Who Owns the Living Room?

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Who owns your living room?

You do!

You own the room, and the furniture, and the electronics,

… but not the programming.
Digital Home Vision: Convergence

- Any content
- From any source

- On any device
- Any time, anywhere

*In accordance with copyright owner’s rules*
Who Owns Your “Converged” Media Experience?

• You own your PC and CE equipment, *but you don’t own your entertainment programming*

  – Copyright owners (studios, record labels)
    • determine what you can and cannot do with their property

  – Aggregators and service providers (cable, satellite, telco, Internet)
    • negotiate with content owners for distribution rights

  – CE and PC manufacturers
    • must comply with all content protection robustness rules
Convergence Must Protect Copyrighted Content

- Studios will prevent unauthorized re-distribution of premium content
- Eventually, all user accessible points in the signal path will be protected

Progressively higher protection standards for each new delivery medium:
- VHS → DVD → Digital Cable/Satellite → Blu-ray Disc

Secure sources
- Production

Secure platforms
- Distribution
  - Terrestrial
  - Cable
  - Satellite
- Management

Secure displays
- Rendering

Secure bits
Secure links (signal paths)
Content Protection is Extremely Complex

The rules governing copyrighted content depend on …

- the type of content,
  - Who owns it
    - Record label
    - Studio
  - How valuable it is
    - Level of quality
    - Release window
- how you obtain it,
  - CD
  - DVD
  - Blu-ray Disc
  - HD-DVD
  - Internet download
  - Internet streaming
  - Over-the-air TV
  - Cable TV
  - Satellite TV
  - Satellite radio
- and what you want to do with it.
  - View / listen locally
  - View / listen remotely
    - Home network
    - Internet (space-shifting)
  - Copy
    - Time shift
    - To desktop, notebook PC
    - To CE device, STB, portable player
    - Burn to CD / DVD
  - Edit or alter content
    - Selectively play content
    - Transcode to different format
    - Transcrypt to different DRM scheme
    - Transrate to different bit rate
    - etc, etc., etc.

The rules can be different for every combination
Convergence Requires “Secure Interoperability”

- Industry standard media formats are interoperable
  - Examples: MP3, MPEG2, MPEG4, H.264, …

- Most content protection methods are not interoperable
  - Example: 13 unique output protection methods for Broadcast Flag

- Call to action
  - Standardize content protection methods
    - Starting with link protection
    - Example: DLNA recently adopted DTCP-IP
  - Push back on new content protection schemes
    - Where robust and licensable schemes already exist
  - Utilize existing encryption algorithms that have proven satisfactory
    - i.e. AES 128
Thank You