



**Who Owns the
Living Room?**



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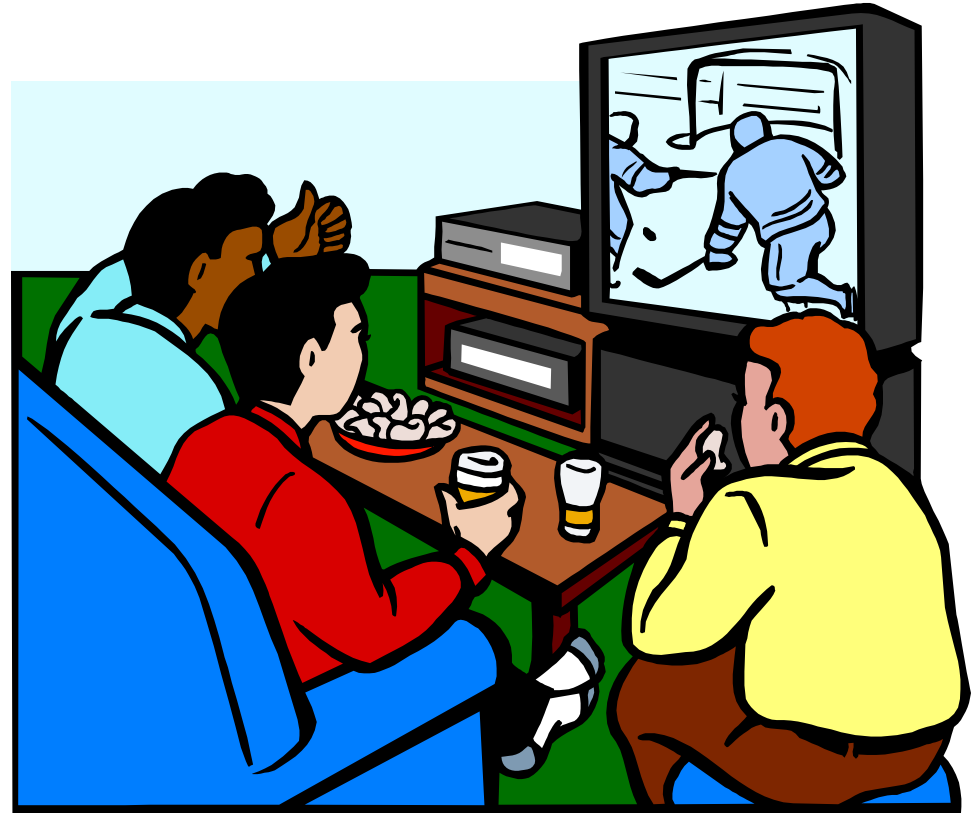


Who owns your living room?

You do!

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

*... but not
the programming.*

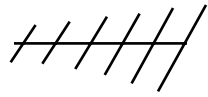


Digital Home Vision: Convergence

- Any content
- From any source

- On any device
- Any time, anywhere

- *In accordance with copyright owner's rules*



content



devices

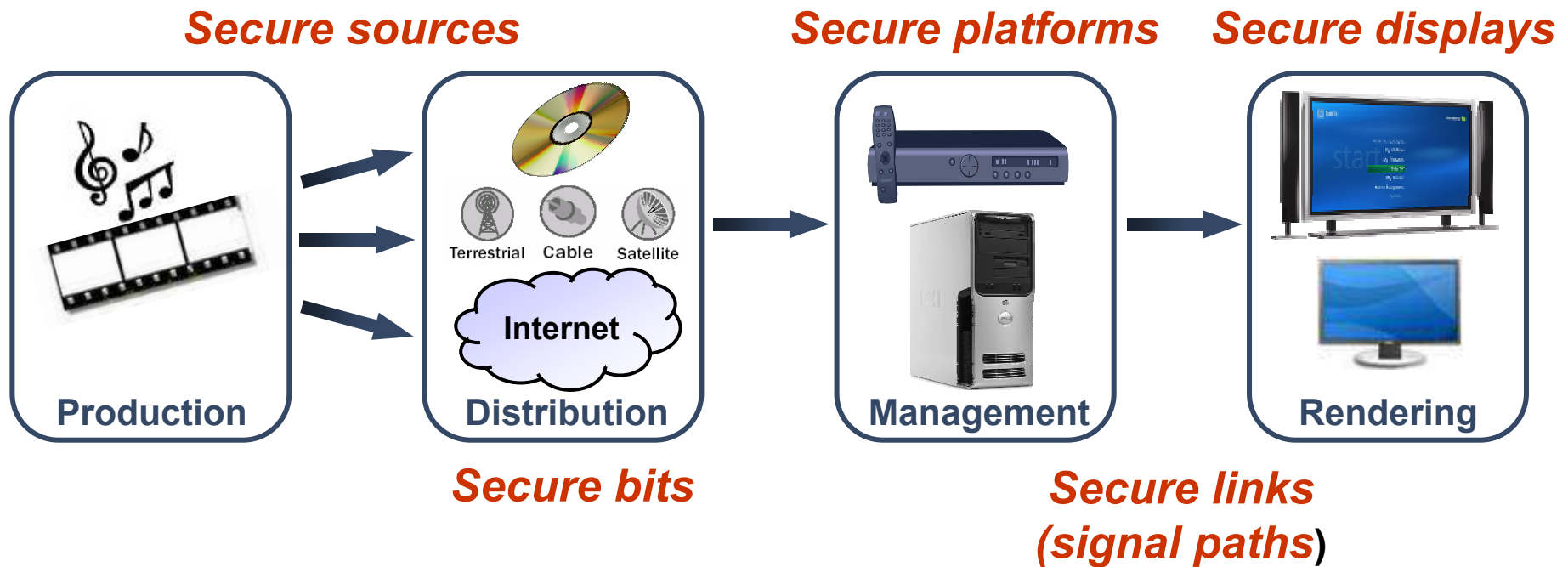
Who Owns Your “Converged” Media Experience?

- 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

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

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



Content Protection is Extremely Complex

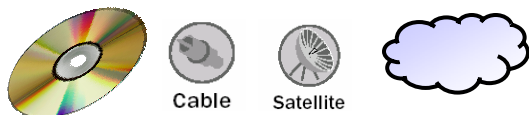
The rules governing copyrighted content depend on ...

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
 - Transcript 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

