Cyber Security: Rule of Use Internet Safely

Maskun
PhD Student, Post Graduate Hasanuddin University, Indonesia and, International Law Department, Hasanuddin University, Jl. Perintis Kemerdekaan Km. 10 Tamalanrea, South Sulawesi, Indonesia, 90245.
Email: maskunlawschool@yahoo.co.id

Abstract

Cyber security plays on important role to guarantee and protect people who use internet in their daily life. Some cases take place around the world that people get inconvenience condition when they access and use internet. Misuse of internet becomes a current issue which some cases take place including a university. Advantages of using internet in the university of course assist the student to get some information in internet. However, they have to be protected in order to feel convenience when use internet. This also is because get and access some information is right of people as governed by International Covenant on Civil and Political Rights.

Keywords: Cyber Security, Internet.

1. Introduction

Internet is becoming an important thing in people daily life and has grown at an explosive rate (Pratap Singh and Bagdi, 2010). According to International Telecommunication Union (ITU) (2013), internet users (population) around the world are over 2.7 billion, which corresponds to almost 40% of the world's population. In the developing countries, people who use internet is around 31% of the population, compared with 77% in the developed countries (ITU, 2013).

Basically, internet was used to military, defense contractors, and a university research purpose. However, in recent years, it has been developed to multi-purposes including information, communication, leisure, shopping, education, e-social activities, financial, job seek, homepage, file share service, and download (Kisa, 2011). Those internet usage purposes bring both advantages and disadvantages for people and their community. In terms of disadvantages of internet use such as illegal contents, online fraud, identity theft, espionage, sabotage, cyber terrorism, and cyberstalking (Boateng, 2011), (Department of Economic and Social affairs, 2012), (Greitzer and Frincke, 2010), (M. Arif Mansur and Gultom, 2005), (Suhariyanto, 2012), cyber security is therefore needed to guarantee people who use internet to be safe.

Theoretically, cyber security has to fulfill 3 (three) critical points: measure to protect information technology; the degree of protection resulting from application of those measures; and the associated field of professional endeavor (Fisher, 2009). The three critical aspects of cyber security play an important role to protect a personal data of every person, government, and businesses. Those data are pivotal because they can be misused or manipulated by other person for criminal purposes.

Internet misuse and manipulation are mostly committed by young and adult people especially people who in level senior high school and university students. In South Sulawesi for example, some Hasanuddin University students in 2011 committed financial fraud (Indonesia Hackers, 2011). The crime usually intended to the personal information stored on personal data forms in computer, such as credit card number and ATM PIN numbers. They were then arrested by the police and should face suing for their committed crime.

2. Complexity definition of cyber security

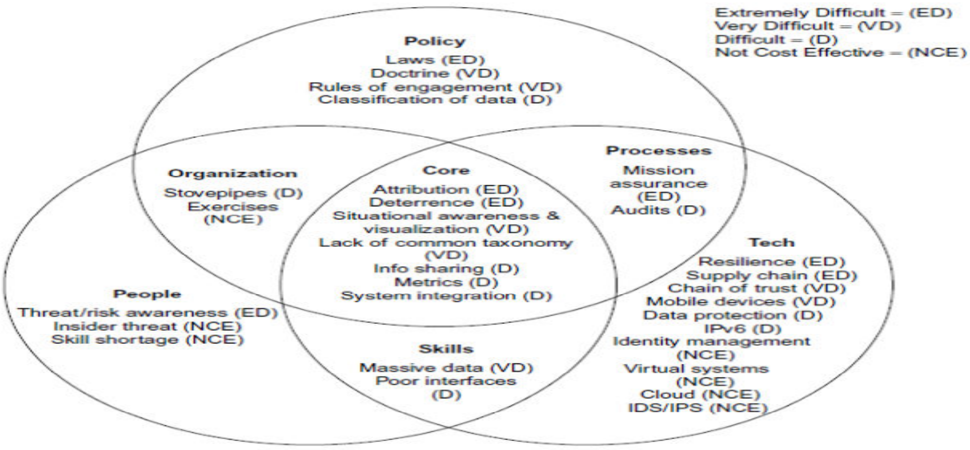
It is quite difficult to define what does cyber security mean? The difficulty definition arises from several reasons and tends to be complex. (Fisher, 2009). According to Eric A. Fisher, "there are many components of cyberspace and many potential components of cyberspace" to be used in order to determine the cyberspace's meanings. (Fisher, 2009).

The meaning of cyber security tends to be decided in different context. In some cases, it refers to economic terms or in social and cultural terms or even in politic and military terms. As it is commonly used, "cyber security refers to 3 (three) things:

1. A set of activities and other measures intended to protect — from attack, disruption, or other threats — computers, computer networks, related hardware and devices software, and the information they contain and communicate, including software and data, as well as other elements of cyberspace. The activities can include security audits, patch management, authentication procedures, access management, and so forth. They can involve, for example, examining and evaluating the strengths and vulnerabilities of the hardware and software used in the country's political and economic electronic infrastructure. They also involve detection and reaction to security events, mitigation of impacts, and recovery of affected components. Other measures can include such things as hardware and software firewalls, physical security such as hardened facilities, and personnel training and responsibilities.

2. The state or quality of being protected from such threats;
3. The broad field of endeavor, including research and analysis, aimed at implementing and improving those activities and quality."(Fisher, 2009).

According to Rich Rosenthal's Cyber Assure Program (Andress, 2011), the complexity of definition of cyber security can be drawn as if:



Source: Rich Rosenthal's Cyber Assure Program

The mapping as shown in figure 1 draws complexity of definition. There are 7 (seven) elements, namely as policy, organization, core, processes, people, skills, and technology, that influence security in cyberspace. Those elements essentially has connection one to another. They have to be developed in one system to create security in the area of cyber space. For example, people as an actor of internet use have intention and skill to use internet in appropriate ways. However, if other elements do not support their intention, it means that they cannot get any advantages from it or otherwise.

According to Andress (2011), some of elements of cyber security issues definition as mentioned in figure 1 are categorized as extremely difficult (ED). They are laws, threat/risk awareness, attribution, deterrence, mission assurance, and resilience and supply chain. Other elements are classified as very difficult (VD) and difficult (D). Classification of those elements actually shows that cyber security plays important role to create "peace" in using internet. Indeed, it is realized that it is not easy-job to reach it.

3. Cyber Security: Rule of Use Internet

Internet user is growing dramatically in variety generation and the purpose of using internet then is done in various ways as explained above. The number of internet users in Indonesia for example is increasing every year. According to Internet World Stats (2010), commercial internet services commenced in Indonesia in 1995 and coming into 2008, Indonesia had an estimated 25 million Internet users. It is predicted that in the beginning of 2013, the number of internet user in Indonesia is becoming bigger than in 2008. Guharoy and Morgan (the Jakarta Post, 2012) furthermore states that internet users in Indonesia is climbing dramatically in the last two years, "20 percent of Indonesians 14 years of age and older now access the Internet every month. That's over 30 million people, and growing steadily each month. But we need to remember two important facts that characterize the usage. First, roughly 10 of the 30 million users access the Internet via their mobile phones. Second, roughly 70 percent of those 30 million users visit Facebook and twitter each month, making it the most popular address in the country".

This fact actually is not surprising because computer and its function including internet as introduction have been introduced since the young people in elementary school. It means that the Indonesian young people especially university students have skill to access internet but they are also potentially to misuse or to be misused by the internet. Presence of internet for students in university actually helps them to get a lot of information related to their tasks. The information is provided in forms of book online and journals. Both books and journals give an easy task for the students to finish their tasks particular when they conduct their final paper to be graduated. However, a lot of cases of misuse the internet function also conducted by university students. Plagiarism is one of the most internet misuse conducted by the students. They tend to copy some materials to their tasks but they do not mention the author's name. Other internet misuse can be found such as illegal contents, online fraud, and identity theft.

According to National Research Council (2003), there are 3 (three) classes of attack that addressed to internet, as following:

1. Service disruption; it causes a loss of service and can result from disabling of networks through a variety of attacks such as denial of service (DoS) and destruction of information.
2. Theft of assets; it misuses critical information on a large enough scale to have major impact.
3. Capture and control; it involves taking control of cyberspace and using them as a weapon.

Those classes of attacks are then classified as cybercrime and also have been modified in various modus. Those modus in fact threaten all human beings activities including infrastructure. To handle and to prevent those crimes, cyber security plays important role to guarantee people to use internet safely.

As we known, cyberspace compiles a huge range of related elements of cyberspace activities and it is therefore cyberspace activities are potentially at risk. To eliminate or dismiss the risk, protection of cyberspace infrastructure is needed in order to stop hackers to commit their crimes. The protection of the infrastructure must cover internet hardware, telecommunications infrastructure, computing devices as control system and computing devices as desktop computer (Fisher, 2019). Andress (2011) furthermore stipulates that to eliminate the risk is not only protection to the infrastructure (hardware) but also must protect the software.

Protection of software is intended to help everybody to use computer/internet safely. It is because so many computers are used in homes and businesses. The computer operating systems and email programs are two aspects of computer/internet that is vulnerable to be attacked and exploited. Case of computer worms that attacked Microsoft Windows operating system in 2003 was a proof to see that the protection of software is needed to protect the internet user (Scheiner); or other sample of a worm (spionage) took place in 2010, when a worm called stuxnet was launched to attack the Iranian nuclear program (Farewell and Rohozinski, 2010).

Both protection of hardware and software are the main point of cyber security. They are able to guarantee people to use internet safely. People will use internet to support their activities without any worry to negative impacts of internet. However, both protections must be implemented and embedded in national and international strategy (regulation) to reach its goals. In United States, for example, it can be found National Strategy for Homeland Security. The purposes of this strategy are to prevent cyber attacks against critical infrastructure; to reduce national vulnerabilities to cyber attack; and, to minimize the damage and recovery time from cyber attacks that do occur (Anonymous, 2003); or another example in Canada, its national strategy is placed on three pillars: securing government systems; partnering with the private sector; and helping Canadians to be secure online through awareness raising (Deibert, 2012).

In terms of Association of Southeast Asian Nations (ASEAN) in which Indonesia one of its members, its regional strategy is put in the area of economic and security cooperative comprised of 10 member nations from Southeast Asia. According to its Roadmap for an ASEAN Community 2009-2015, it has effort to combat transnational cybercrime by fostering cooperation among member-nations' law enforcement agencies and promoting the adoption of cybercrime legislation. In addition, the road map calls for activities to develop information infrastructure and expand computer emergency response teams (CERT) and associated drills to all ASEAN partners (United States Government Accountability Office, 2010). To develop information infrastructure as one of the ASEAN' roadmap, Indonesia continues to complete Indonesian Law Number 11/2008 Concerning Information and Electronic Transaction. One of its efforts is enacting some Government Decree such as the Government Decree No. 82/2012 Concerning Maintenance System and Electronic Transactions.

Those regulation strategies as implemented in domestic law each country essentially show huge effort of them to create convenience and comfortable environment to internet user to feel safely. Those regulations also must be completed every time to respond some changes related to using internet. So, cyber security goals can be reached and are able to eliminate and dismiss negative side of internet usage as discussed above.

4. Cyber Security and Access to Get Information/Freedom of Expression

Access to get information or freedom of expression basically is one of role of cyber security. As mentioned by Fisher (2009) that cyber security focuses on protection hardware and software, including the information they may contain and communicate. Indeed, information in this term plays important role for people to express those information for some purposes. However, it becomes a critical point when the idea of cyber security (information) has to be correlated with right people to get information or right people to express the idea..

As we know, right to access information and right freedom of expression is governed by International Covenant on Civil and Political Rights (ICCPR), G.A. res. 2200A (XXI), 21 U.N. GAOR Supp. (No. 16) at 52, U.N. Doc. A/6316 (1966), 999 U.N.T.S. 171, *entered into force* Mar. 23, 1976. Those rights precisely can be found in article 19 ICCPR. The Article 19 states that**:**

1. Everyone shall have the right to hold opinions without interference.
2. Everyone shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of his choice.

3. The exercise of the rights provided for in paragraph 2 of this article carries with it special duties and responsibilities. It may therefore be subject to certain restrictions, but these shall only be such as are provided by law and are necessary:
    (a) For respect of the rights or reputations of others;
    (b) For the protection of national security or of public order (order public), or of public health or morals.

The article 19 ICCPR actually is accordance with the idea of cyber security. There is no disagreement between both of them. People are able to express their idea into internet. They are allowed to post, seek, receive and impart information and ideas of all kinds, as long as the law does not prohibit.

Related to right to access information and right freedom of expression, an internet is one of media for people to access information and expresses the people's idea. People today live in the era which they are bombarded with internet news and events either in positive or negative sides (Andress, 2011). In positive sides, internet news and events cannot create debate, but in negative side, it will be debatable. The debate of it is resulted from the reason of right people to access information and right freedom of expression and the security perspective. Question arises from this view is: could people have their right to access and express their idea without consider to other people right to secure?

As a right, they are right people to get it as governed by ICCPR. However, they are also not allowed to use it by against the law. As we know, the use of internet is growing fast in a decade and possibility to misuse it is open. Therefore, as computer or internet users, they need to watch out the latest phishing attack trying to steal the identity information, new zero day attack against smart phones, Facebook privacy compromised, someone took down Twitter, and something very scary – called cyber war (Andress, 2011).

Those of internet misuse are a fact that people are able to post some information to the internet that is harm for other people rights. It also can threaten other people interest and national interest. So that is way, article 19 ICCPR point 3 stipulate the exceptional condition for those people rights. They can have their right fully but in some condition those rights are limited for respect of the rights or reputations of others and for the protection of national security or of public order (order public), or of public health or morals. In the area of this restriction, cyber security can be applied to keep and maintenance not only other people rights but also national security. Therefore, as a forum for free expression, the internet contents and information shall be governed carefully including to be to censorship and discrimination at a variety of chokepoints (Nunciato, 2009).

5. Conclusion

Internet has become a global phenomenon; numerous advantages and disadvantages (crimes) are being gotten and committed through the internet. To cope with both advantages and disadvantages, cyber security is needed to guarantee people to use internet safely, particular to young people including university students. Cyber security covers hardware and software infrastructure that is supported by national and international strategy and regulations.

Terms of cyber security is also accordance with the right people to access information and freedom to express as mentioned in article 19 ICCPR. The article has shown the rights people to access and express their idea with some restriction such as respect of the rights or reputations of others and the protection of national security or of public order (order public), or of public health or morals .

References

Andress, Jason, et.al., (2011). *Cyber Warfare: Tehcniques, tactics and Tools for Security Practitioners*, Waltham, Elsevier.

Anonymous, (2003). *"Securing Cyberspace". Business Credit,*July/Aug, 2003, 60.

Boateng, Richard, et.al., (2011), "Sakawa – Cybercrime and Criminality in Ghana", *Journal of Information Technology Impact*, Vol. 11 No. 2., 85-100.

Deibert, Ron. (2012). Distributed Security as Cyber Strategy: Outlining a Comprehensive Approach for Canada in Cyberspace. Canada, Canadian Defence and Foreign Affairs Institute.

Department of Economic and Social Affairs, (2011). *Cybersecurity: A global issue demanding a global approach*, http://www.un.org/en/development/desa/news/ecosoc/cybersecurity-demands-global-approach.html, posted.

Farewell, James p., and Rohozinski, Rafal. "Stuxnet and the Future of Cyber War", *Survival*, Vo. 53, No. 1. (Feb-March, 2011), 23.

Fischer, Eric A. (2009). *Creating a National Framework for Cybersecurity: an Analysis of Issues and Options*, New York, Nova Science Publisher, Inc.

Greitzer, Frank L., and Frincke Deborah A., (2010). "Combining Traditional Cyber Security Audit Data with Psychosocial Data: Towards Predicyive Modeling for Insider Threat Mitigation". in Probst Christian W., et.al.

Insider Threats in Cyber Security, New York, Springer. 85-86.

Guharoy, Deborah, and Morgan, Ray. Analysis: the Truth Internet usage in Indonesia, the Jakarta Post, 24 of July, 2012, 14.

Indonesian Hacker, (2011), *Arrested by Police when Committing financial Fraud*, available at http://forum.indonesianhacker.or.id/showthread.php?7757-Ditangkap-Polisi-saat-Bobol-Kartu-Kredit.

International Telecommunication Union, (2013), *ICT Facts and Figures*, available at http://www.itu.int/ITU-D/ict/facts/material/ICTFactsFigures2013.pdf,

Internet World Stats, (2010), *Internet Usage, Boadband, and Telecommunnication Reports*, available at http://www.internetworldstats.com/asia/id.htm.

KISA, (2011), *Purpose of Internet use*, available at, : http://isis.kisa.or.kr/eng.

M. Arief Mansur, Dikdik, and Gultom, Alitaris, (2005). Cyber Law: Information and Technology Law Aspects, Bandung, Refika Aditama.

National Research Council, (2003), *Information Technology for Counterterrorism*, Washington DC, National Academy Press.

Nunziato, Dawn C. (2009). *Virtual Freedom: Net Neutrality and Free Speech in Internet Age*, Stanford, Stanford University Book.

Scheiner, Bruce, (2003). *Blaster and the Great Blackout*, available at http://www.salon.com/tech/feature/2003/12/16/blaster_security/index_np.html.

Suhariyanto, Budi, (2012). *Information and Technology Crime (Cybercrime)*, Jakarta, PT. RajaGrafindo Persada.

United States Government Accountability Office, (2010). *Cyberspace: United States Faces Challenges in Addressing Global Cyber Security and Governance: A congressional Requesters*, July 2010, 9-10.

Brief Bibligraphies

Member of Association

- Firma Hukum Ilmar and partners, 2008-Now.
- Director of Centre of Analysis of law and Local Autonomy, 2008-Now.
- Member of Center Human Rights and Conflict Resolution, School of Law, Hasanuddin University, 2012-2016.
- Member of Center law and Development School of Law, Hasanuddin University, 2013-2017.
- Member of Center of Maritime Law

Personal Identity

Name	: Maskun, S.H.,LL.M.
Place/Date of Birth	: Abeli, 29 Nopember 1976
Ocupation	: Lecturer at Faculty of Law, Hasanuddin University
Address	: Jl. A.P. Pettarani II lrg. 2G/1 Makassar, Phone. +62 411 443352 atau + 62 81342 977 094

Educational Backgraound

1. Elemenatary School, Kendari-South East Sulawesi, 1988.
2. Junior High School, Kendari-South East Sulawesi,1991.
3. Senior High School, Kendari-South East Sulawesi,1994.
4. Bachelor Degree, Faculty of Law, Hasanuddin University , 1998.
5. Master Degree, the University of New South Wales (UNSW). Sydney, Australia, 2004.