

Internet Security and the Butterfly

Chaos theory has the wonderful metaphor of a butterfly flapping its wings causing the weather to change half way around the world to indicate the interconnections between micro-level behaviors (one wing flap) and macro-level events (a hurricane) that are impossible to perceive by observing either level alone. We might do well to remember this metaphor and the idea that individual behavior is connected to global consequences when thinking about Internet security and the recent revelations of major distributed denial of service (DDoS) attacks against United States and South Korean government Web sites.

While much of the reaction to the attacks has rightly focused on the uneven preparedness of federal agencies to prevent such attacks, as well as identifying the perpetrators, it may be more important to think about how the wing-to-hurricane interconnections play a role. As pointed out by Philip Reitinger, deputy under secretary at the Homeland Security Department and head of cybersecurity operations, the series of individual computers (“zombies”) involved in the attack were as much a target of the attack as the eventual Web sites: “They’re just zombies that are being used by some unseen third party to launch attacks against government and nongovernment Web sites.” (http://www.msnbc.msn.com/id/31789294/ns/technology_and_science-security/)

This means that individuals’ behaviors, such as opening attachments in emails from unknown sources that ultimately contain viruses, downloading questionable files from unknown websites that contain Trojan horses, or failing to adequately secure online connections, allows their systems to be compromised and potentially become part of a “botnet” system running malicious code that perpetrates attacks like that against the U.S. government. Most owners of such compromised computers are completely unaware that their system is being used in this way.

Recognizing the Internet as the “virtual commons” it is means that even individual users like you and me bear some responsibility for its security, though that does not mean we absolve the attacker or the organized crime entities that create the botnets of responsibility. Nor does it free government or corporate representatives from accountability for taking appropriate actions necessary to protect the Internet. Rather, the Internet commons highlights the ongoing need for multiple and diverse strategies not only to protect and secure Internet infrastructure, but also to educate users in order to protect and promote the interests and activities of all the commoners. Let’s embrace the notion of the Internet commons, a place where butterfly wings can produce hurricanes, so that we are mindful to weigh the sociological and ethical, as well as the technological and economic issues when developing new laws and regulations, creating new products and services, and using new devices and applications. For Internet security, remember the butterfly.

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July 9, 2009