MOBILE COMMUNICATIONS:
ECONOMIC AND SOCIAL IMPACT

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Wireless Technologies: *Enabling Innovation and Economic Growth*
The Pernicious Rise of Cell Phones

- The Popular View in the US is that pervasive mobile telephony is the bane of civilized society
  - People talking on cell phones in public spaces are rude and annoying:
How Can We Cope?

• How about this…

THE CELL PHONE AVENGER SAVES THE DAY!
Kids – way too much talking
Health?

• Ongoing fears of brain damage
Auto Safety?
Family Life?

Technology continues to improve communication.
Have we forgotten how to relax?

Gone fishin’

Nearly 70% of 300 entrepreneurs in a recent survey plan to take a vacation this summer. That’s up from 60% a year ago. But many will be electronically tethered to their office. Share of those taking gadgets with them:

- Cellphone: 41%
- Laptop: 19%
- Pager: 10%
- Personal digital assistant: 9%

Source: American Express

By Sam Ward, USA TODAY
If Mobile Phones are so bad...

• …then why do we buy and use them?
• Early cell phones were expensive, big, and few (rich) people bought them.
  – A minority that we could all loath
• Today, cell phones are ubiquitous, yet we still complain bitterly about their negative effects
  • But something must be good about them…we all buy and use them
Standard Reaction to New Mass Technology

- Similar concerns when television introduced in late 1940’s
  - Bad for the eyes
  - Turns kids into vegetables
  - “Vast wasteland” of vulgar culture, undermining high culture
  - Even increased teen pregnancy *(recent)*

- Concerns over the Internet
  - Increased child pornography
  - Divert people from face to face interaction
  - Increase sexual predator behavior

- New technology, especially *successful* technology, raises lots of concerns.
The US Picture-Subscriber Growth
The US Picture – Voice Minutes

Billions

The US Picture – Price v Volume

Minutes of Use Per Month

Average Revenue Per Voice Minute

Source: FCC 12th CMRS Report

4/17/2009 Georgetown Wireless Slide 13
The US Picture – Wireless v Wireline

USAC ILEC Line Counts  CLECs  Wireless

Jun-00  Jun-01  Jun-02  Jun-03  Jun-04  Jun-05  Jun-06  Jun-07

0  50,000,000  100,000,000  150,000,000  200,000,000  250,000,000  300,000,000  350,000,000  400,000,000  450,000,000

11,557,381  17,274,727  21,644,928  26,985,345  32,033,915  33,975,336  28,711,461

173,822,123  178,357,549  184,489,144  186,502,218  173,281,480  172,374,946  157,933,653

9,063,058  12,838,941  13,375,149  14,833,734  16,737,001  18,451,087  21,774,404  23,223,553
The US Picture

- Wireless-only adults (6/08) = 17.5%
  - Growth rate = 45%/year
- Still considerably behind Korea and Japan in 3G
  - Less penetration than EU
- But surely other technologies have done as well or better...TV, PCs, broadband...
- More mobiles than TVs (235M), Internet users (230M), PCs (220M), and broadband (80.2M)
US Picture – Data Services

- Fastest Growing Segment of Mobile
  - Migration of Internet/e-mail/TV/etc. to mobile
  - 68% BB adds in 2007 were mobile. Is mobile the future platform of choice?
How about the rest of the world?

• Mobile’s biggest impact has been on the less developed world
  – Has brought connectivity as well as mobility
  – Low barriers to entry
  – Leapfrog over wireline technology

• Active mobile phones = 4.2 billion, 61% of the world’s population
  – wireline never exceeded 20% penetration
  – PC penetration = 8.5%, Internet users = 20%, broadband 5.4%
India (for example)

• 300 M subscribers today, growth rate = 42%
• Aggressive deployment in rural areas
  – “Candlebox”: wireless webtop device to access Internet over cell network
• Individual stories
  – Babu Rajan, Kerala fisherman, has tripled his income due to better market communications and bargaining power; customers better off as well
  – Devi Datt Joshi, New Delhi grocer, has almost tripled his income, with improved information on supply and demand in his market
  – Bangladeshi villagers use wireless to connect to the Internet, find medical help otherwise unavailable
And Elsewhere

- In **Phillipines**, wireless texting used for political action (Joseph Estrada, 2001)
- In **Congo**, staying in touch with family in war-torn country, getting medical help, even paying bills with m-currency
- **Wireless banking** in Phillipines (G-cash), Africa
- **Grace Wachira**, Kenya clothing producer: “I’m saving time and saving money”
…and More

- In Rwanda, leveraging scarce medical resources using mobile phones to access medical records in outlying villages (solar power)
- 90% of phones in Africa are mobile; penetration is 28 per 100 pop, and over 85% of Africans have a cell tower within reach.
- "The cell phone is the single most transformative technology for development"
  - Jeffrey Sachs
Is There Any Hard Evidence?

  - For poor countries: incremental penetration of 10 (per 100 pop) increases GDP growth by ½%
    - For developed countries, a 10 per 100 increase leads to a GDP growth rate increase of ¼%
  - Results are statistically and economically significant
    - Not published in peer-reviewed journal

Bottom Line

• Mobile penetration and use far deeper than wireline, far deeper than PC
  – Data applications growing fast, everywhere
  – Internet access, even wireless broadband
  – Spur to economic growth

• Mobile phones are (and will be) the access device of choice to voice/data/Internet for most of the world’s population. Spectrum availability a key!

• Mobile phones are the most transformational, most ubiquitous technology (along with the Internet) in the last fifty years