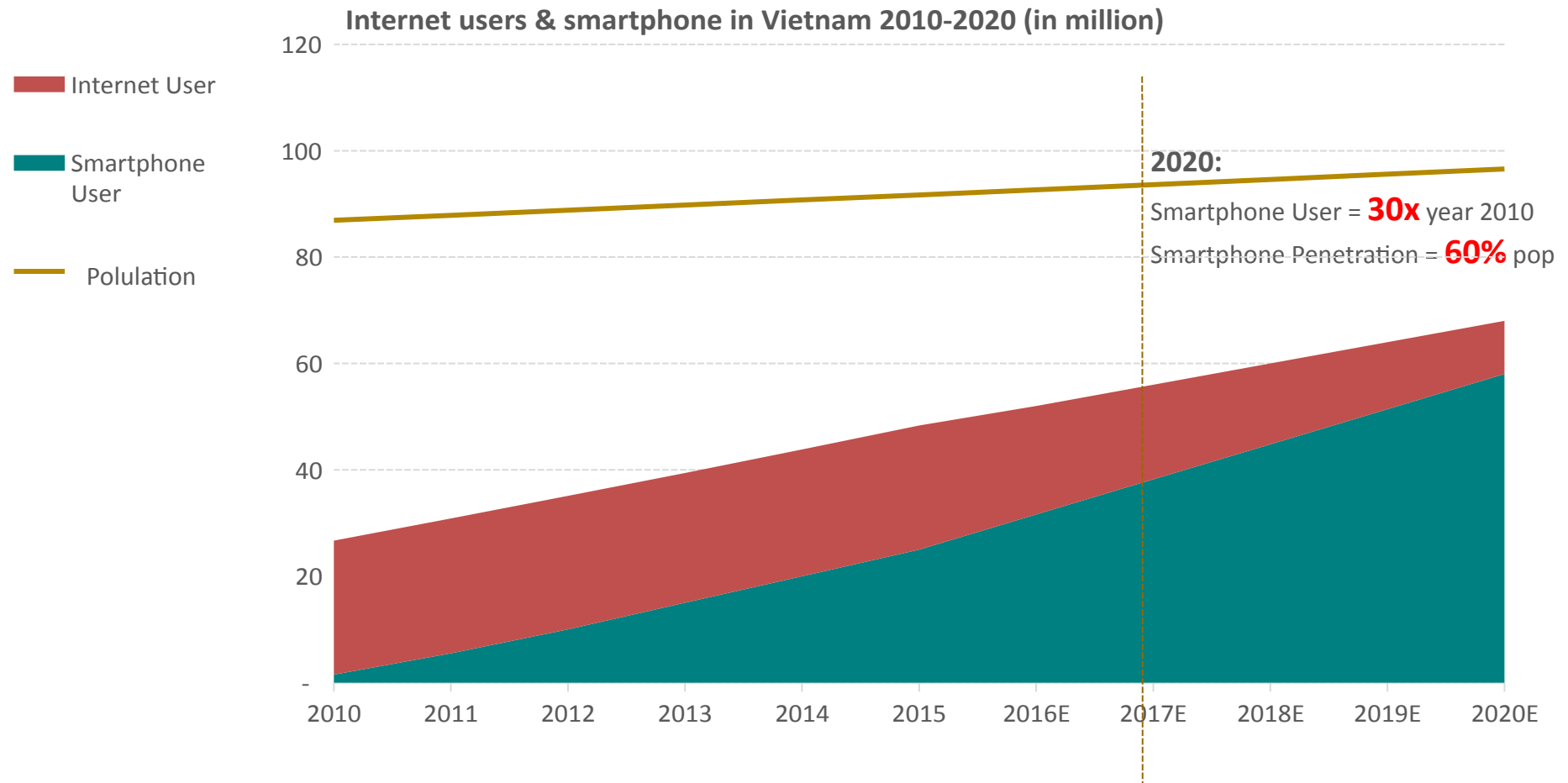




Vietnam Internet & Cyber Security Landscape 2016-17

*Binh Vu, Vietnam Internet Association
@ AP* Retreat, Saigon, 26 Feb 2017*

internet penetration vietnam

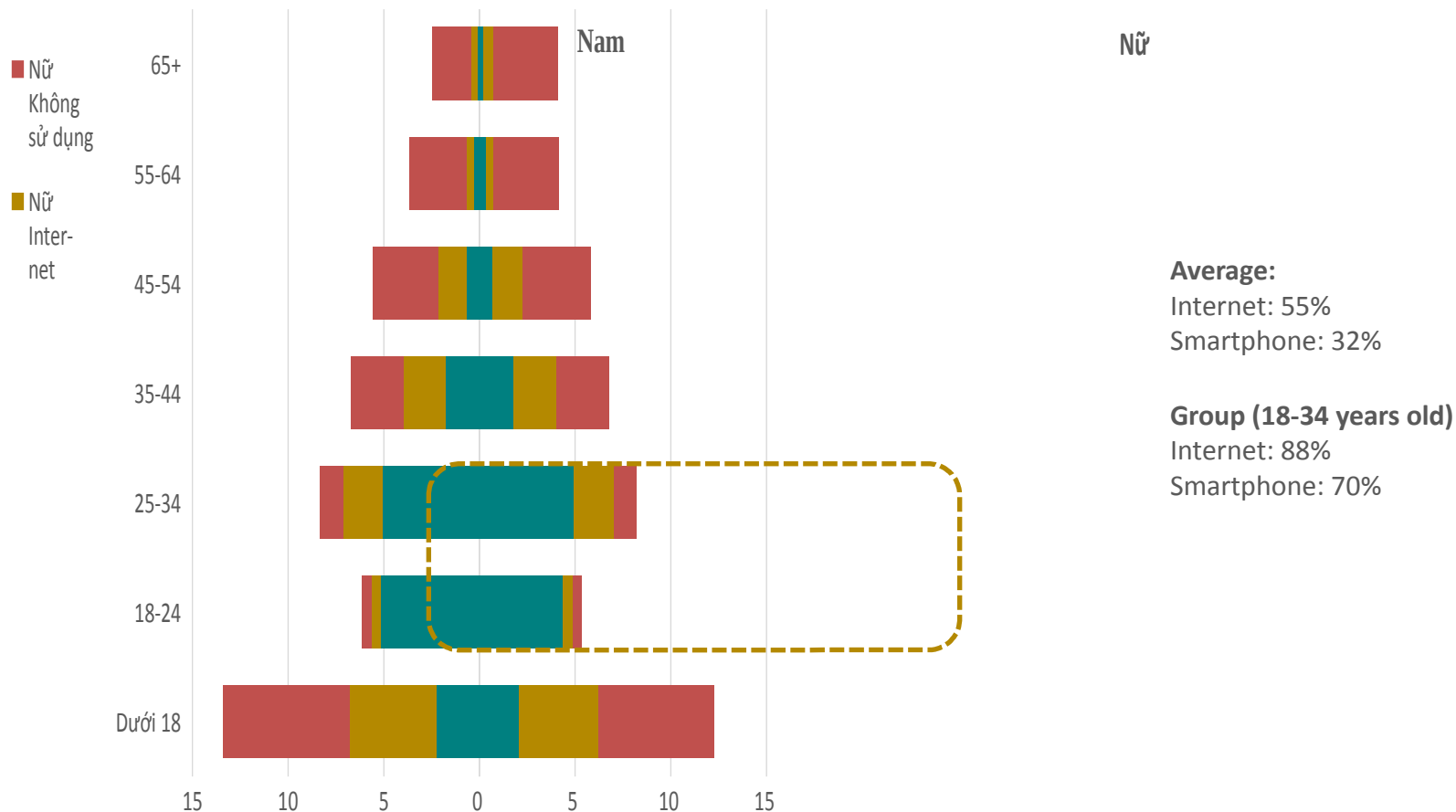


Notes: penetration (%) = user/population

Source: World Bank, eMarketer, VNG-ID2016

users: young & dynamic

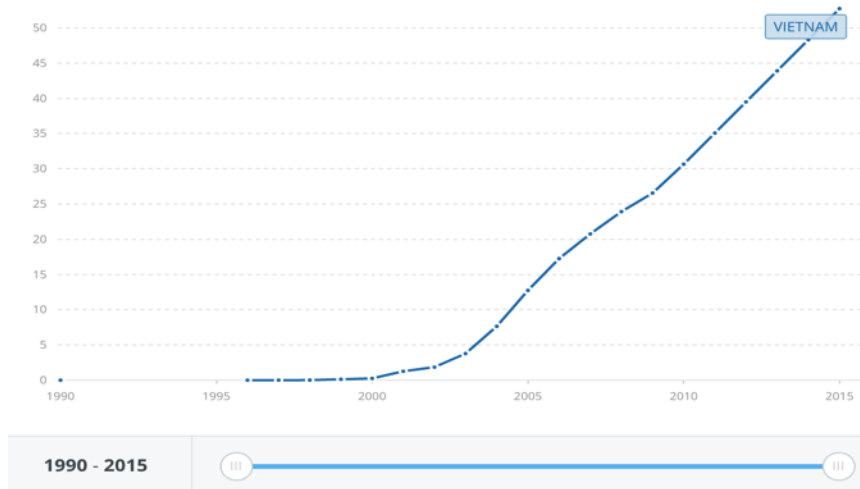
Internet & Smartphone penetration in Vietnam by ages, 2016



Notes: penetration (%) = user/population

Sources: GSO, comScore, Facebook, VNG-ID2016

internet users growth



Top 20 countries with highest rate of internet user growth rate

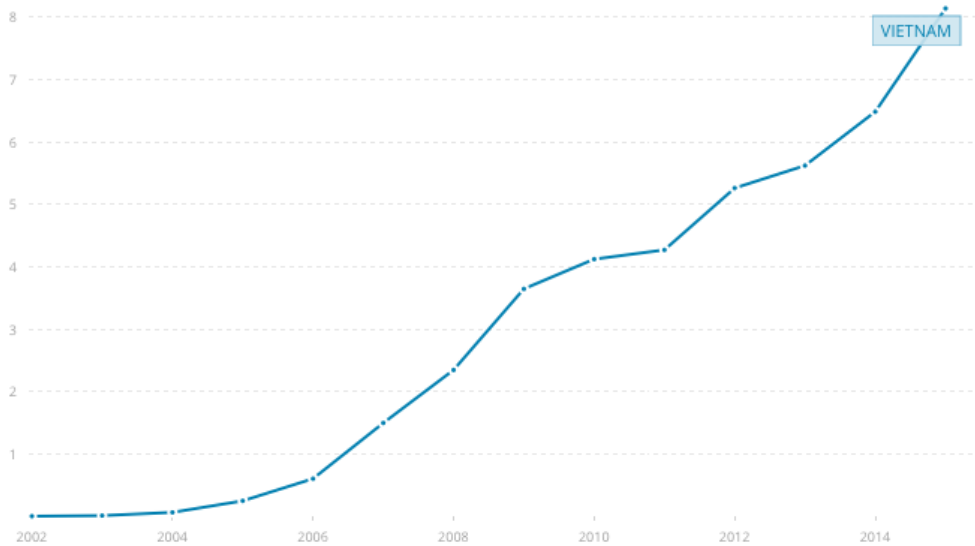
Sources: data.worldbank.org; VNNIC

Ranking # 13 globally for number of internet users

#	Country	Internet Users (2016)	Penetration (% of Pop)	Population (2016)	Non-Users (internetless)	Users 1 Year Change (%)	Internet Users 1 Year Change	Population 1 Y Change
1	China	721,434,547	52.2 %	1,382,323,332	660,888,785	2.2 %	15,520,515	0.46 %
2	India	462,124,989	34.8 %	1,326,801,576	864,676,587	30.5 %	108,010,242	1.2 %
3	U.S.	286,942,362	88.5 %	324,118,787	37,176,425	1.1 %	3,229,955	0.73 %
4	Brazil	139,111,185	66.4 %	209,567,920	70,456,735	5.1 %	6,753,879	0.83 %
5	Japan	115,111,595	91.1 %	126,323,715	11,212,120	0.1 %	117,385	-0.2 %
6	Russia	102,258,256	71.3 %	143,439,832	41,181,576	0.3 %	330,067	-0.01 %
7	Nigeria	86,219,965	46.1 %	186,987,563	100,767,598	5 %	4,124,967	2.63 %
8	Germany	71,016,605	88 %	80,682,351	9,665,746	0.6 %	447,557	-0.01 %
9	U.K.	60,273,385	92.6 %	65,111,143	4,837,758	0.9 %	555,411	0.61 %
10	Mexico	58,016,997	45.1 %	128,632,004	70,615,007	2.1 %	1,182,988	1.27 %
11	France	55,860,330	86.4 %	64,668,129	8,807,799	1.4 %	758,852	0.42 %
12	Indonesia	53,236,719	20.4 %	260,581,100	207,344,381	6.5 %	3,232,544	1.17 %
13	Viet Nam	49,063,762	52 %	94,444,200	45,380,438	3.3 %	1,564,346	1.07 %
14	Turkey	46,196,720	58 %	79,622,062	33,425,342	5.1 %	2,242,750	1.22 %
15	Philippines	44,478,808	43.5 %	102,250,133	57,771,325	4.4 %	1,855,574	1.54 %
16	South Korea	43,274,132	85.7 %	50,503,933	7,229,801	1.2 %	522,375	0.42 %

Sources: internetlivestats.com; VNNIC

Broadband



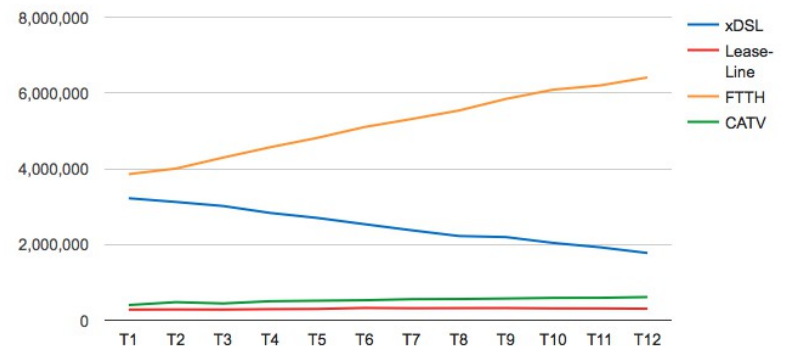
Fixed broadband:

9 million subscribers (dec 16)

FTTH arising, ADSL declining

2002 - 2015

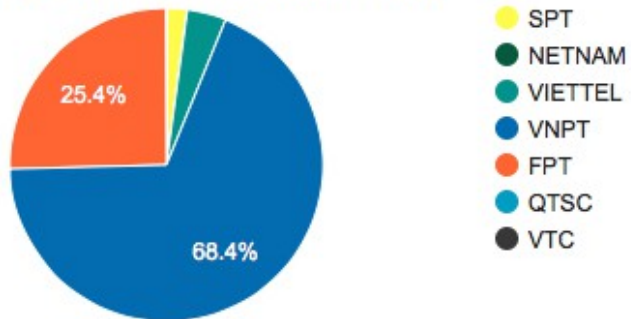
Tình hình phát triển thuê bao Internet băng rộng cố định đến tháng 12 năm 2016



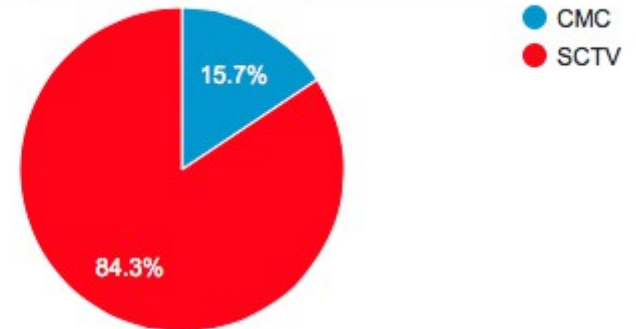
Sources: VNTA

fixed broadband players

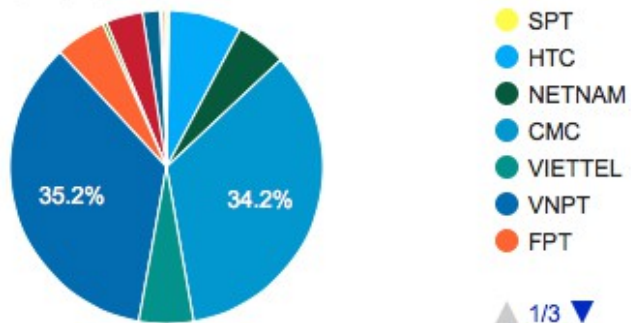
Thị phần cung cấp dịch vụ Internet xDSL năm 2016



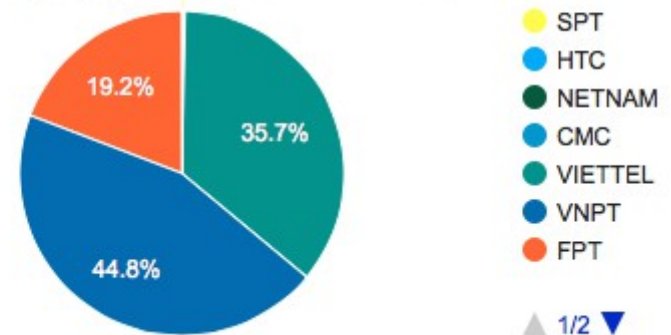
Thị phần cung cấp dịch vụ Internet CATV năm 2016



Thị phần cung cấp dịch vụ Internet Lease-Line năm 2016

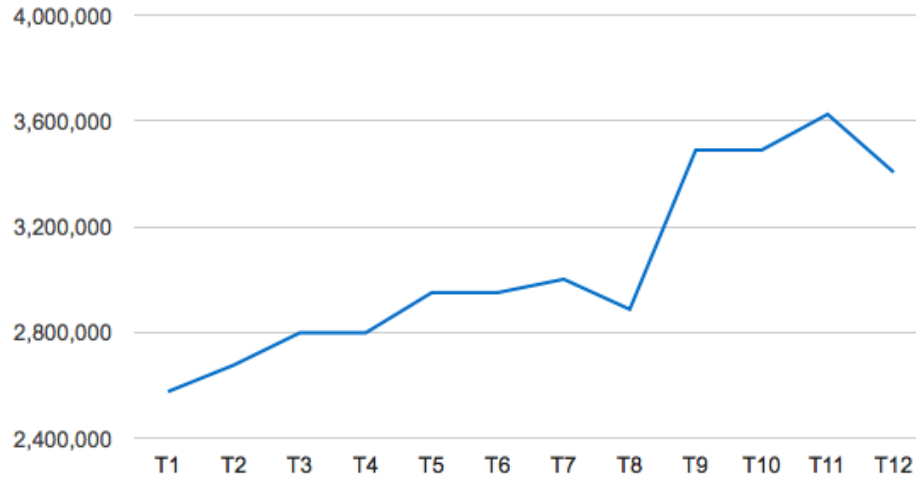


Thị phần cung cấp dịch vụ Internet FTTH năm 2016



mobile broadband

Tình hình phát triển thuê bao Internet băng rộng di động năm 2016 (Data Card 3G)

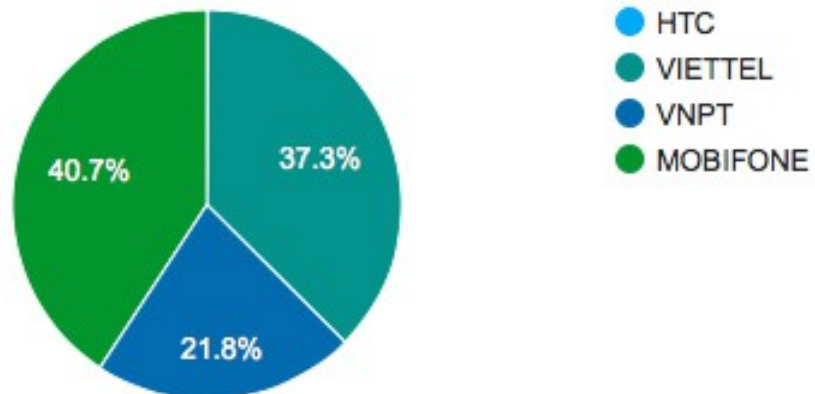


Mobile broadband:

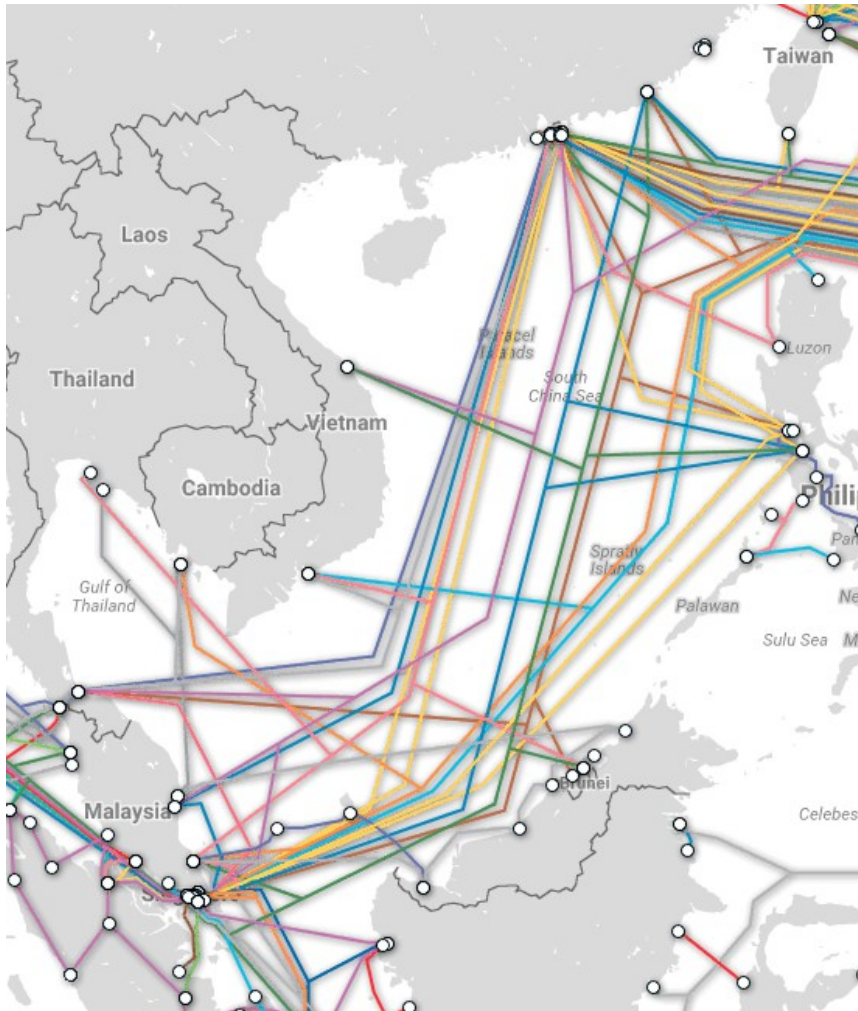
3.4 million subscribers (dec 16)

3+1 carriers

Thị phần cung cấp dịch vụ Internet băng rộng di động năm (DataCard 3G) 2016



infrastructure - bandwidth



Cables connecting outside:

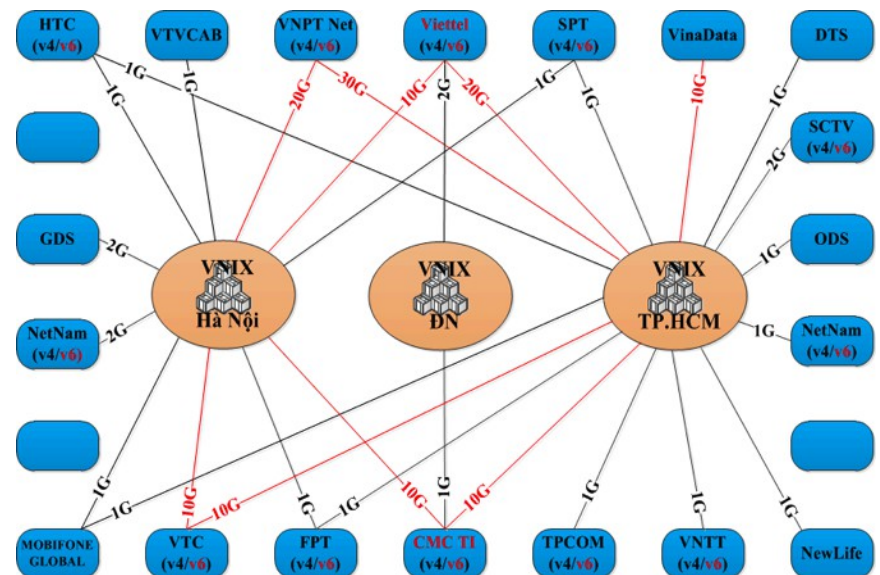
Submarine cables: SMW3, AAG, IA, APG

Terrestrial via north/south west borders

Bandwidth:

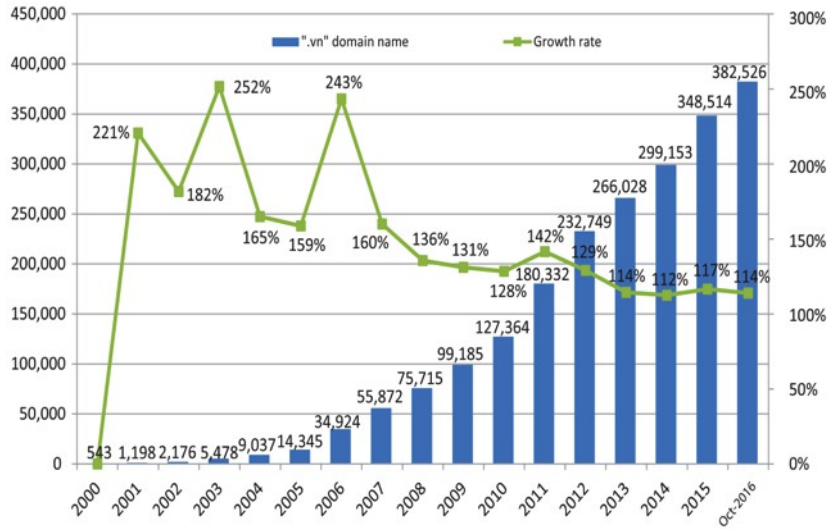
International: 3.8T

Domestic: 3.0T



Sources: VNTA, VNNIC, Submarinecables

domain names & IPv6



IPv6 adoption:

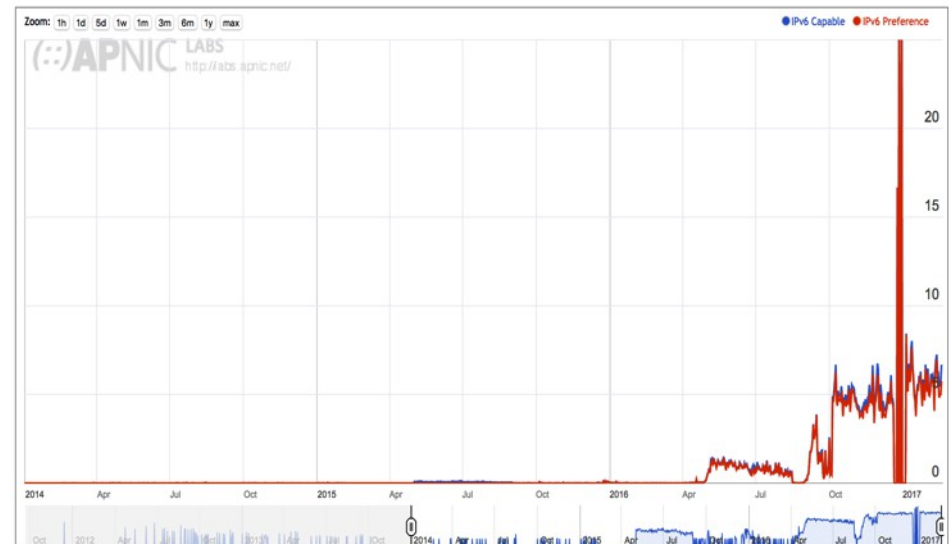
- ~6% (dec 2016)

Sources: VNNIC, APNIC

dot vn domain names:

- ~ 400k domain names
-

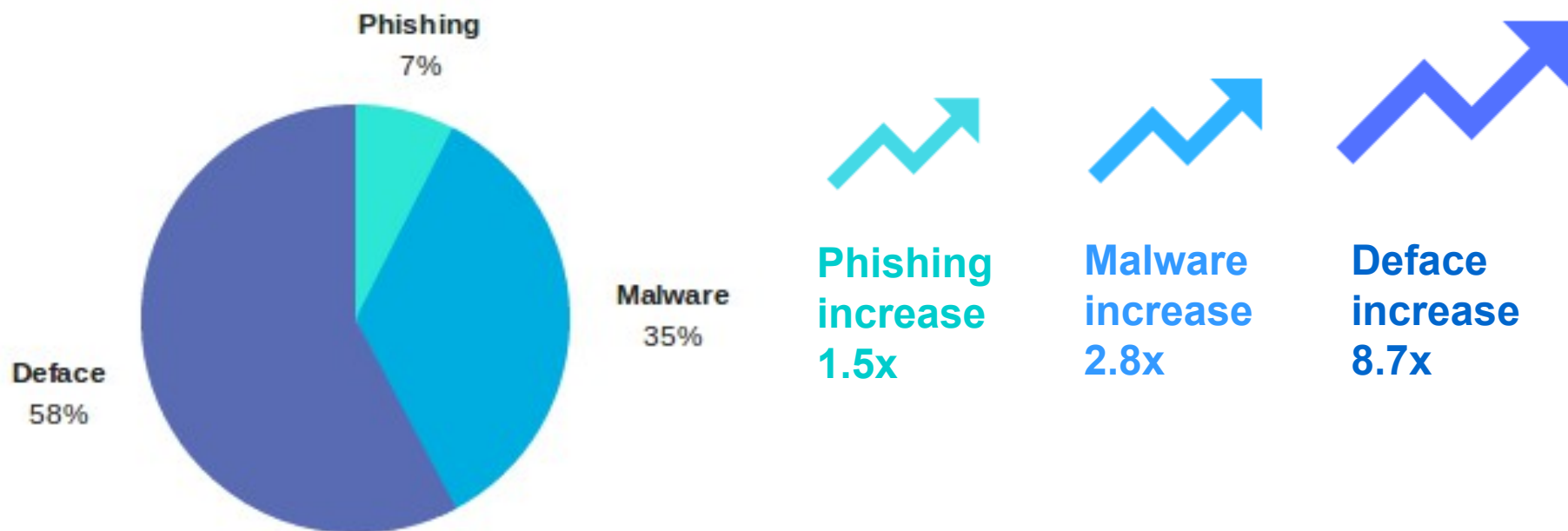
Use of IPv6 for Vietnam (VN)



cyber security in vietnam 2016-2017

2016 security incidents

Total security accident in 2016: 134.000



Src: VNCERT

ransomeware



**Email traffic with
Ransomware**



20 times more than in 2015

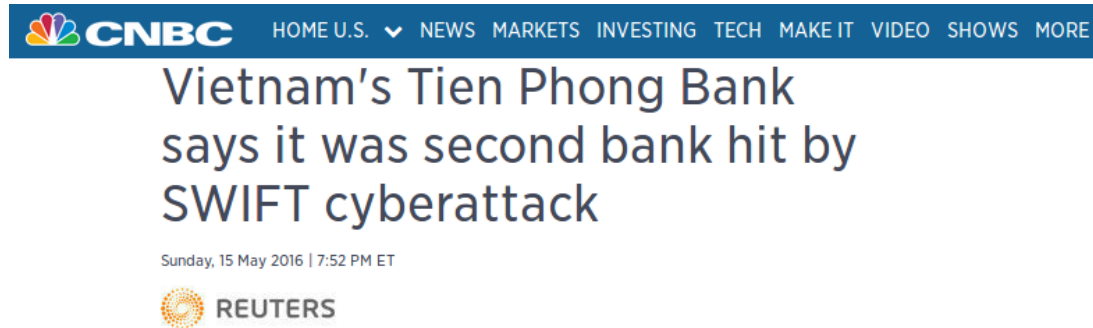
Src: BKAV

the most serious incident to the public



More than 400,000
Lotusmiles members
leaked on the Internet

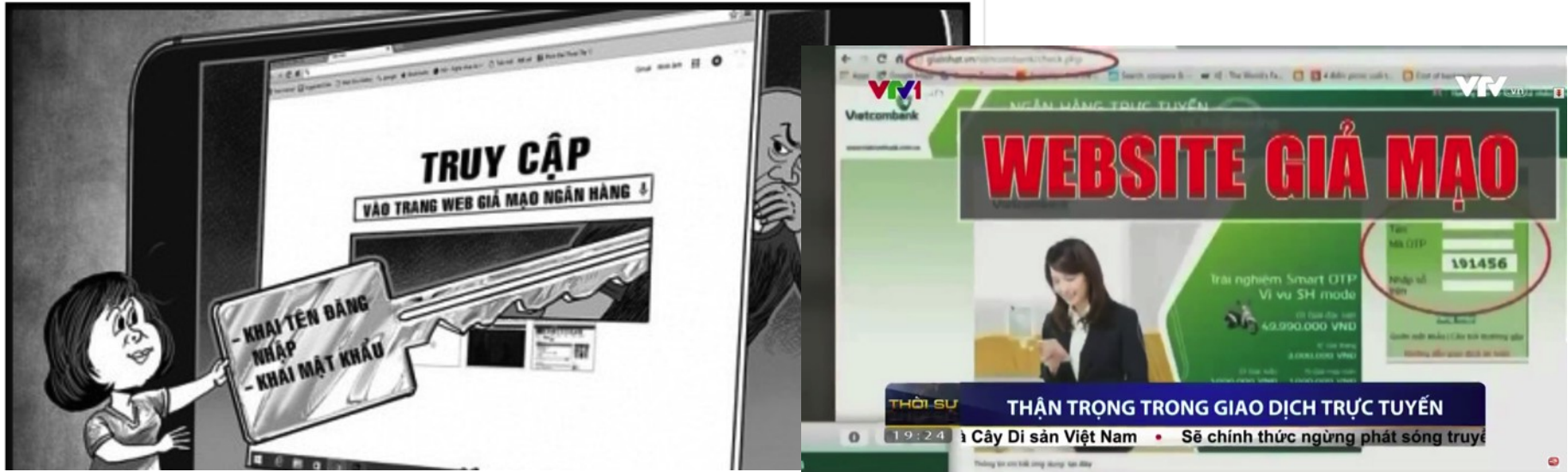
phishing and financial lost



Vietcombank blames phishing scam as customer loses \$22,300 overnight

TUOI TRE NEWS

UPDATED : 08/13/2016 09:17 GMT + 7



local infection risk

Countries where users faced the highest risk of local infection

	Country*	% of users attacked**
1	Vietnam	52.07
2	Afghanistan	52.00
3	Yemen	51.32
4	Somalia	50.78
5	Ethiopia	50.50
6	Uzbekistan	50.15
7	Rwanda	50,14
8	Laos	49.27
9	Venezuela	49.27
10	Philippines	47.69

Source: Kaspersky lab: IT THREAT
EVOLUTION IN Q3 2016

banking malware attacks

TOP 10 countries attacked by banking Trojans

Country*		% attacked users**
1	Russian Federation	4.8
2	Brazil	4.7
3	Turkey	4.5
4	Sri Lanka	4.5
5	Pakistan	3.8
6	Austria	2.6
7	Vietnam	2.4
8	United Arab Emirates	2.3
9	Japan	2.2
10	Morocco	2.2

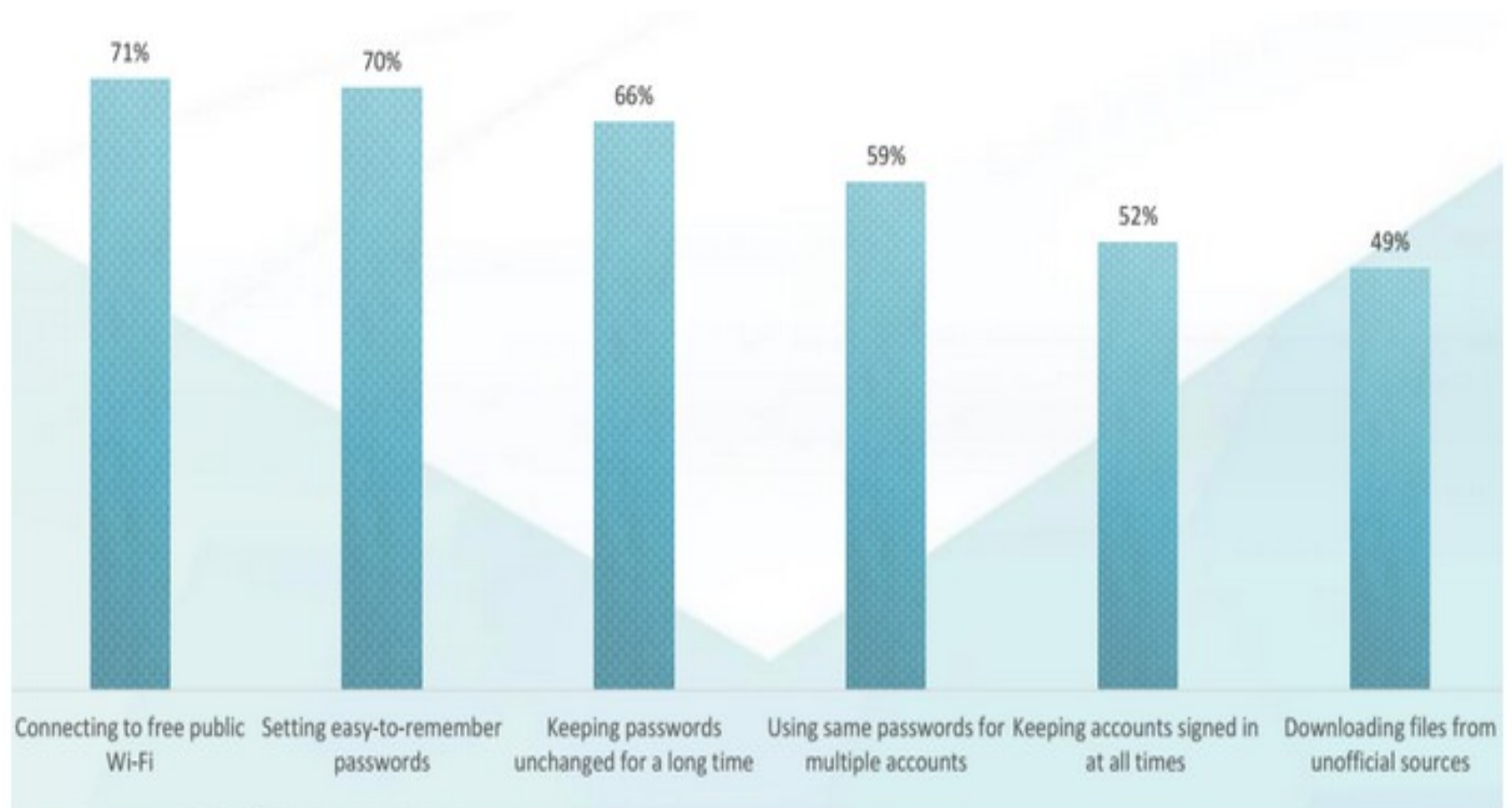
Source: Kaspersky lab: IT THREAT
EVOLUTION IN Q3 2016

malware threats

Top Markets in the Asia Pacific under Malware Threats:

1. Mongolia	6. Cambodia	11. Malaysia	16. South Korea
2. Vietnam	7. Philippines	12. Taiwan	17. Australia
3. Pakistan	8. Thailand	13. China	18. New Zealand
4. Indonesia	9. India	14. Singapore	19. Japan
5. Nepal and Bangladesh	10. Sri Lanka	15. Hong Kong	

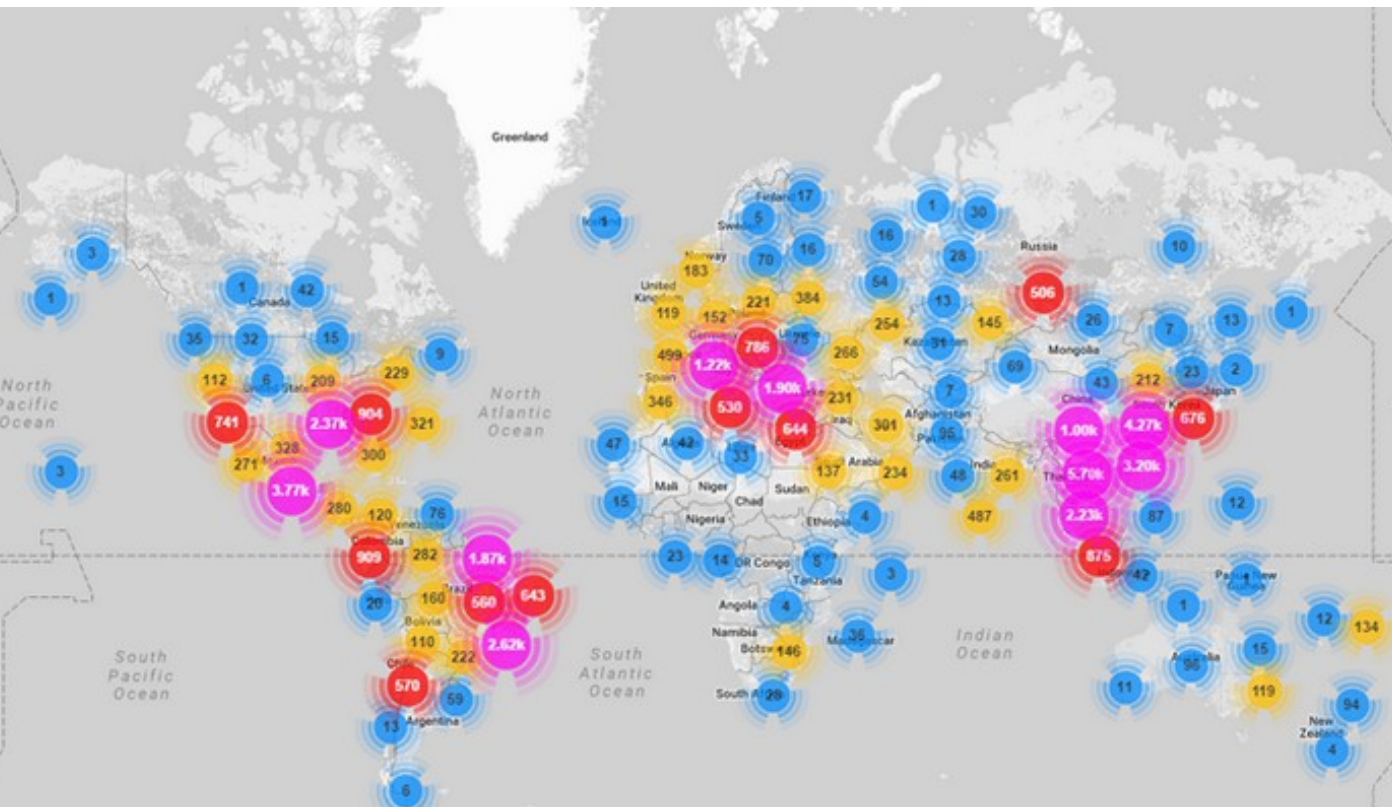
Src: Microsoft report



Top risky online behaviors in Vietnam

Source: WeLiveSecurity

ddos threats



Country	% of Mirai botnet IPs
Vietnam	12.8%
Brazil	11.8%
United States	10.9%
China	8.8%
Mexico	8.4%
South Korea	6.2%
Taiwan	4.9%
Russia	4.0%
Romania	2.3%
Colombia	1.5%

Src:<https://www.incapsula.com/blog/malware-analysis-mirai-ddos-botnet.html>

legal environment

New Law on Cyber Security in Vietnam

Vietnam's Law on Cyber Information Security
("LOCIS") came into effect 1 July 2016

THE GOVERNMENT

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

No: 108/2016/ND-CP

Hanoi, July 01, 2016

DECREE

DETAILED REGULATIONS ON PROVISION OF CYBER INFORMATION SECURITY SERVICES AND PRODUCTS



2017 trends



Ecosystem, organization

- Internet
 - Legality: law of telecom, internet decree
 - Governance: MIC, VNTA, ABEI, VNNIC
 - Association/Community: VIA
 - Industry: 4 mobile carriers, <10 fixed ISP, many CPs, etc
- Cyber security
 - Legality: law on network information security
 - Governance: MIC, AIS, VNCert
 - Association/Community: VNISA, VIA
 - Industry: < 5 local products/services

Thanks!

