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Beyond DRM

Balancing of interests,

Münchner Kreis, April 22

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A connected world

The freedom to access entertainment, information and services anything, anytime and anyplace

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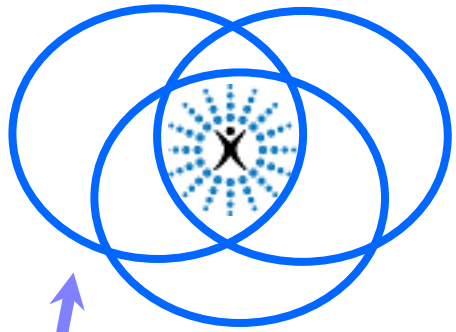
Personal Expression

Connected Planet



Home Entertainment

Business Productivity

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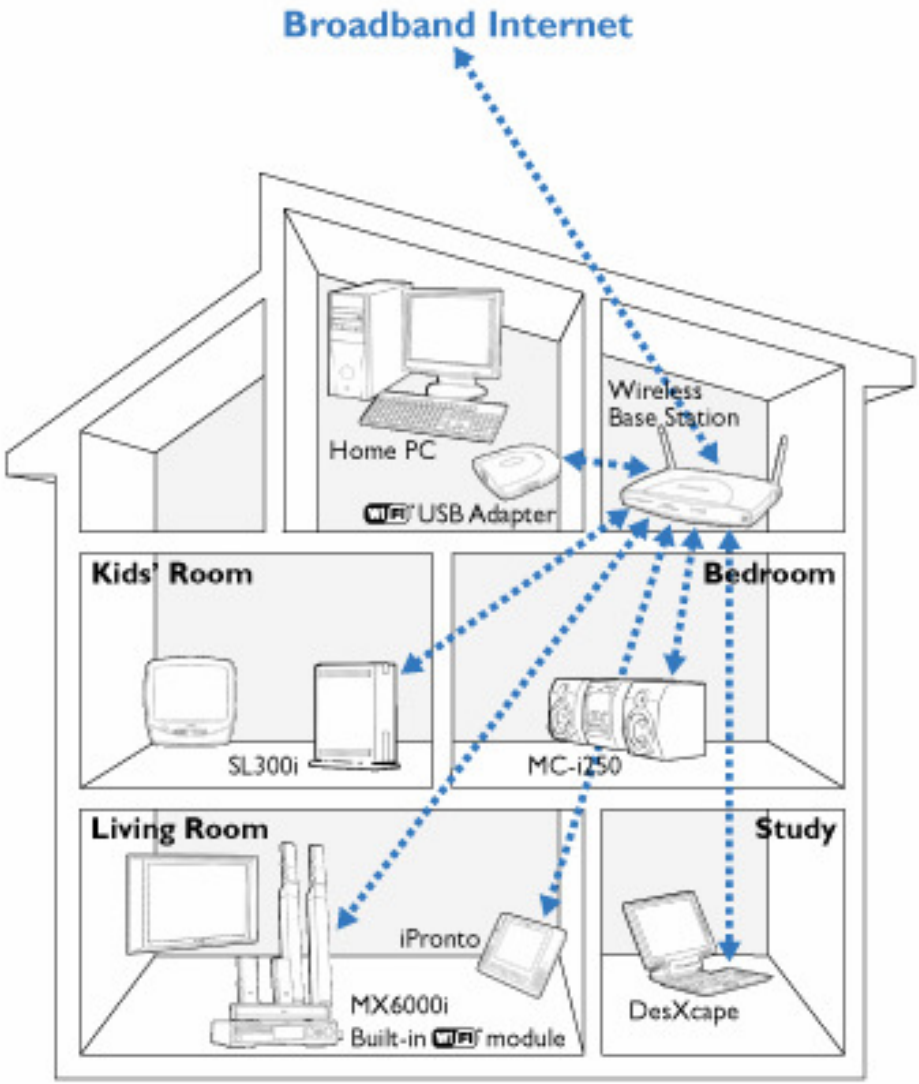

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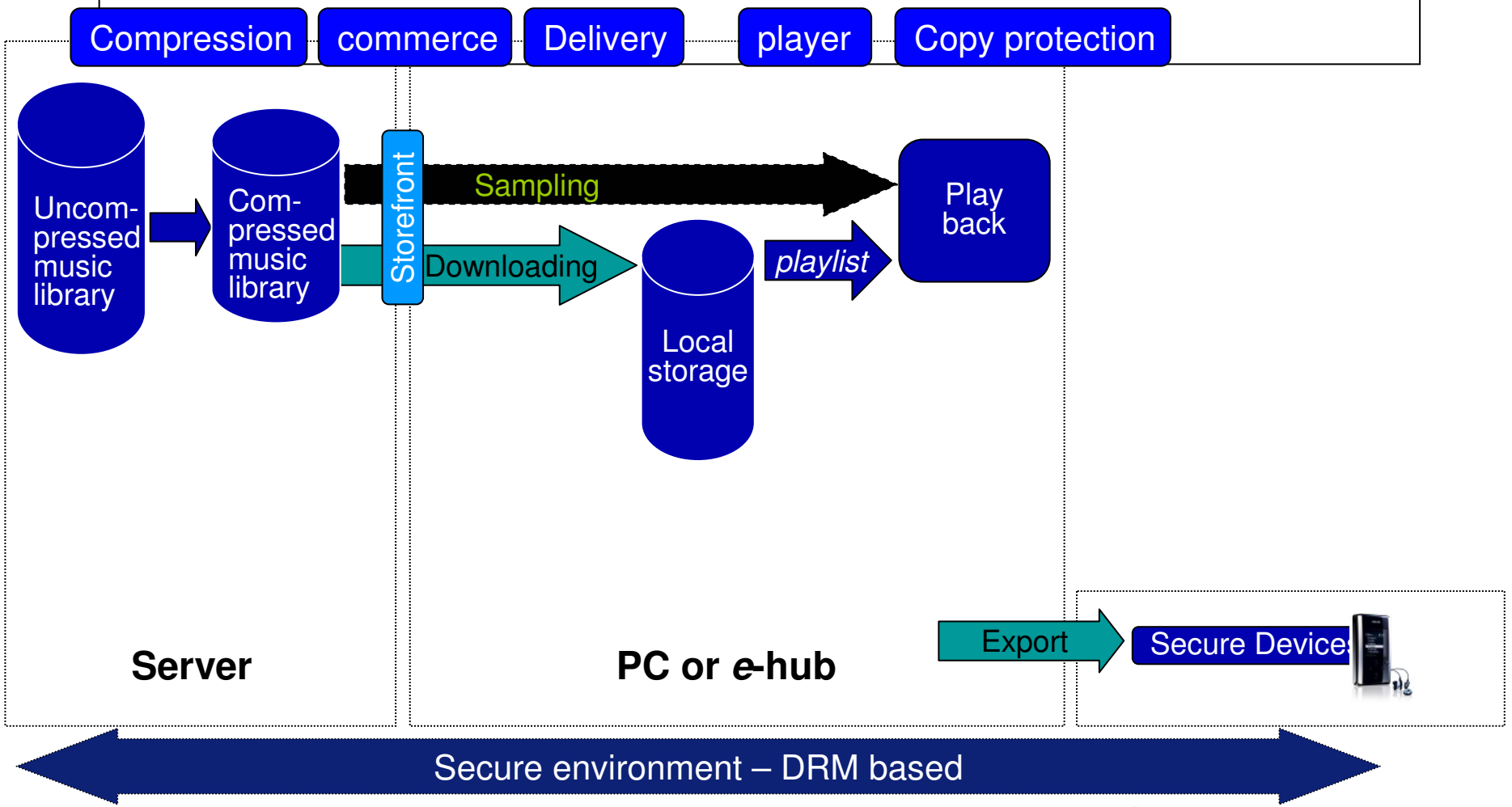
Today's DRM



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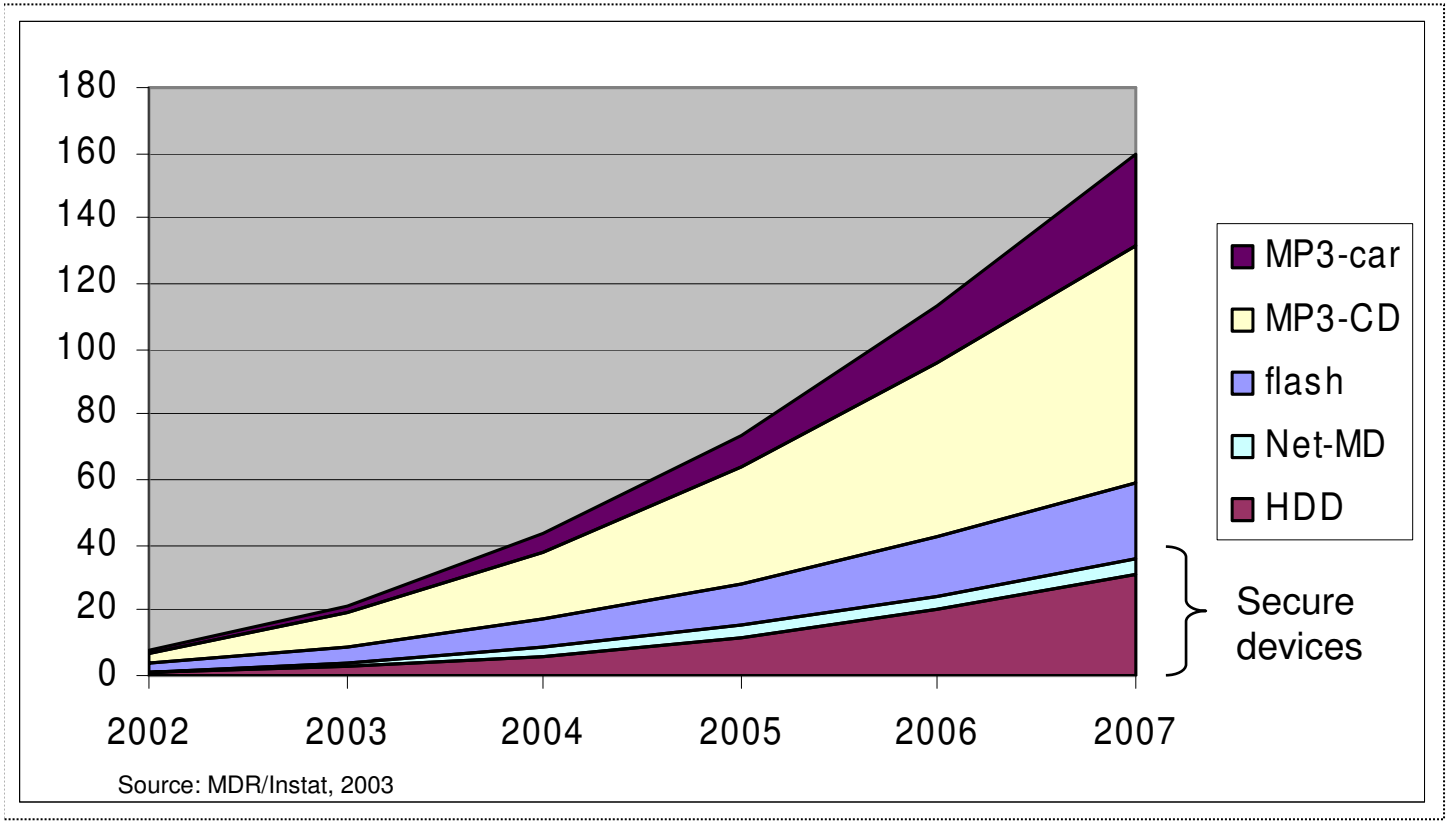
Portable devices installed base,

in millions



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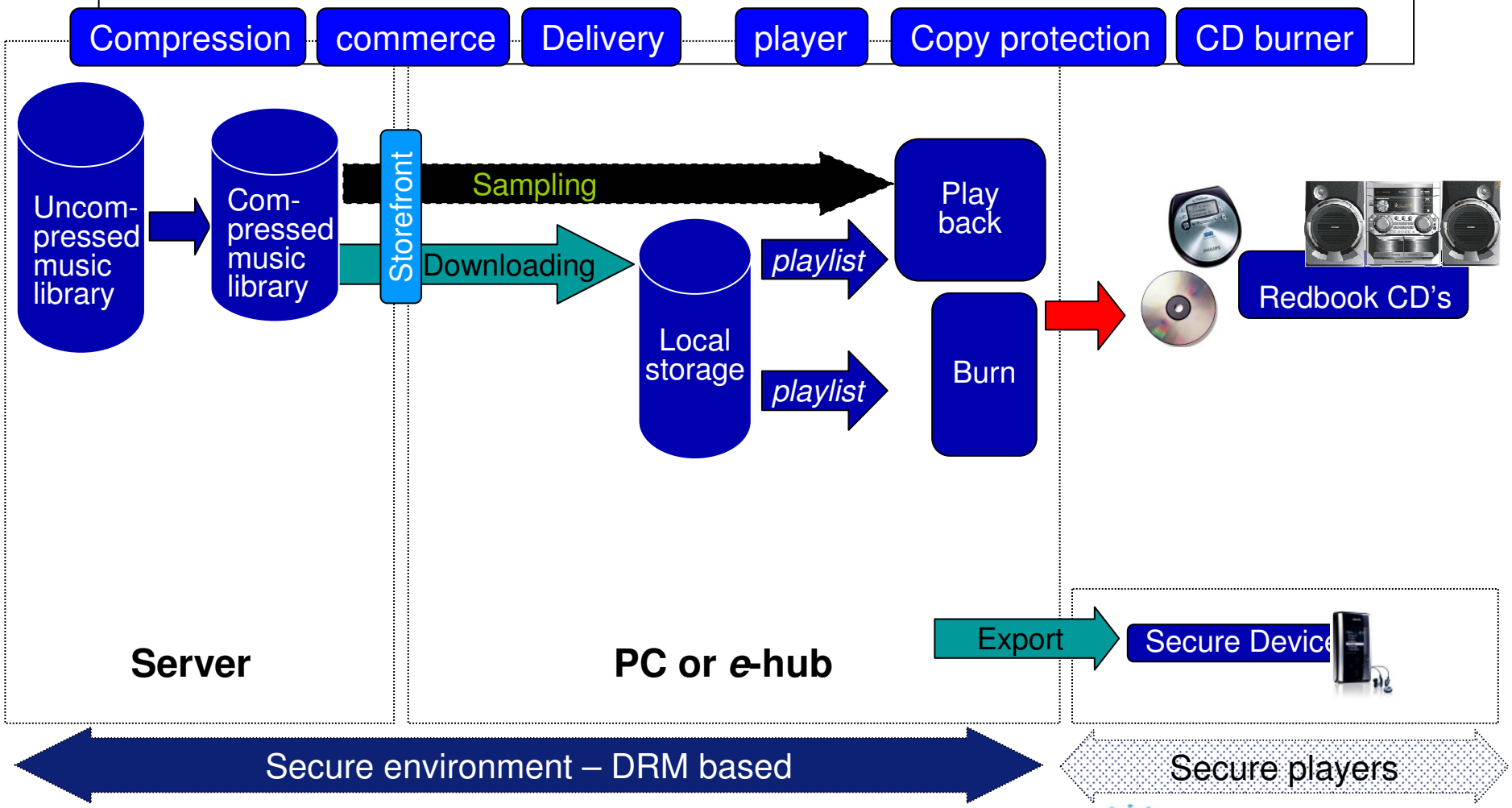
Today's DRM in reality



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Summary of today's DRM

- Reach limited to initial networked device
  - Typically a PC or an *e*-hub
  - Content and rights bound to that device
- Transfer only to approved secure devices
  - Limits addressable market
- Vulnerable protection
  - Software tamper-resistance
- Wide-open backdoor
  - Burning unprotected CDs

Balance of Interest

- Consumers want to enjoy their content anywhere, anytime, with the device of their choice
- Content industry wants to see fair compensation for their Intellectual Property, i.e. protection
- The CE and IT industries want the right to innovate
  - Adding differentiating features
- Current DRM practices are not geared towards mass-market acceptance
  - Many device owners left out
  - “Forced” to use P2P for ease-of-use

Person-centric Design

- A user's presence is represented by presence of his mobile phone
- Rights Objects are stored in SIM
  - Mobile phones have efficient payment infrastructure
  - Hardware Security module
- NFC (Near-Field Communication) interaction between phone and CE equipment
  - Very natural move (human handshake)
  - Registration into Authorized Domain
  - Transfer of Rights from SIM to stationary equipment possible

Timing considerations

- Authorized domain needs new installed base
  - First agreement on approach, then deployment
  - Takes time, by definition
- What if we could make each file unique ?
  - DRM delivery is contract-based with known users
  - Transactions no longer anonymous
  - Leakage can be traced
  - Non-anonymity can act as deterrent
  - Honest users are not inconvenienced at all

DRM*plus* Forensic tracking

- Unique Watermark embedded in each file
  - Imperceptible
  - Large enough payload to mark files individually
  - Robust against signal manipulation
- Professional detection service monitoring P2P networks
- Server-side embedding
  - Does not rely on client-side tamper-proofing
- Travels through all legacy equipment
  - Even analog conversion

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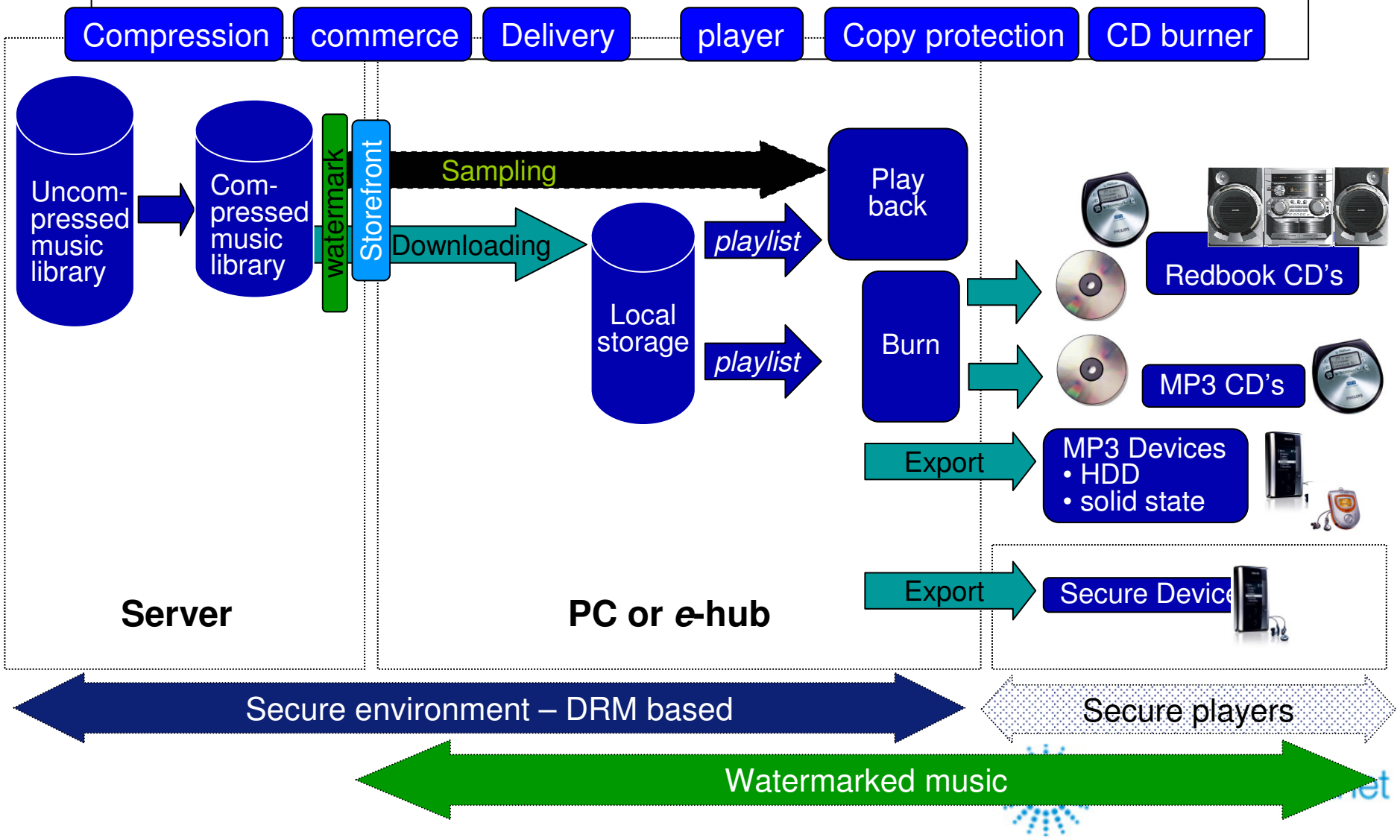
Forensic tracking



Summary and conclusion

- Mass market acceptance of DRM will only happen when ease of use equals current practices
- Advanced technology as enabler
  - Short term: forensic tracking
  - Mid term: Authorized Domain and NFC