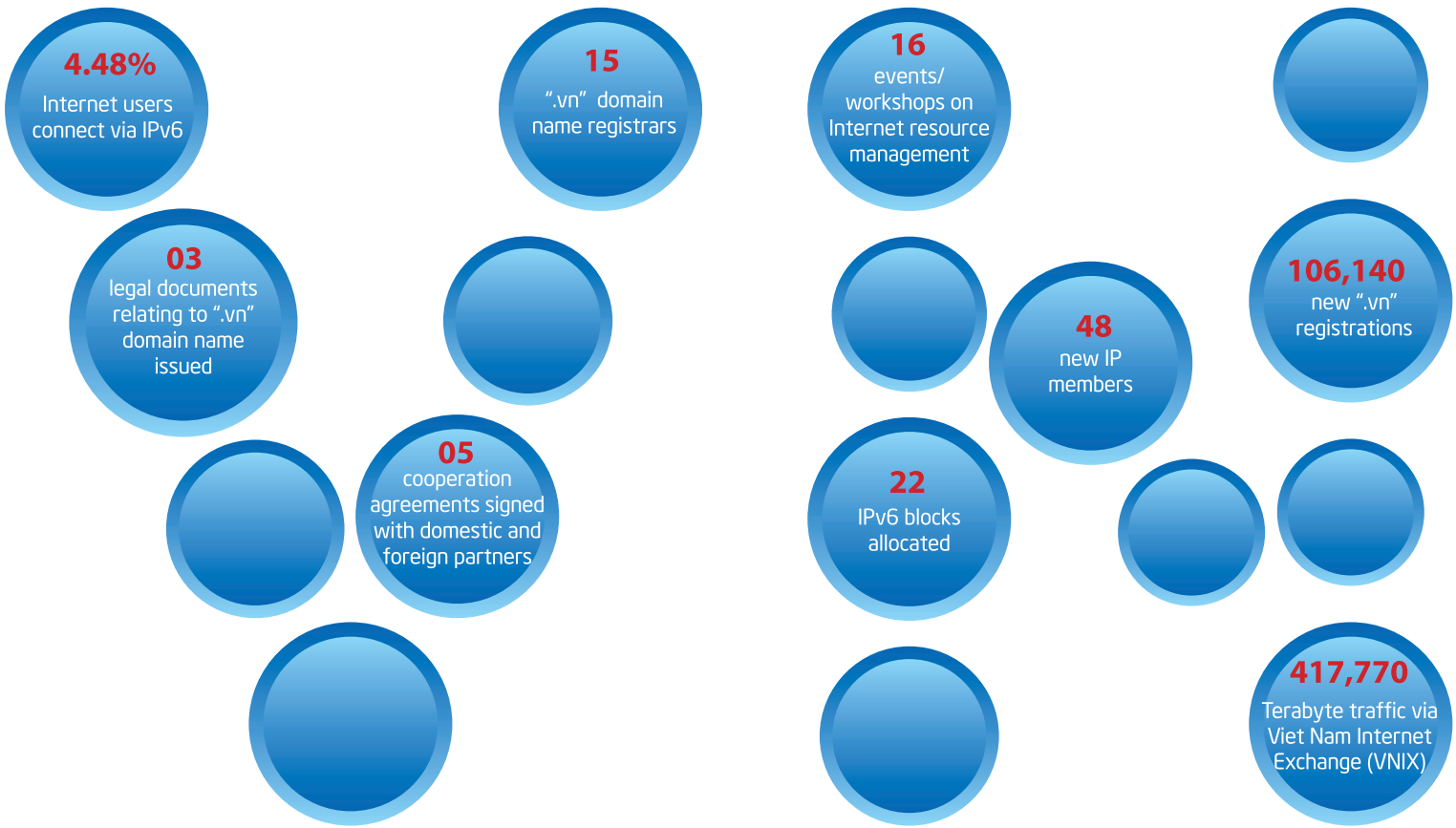
The Viet Nam's Annual Report on Internet resources was first published in 2012 with the expectation to collect all statistics and achievements of Internet resources in Viet Nam into the system. Vietnam Internet Network Information Center (VNNIC), in collaboration with Information and Communications Publishing House, to produce the "Report on Internet resources 2016". The bilingual publication would present to readers statistics and information about the overall picture of Internet resource development in Viet Nam in 2106. All the statistics are categorized into sections: resources under the management and operation of VNNIC such as ".vn"domain name, IDN ".vn", IP addresses, ASNs and international domain names used in Viet Nam. The achievements of 2016 continued to reflect the development of resource usage and Internet Viet Nam under the influence of integration trends together with global Internet. The highlights here is the IPv6 deployment with remarkable increase in the IPv6 user rate after the National IPv6 Day's events on May 6th. Also, several results from a recent survey by the Viet Nam E-commerce Association (VECOM) on the use of Internet among Vietnamese enterprises would also be included in the report.

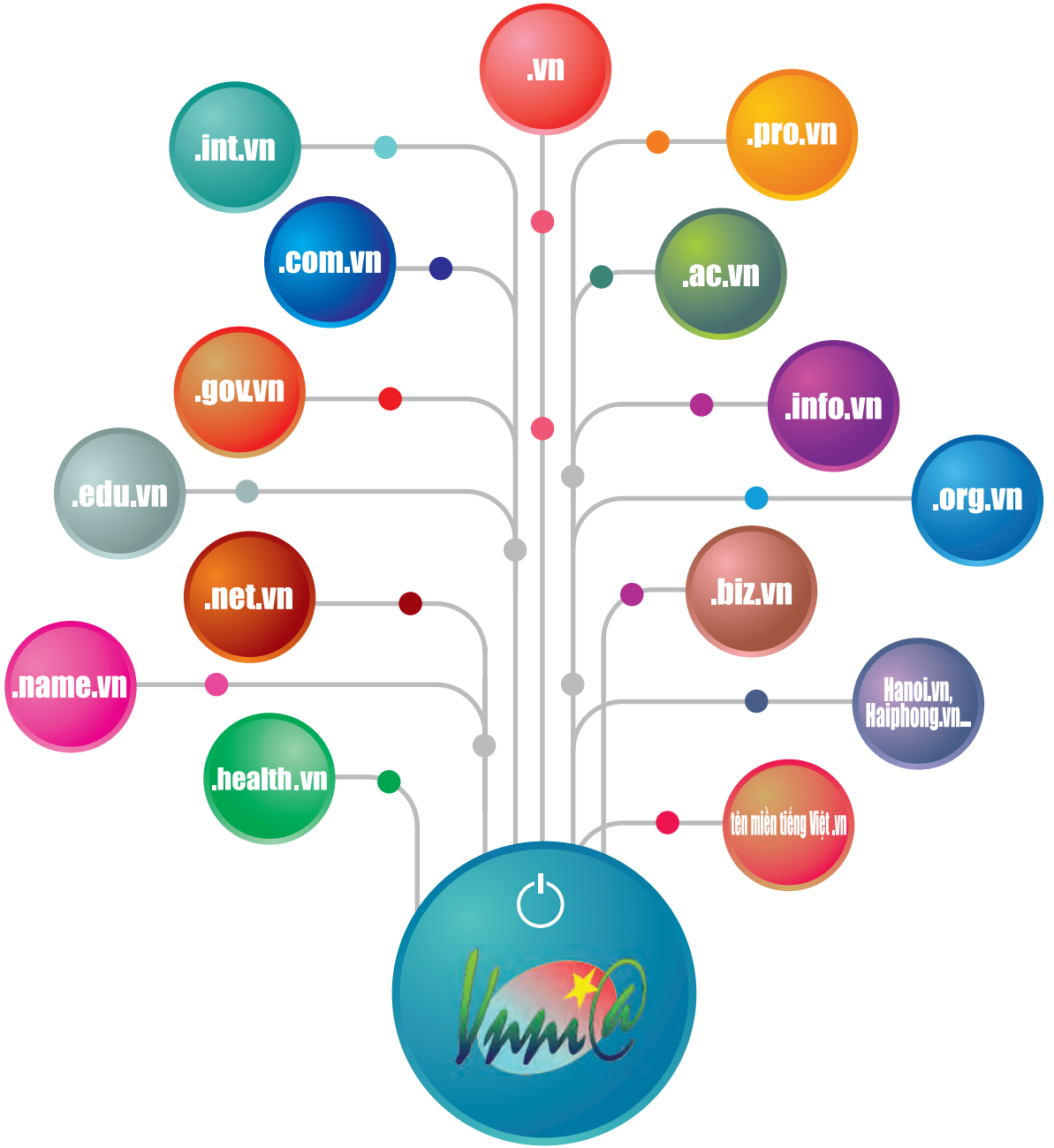
We expect that the report would benefit government bodies, enterprises, individuals to grasp ideas of the situation and analysis of Internet resource management in Viet Nam.

Any comment or feedback would be much appreciated to complete.

VIETNAM INTERNET NETWORK INFORMATION CENTER

VNNIC 2016 IN FIGURES





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INTERNET RESOURCE STATISTICS IN VIET NAM IN 2016

ASCII ".VN" COUNTRY CODE TOP LEVEL DOMAIN NAME

1. ".VN" NEW REGISTRATIONS IN 2016

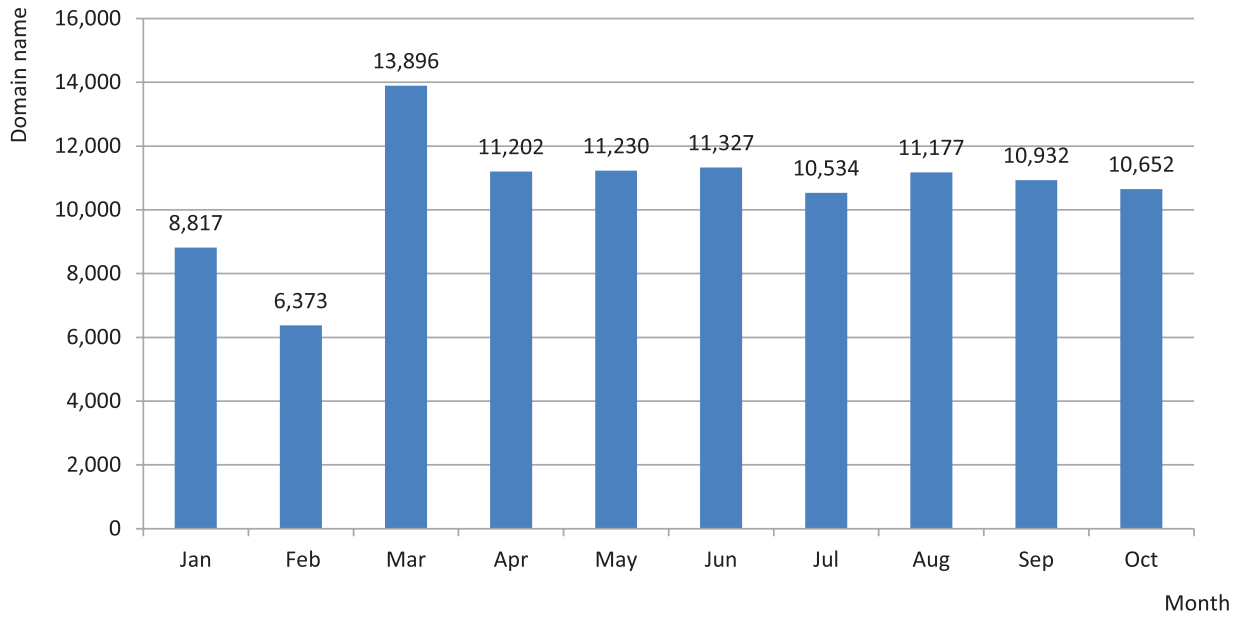

Figure 1: *".vn" domain name new registration over months in 2016*

By Oct 2016, the number of new registrations in 2016 reached 106,140 domain names, increasing 12% in comparison with last year's period. This growth in recent years reflected the stable development of ".vn" despite the challenges from revolution in global domain industry and competition of new gTLDs. This resulted from the efforts of VNNIC and the Registrars with the promotional activities for ".vn" ccTLD, such as strengthening the relationship with customers, and improving the service quality for customers.

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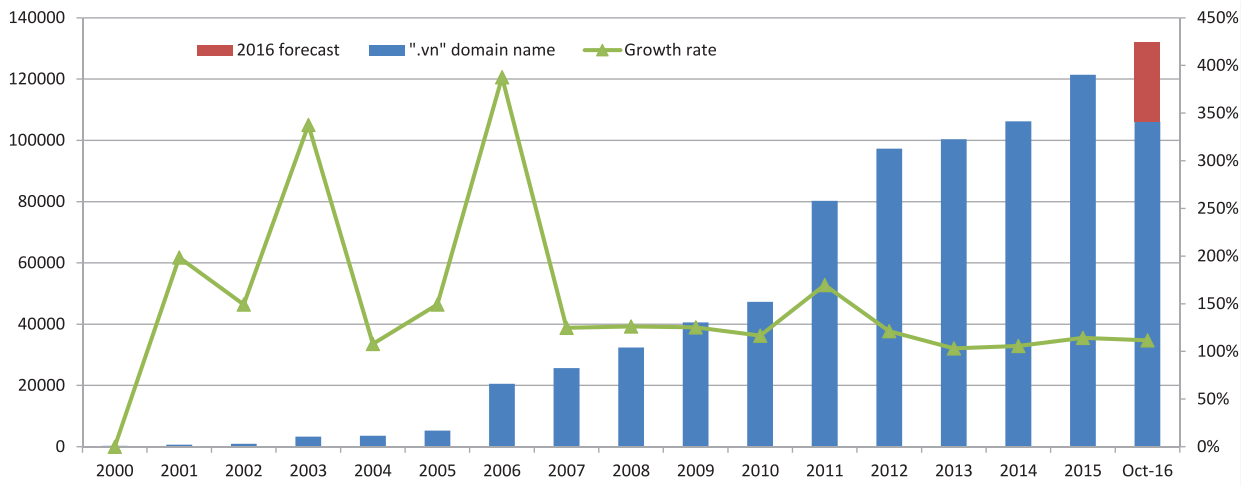

Figure2: *"vn" domain name new registrations and growth rate (2000-2016)*

Tabe 1: ".vn" ccTLD new registrations and growth rate over the years

Year	".vn" Domain name	Growth rate
2000	330	0
2001	655	198%
2002	978	149%
2003	3,302	338%
2004	3,559	108%
2005	5,308	149%
2006	20,579	388%
2007	25,680	125%
2008	32,388	126%
2009	40,576	125%

Year	".vn" Domain name	Growth rate
2010	47,302	117%
2011	80,246	170%
2012	97,315	121%
2013	100,382	103%
2014	106,206	106%
2015	121,371	114%
Oct-2016	106,140	112%

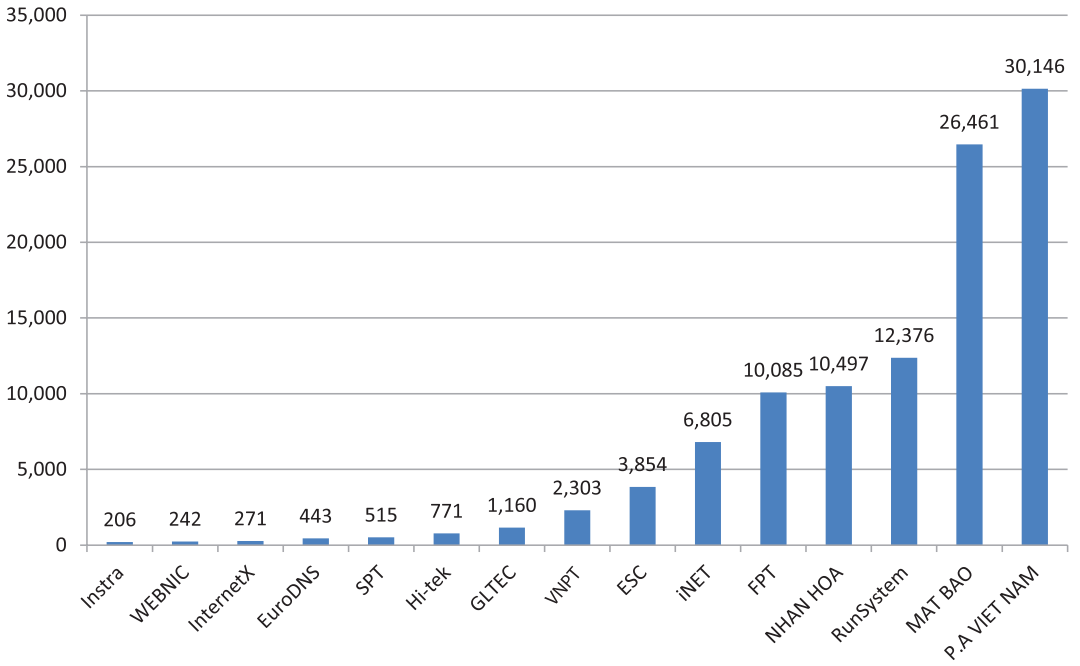

Figure 3: *New registrations by registrar in 2016*

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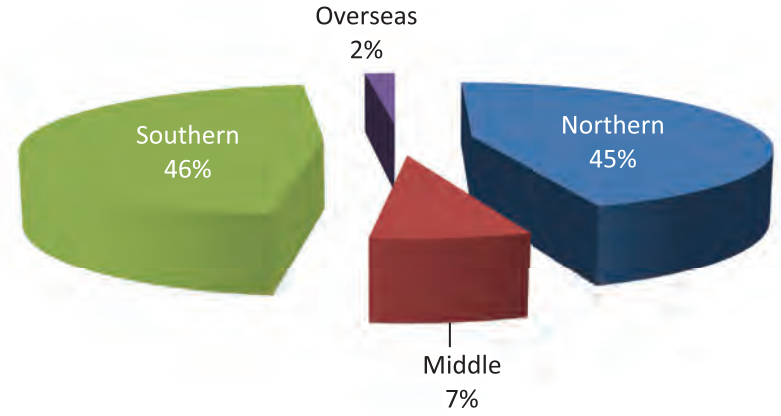

Figure 4: *New registrations by geographical area in 2016*

Table 2: ".vn " new registrations by provinces and cities under the central government in 2016

No.	Province/City	Number of ".vn" new registrations in 2016
1	An Giang	192
2	Ba Ria - Vung Tau	677
3	Bac Giang	463
4	Bac Kan	30
5	Bac Lieu	47
6	Bac Ninh	692
7	Ben Tre	348
8	Binh Dinh	539
9	Binh Dương	1,343
10	Binh Phuoc	181
11	Binh Thuan	241

No.	Province/City	Number of ".vn" new registrations in 2016
12	Ca Mau	93
13	Cao Bang	23
14	Can Tho	528
15	Da Nang	1,694
16	Dak Lak	430
17	Dak Nong	71
18	Dien Bien	42
19	Dong Nai	1,311
20	Dong Thap	185
21	Gia Lai	201
22	Ha Giang	43
23	Ha Nam	365
24	Ha Noi	38,236
25	Ha Tinh	314
26	Hai Duong	712
27	Hai Phong	1,398
28	Hau Giang	40
29	Hoa Binh	173
30	Ho Chi Minh City	41,366
31	Hung Yen	591
32	Khanh Hoa	781
33	Kien Giang	280

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No.	Province/City	Number of ".vn" new registrations in 2016
34	Kon Tum	56
35	Lai Chau	15
36	Lam Dong	430
37	Lang Son	71
38	Lao Cai	146
39	Long An	422
40	Nam Dinh	949
41	Nghe An	893
42	Ninh Binh	334
43	Ninh Thuan	98
44	Phu Tho	353
45	Phu Yen	146
46	Quang Binh	138
47	Quang Nam	384
48	Quang Ngai	241
49	Quang Ninh	500
50	Quang Tri	134
51	Soc Trang	73
52	Son La	68
53	Tay Ninh	192
54	Thai Binh	669
55	Thai Nguyen	365

ISO 27001:2013

No.	Province/City	Number of ".vn" new registrations in 2016
56	Thanh Hoa	1,042
57	Thua Thien - Hue	262
58	Tien Giang	296
59	Tra Vinh	166
60	Tuyen Quang	80
61	Vinh Long	129
62	Vinh Phuc	382
63	Yen Bai	97

Ho Chi Minh City and Ha Noi still had the highest number of ".vn" new registrations in 2016, followed by those provinces and cities: Da Nang, Binh Duong, Dong Nai, Hai Phong. Thanh Hoa was such a phenomenon of 2016 for the first time when this province reached over 1,000 ".vn" new registrations this year.

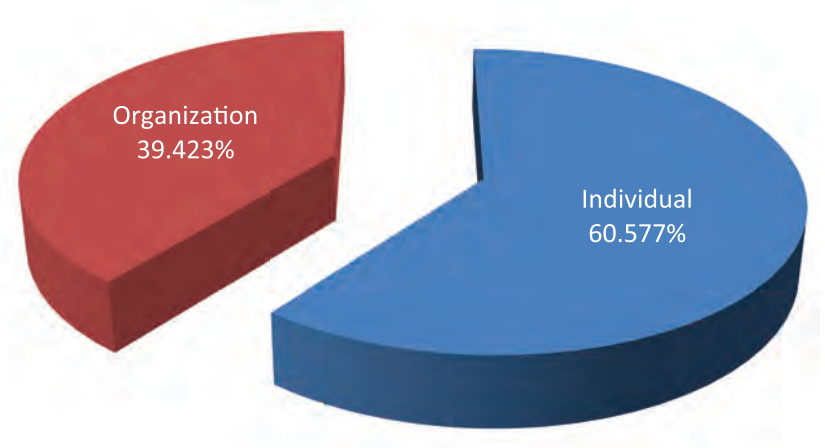

Figure 5: *New registrations by type of registrant in 2016*

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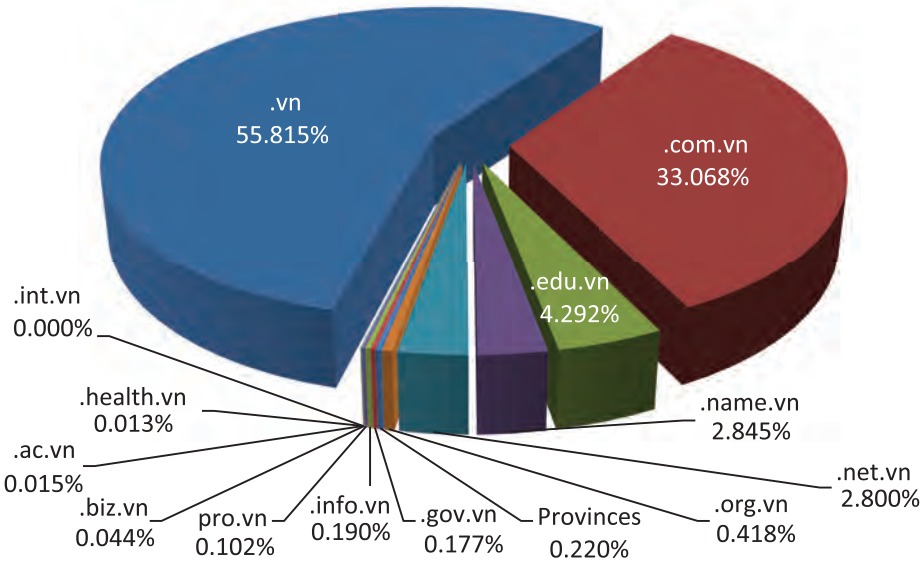

Figure 6: *New registrations by extension in 2016*

2. ".VN" GROWTH OVER THE YEARS

Besides the statistic of ".vn" new registration in 2016 in the previous part, this part analyzes several indicators relating to the cumulative number of ".vn" which is calculated by the total amount of new registration minus the number of domain name withdrawal over time.

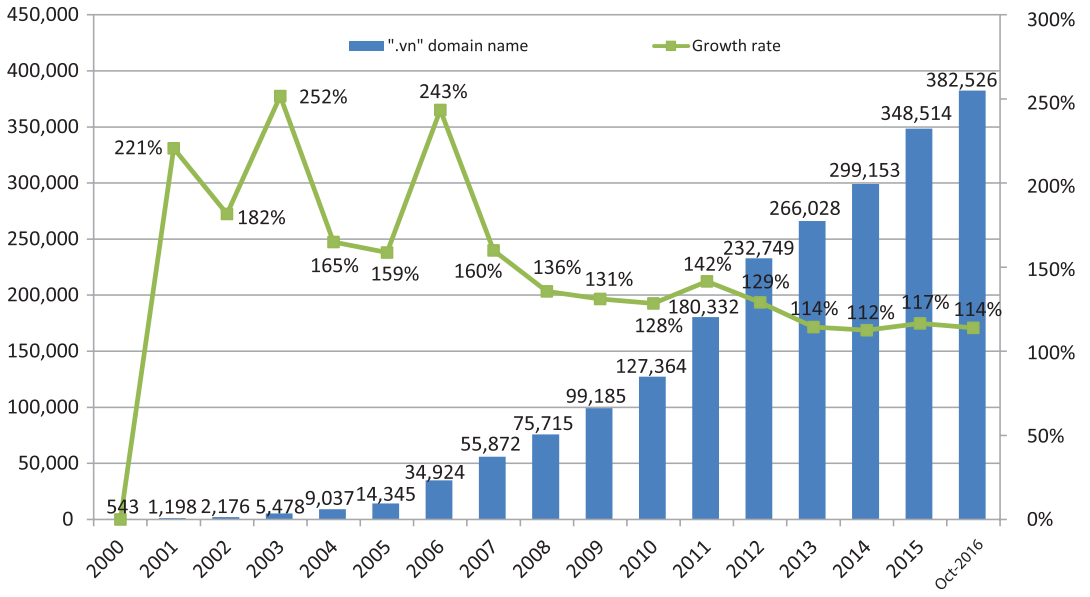

Figure 7: *Cumulative number of ".vn" domain name registration and growth rate over the years*

".vn" domain name kept a comparatively steady growth with 114% growth rate of Oct 2016 in comparison with the same period last year. This development, among the ccTLDs in the region, demonstrates the prospect of a stable future of ".vn"domain name and registrants' loyalty.

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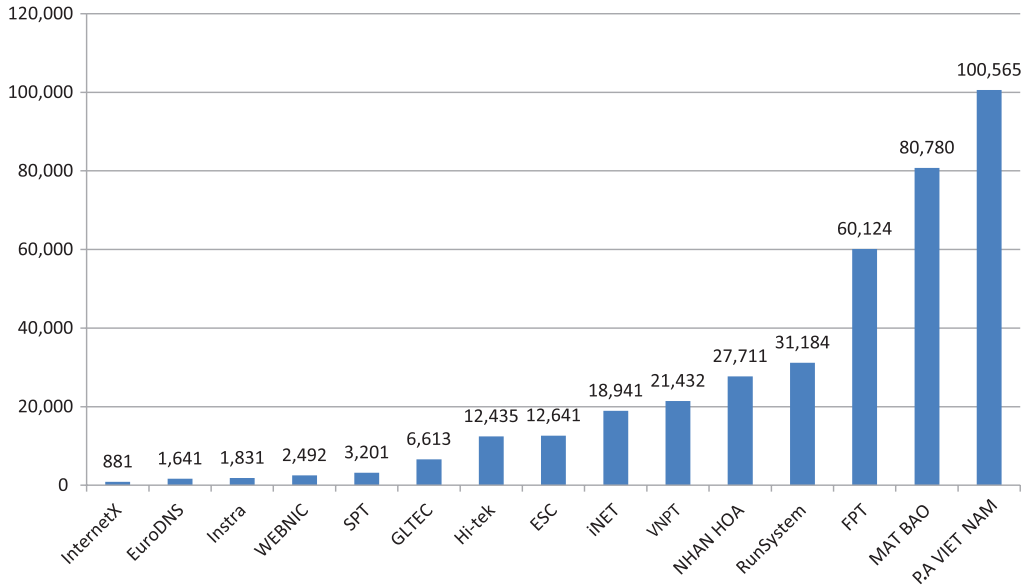

Figure 8: *Cumulative number of ".vn" domain names by registrar*

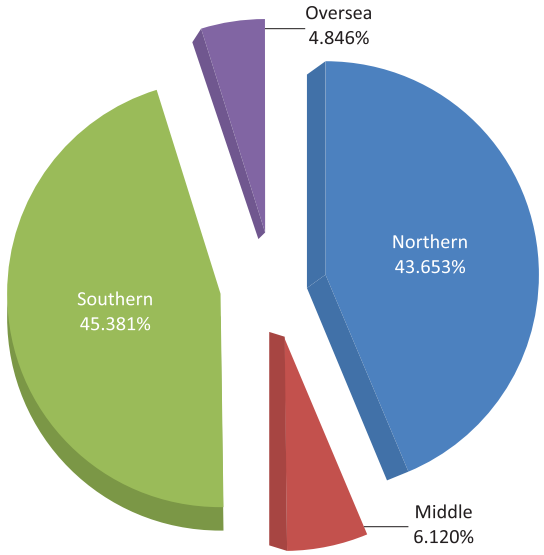

Figure 9: *Cumulative number of ".vn" domain names by geographical area*

Table 3: Cumulative number of ".vn" and ".gov.vn" domain names by provinces and cities under the central government

No.	Province/City	Cumulative number of ".vn"	Cumulative number of ".gov.vn"
1	An Giang	764	8
2	Ba Ria - Vung Tau	2,637	14
3	Bac Giang	167	8
4	Bac Kan	1,289	19
5	Bac Lieu	96	9
6	Bac Ninh	2,062	16
7	Ben Tre	900	10
8	Binh Dinh	1,616	17
9	Binh Dương	5,251	16
10	Binh Phuoc	632	33
11	Binh Thuan	855	13
12	Ca Mau	309	7
13	Cao Bang	2,060	18
14	Can Tho	98	12
15	Da Nang	6,231	32
16	Dak Lak	1,375	31
17	Dak Nong	161	5
18	Dien Bien	165	20
19	Dong Nai	4,749	30
20	Dong Thap	649	12
21	Gia Lai	575	10

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No.	Province/City	Cumulative number of ".vn"	Cumulative number of ".gov.vn"
22	Ha Giang	137	8
23	Ha Nam	983	19
24	Ha Noi	141,233	652
25	Ha Tinh	862	35
26	Hai Duong	2,108	12
27	Hai Phong	4,904	39
28	Hau Giang	204	3
29	Hoa Binh	504	9
30	Ho Chi Minh City	147,804	118
31	Hung Yen	1,743	13
32	Khanh Hoa	2,776	51
33	Kien Giang	950	18
34	Kon Tum	192	10
35	Lai Chau	60	4
36	Lam Dong	1,632	18
37	Lang Son	245	8
38	Lao Cai	460	12
39	Long An	1,410	8
40	Nam Dinh	2,354	16
41	Nghe An	2,260	40
42	Ninh Binh	1,081	10
43	Ninh Thuan	332	7

ISO 27001:2013

No.	Province/City	Cumulative number of ".vn"	Cumulative number of ".gov.vn"
44	Phu Tho	896	13
45	Phu Yen	415	16
46	Quang Binh	663	20
47	Quang Nam	1,563	71
48	Quang Ngai	775	13
49	Quang Ninh	1,884	24
50	Quang Tri	457	25
51	Soc Trang	354	4
52	Son La	210	13
53	Tay Ninh	636	3
54	Thai Binh	1,729	6
55	Thai Nguyen	1,318	25
56	Thanh Hoa	2,688	46
57	Thua Thien - Hue	1,032	12
58	Tien Giang	911	10
59	Tra Vinh	557	6
60	Tuyen Quang	262	20
61	Vinh Long	378	7
62	Vinh Phuc	1,329	12
63	Yen Bai	284	10

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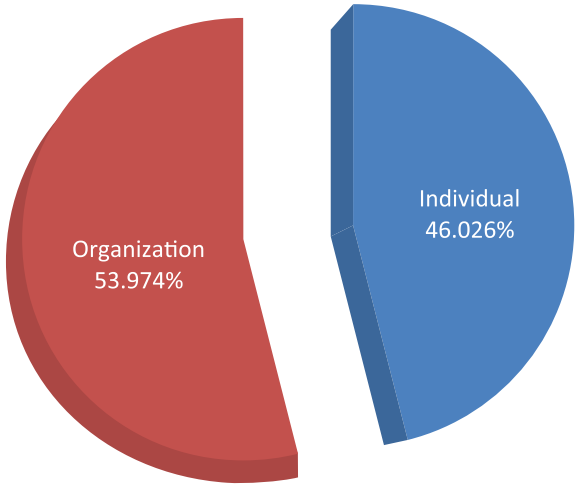

Figure 10: *Cumulative number of ".vn" domain names by type of registrant*

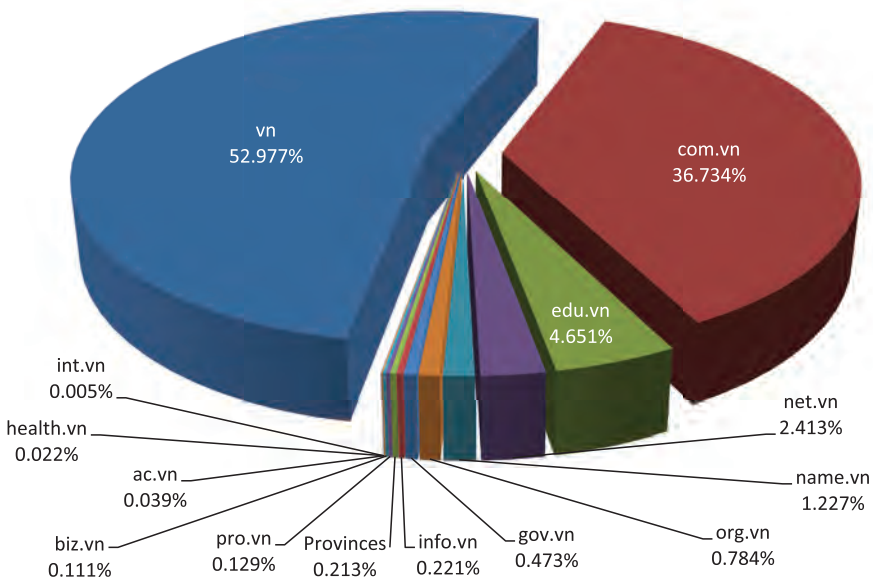

Figure 11: *Cumulative number of ".vn" domain names by extension*

3. ".VN" DOMAIN NAME USAGE IN 2016

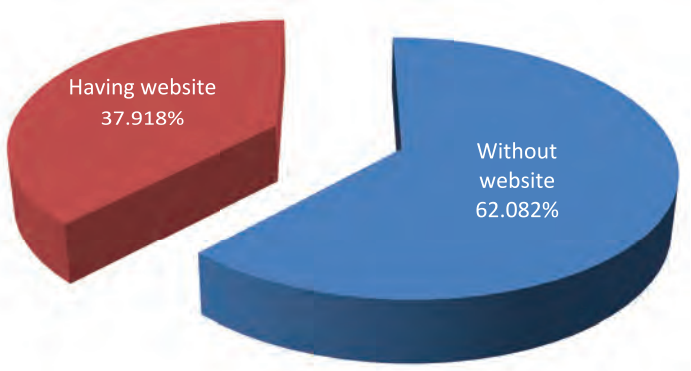

Figure 12: *".vn" domain names with active Website rate in 2016 (The rate of 2015 is 61.85%)*

Table 4: Percentage of all active Websites, by ".vn" domain extention

Extension	Having Website	Without Website	Number of domain names	Rate of having Website
.vn	127,843	75,286	203,129	62.94%
.com.vn	83,404	57,221	140,625	59.31%
.edu.vn	13,199	4,523	17,722	74.48%
.net.vn	5,113	4,115	9,228	55.41%
.name.vn	3,092	1,568	4,660	66.35%
.org.vn	2,069	933	3,002	68.92%
.gov.vn	1,470	338	1,808	81.31%
.info.vn	449	392	841	53.39%

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Extension	Having Website	Without Website	Number of domain names	Rate of having Website
pro.vn	295	190	485	60.82%
biz.vn	197	227	424	46.46%
ac.vn	95	52	147	64.63%
health.vn	33	55	88	37.50%
int.vn	6	15	21	28.57%
Provinces	2	2	4	50.00%

Table 5: Top 20 most queried ".vn"domain names in 2016

No.	Domain name
1	dantri.com.vn
2	cmcti.vn
3	google.com.vn
4	24h.com.vn
5	zing.vn
6	vietinbank.vn
7	vdc.com.vn

No.	Domain name
8	vtcebank.vn
9	vnn.vn
10	eclick.vn
11	adnetwork.vn
12	vcmedia.vn
13	vnpt.vn
14	kiemhiep.com.vn

No.	Domain name
15	mecon.vn
16	pepsico.vn
17	vieclam24h.vn
18	idoltv.vn
19	lazada.vn
20	360game.vn

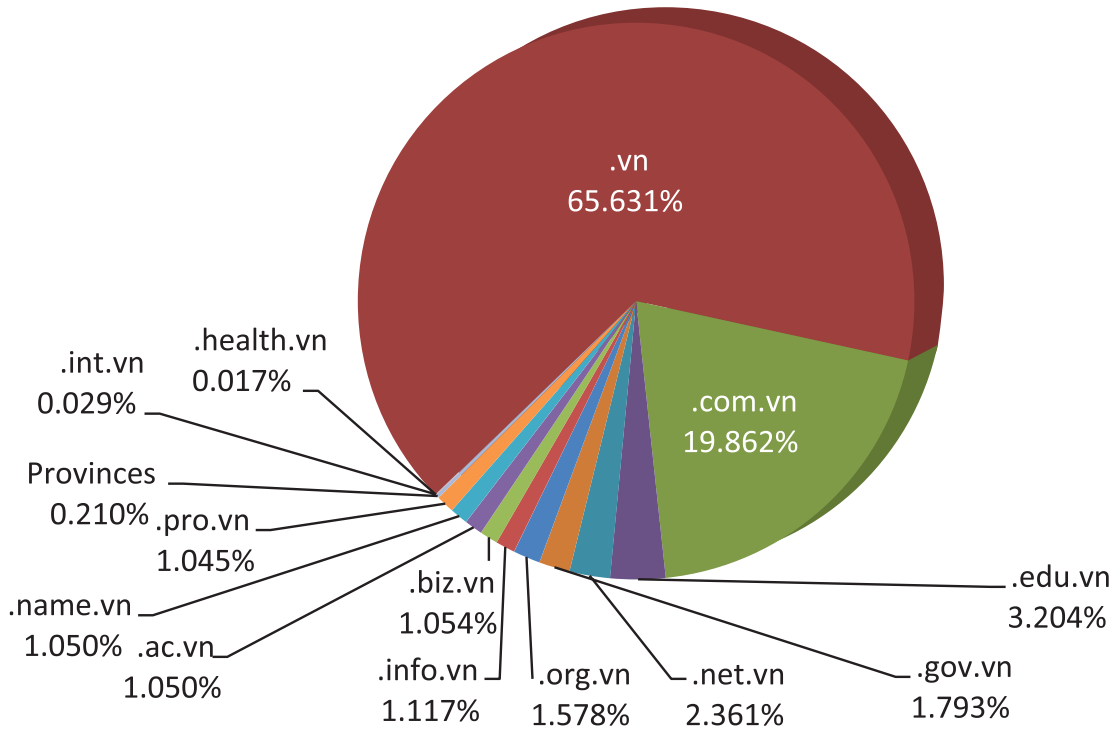

Figure 13: *Queries to National ".vn" DNS breakdown by extention in 2016*

4. ".VN" IN THE WORLD

Since 2011, ".vn" has always been the most registered ccTLD in the ASEAN region, and now expanding to the Asia region. According to APTLD statistics of Asia's top ccTLD with number of registrations by Oct 2016, ".vn" ranked in top 10 of Asia.

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Table 6: Ranking of some ccTLDs in Asia (as of October 2016)

Ranking	Country/Territory	ccTLD	Number of domain ccTLD
1	China	.cn	19,511,872
2	India	.in	2,178,238
3	Japan	.jp	1,444,814
4	Korea	.kr	1,049,127
5	Iran	.ir	696,602
6	Taiwan	.tw	679,646
7	HongKong	.hk	436,990
8	Viet Nam	.vn	382,526
9	Malaysia	.my	320,619
10	Indonesia	.id	218,019
11	Singapore	.sg	179,813
12	Kazakhstan	.kz	126,038
13	Thailand	.th	65,738
14	Saudi Arabia	.sa	45,728
15	Sri Lanka	.lk	24,710

(Source: APTLD Member Statistics and Growth Report Oct 2016)

VIETNAMESE INTERNATIONALIZED DOMAIN NAME (IDN.VN)

1. IDN ".VN" TREND

After nearly 06 years of free registration, there were 977,007 IDN ".vn" domain names as of October 2016. From January 1st , 2017, Circular No. 208/2016 / TT-BTC dated November 10th , 2016 which stipulates the collection, remittance, management and use of charges and fees ".vn" domain names and IP addresses, would come into effect. Implementing this Circular plays an important role in placing the position of IDN in equivalence with ASCII ".vn"domain name. IDN ".vn" will be officially charged a minor fee (20,000 VND per domain name per year) for renewal in order to cover management cost and still follow the government's direction to promote Vietnamese content online.

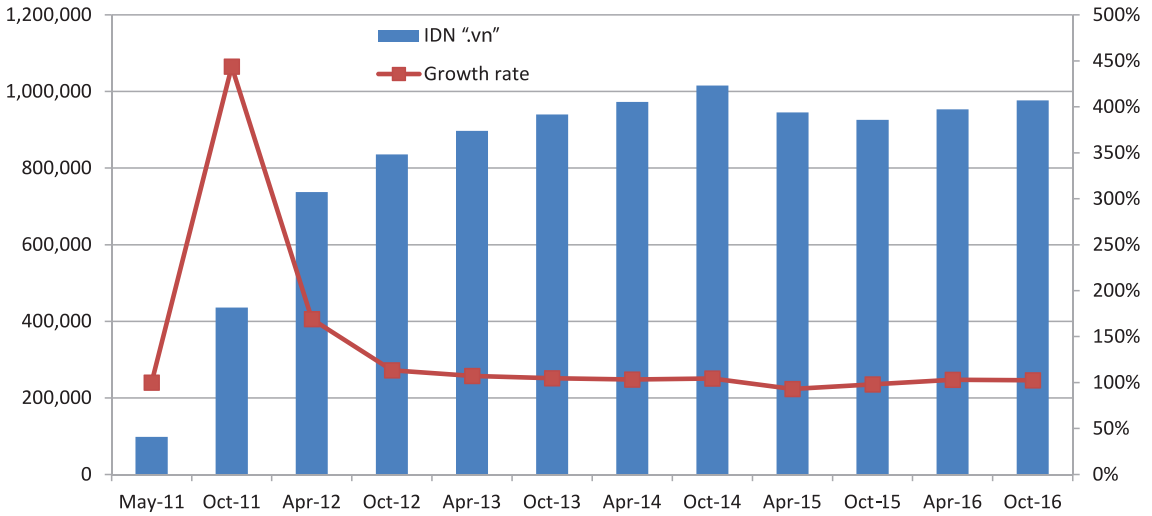

Figure 14: *IDN ".vn" growth over the years*

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2. IDN ".VN" BREAKDOWN

2.1. IDN ".VN" breakdown by registrant

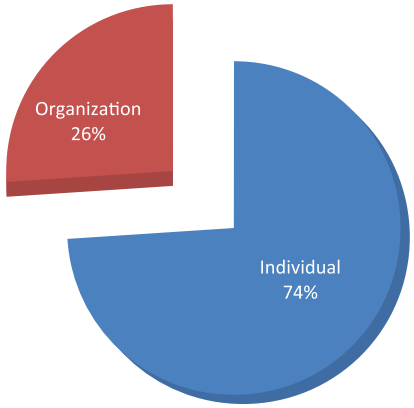

Figure 15: *IDN ".vn" breakdown by type of registrants*

2.2. IDN ".VN" breakdown by geographical area

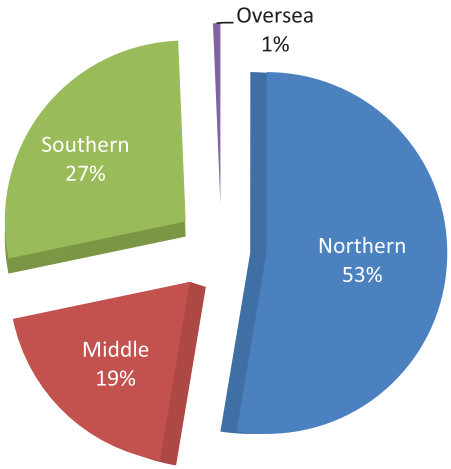

Figure 16: *IDN ".vn" breakdown by geographical area*

3. IDN ".VN" SERVICE USAGE

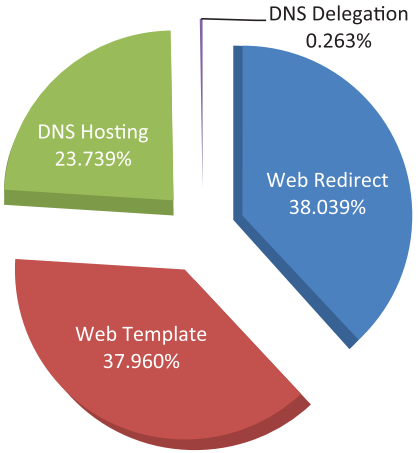

Figure 17: *IDN ".vn" breakdown by service usage*

4. TOP 20 IDN ".VN" MOST QUERIED IN 2016

Table 7: Top 20 IDN ".vn" most queried in 2016

No.	Domain Name
1	cẩmnangmuasắm.vn
2	cướihạnhphúc.vn
3	góctinhọc24h.vn
4	ccđẹp.vn
5	mỹphẩmsakura.vn
6	canhquansanvuonsàigòn.vn
7	đồngcao.vn
8	máycôngcụphụtùng.vn
9	bàbầucầnbiết.vn
10	chănđiệnnhậtbản.vn

No.	Domain Name
11	toánsơcấp123.vn
12	khóavântaycaocấp.vn
13	indecalgiấy.vn
14	rẻquátrờioi.vn
15	sữaminhvy.vn
16	bàithuốchayvn.vn
17	thợsửakhóa.vn
18	baoholaodonggiárẻ.vn
19	cácảnhhảithiên.vn
20	anviênonline.vn

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INTERNATIONAL DOMAIN NAMES USED IN VIET NAM

The statistic of international domains queries of Viet Nam Internet's users in 2016 showed a significant change in the breakdown and usage of international domain names in Viet Nam. ".com" domain names dominated the number of queries to VNNIC's system, for a while followed by ".net", ".org", ".info", ".biz". Since 2014, New gTLDs like ".xyz", ".berlin"...has been officially introduced to the domain market and widely promoted to users. In 2016, New gTLDs has been increased with a large number of registrations and queries in Viet Nam.

1. INTERNATIONAL DOMAIN NAME QUERIES IN VIET NAM

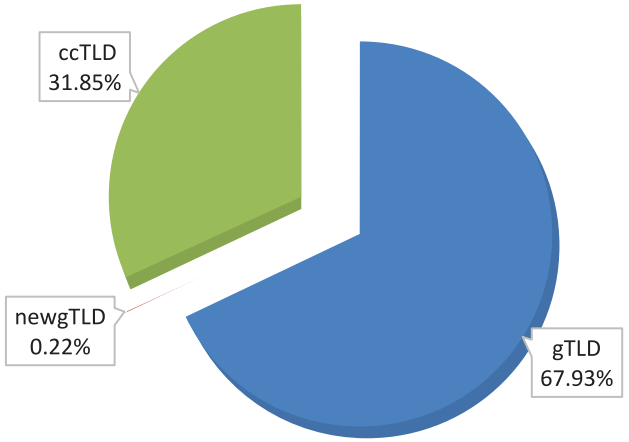

Figure 18: *gTLD, new gTLD and others ccTLD in Viet Nam*

2. GTLD QUERIES BREAKDOWN BY EXTENSION

Table 8: gTLD queries through VNNIC DNS Caching system in October 2016

No.	Extension	Querie
1	.aero	1,218
2	.asia	11,106
3	.biz	294,268
4	.cat	7,188
5	.com	18,391,408
6	.coop	1,455
7	.edu	18,231
8	.gov	9,404
9	.info	656,424
10	.int	1,519
11	.jobs	2,130
12	.mil	1,163
13	.mobi	18,798
14	.museum	623
15	.name	11,100
16	.net	1,967,877

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No.	Extension	Querie
17	.org	1,421,330
18	.post	71
19	.pro	28,669
20	.tel	611
21	.travel	1,330
22	.xxx	24,193
Total		**22,870,116**

Table 9: New gTLD queries through VNNIC DNS Caching system in October 2016

No.	Extension	No. of Queries
1	.xyz	31,258
2	.social	102
3	.science	637
4	.photo	169
5	.trade	468
6	.camera	32
7	.fashion	36
8	.top	18,954
9	.wang	6,699
10	.club	5,391
11	.win	5,253
12	.party	300
13	.link	1,797
14	.ren	1,415
Total		**72,511**

Table 10: Top 20 ccTLD (not ".vn") most queried in Viet Nam in 2016 (through VNNIC DNS Caching system)

No.	Domain name
1	tm.com.my
2	ne.jp
3	svist21.cz
4	1x1.cz
5	uc.cn
6	360.cn
7	yandex.ru
8	naver.jp
9	7m.cn
10	amung.us

No.	Domain name
11	goo.gl
12	mail.ru
13	twitch.tv
14	coolgame.cc
15	sina.com.cn
16	microfun.cn
17	p111.us
18	yimg.jp
19	9game.cn
20	microad.jp

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Table 11: Top 20 International domain names most queries in Viet Nam in 2016 (through VNNIC DNS Caching system)

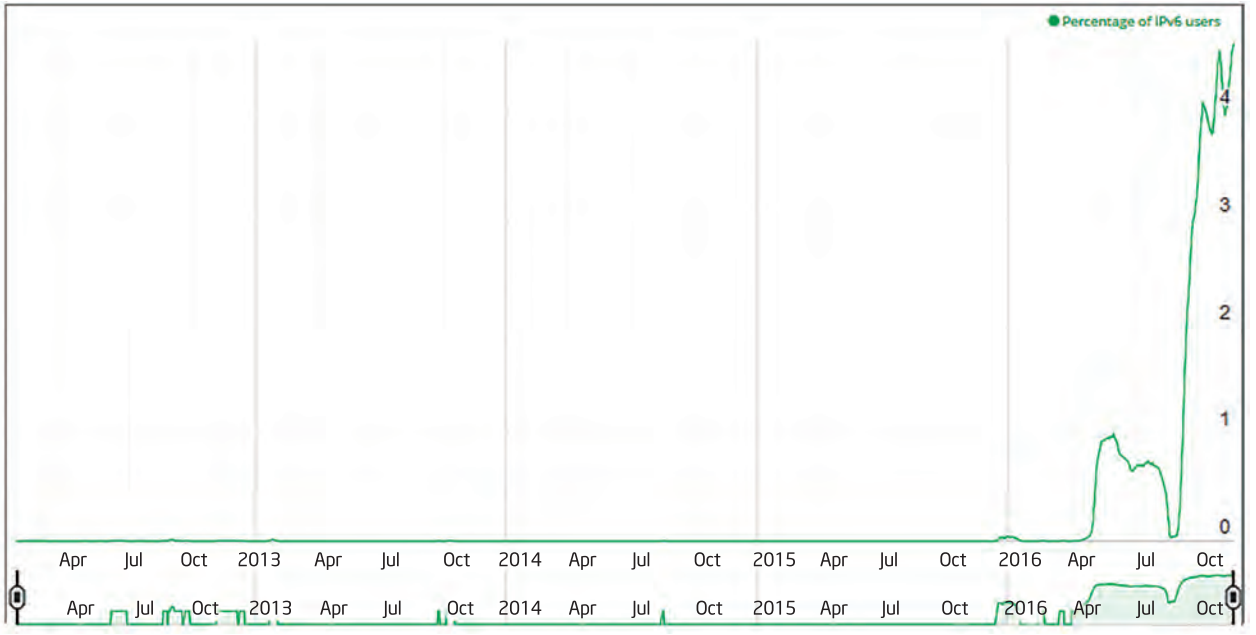
No.	Domain Name
1	cpsc.gov
2	facebook.com
3	google.com
4	akamai.net
5	apple.com
6	amazonaws.com
7	doubleclick.net
8	microsoft.com
9	cloudfront.net
10	cloudapp.net

No.	Domain Name
11	youtube.com
12	yahoo.com
13	twitter.com
14	isc.org
15	live.net
16	vnexpress.net
17	muabannhanh.com
18	tp-link.com
19	dyndns.org
20	kaspersky-labs.com

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

1. IPV6 IMPLEMENTATION OF VIET NAM IN 2016

11. Viet Nam IPv6 user



(source http://6lab.cisco.com/stats)

Figure 19: *Viet Nam IPv6 users growth over years*

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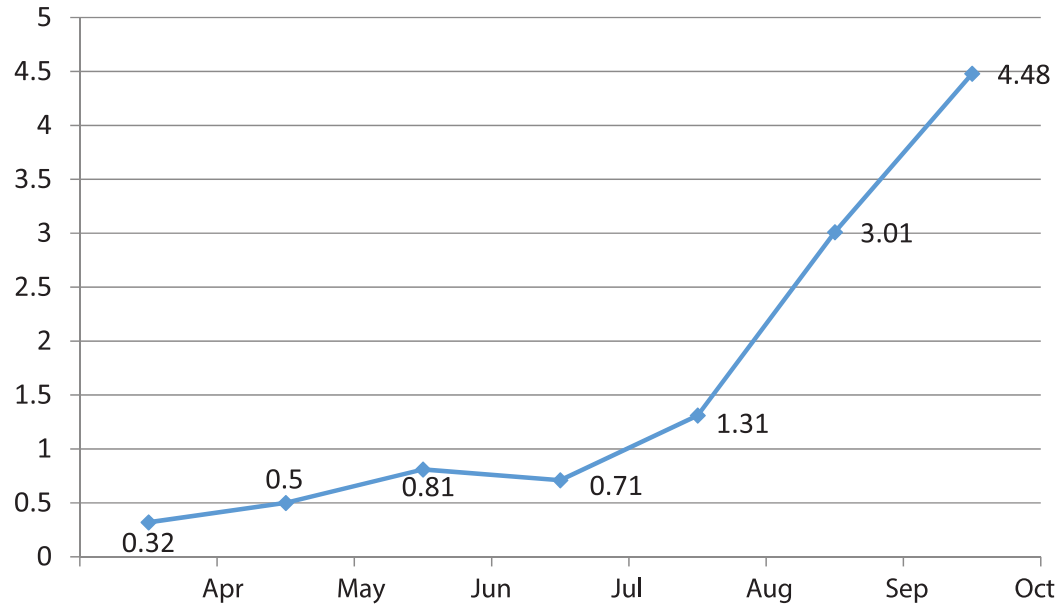

Figure 20: *Viet Nam IPv6 users increasing in 2016*

1.2. The list of IPv6 enable Websites in Viet Nam

Table 12: The list of IPv6 enable Websites in Viet Nam

No.	Sites	Certified by IPv6 Forum	Website Owner
1	http://mic.gov.vn		Ministry of Information and Communications (MIC)
2	http://www.mic.gov.vn		Ministry of Information and Communications (MIC)

No.	Sites	Certified by IPv6 Forum	Website Owner
3	http://www.vnnic.vn	x	Viet Nam Internet Network Information Center (VNNIC)
4	http://vnnic.vn	x	
5	http://vietnamipv6ready.vn	x	
6	http://www.ipv6.vn		
7	http://ipv6.vn		
8	http://www.ipv6tf.vn		
9	http://ipv6tf.vn		
10	http://mail.ipv6tf.vn		
11	http://www.ipv6event2013.vn		
12	http://ipv6event2013.vn		
13	http://www.ipv6event2012.vn		
14	http://ipv6event2012.vn		
15	http://www.vietnamipv6launch.vn		
16	http://vietnamipv6launch.vn		
17	http://www.elearning.vnnic.vn		
18	http://elearning.vnnic.vn		
19	http://vnpt.vn		Viet Nam Post and Telecom Corporation (VNPT)
20	http://www.vnpt.vn		
21	http://vnpt.com.vn		
22	http://www.vnpt.com.vn		
23	http://ipv6.vnpt.com.vn		
24	http://vdc.com.vn		
25	http://support.vnn.vn		

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No.	Sites	Certified by IPv6 Forum	Website Owner
26	http://netnam.vn	x	NetNam Corporation
27	http://www.go6.vn	x	
28	http://tunnelbroker.netnam.vn	x	
29	http://wifi.netnam.vn		
30	http://netnamonline.vn		
31	http://ipv6.net.vn	x	
32	http://hcmc.netnam.vn	x	
33	http://ipv6.hcmc.netnam.vn	x	
34	http://www.hcmc.netnam.vn	x	
35	https://www.fshare.vn	x	FPT Telecom
36	http://startalk.vn	x	
37	http://mix166.com	x	
38	https://ods.fpt.net	x	
39	http://office365.fpt.vn	x	
40	https://truyenhinh.fpt.vn	x	
41	https://ipv6.fpt.vn	x	
42	http://abcplay.net	x	
43	https://member.fpt.vn	x	
44	http://id.fpt.vn	x	

No.	Sites	Certified by IPv6 Forum	Website Owner
45	http://go.vn		VTC Corporation
46	http://cf.go.vn		
47	http://bongro.go.vn		
48	http://game.go.vn		
49	http://au.go.vn		
50	http://fifaonline.go.vn		
51	http://a2.go.vn		
52	http://esites.vn		
53	http://hfh.com.vn	x	Ha Noi French Hospital
54	http://www.usth.edu.vn/vi	x	Ha Noi University of Science and Technology
55	http://vnio.vn		Viet Nam National Institute of Ophthalmology
56	http://virror.hanoilug.org	x	Virror Hanoi Lug
57	http://www.giabao.net.vn		Gia Bao Company
58	http://iami.ac.vn		Institute of Applied Mechanic and Informatics
59	http://www.interdist.com.vn		Interdist Group
60	http://www.daiko.com.vn		Daiko Viet Nam Limited Company
61	http://www.v-lead.com.vn		V-Lead Company

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No.	Sites	Certified by IPv6 Forum	Website Owner
62	http://www.vienvatly-hcm.ac.vn		Ho Chi Minh City Institute of Physics
63	http://kttvnb.vn		Southern Regional Hydrometeorological Center
64	http://www.kttv-nb.org.vn		
65	http://www.namphatwtc.com		Nam Phat Company
66	http://www.hopviet.com.vn		Hop Viet Company
67	http://www.netmarks.com.vn		NETMARKS Viet Nam Company
68	http://vfossa.vn	x	Mr. Nguyen Hong Quang

1.3. Number of AAAA (IPv6) record queries through VNNIC's DNS over the years

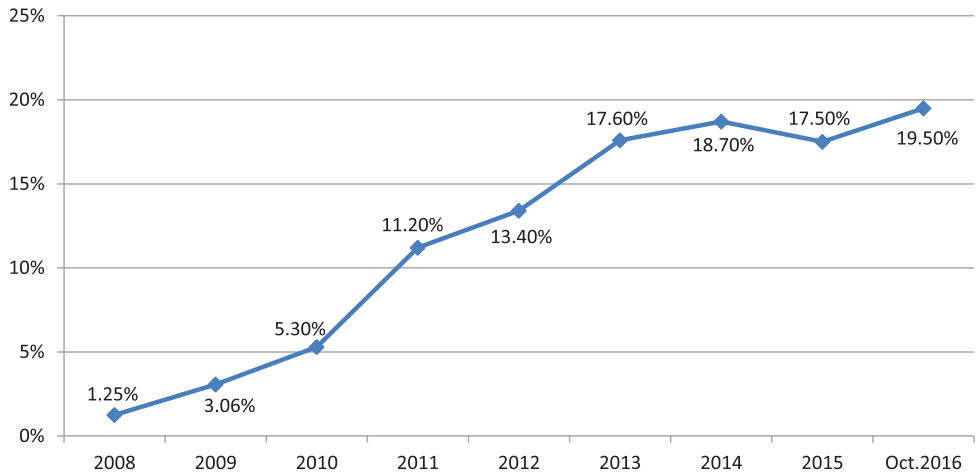

Figure 21: *Number of AAAA (IPv6) record queries through VNNIC's DNS over the years*

1.4. Use of IPv6 for Viet Nam (Source: APNIC)

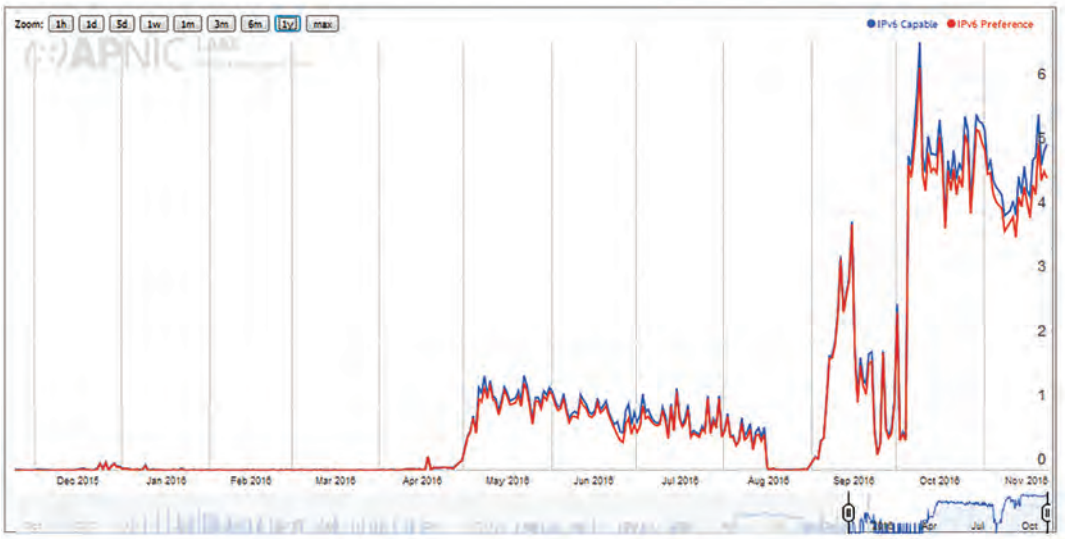

Figure 22: *Growth of IPv6 use for Viet Nam (source APNIC)*

2. IP ADDRESS AND ASN GROWTH OVER THE YEARS

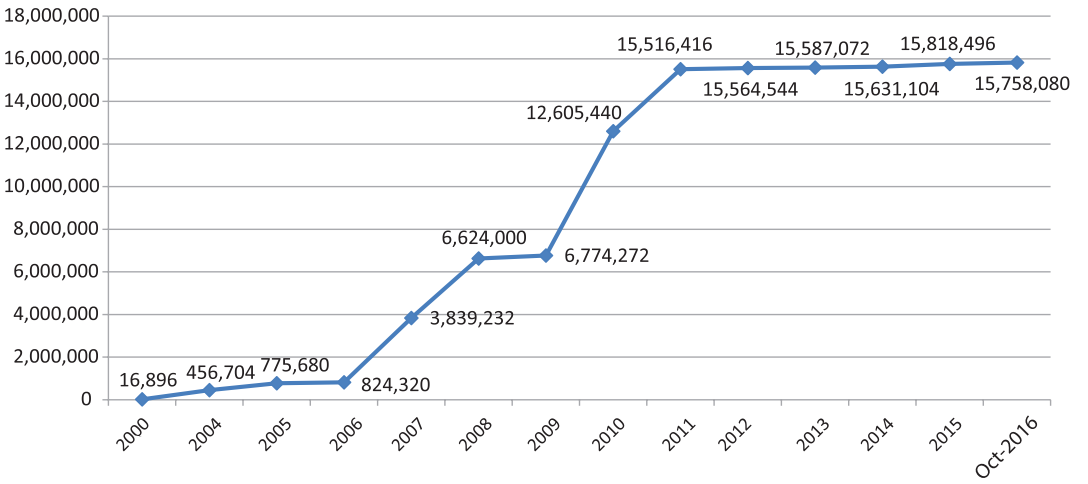

Figure 23: *IPv4 growth over the years*

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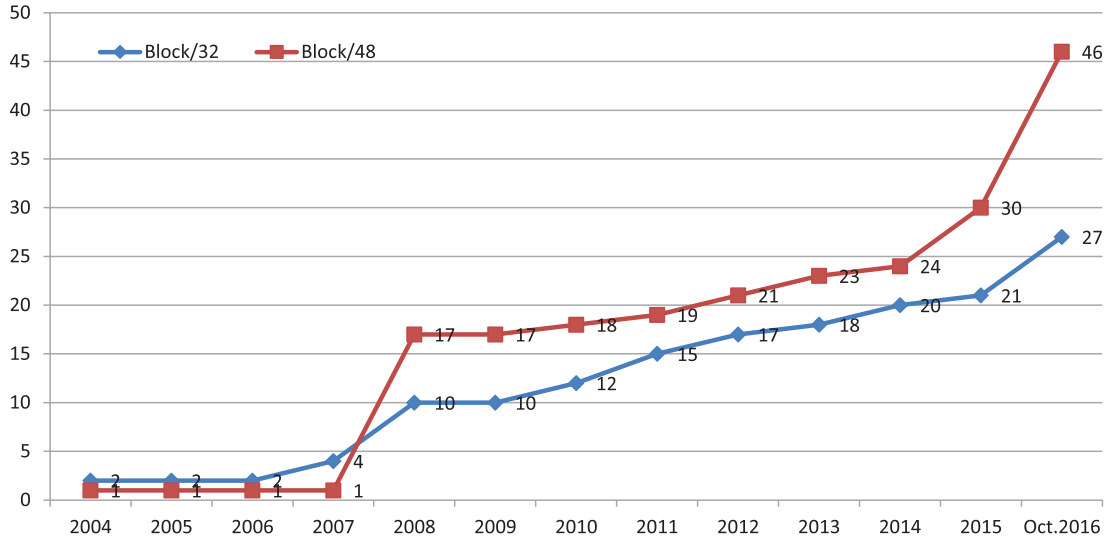

Figure 24: *IPv6 growth over the years*

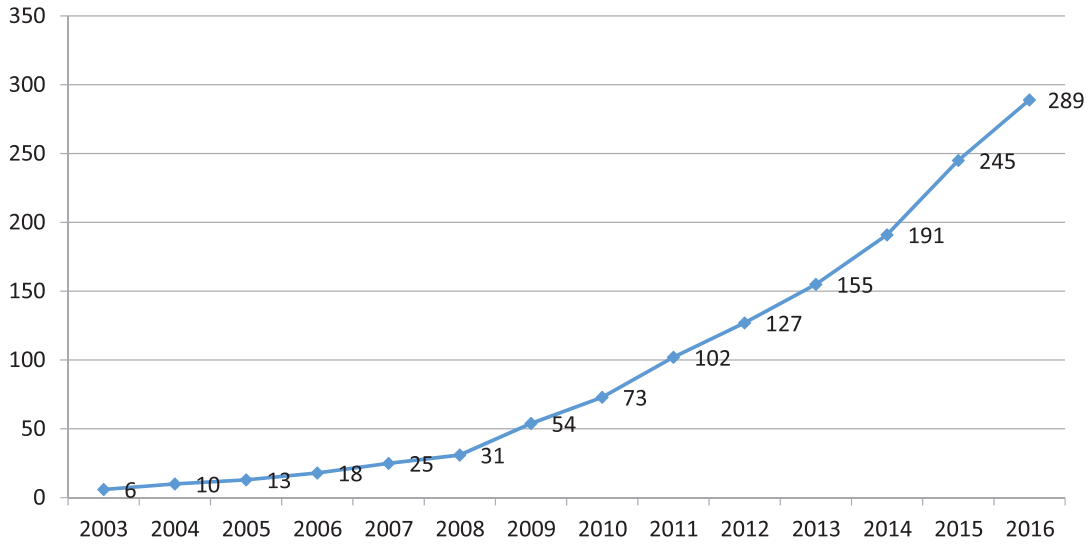

Figure 25: *IP member's growth over the year's*

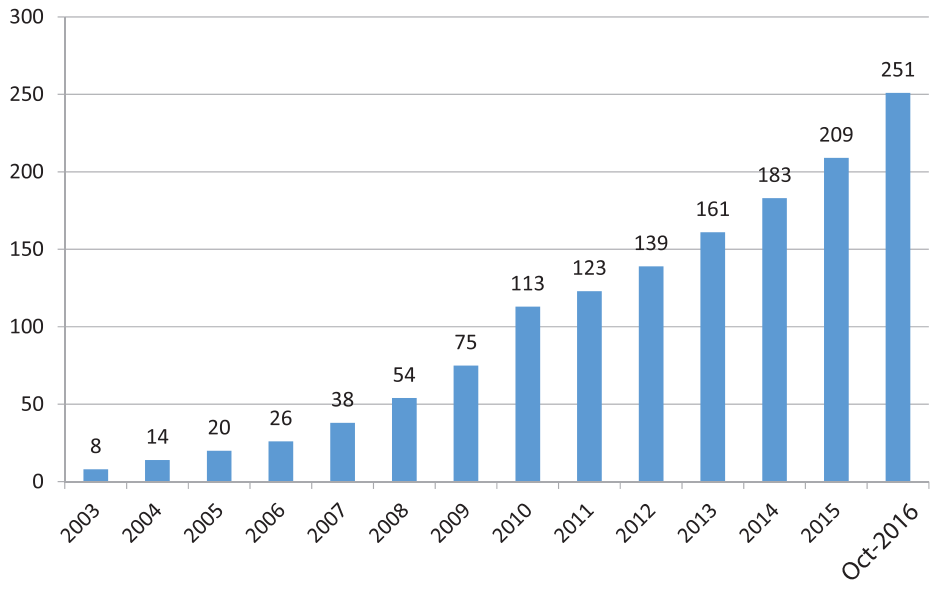

Figure 26: *ASN's growth over the years*

3. IP ADDRESS AND ASN DELEGATION OF VIET NAM IN 2016

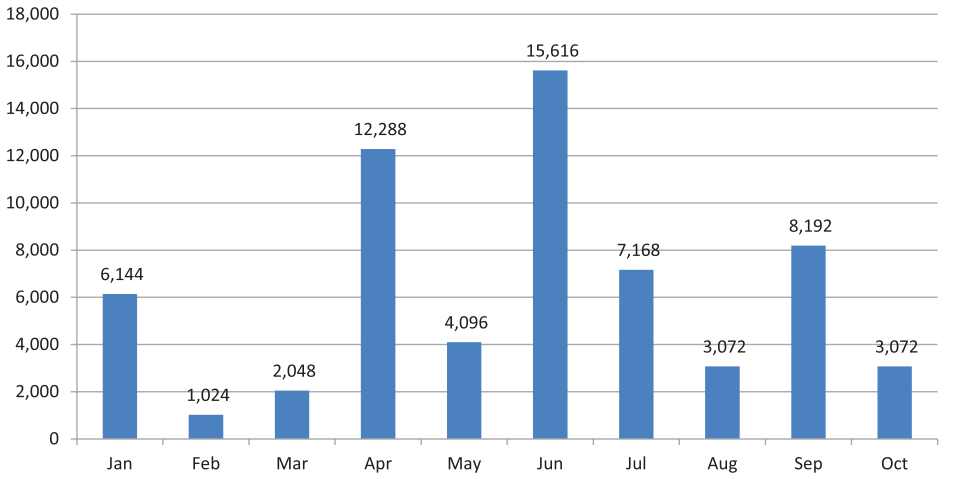

Figure 27: *IPv4 address delegation in 2016*

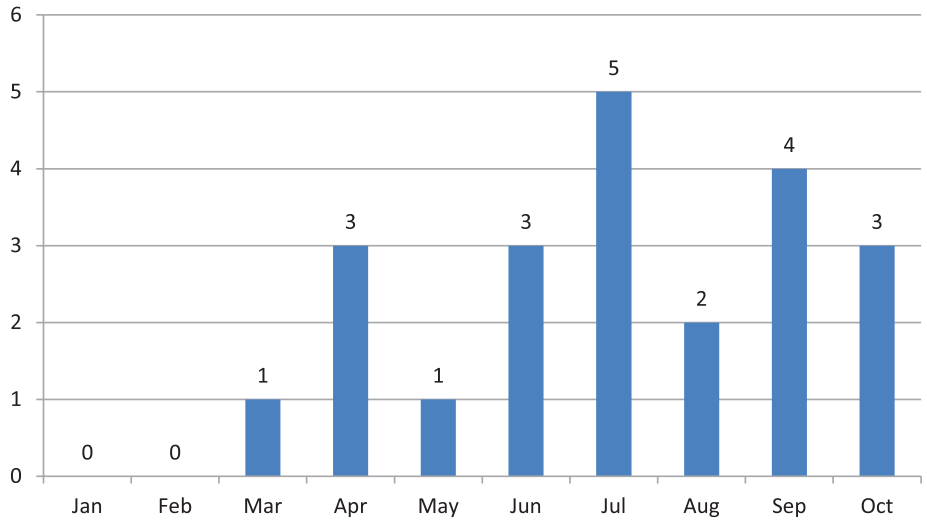

Figure 28: *The number of IPv6 block delegation in 2016*

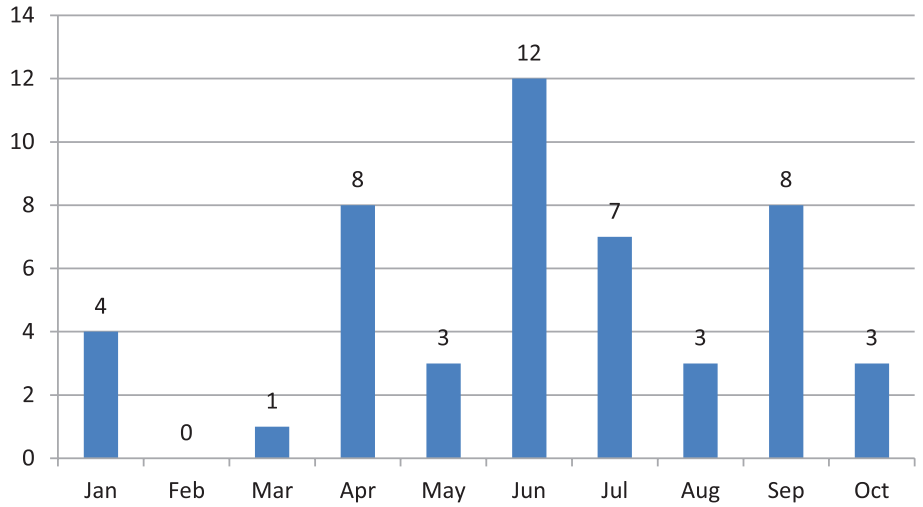

Figure 29: *The number of new IP members in 2016*

VNiXNOG
Viet Nam National Internet eXchange Network Operators Group

VIET NAM NATIONAL INTERNET EXCHANGE - VNIX

Internet Exchange Point (IX) is a physical infrastructure through which independent networks exchange Internet traffic, and plays a crucial role for the development of Internet.

Viet Nam National Internet eXchange (VNIX) was established in Nov 2003 to develop, enhance and improve the quality 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. Throughout the development, VNIX has been contributing greatly to the growth of Internet in Viet Nam, by supporting domestic ISPs with multicast and bilateral connections, even to international IXs; reducing cost and operation fees for service providers.

VNIX is operated according to BGP layer 2, with Router Server managing routing information exchange with participants' routers between which Internet traffic exchanges directly. VNIX supports IPv4/IPv6 dual stack.

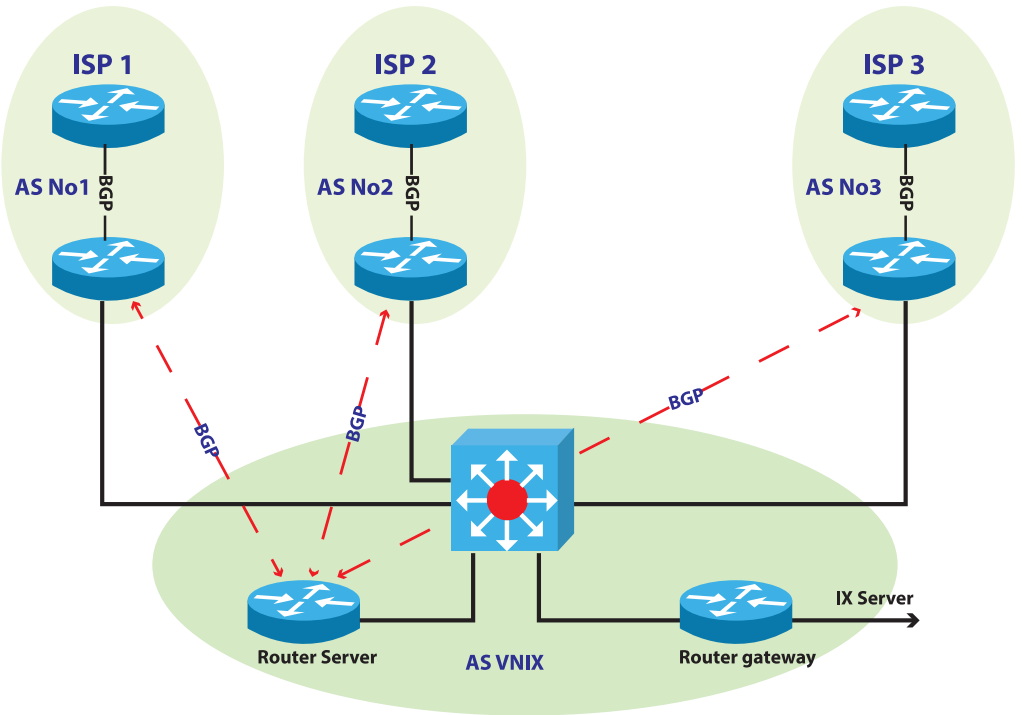

Figure 30: *VNIX operation model*

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VNIX EXCHANGE POINT

VNIX is deployed at 04 major sites in Ha Noi (Yen Hoa, Hoa Lac), Da Nang, and Ho Chi Minh City. There was 53.42% of total bandwidth via Ha Noi IX, 44.52% via Ho Chi Minh City IX and 2.06% via Da Nang IX.

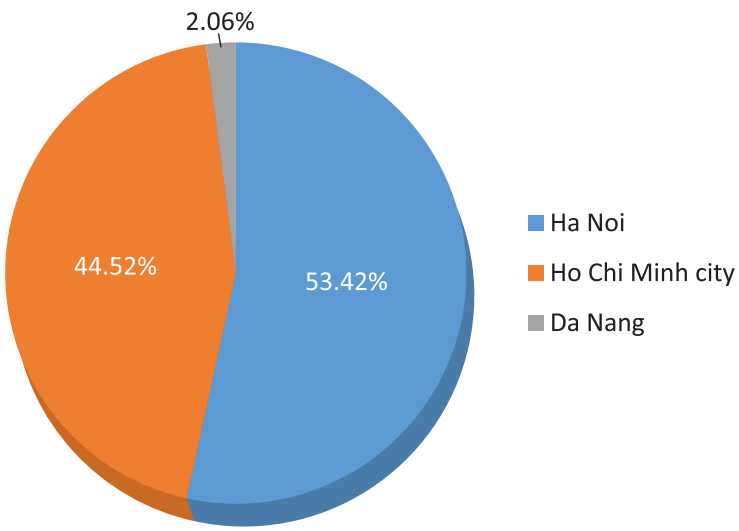

Figure 31: *VNIX Exchange Points in Viet Nam*

VNIX MEMBERS

Table 14: VNIX member

No.	VNIX member	VNIX Point	Bandwidth
1	VNPT	Ha Noi	20 Gbps
		Ho Chi Minh city	30 Gbps
2	FPT Telecom	Ha Noi	1 Gbps
		Ho Chi Minh city	1 Gbps
3	VIETTEL	Ha Noi	10 Gbps
		Ho Chi Minh city	20 Gbps
		Da Nang	2 Gbps
4	SPT	Ha Noi	1 Gbps
		Ho Chi Minh city	1 Gbps
5	HTC	Ha Noi	1 Gbps
		Ho Chi Minh city	1 Gbps
6	VTC Intecom	Ha Noi	10 Gbps
		Ho Chi Minh city	10 Gbps
7	SCTV	Ho Chi Minh city	2 Gbps
8	GDS	Ha Noi	2 Gbps

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No.	VNIX member	VNIX Point	Bandwidth
9	NetNam	Ha Noi	2 Gbps
		Ho Chi Minh city	1 Gbps
10	DTS	Ho Chi Minh city	1 Gbps
11	CMC TI	Ha Noi	10 Gbps
		Ho Chi Minh city	10 Gbps
		Da Nang	1 Gbps
12	NewLife	Ho Chi Minh city	1 Gbps
13	ODS	Ho Chi Minh city	1 Gbps
14	VinaData	Ho Chi Minh city	10 Gbps
15	VNTT	Ho Chi Minh city	1 Gbps
16	MOBIFONE Global	Ha Noi	1 Gbps
		Ho Chi Minh city	1 Gbps
17	DIGINET	Ha Noi	1 Gbps
18	VTVCAB	Ha Noi	1 Gbps
19	TPCOM	Ho Chi Minh city	1 Gbps

ISO 27001:2013

VNIX GROWTH

1. VNIX MEMBERS

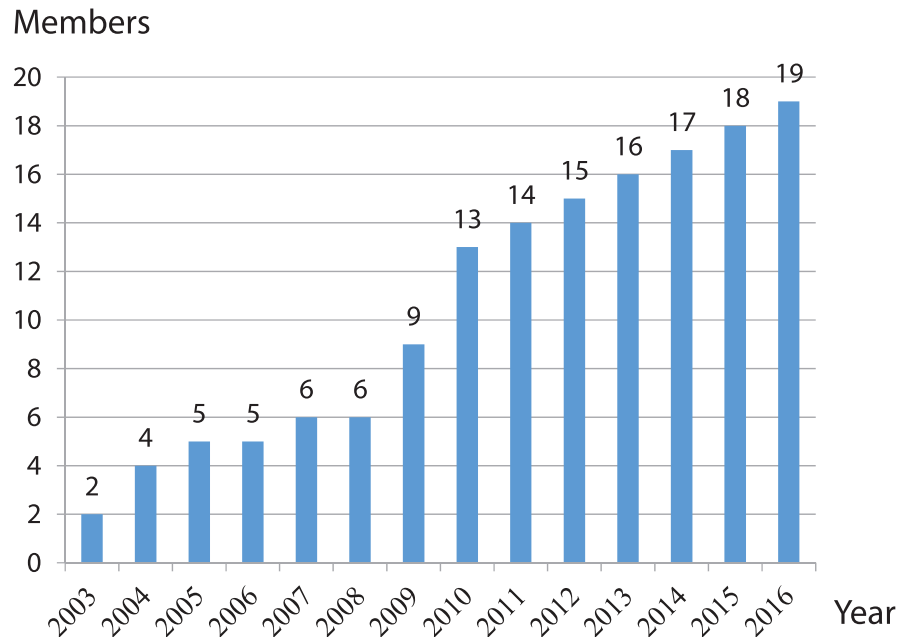

Figure 32: *Number of VNIX members over years*

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2. CONNECTION BANDWIDTH

VNIX connection bandwidth increased over the years and the max peak of traffic reached 26.36 Gbps by October 31st 2016.

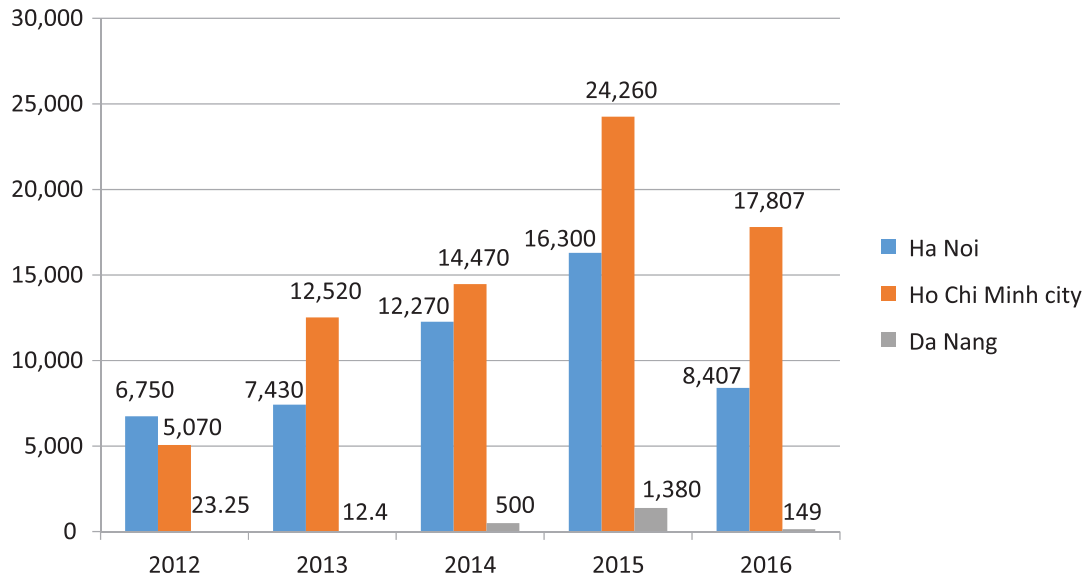

Figure 33: *Max peak of traffic via VNIX*

3. VNIX TRAFFIC

As of 31st October 2016, ISPs have connected and exchanged 417,770 TB (Terabyte) via VNIX. The weekly average traffic volume reaches 1,159,149 GB (Gigabyte).

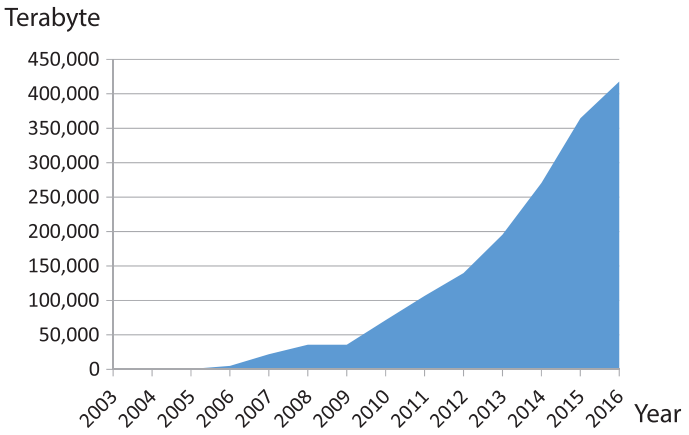

Figure 34: *Cumulative traffic via VNIX*

In April, 2013, VNIX cooperated with ISPs to connected and exchanged IPv6 traffic through VNIX. From that time on, the IPv4/IPv6 dual stack started to be applied on Viet Nam's Internet, after major ISPs were ready for the services and equipment on IPv6 basis. By Oct-2016, there have been 10 ISPs which have IPv6 traffic via VNIX including VNPT Net, Viettel, CMCTI, FPT,...

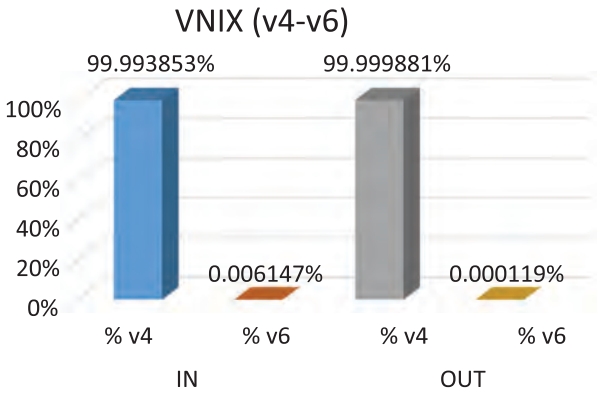

Figure 35: *: % IPv4 versus %IPv6 traffic via Ha Noi VNIX (in/out)*

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4. INBOUND/OUTBOUND TRAFFIC

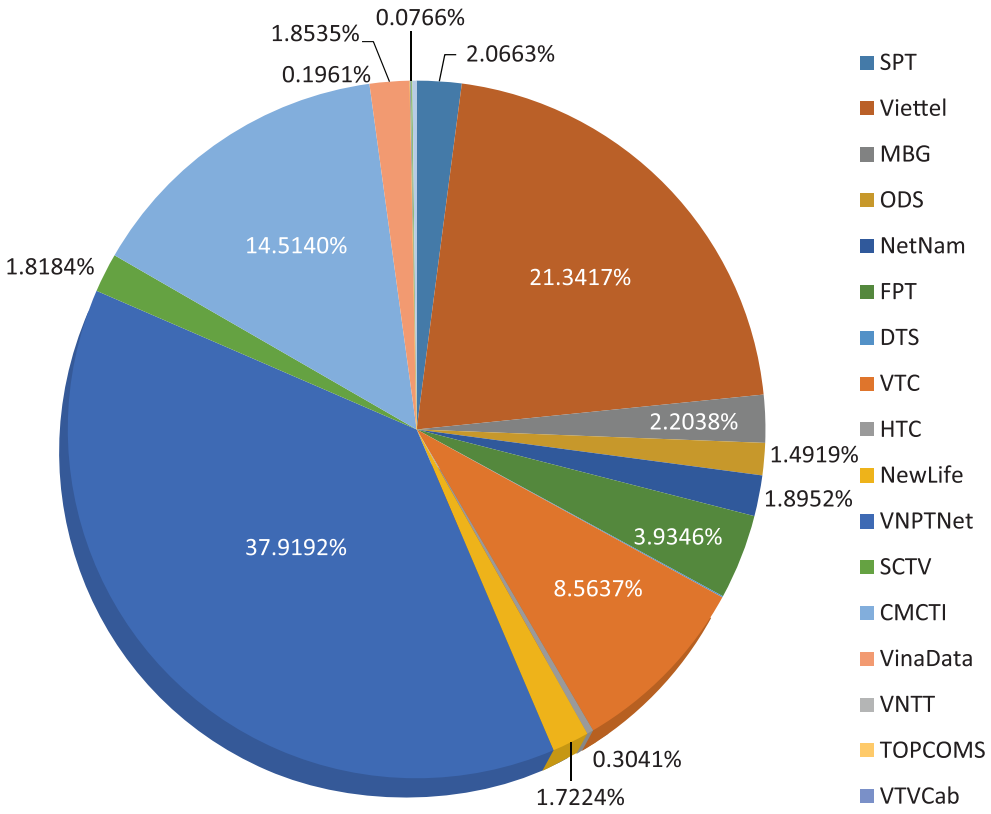

***Figure 36**: The inbound traffic volume via VNIX*

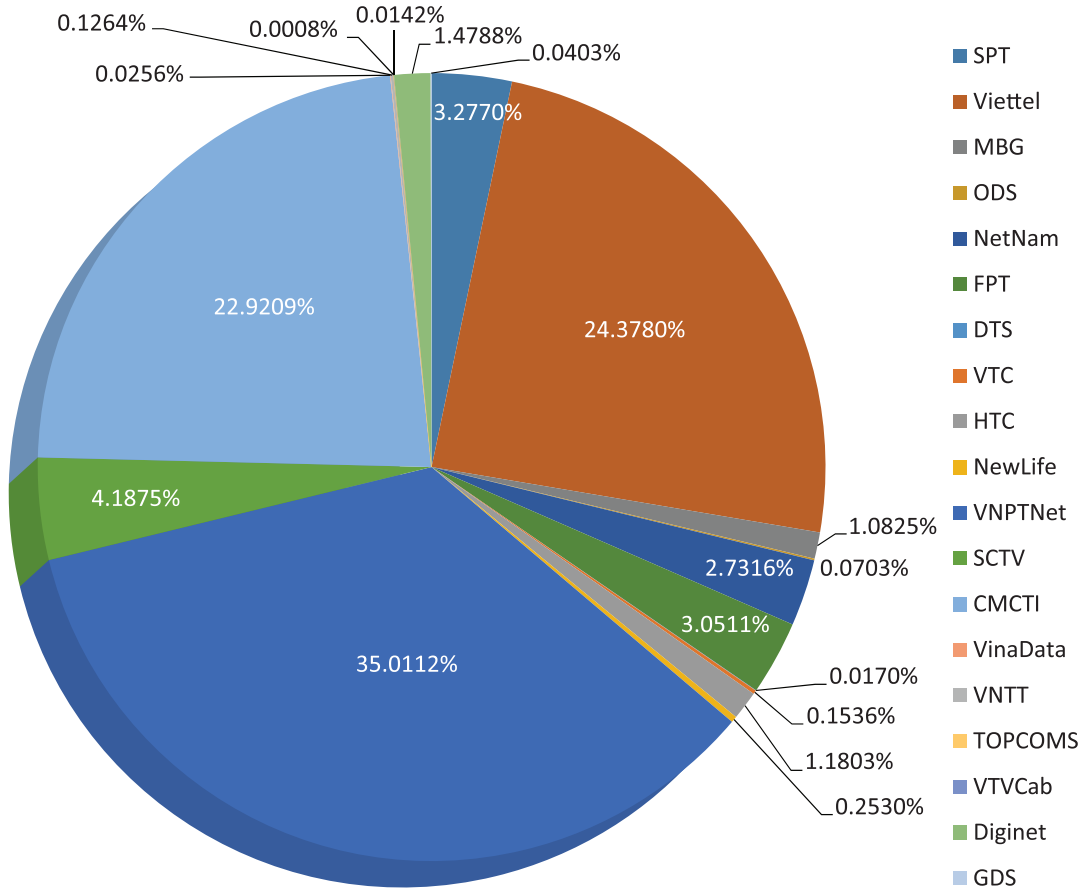

Figure 37: *The outbound traffic volume via VNIX (OUT qua VNIX)*

5. CONNECTION BANDWIDTH VIA PORT

In 2008, VNIX started supporting high-speed Internet connectivity line (10Gbps) via VNIX. ISPs also started to adopt technology application to in order to match the demand for VNIX traffic. Consequently, the total bandwidth of 10Gbps ports was higher than that of 1Gbps ports. The total bandwidth via VNIX reached 155 Gbps by Oct 2016.

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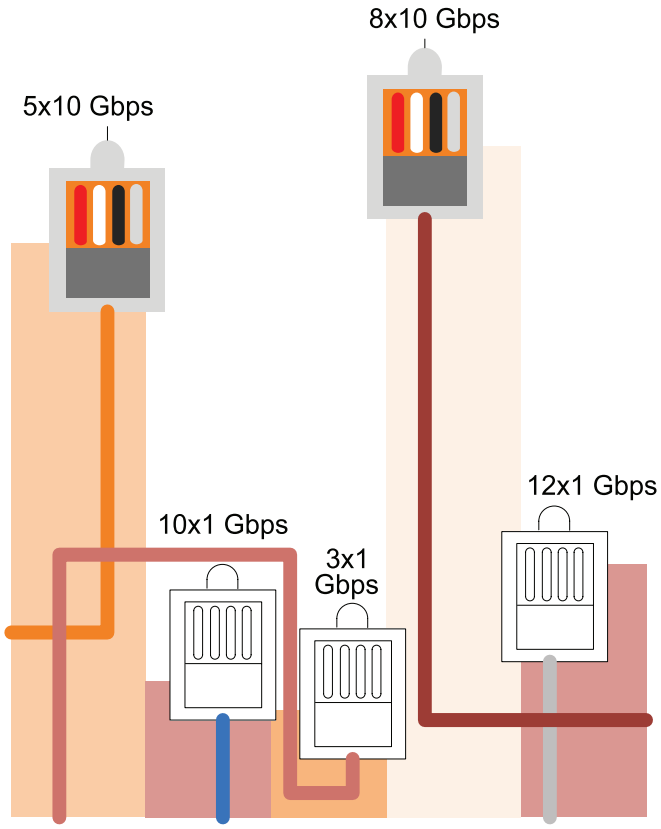

Figure 38: *VNIX connection bandwidth*

ROUNTING ON VNIX

VNIX supports routing activities and traffic exchanges among Internet service providers in Viet Nam. Other organizations having independent networks also can connect to VNIX. The number of /24 IPv4 blocks and /64 IPv6 blocks announced via VNIX are depending on how many IP addresses and customers of VNIX members.

1. MARKET SHARE OF IP (IPV4, IPV6) ADVERTISED VIA VNIX BY MEMBERS

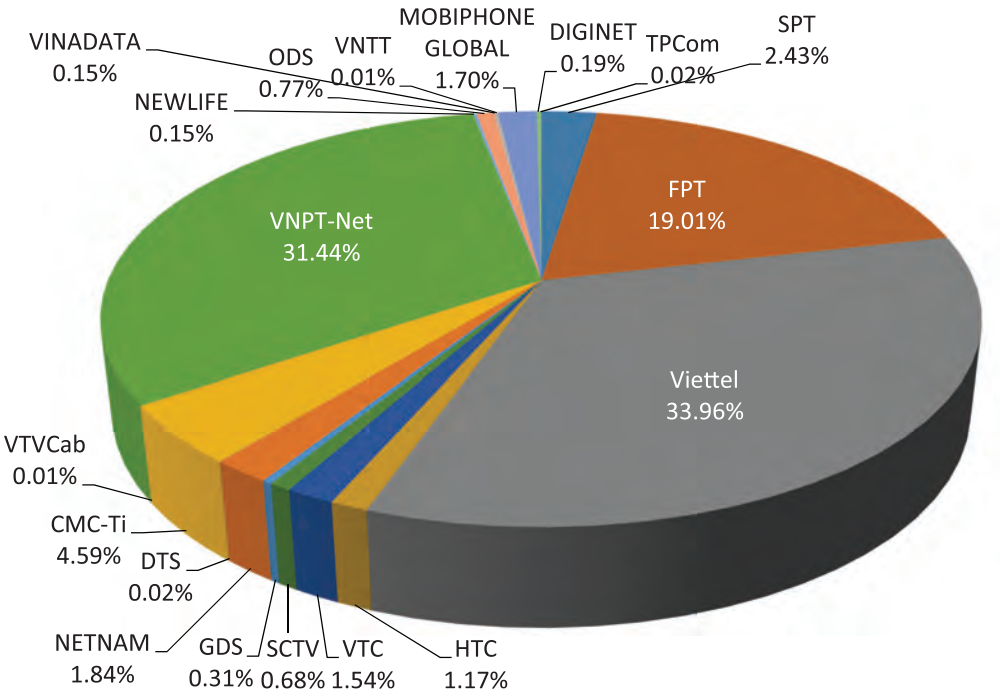

Figure 39: *IP Prefix announcement via VNIX*

2. IP PREFIX ADVERTISED VIA VNIX

The minimum IP block for VNIC members to be announced via VNIX was /24 for IPv4 and /64 for IPv6. Based on routing policy of each member, members may advertise bigger block (prefix). Total number of IP prefix advertised via VNIX of a member partially reflects their network's scale.

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ISO 9001:2008

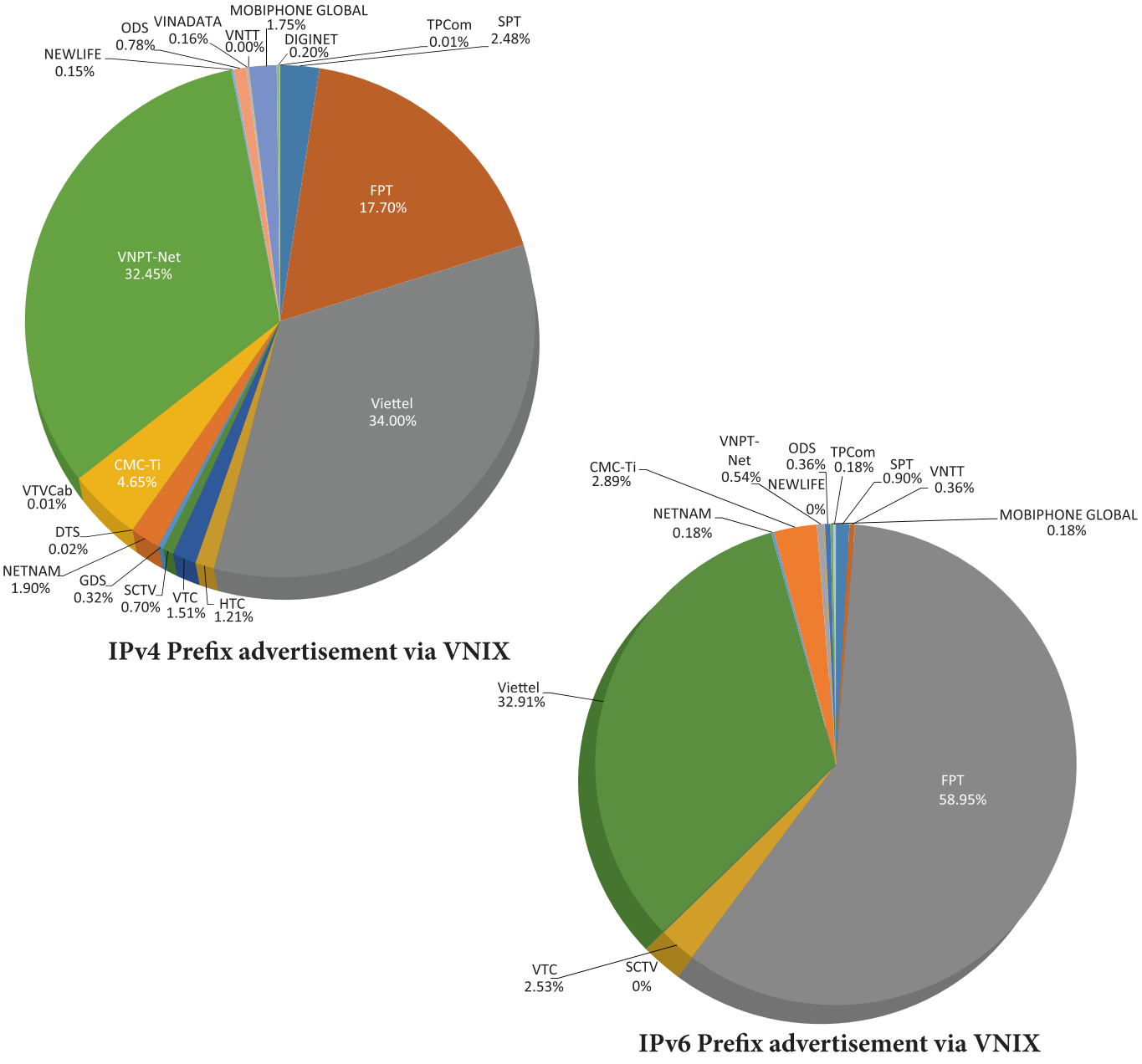

Figure 40: *IP prefix advertisement via VNIX*

You
Tube
Bē

INTERNET AND BUSINESS ACTIVITIES OF VIET NAM ENTERPRISES 2016

(Statistics were provided by Viet Nam E - Commerce Association)

E-COMMERCE VIA WEBSITE, SOCIAL NETWORK AND OTHER APPLICATIONS

1. RATE OF ENTERPRISES HAVING WEBSITE

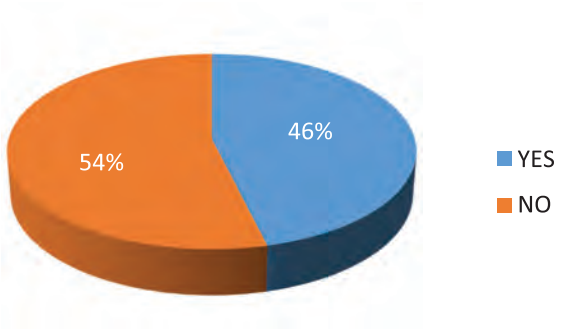

Figure 41: *Rate of Enterprises having Website*

2. PRIORITY OF ENTERPRISES WHEN CHOOSING DOMAIN NAME FOR WEBSITE

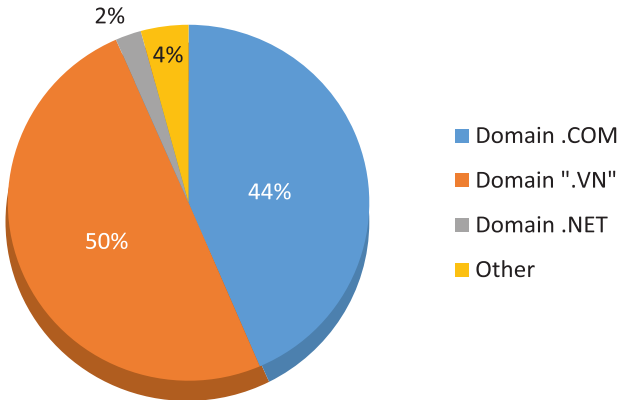

Figure 42: *Priority of enterprises when choosing domain name for website*

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3. WEBSITE UPDATE FREQUENCY OF ENTERPRISES

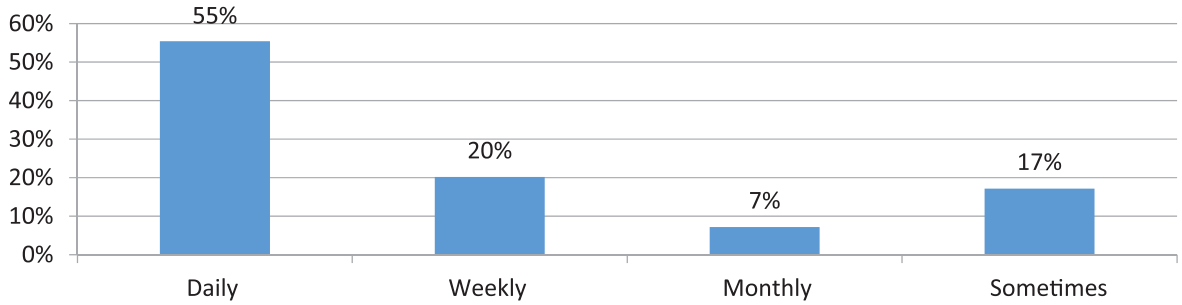

Figure 43: *Enterprises' Website Update Frequency*

4. EVALUATING THE EFFECTIVENESS OF ADVERTISING VIA WEBSITES/ MOBILE APPS

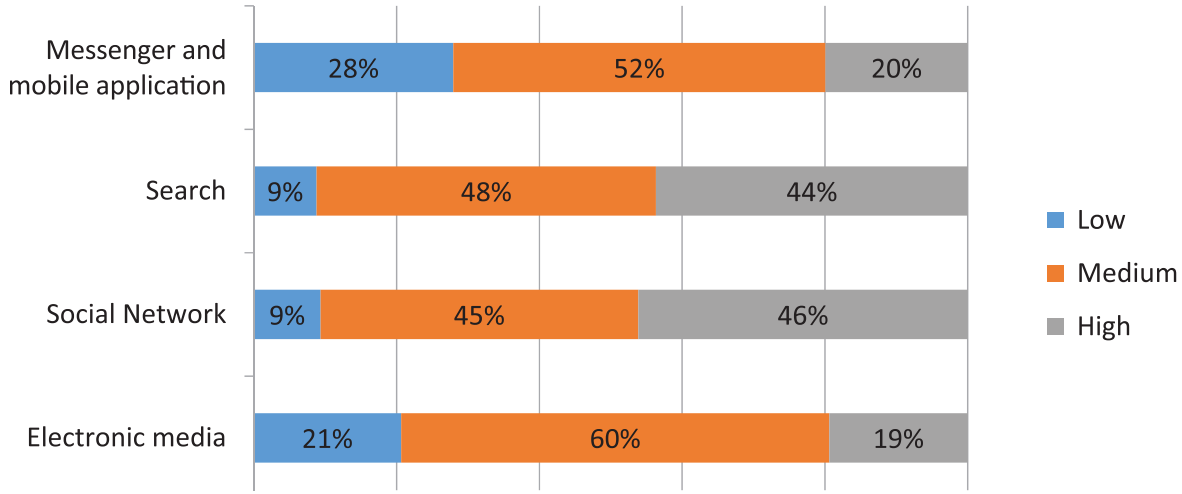

Figure 44: *Evaluating the effectiveness of advertising via Websites / mobile apps*

5. EVALUATING THE EFFECTIVENESS OF E-COMMERCE CHANNELS

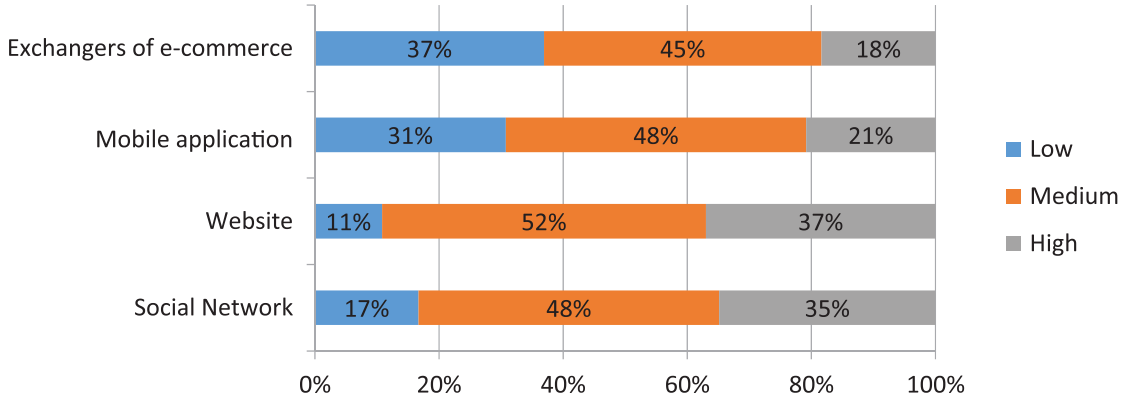

Figure 45: *Evaluating the effectiveness of e-commerce channels*

USAGE OF ONLINE SERVICES

1. ENTERPRISES LOOKING UP INFORMATION ON THE STATE AGENCY WEBSITE

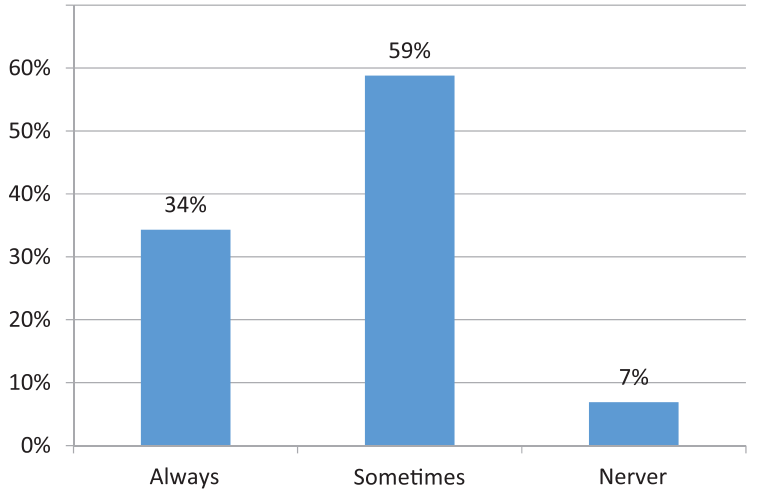

Figure 46: *Enterprises looking up information on the State AgencyWesite*

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2. TYPES OF ONLINE PUBLIC SERVICES

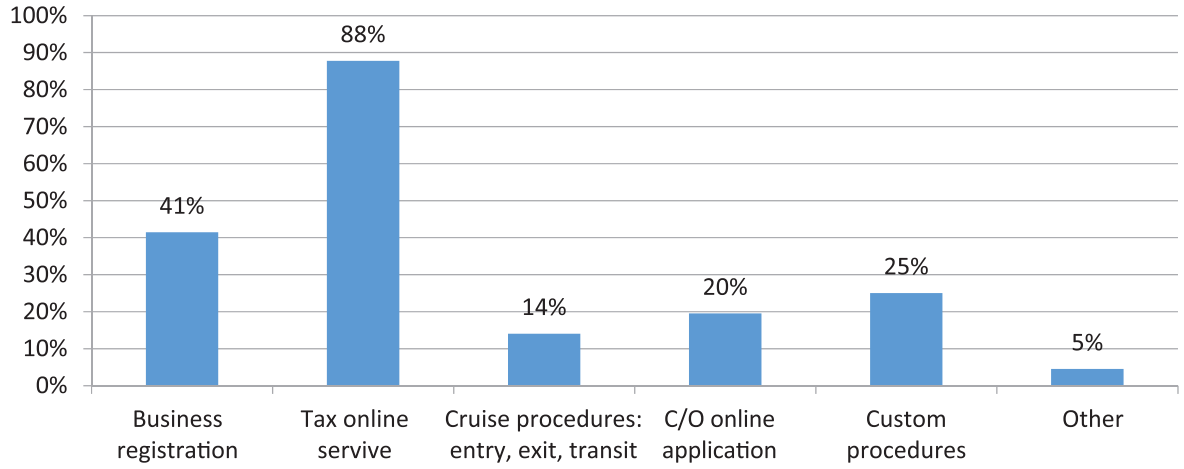


Figure 47: *Types of online public services*

3. ASSESSMENT OF THE ENTERPRISE ON THE BENEFIT OF ONLINE PUBLIC SERVICES

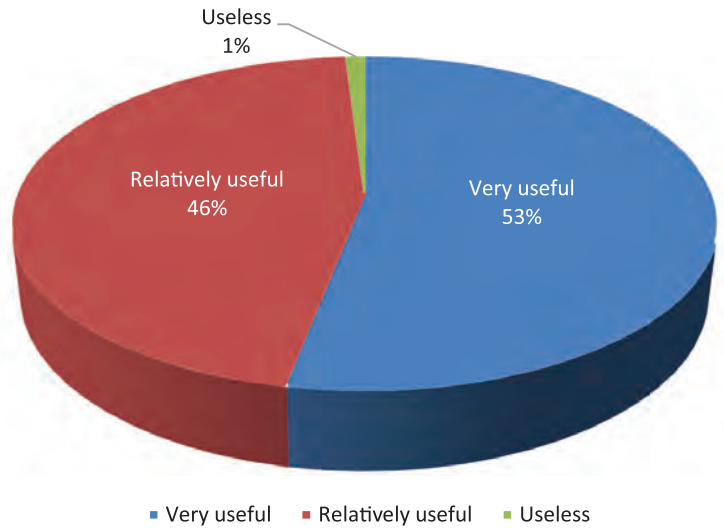
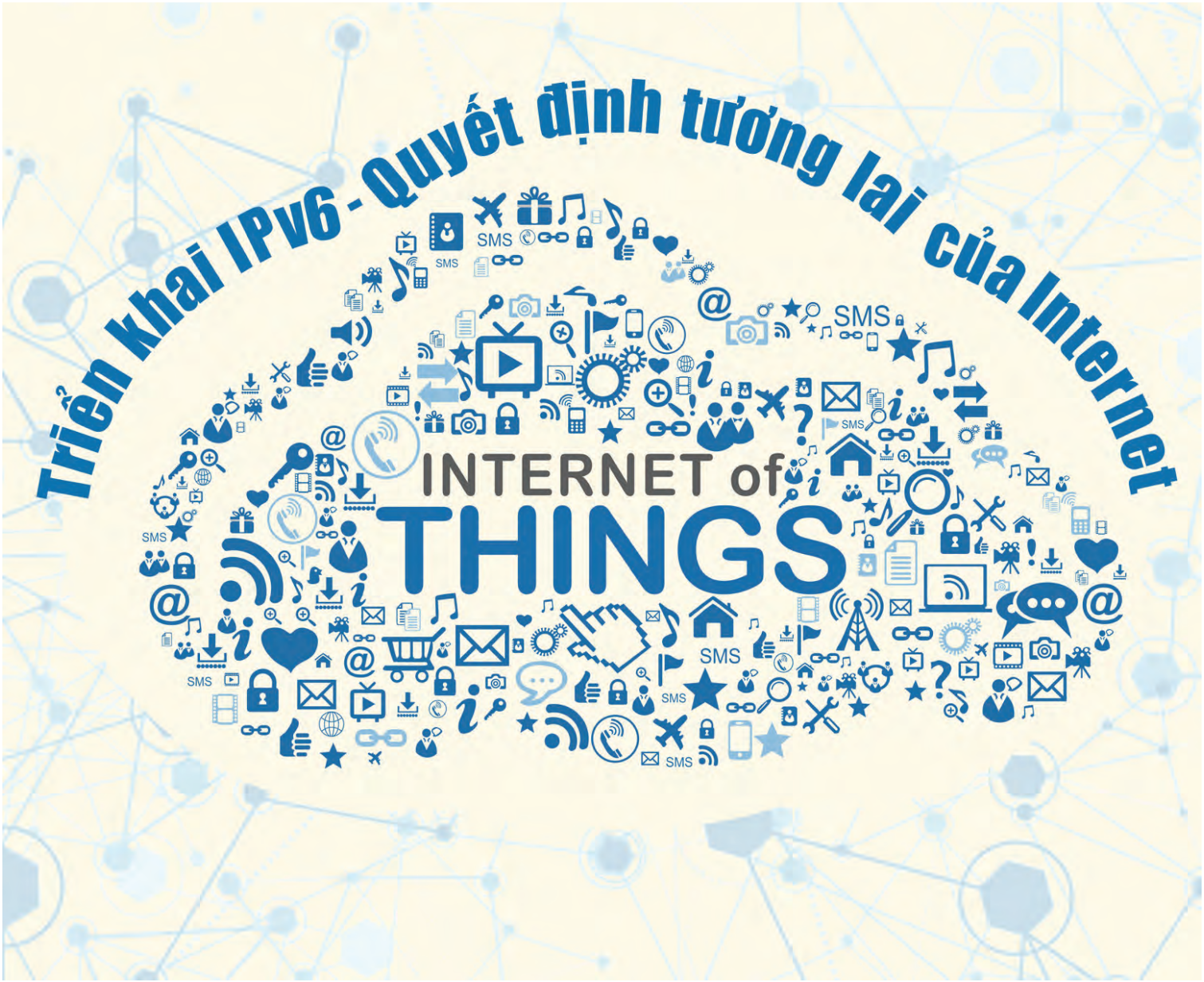


Figure 48: *Assessment of the enterprise on the benefit of online public services*



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ABOUT VNNIC

VNNIC - MISSION AND VISION

On 28th April 2000, two years after the official introduction of Internet into Vietnam, Viet Nam Internet Network Information Center (VNNIC) was established under the Authority of Posts 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" (Submission to the Government No. 222/TT-TCBD dated 18/02/2000 by Authority of Posts)

All functions, tasks and power of VNNIC are currently stipulated by the Decision No. 1198/QD-BTTTT dated 20/7/2015 by the Minister of Information and Communications.

During the 16 years of history, VNNIC has constantly led the management of Internet resources into growth and integration into the world; secured the safe operation of the networks and Internet services in Viet Nam; expanded the influence to enhance the position of Viet Nam's ICT internationally. Those are the missions that VNNIC did, is doing and would effort to complete the tasks that are imposed with the development of Viet Nam's Internet.

With the vision of growing into such a significant NIC with great reputation in the region and all over the world, all VNNIC staff have considerably tried our best to strengthen our relationship and creativity to continue the road.

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VNNIC was established during the beginning of Viet Nam's Internet, with the purpose of the Government to lay the foundation of Internet resource management to catch up with global development and promote Internet's integration. Since our start, we have dealt with various difficulties in staff, infrastructure, policy.., but with strength and willing of our people, VNNIC has been growing strong and expanding as today.

Ha Noi December 2016

Director General of Vietnam Internet Network Information Center

VNNIC'S HISTORY

2000:

- **April 28, 2000:** Established under the Authority of Post.
- **Oct, 2000:** The management of ".vn" registration was officially taken from the Authority of Post.

2001:

- **May, 2001:** Became a member of Asia Pacific Top Level Domain Name Association (APTLD).
- **Jul, 2001:** The functions of management and operation of DNS was officially taken over from VNPT.

2002:

Officially named Viet Nam Internet Network Information Center (VNNIC) under Ministry of Post and Telecommunications

2003:

- **Feb, 2003:** The second branch was opened in Ho Chi Minh City.
- **Mar, 2003:** Recognized by Asia Pacific Network Information Center (APNIC) as the National Internet Registry of Viet Nam (NIR).
- **Jul, 2003:** Decision No. 92/2003/QD-BBCVT on management and use of Internet resources - the first legal document on Internet resource management was issued, which allowed both domestic and foreign individuals to register ".vn" domain name.
- **Nov 2003:** Viet Nam Network Internet Exchange (VNIX) was established.

2004:

- **Apr, 2004:** Vietnamese Internationalized Domain name (IDN.VN) project which was granted VIFOTECH award in 2003 was put under trial period for official launching in 03/2007.

2005:

- **Jan, 2005:** The third branch was opened in Da Nang City.

2006:

- **Aug, 2006:** The public registration for second level domain name under ".vn" was opened

2007:

- **May, 2007:** Applied fully the Registry-Registrar model for ".vn" domain name.
- **Nov, 2007:** IDN".vn"registration was opened, but limited to ASCII ".vn" domain name holders.

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2008:

- **May, 2008:** The Minister of Information and Communications signed the Directive No. 03/CT-BTTTT dated 06/5/2016 on the promotion of IPv6 usage.
- **Dec, 2008:** Branch was officially opened in Ho Chi Minh City.
- **Dec, 2008:** First DNS server with Anycast technology using IPv6 was installed for National ".vn" DNS
- **Dec, 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 Viet Nam's country code domain name ".vn" were issued.

2009:

- **Jan, 2009:** The Vietnamese IPv6 Task Force (VNIPv6TF) was established, VNNIC acting as Standing Committee.

2010:

- **Jan, 2010:** The number of ".vn" reached 100,000. Viet Nam became the second largest country in ASEAN in terms of ccTLD registrations
- **Apr, 2010:** Celebrated the 10th Anniversary and the Third class Labor Decoration.

2011:

- **Apr, 2011:** Opened free registration period for IDN.VN, starting the booming period of IDN.VN.

2012:

- **Jun, 2012:** May 6th was officially chosen as the National IPv6 Day by MIC, with the first annual IPv6 event hosted by VNNIC

2013:

- **Mar, 2013:** VNNIC and ".vn" Registrar started the series "Protecting the Vietnamese brand name with ".vn" domain name" with the first event in Binh Duong province.
- **May, 2013:** VNNIC was granted the certificate of ISO TCVN 9001:2008 by Quacert
- **Nov, 2013:** Became the 143rd official member of ccNSO (ICANN)
- **Dec, 2013:** VNNIC and JPNIC signed MoU

2014:

- **Jul, 2014:** 1 million IDN".vn" reached
- **Oct, 2014:** Launched the domain management system (SRS) with EPP standards
- **Apr, 2014:** The project of DNSSEC deployment for the national ".vn" DNS was approved in the Decision No. 1524/QD-BTTTT dated Oct 23rd 2014.

2015:

- **Feb, 2015:** VNNIC and KISA signed MoU
- **Apr, 2015:** Celebrated the 15th Anniversary and granted the Second class Labor Decoration.

2016 IN REVIEW

08th Jannuary: VNNIC signed MoU with Post and Telecommunications Institute of Technology (PTIT) and Institute of Information and Technology (IOIT) on the topics of research, deployment and education in the fields of IT and Internet.

MoU signing ceremony between VNNIC, PTIT and IOIT

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- Feb - May: VNNIC signed MoUs with Department of Information and Communications of Quang Binh province, Ho Chi Minh city, and Lam Dong province to enhance promotion and strengthen the management and development of Internet resources at local level. So far VNNIC has had agreements with 07 provincial departments of Information and Communications.

MoU signing ceremony between VNNIC and Department of Information & Communications of Quang Binh Province (25/02/2016)

MoU signing ceremony between VNNIC and Department of Information & Communications of Ho Chi Minh city (22/3/2016)

MoU signing ceremony between VNNIC and Department of Information & Communications of Lam Dong Province (30/5/2016)

- In April and May: IPv6 annual events of 2016 started with the completion of the National IPv6 Task Force with updated members according to the approval of the Minister of Information and Communications, followed by the workshop on IPv6 Deployment for LTE Network organized by VNNIC and Malaysia's NAv6 from 25-28/4/2016. And on Viet Nam National IPv6 Day (May 5th) the conference "National IPv6 Action - Working together to providing IPv6 services" was well participated by all related government authorities, ISPs, CSPs,...to agree to shortly provide IPv6 on their networks.

Workshop on "IPv6 Deployment for LTE Network" (25/4/2016)

The conference "National IPv6 Action – Working together to providing IPv6 services" (05/6/2016)

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- 08th June: Joint Circular No. 14/2016/TTLT-BTTTT-BKHCN dated June 8th, 2016 of the Ministry of Information and Communications - the Ministry of Science and Technology guiding the order and procedures for changing and revoking domain names infringing upon the intellectual property rights

Signing ceremony of Joint Circular No. 14/2016/TTLT-BTTTT-BKHCN dated June 8th, 2016 of the Ministry of Information and Communications - the Ministry of Science and Technology

- 15th July: The 5th conference of the series "Protecting the Vietnamese brand name by ".vn" domain name" was cohosted by VNNIC, Department of Information and Communications of Ho Chi Minh city, and ".vn" Registrars.

The conference "Protecting the Vietnamese brand name by ".vn" domain name"

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- **22nd July:** 2016 annual IP member meeting took place, with the participation of Mr. Paul Wilson, GD of APNIC and representative of ICANN, which gave the IP members in Viet Nam the opportunity to discuss the IP policy and practices with the international experts

VNNIC's IP member annual meeting 2016

- In July and August: VNNIC hosted a DNSSEC workshop, in collaboration with ICANN and APNIC, to train the staff of ISPs and ".vn" Registrar in Ha Noi. After that, two experts from NZRS paid a working visit to VNNIC to work with our engineers about DNSSEC.

Workshop on DNSSEC hosted by VNNIC, APNIC and ICANN (19-21/7/2016)

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NZRS staff and VNNIC colleagues took a picture together during the working visit to VNNIC's headquarter to discuss about DNSSEC deployment (22/8/2016)

- **13th September:** VNNIC signed an MoU with Coordination Center for CC TLD RU on the cooperation in the fields of building management and promotion policy of Internet resources, statistics, security, ccTLD/IDN application and infrastructure development in each country..

MoU signing ceremony between VNNIC and CC for TLD RU (13/9/2016)

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- Oct: According to the action plan of 2016, the VNIPv6TF had several working visits to major ICT enterprises and ISPs, including Authority of Central Posts, VNPT, VIETTEL, MobiFone, FPT Telecom and VnExpress to discuss about IPv6 deployment status and plan. By Oct 2016, the IPv6 user rate of Viet Nam reached 4.48%.

Viet Nam IPv6 taskforce working with Viettel Corporation on 26th, Oct, 2016