Challenges to communications regulation posed by technology convergence

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The big regulatory challenge: convergence

- Telephone network
- Cell phone networks
- Internet
- Everything-Over-IP
- Cable tv networks
Open vs. closed models

- Telephone network: Title II
- Cell phone networks: Title II / III
- Cable tv networks: Title VI
- Internet: Everything-Over-IP
Device attachment

Telephone network
- Carterfone

Cell phone networks
- Open Internet

Cable tv networks
- CableCard

Everything-Over-IP

Internet

Open Internet
Universal service

- Telephone network
  - USF
- Cable TV networks (cross-subsidies)
- Cell phone networks
  - USF (mobility)
- Internet
  - USF (broadband)
- Everything-Over-IP
Challenge: Where does the Title II service begin?
Challenge: Using one service to protect another

- Protect incumbent video service
- Profit-maximizing cap
- Heavy-user cap

$/month

Average price per GB

Base plan price

Data cap

GB/month
Challenge: What services fall under which Title?

- WiFi: capacity for BIAS
- OTT video (Netflix, Hulu)
- Cable video over IP
- STB: capacity for MVPD services
- Live / Recorded
- On-Demand
- MVPD partitions capacity for cable services between live and on-demand video

MVPD may claim cable video over IP does *not* use BIAS capacity, and is thus *not* counted against data cap
Challenge: Application-specific treatment

- Modification of content
  - Video transcoding
  - Web caching
  - Image compression

- Throttling based on class of application
  - video streaming
  - video downloads
  - music streaming
  - gaming
  - tethering
  - application-based capacity allocation

- Zero rating