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VOA Online Discussion: Cyber Security

Guest: Viktor Mayer-Schönberger , Associate Professor and Director, Information + Innovation Policy Research Centre, Lee Kuan Yew School of Public Policy, National University of Singapore

Date: 15 July 09

Moderator: Erin Brummett

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Erin: Welcome to T2A chat as we learn more about the impact of Information Technology on government. The recent cyber attacks temporarily jammed several government websites. We're exploring issues of cyber security with Viktor Mayer-Schonberger. He is an IT expert at the Lee Kuan Yew School of Public Policy, National University of Singapore, where it is very very early in the morning - or very very late at night.

P Madan Mohan, India (email): Is it not possible to detect the hackers or cyber attackers? I think it is possible only with the IP providers of big Internet companies.

Viktor: Because of the way the Internet works, hackers and cyber attackers can hide their location and Internet address very effectively, making it almost impossible not just for the users but also for large Internet providers to find out where attacks actually are coming from. Worse, a lot of attacks today are done by utilizing hundreds of thousands of highjacked user computers around the world, so that the people who are actually doing the attack don't even know that their computers are attacking somebody else. Their computers are remotely controlled by the cyber attackers. So there is another layer of indirection that is incredibly hard to get through.

Erin: So who's moving faster, the cyber attackers or the cyber police?

Viktor: The cyber attackers, because the offensive is almost by definition faster and ahead of the defense.

S Deva Rajulu, India (email): How can cyber attacks on Government sites be prevented? Is there really anything to provide 100-per cent security?

Viktor: We are not able to provide 100-percent security but there are possibilities to harden websites including government websites, thereby making it more difficult for cyber attackers to hack into these sites.



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Hio Tiao, Lim, the Philippines (email): In this age of fast changing technologies, it is part and parcel that unwanted and unforeseen developments happen. Is there a possibility that the movie "WAR GAMES" could actually happen? In that movie, a computer chip found its way into a toy which connected the toy to the military defense system computer center, almost creating WWII even without the world knowing it. With all the hacking and virus attacks prevalent in cyberspace, what steps have been done to secure vital information and installation?

Viktor: The situation as portrayed in that movie cannot take place in reality because the computers used to control nuclear missiles are not connected to the Internet. But as the military, in order to save costs, moves to use off-the-shelf components for its military hardware, possibilities for general cyber vulnerabilities do increase.

Martino: What is the significance of the recent cyber attacks on the government and non commercial websites in the United States and South Korea? Do you think these cyber attacks will increase in the future?

Viktor: Yes, cyber attacks will increase in the future as we are moving from a traditional economy to an informational economy in which the flow of information becomes more and more valuable. The recent attacks are part of a long sequence. They are just another stage in an ongoing conflict between those that try to defend their servers and networks and those cyber attackers from around the world who try to hack into it.

Erin: You recently co-authored a book *Governance and Information Technology: From Electronic Government to Information Government*. Can you give us one specific example of a government's efforts to use information technology to either increase or decrease democratic accountability?

Viktor: Here's a positive example...a few years ago, the U.S. Environmental Protection Agency, which had routinely collected environmental information about toxic waste, made their toxic waste inventory accessible online by combining it with a map of the United States, so that users could, for free, visualize any toxic waste depositories in their neighbourhood. This made transparent to local communities the need to create local pressure for toxic clean up and help environmental causes. Unfortunately, the Bush Administration, citing 9-11 attacks, stopped that program, thereby taking away the transparency that the program had provided to the people.

Claire: The Internet seems to create more chances for activism but also more passive behaviour in citizens. What role do you see the Internet playing in civic engagement?

Viktor: The Internet is a wonderful tool for those who want to engage themselves in public matters to organize and to reach out, but it is not a magic wand through which we create public engagement. Because it requires people to act, without people's desire to be engaged, the Internet is useless.

Claire: With information flows controlled by governments and private enterprise, and geographical discrimination or simply a lack of broadband cables, is the concept of one "Internet cloud" for all of humanity really a reality?

Viktor: No. There is no one Internet cloud much like there is no one cloud in reality, but many clouds. Connecting those that because of lack of means or remoteness remain disconnected from the information tools including the Internet,

must continue to be a top policy priority, both in the West and in developing nations.

Erin: Many people do not seem to be aware of the physical side of the Internet, that is the hardware required and the energy burned everytime they download a page. Where are the servers of the world, who owns them, and are they vulnerable to physical attacks?

Viktor: The big players in the Internet economy, like Google or Amazon, own and operate a network of large so-called server farms around the globe, while details are confidential, it is understood that Goggle maintains hundreds of thousands of individual servers in these farms, with other players not too far behind. Because these servers need to be operational at all times for these companies to succeed, a significant portion of the IT budget of these companies is spent on security and attack mitigation. These farms burn up a lot of fossil fuels. The same applies to government servers. Government often times has vastly fewer servers than Amazon or Google, but the principle problem is the same.

Erin: On your website, you are quoted as being in favour of a move by the European Council to have the "right to silence the chips". What is the "ability to forget" that is achieved by this, and why are you an advocate for it?

Viktor: Forgetting is a fundamental human trait. With our digital tools we undo our human ability to forget. This has fundamental consequences, not just in the way power is being distributed, but also in the way human beings are able to act and decide. I worry that a society of perfect memory will not just forget, but also never forgive. We must address this shift. This is an overlooked, understudied but potentially fundamental shift, perhaps as important as the human invention of script. As young people Twitter and SMS their whereabouts and what they're doing, they assume that global internet does not remember. They're wrong. Will they like to be confronted 30 years later with their utterances today?

Erin: What is "net neutrality" in the United States and are there similar policies in place in other countries? Are you a supporter?

Viktor: Net neutrality implies that information can flow freely through the network without being filtered, sped up or slowed down, by the Internet Provider. The filtering, if at all, should take place at the end points of the transmission. Net neutrality is an important policy issue and one that will be with us for the months and years to come. It pits the network providers who want to optimize their networks towards their offerings against desire of users and web service providers like Google to exchange information freely and without discrimination. Net neutrality is a hot topic, not just in the U.S., but also in Europe and is gaining political traction in Asia as well. I support network neutrality.

Erin: What is the Information + Innovation Policy Research Centre's mission? Will its research help citizens, corporations and/or governments better understand information technology flows?

Viktor: The I + I aims at examining and highlighting the importance of information flows for businesses, governments and civil society, especially as these flows enable us as organizations and societies, as well as human beings, to innovate or be innovative.

Erin: In response to growing subtle censorship, the website herdict.org lets

users report about websites that are slow or that are blocked anywhere in the world. Should Internet users be more concerned about censorship from governments or from private businesses and Internet service providers?

Viktor: Yes. As information gains value, we must remain aware of the multiple filtering and censorship that is happening around the world. Raising awareness as herdict.org does is one important component. The other is to scientifically and rationally uncover and publicize where censorship is taking place. We need to develop a good rational baseline of Internet censorship so that we can successfully raise awareness and mobilize.

Erin: What sources of information do people trust the most now that we live in what appears to be a new 'age of rumours'? Is seeing still believing?

Viktor: Humans tend to trust what we know and distrust what is not yet known to us, hence, on the Internet, we trust brands and trust websites that our friends tell us they trust in. There is no guarantee however that either brands or our friends know what websites are trustworthy or not. We must be careful not to end up in a world in which the accuracy and truthfulness of information has become opaque and irrelevant.

Claire: Why don't you have a Wikipedia page? In the 18th century, Diderot's Encyclopedia helped spread Enlightenment ideas worldwide that inspired the American, French and other revolutions. How would you rate Wikipedia's impact against other historic innovations in Information Technology?

Viktor: Wikipedia is fabulous because it provides access to knowledge at very low cost, throughout the world. I do not have a Wikipedia entry because I believe writing one's own is tacky. To an extent, Wikipedia may have the same impact as Martin Luther translating the Bible into the vernacular language of the people. It democratizes knowledge. Wikipedia is only one case where users around the world come together to enable the sharing of knowledge by donating small amounts of their time and energy to the public good. Numerous other sites offer similarly important but more specific information. I want to single out Cornell University's Legal Information Institute, which with a tiny budget for well over a decade has made available to the world, the High Court (U.S. Supreme Court) decisions of the U.S. for free.

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Erin: Thank you Viktor. Viktor Mayer-Schonberger is an IT expert at the Lee Kuan Yew School of Public Policy, National University of Singapore. You can learn more here: www.iplusicentre.net. We hope you can come back Wednesday, July 22 at 1800 UTC when we look at the political situation in the world's most populous Muslim-majority nation, Indonesia - right here on voanews.com!

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