CNSR06 Panel Discussion: A Short and Grim Fairy Tale

Subject: Impact of devastating catastrophe on telecommunications networks

Importance: This hypothetical extreme case will generate productive discussion of many key issues. The main focus is not on the ways in which catastrophe could occur. [There are well known vulnerabilities of telecom networks, such as massive hacker attacks in IP networks and devastating EMPs (electromagnetic pulses).]

Instead, the effects of catastrophe are examined from several perspectives. A key issue is whether it is economically feasible for telephone companies to rebuild infrastructure today given their financial situations and levels of competition. The essential role of government will be discussed, as well as possible differences in priorities across political and social groups. The topic will generate fundamental discussion in technical areas such as new opportunities for network design, standards, protocols, services, QoS, network security, and prevention of telecom disaster.

How it started: The oddly dressed customer sets down a Harry Potter book with his credit card, and asks the cashier why it was in the fiction section. She stares speechlessly as he writes “Wizard Hakker” in calligraphy on the slip. With pointed hat, buckled shoes and entirely in black, the eerie customer walks out and begins to read while waiting at the crosswalk.

Moments earlier, the telephone company received a customer complaint, and a repair truck now speeds past the bookstore (this is a fairy tale). The driver hits an enormous pothole filled with the last slush of winter. Hakker is drenched, point to buckle, and in his surprise drops the book into the pothole.

With a fearsome expression on his dripping face, Hakker shakes his fist at the truck and curses. Instantly, all lines, cell phones, blackberries, etc., cease to work everywhere. The global economy begins a severe slide. Now as before, only madmen, geniuses and drama students talk when alone. However, birds continue to chirp, and more people actually converse in cafes.

A panel of experts is summoned by mail to advise government on the questions below, and they are encouraged to identify other key issues.

1) Would the PSTN (Public Switched Telephone Network) be rebuilt?
   • Could existing telephone companies finance the huge costs of rebuilding?
   • Given projected customer losses to competitors, would they?
   • Should government take on the task instead?
   • Could a partnership of government and academia be effective?
   • Are there political and social differences of opinion on what should be rebuilt?
   • Would large businesses band together and construct their own private network?

2) What would a completely new telecom infrastructure look like?
   • Is this a great opportunity to simplify network design, protocols, standards, etc?
   • Would it be wireless (fixed and mobile) except for long haul facilities?
   • Would it be based entirely on IP? v4, or v6?
   • What new and existing services might be supported?
   • Would voice quality match or exceed previous levels?
   • Could network security become a solved problem?
   • Should Canada be impervious to recent controversial US government actions (unauthorized wiretaps, demands that Google, etc., release search records)?

3) Would everything work when the power goes on?
   • Could interoperability testing with all new protocols and devices be done?
   • Are provisioning tools available to handle traffic from all supported services?
   • Can Wizard Hakker be kept away from potholes?