

POTS in Transition: What is Voice Service?

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Two ways of looking at this

1. How do we provide services that act like POTS?
2. Will people care about POTS service?
3. What is the regulatory implications of 1 & 2.

Need to know what we are talking about before we talk about where it is going

POTS: A Technology Viewpoint



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- Ubiquitous reachability, globally
- Simple addressing scheme: 7 (10) – 15 digits gets you anywhere in the world
- Voice interoperability with OK quality
- Claimed high availability with location information
 - We know at least what building the wire goes to

POTS and Public Policy



Emergency
Services

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- Emergency services
 - Lifeline connectivity to PSAP

POTS and Public Policy



- Ability for Grandma to stay connected to family
- Ability for family to check in on Grandma
- Ability for rural folks to connect to commerce
 - Catalog sales (easy to scoff at in DC, but big in NH)
- Ability to connect anything to anything
 - Fax
 - Dial-up, point-to-point modem

Are We Protecting the Right Thing?

- Theory: from FCC Reliability NOI: “the *NBP* identified the inadequacy of backup power and insufficient communications backhaul redundancy as key factors that contribute to the congestion or failure of commercial wireless data networks, particularly during emergencies such as large-scale natural and man-made disasters”



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– Katrina: only VoIP was up

– Japan: ‘Internet “Didn’t Even Blink”’

The controlled shutdown on telephone line to avoid the congestion was taken place. Any 3G voice and fixed line voice were totally shutdown. In Japan’s regulation 3G antenna has to be equipped with emergency power equipment. Therefore, even the area with electric power shutdown, carrier signal was up. After a couple of hours, when the all voice phone kept silent, a call was received at a customer relation business office. The call was from an office of self-defense forces. The circuit switch obviously was under control giving priority to emergency related institutes. Twitter and emails worked from the very first moment for most of the people who use the mobile Internet. The devices were battery-equipped and 3G data packet were working without any suspensions of operation. Finding family’s and friend’s tweets were the first action for most of the people. This was the fastest way in the history for a person in a disaster area to confirm family member’s safety. For those who were not familiar with data communication such as SNSs and emails, including my mother who were left at a conference facility at the time of the earthquake, unfortunately lost their way to confirm safety of family members for more than 24 hours. After eighteen hours, my mother found a way to call home by the occasional recovered fixed line phone. We do have a special rule for public phone to become free of use when disaster time. This system invoked for the first time since 1995 when the Kobe earthquake time, but unfortunately, the number of installation of public phones drastically been decreased because of wide deployment of mobile phones. Thanks for the Internet, a packet switching network and its successful deployment to cover to connect a lot of people, even for this emergency occasion. - Jun Murai, WIDE

But a cable is a cable – no magic here



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A Shovel Cuts Off Armenia's Internet

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By GIORGI LOMSADZE

TBILISI—Georgia has arrested a 75-year-old woman who, with her shovel, left all of Armenia without access to the Internet for half a day, according to Georgian police.

Aishtan Shakarian, who lives in a small village near Georgian capital Tbilisi, was scavenging for scrap metal on March 28 when she damaged an international fiber-optic backbone cable that connects much of the southern Caucasus to Europe, a police spokesman said.

The damage sent almost all of Armenia offline for about 12 hours. It also triggered a partial shutdown in Georgia and service interruptions in Azerbaijan, according to Georgian police and telecommunications companies.

online.wsj.com/article/SB10001424052748704630004576249013084603344.html?articleTabs=article, completed 241

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Same goes for power, radio towers, etc.

Broadband *INTERNET* Access



- Citizen to government and economy

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- Critical for connecting citizenry to government
 - We are beginning to see “please access us on line”
 - Vote-by-mail (Oregon, Washington)
 - Vote-by-Internet (18 countries) Australia, Belgium, Brazil, Canada, Estonia, the European Union, France, Germany, India, Ireland, Italy, the Netherlands, Norway, Romania, Switzerland, the United Kingdom, Venezuela, and the Philippines
 - Smallest town halls in New England
 - Difference between USPS and email to Congress
- INTERNET
 - Not just broadband access
 - Unfettered access to any Internet connected machine

Enhanced Emergency Services



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- We met Grandma before
 - Note hearing aid
- Enhanced emergency services
 - NG911
 - Still POTS paradigm
 - Promise is for Internet experience

Enhanced Emergency Services



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What Do We Lose If POTS Goes Away?

- What if only broadband access instead of wire line?
- Do we really lose functionality?
- Do we really lose reliability?
- Cheaper to give grandma a new phone than to support legacy equipment

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– History

– Insanity about analog vs. digital

– Charging for DTMF

- Made sense in 1970: detector boards cost real \$\$\$
- Made no sense in 1990: cost more to detect clicks

If you believe Grandma can't figure out voice as an Internet application, give her a "phone" and deploy ENUM (see Shockey)

Regulatory Impacts

NATIONAL
BROADBAND PLAN
CONNECTING AMERICA



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- Asking about how VoIP or the Internet impacts next-generation POTS service is asking the wrong question
 - In the Internet world, access to operator services, long distance, directory assistance, and restricting long-distance communications are non-sequiturs
 - In the broadband world, providing voice grade access and local usage cost nothing to the access provider
 - In the broadband world, DTMF is laughable – you have the Web, for goodness sake!
 - BTW, what about disabled access? Get that for free in Internet world
- But
 - If state, local, and federal governments move to preferential access over the Internet,
 - If PSAPs move to preferential access / order of magnitude better service over the Internet,
 - If commerce continues its shift to the Internet,
 - Universal broadband Internet service becomes a right, not a privilege.

Thank You

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