The Rocky Road to Digital Broadcasting v 7.0

"Transition Lessons of Hope and Horror from HDTV"

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NPR Digital Transition Advisory Committee February 10, 2003

What we're going to talk about

- Why Technology Predictions Go Awry
- The Broadcast DTV Transition
- What is "The Digital Transition"?
- What are the differences in the digital rollout for Radio vs. TV?
- What are the similarities in the digital rollout for Radio vs. TV?
- How many households could have watched this year's Superbowl in HDTV?

Looking out my window at home . . .

"Why Technology Predictions Go Awry"

- rosy predictions originate with those who have a financial stake in new technologies
- market researchers interview the wrong people when making predictions

"Why Technology Predictions Go Awry"

- the media are willing accomplices
- predictions find a receptive audience

"Why Technology Predictions Go Awry"

- Technology predictions tend to be wrong because things change while waiting for new technologies to be adopted
  - existing technologies constantly improve
  - "good enough" "disruptive technologies" are introduced

"Why Technology Predictions Go Awry"

- **Don't base predictions on how Wall Street responds to companies associated with specific technologies, but rather on consumer response to functionality and convenience.**

- **Beware of projecting early adopter behavior to the general population**

The risk of being “swept away”

- HBR article “Why Bad Projects Are So Hard To Kill” - Isabelle Royer, Harvard Business Review 2/2003
  - “the seductive appeal of collective belief”
  - “beware of cheerleading squads”
  - “establish an early warning system”
  - “recognize the role of the exit champion”

The broadcast DTV transition

- mandated timetable
  - May 2002 deadline for commercial TV stations
    - approx 50% of stations on air as of 2/10/03
    - NAB: "DTV signals are being transmitted in 179 markets that <u>include</u> more than 96.69% of U.S. TV households"
    - Note what they don't say: "DTV signals now <u>reach</u> more than 96.69% of U.S. TV households"
      - many stations transmitting at low power
      - limited cable carriage
      - problems with transmission/reception
      - interference problems

The broadcast DTV transition

- mandated timetable
  - May 2003 deadline for public TV stations
    - approx 25% of PTV stations on air as of 2/10/03
  - 2006 - analog shutdown (?)
    - 85% rule
    - analog broadcasting will remain our principal distribution platform for many years to come

The Players in the Transition to DTV Broadcasting

- Broadcasters
- Nat'l Cable and Telecommunications Association and cable operators
- Consumer Electronics Association (manufacturers)
- Consumer Electronics Retailers
- Broadcast and Production Equipment manufacturers and distributors

The Players in the Transition to DTV Broadcasting

- service providers coveting the analog spectrum
- copyright holders
- FCC
- US Congress
- CBO - 1996 balanced budget agreement (Clinton/Gringrich) presumed auction of analog spectrum in 2002
- the courts
- the Administration
- consumers

What is “Digital Television”?

- Direct Broadcast Satellite (e.g. DirecTV, DishTV)
- Digital Cable
- DVDs
- Digital TV monitors
- Digital TV receivers (cable, satellite, and off-air)
- Digital TV Broadcasting

Types of Digital Television

- HDTV
- SDTV

Types of Broadcast DTV

- HDTV
- SDTV
- multicasting
- datacasting

What is "The Digital Transition"?

- original meaning: The transition from analog to digital broadcasting, to clear the analog spectrum
- Cable: The transition from analog to digital cable transmission (especially HD)
- CEA: The transition from analog to digital (especially HD) television displays
- NAB/CEA joint program to promote "digital television" in select cities around the country - (it should be promoting "<u>broadcast</u> digital television"

What are the differences in the digital rollout for radio vs. TV?

- no government mandated timetable
- no spectrum set-aside or return
- no dependence upon “middlemen” (e.g. cable) to reach audience
- relatively low cost to create new content
- investment by radio station group owners, equipment manufacturers and automakers in success of digital radio broadcast rollout
- seed markets provide opportunity for testing technical, business, programming strategies

What are the similarities in the digital rollout for radio and TV?

- broadcasters' high hopes for additional service opportunities
  - multiple program streams
  - improved quality
  - datacasting
  - on demand/interactivity
  - public service opportunities/obligations
- dependence upon consumer electronics manufacturers for deployment of properly-configured receivers at attractive price points
  - (TV tuner requirements scheduled to take effect beginning in 2004, but no performance standards specified)

What are the similarities in the digital rollout for radio and TV?

- consumer confusion
- uncertain consumer demand, timeline
- technical uncertainties
  - interference
  - reception/receiver performance
  - widely varying transmission implementation costs
- alternative "good enough technologies" emerging, e.g. satellite, Internet, emerging wireless platforms, PARs, MP3 players, DVDs, PVRs

What are the similarities in the digital rollout for radio and TV?

- How will we measure audience use of new services, determine ROI?
  - fragmentation, time-shifting confound measurement
- How do we sift through market data provided by self-interested parties, evaluate the inevitable hype and spin?

What are the similarities in the digital rollout for radio and TV?

- Principal driver may not be improved quality
  - Mike Starling's "radioplex content aggregators"
  - my "we are morphing into digital libraries"
  - key concepts:
    - personalization
    - customization
    - content management (metadata standards and tagging, rights management)
- Look to the web for examples of possible service models - watch for convergence opportunities - don't confuse platform with content delivery opportunities

What are the similarities in the digital rollout for radio and TV?

- Over time, are we evolving from "mass communications" to "amassed communications", to a "digital library" or "radioplex content aggregator"
- personalization/customization
  - on demand
  - whenever, wherever, at the user's preferred level of quality
- datacasting to targeted recipients
  - schools, businesses, commuters
  - homeland security, emergency apps
  - conditional access

How many households could have watched the Superbowl in HD on cable?

- "Comcast had more than 9 million HD homes by the end of December" -Cable World 1/27/03

- "Cable was pleased to make available this year's Super Bowl in HDTV to millions of customers" - Dan Brenner, SVP, NCTA - 1/27/03

How many households could have watched the Superbowl in HD on cable?

- " Of the total number of U.S. TV households, a scant 4.3% belong to the DTV install base. Of these, a mere 120,000 are HD cable subs" - Cable World 2/3/03

How many households could have watched HD broadcasts of the Superbowl?

- " By my count, ... a grand total of 542,659 ATSC receivers of any kind . . . . have left factories since the FCC's DTT rules were issued more than six years ago . . . . Of course, every receiver in a store, a warehouse, a TV station, etc. is a receiver that's not in a home." - Mark Schubin - 1/27/03

How many households <u>could</u> have watched the Superbowl in HDTV?

- Cable: no more than 120,000 (to be generous)
- Broadcast: no more than 350,000 (to be generous)
- Very Generous Total: 470,000
- Nielsen's reported household rating for the <u>analog</u> broadcast: 40.7, or roughly 43,000,000 households
- Six years into TV's transition to digital broadcasting, approximately 1% of households viewing the Superbowl may have been watching in HD,

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