The Cybersecurity Landscape

Presentation Summary

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Mr. Schaeffer characterized the cyberenvironment as continuously accelerating, evolving and expanding. He points out that from December 1995 to March 2001, the number of Internet users grew from 16 million to 458 million, and by January 2009, there were over 1.5 billion Internet users. A projection of this trend indicates that the number of Internet hosts is expected to exceed human population around 2015: as the world's population tops seven billion, the number of internet hosts is estimated to exceed 10 billion.

Key to better understanding the threat environment of cyberspace is to know that it is a highly complex space that consists of numerous layers of networking systems. What we actually see forms only part of this environment, as most of cyberspace remains invisible to Internet users. Mr. Schaeffer notes that there are at least five layers operating in the computer network: the geographic layer, physical network, logical network, cyberpersona and the persona layer. It is the dynamic operation of this complex network of systems that has created both security and insecurity to its
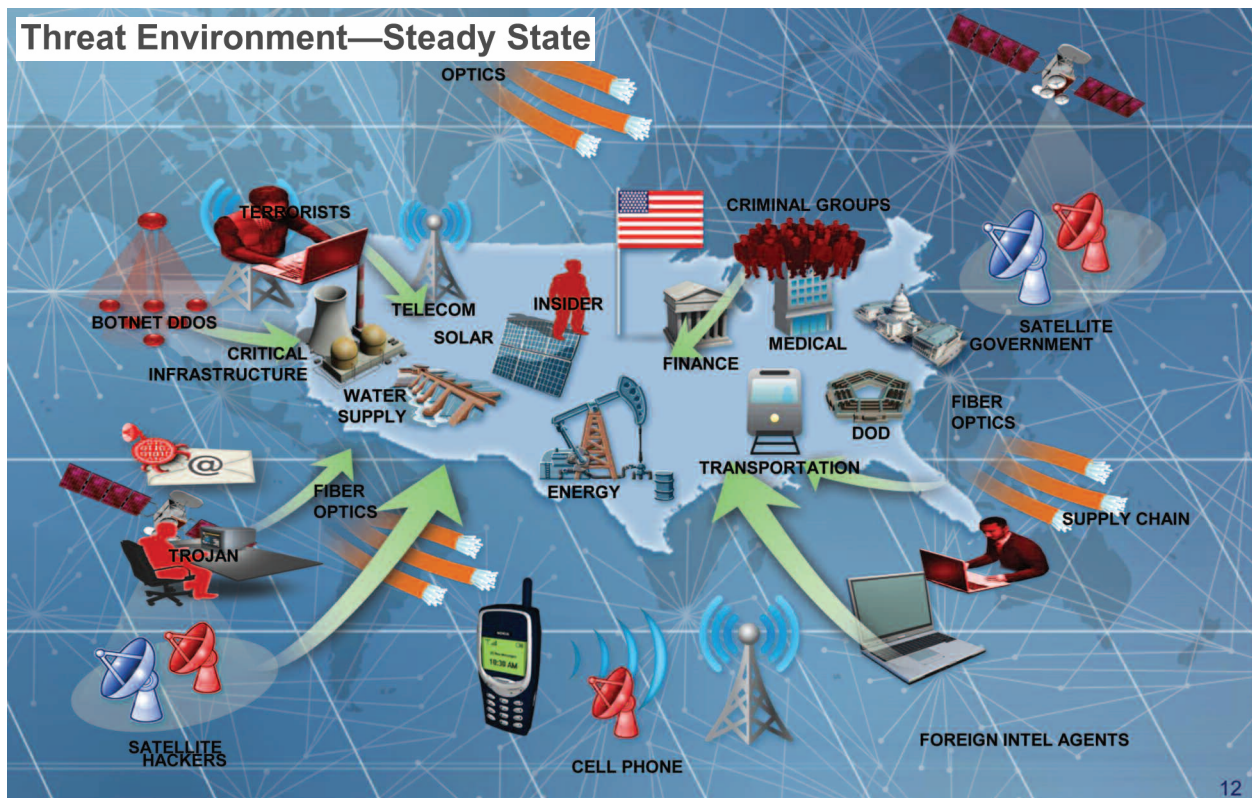

FIGURE 1 Threat Environment – Steady State

users. According to Mr. Schaeffer, cyberuse immensely informs the "steady state" of the threat environment worldwide, as shown in Figure 1 (page 75). In order to manage the growing and equally complex risks related to cyberspace, Mr. Schaeffer suggests four 'must-have' drivers of Information Assurance (IA) capabilities:

- the rapid introduction of new technology and services: vulnerability discovery capabilities must keep pace, and IA solutions must be available at the speed of the IT business and customer cycles;
- leverage and influence commercial activity: this is vital because commercial IT dominates most systems, and commercial IA is growing;
- continuously strengthen weakest links (people and systems) because global communication and connectivity continue to expand; and
- pay close attention to the impact and implications of Facebook, My Space, Twitter, and other yet-to-be discovered social networking capabilities.

What it will take to be secure, according to Mr. Schaeffer, is a "coalition of the connected" because cyberspace is global, interconnected, belongs to no one, and will take the combined talents, efforts, and capabilities of government, private industry and allies to secure it.