

# PHILIPS

## The Open Road Ahead: Establishing an Open Standard Video Ecosystem

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## The Dream

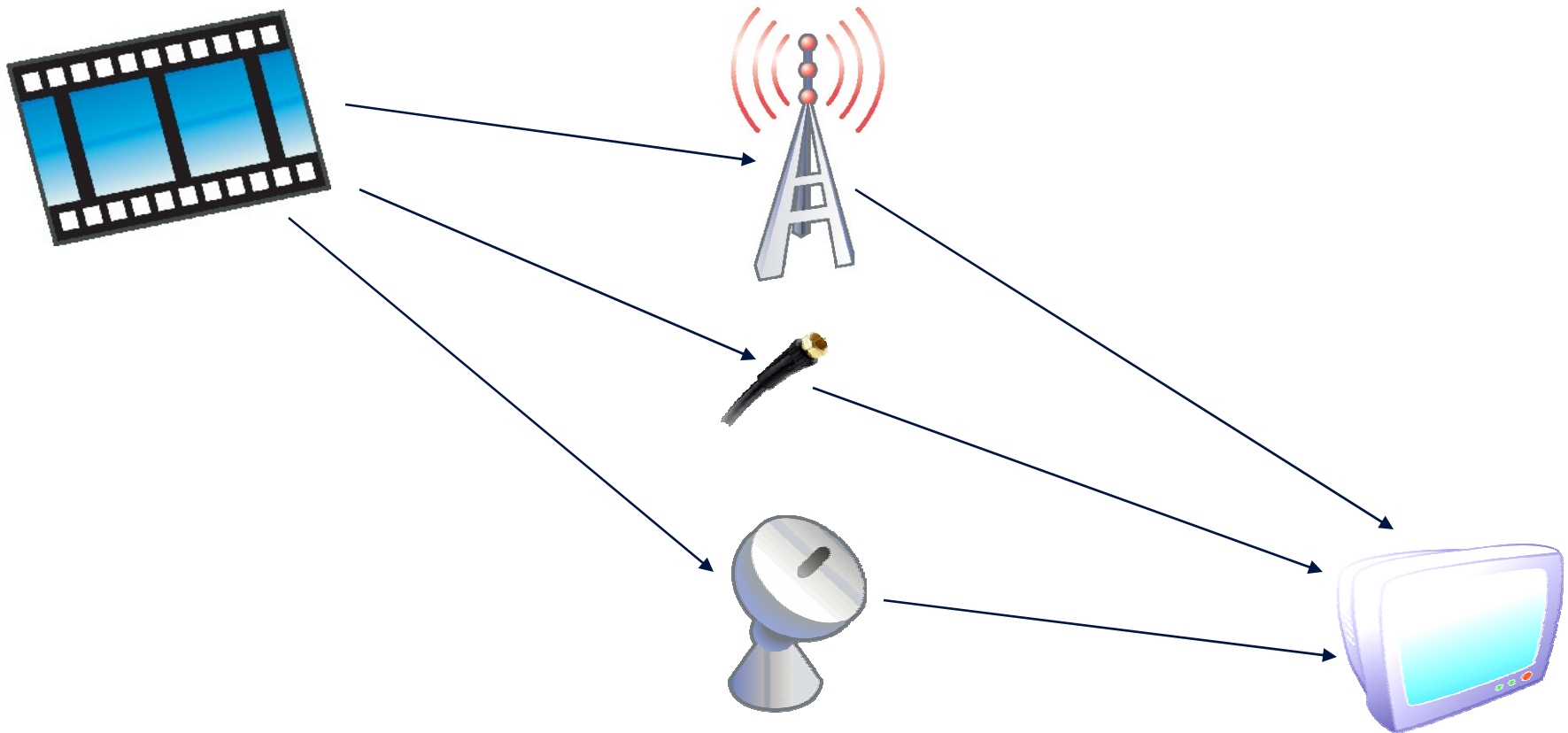
- Many of us share the dream: **An open standards based video ecosystem.**
  - Early and full disclosure, allowing everyone to build on each other's contributions.
  - Open competition during standard setting, and in the marketplace.
  - Resulting quality and cost benefits.
- But: **How can we get there?**

## Entertainment Content Distribution Chains

- Begin by considering the various content distribution chains.
- Four main distribution chains.
  - “Classic”:
    - Broadcast (Terrestrial, Cable, Satellite)
    - Packaged Media (CD, DVD)
  - “New Wave”:
    - Internet (Download, Streaming, P2P)
    - Mobile (Download, Streaming, P2P)
- Greatest challenge and promise is in New Wave.

## Broadcast Distribution Chain

- Open standards are already adopted quite broadly.
- Most notable exception is content protection.



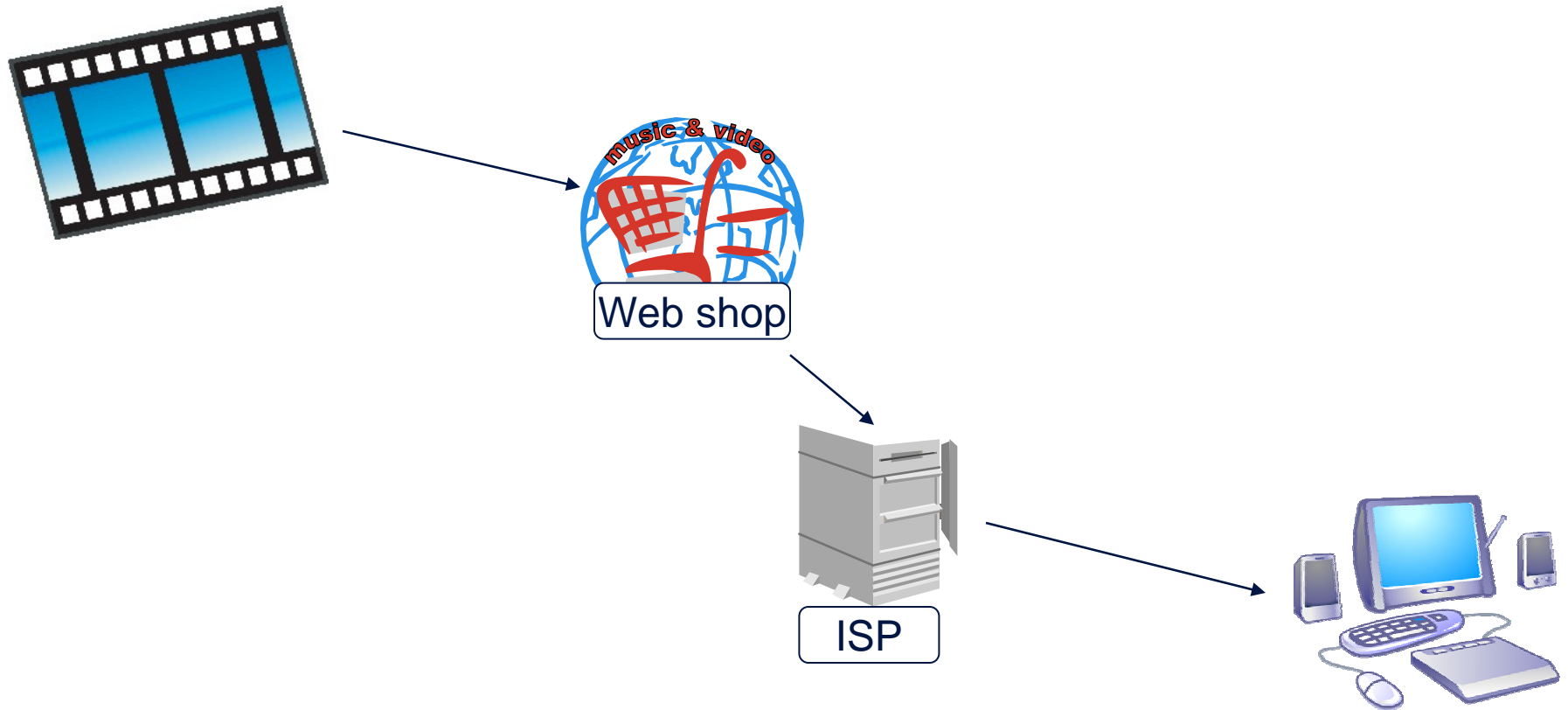
## Packaged Media Distribution Chain

- Newer standards follow increasingly open processes.
- Broad use of open standards for content formats.



## Internet Distribution Chain

- Currently dominated by proprietary standards.
- Rapid evolution due to flexible platforms.



## Mobile Distribution Chain

- Open standards orientation: 3GPP, OMA.
- Embryonic chain: Few entrenched proprietary standards.



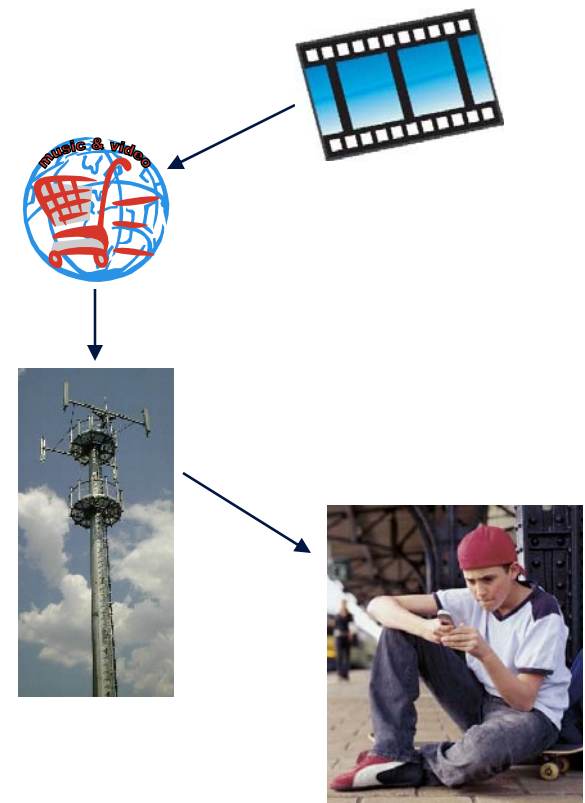
## The Mobile Opportunity

- We believe the **mobile distribution chain offers the greatest promise** for rapidly establishing a broad, open standards based, video ecosystem.
- Tremendous innovation rate.
  - 18 month replacement cycles.
  - Aided by “product subsidy” business model.
- Successful pay services and payment infrastructure.
  - SMS versus Instant Messaging.
  - Ring tones, wallpaper, and games.
- OMA is aggressively driving standards.
  - Only open DRM standard in existence.



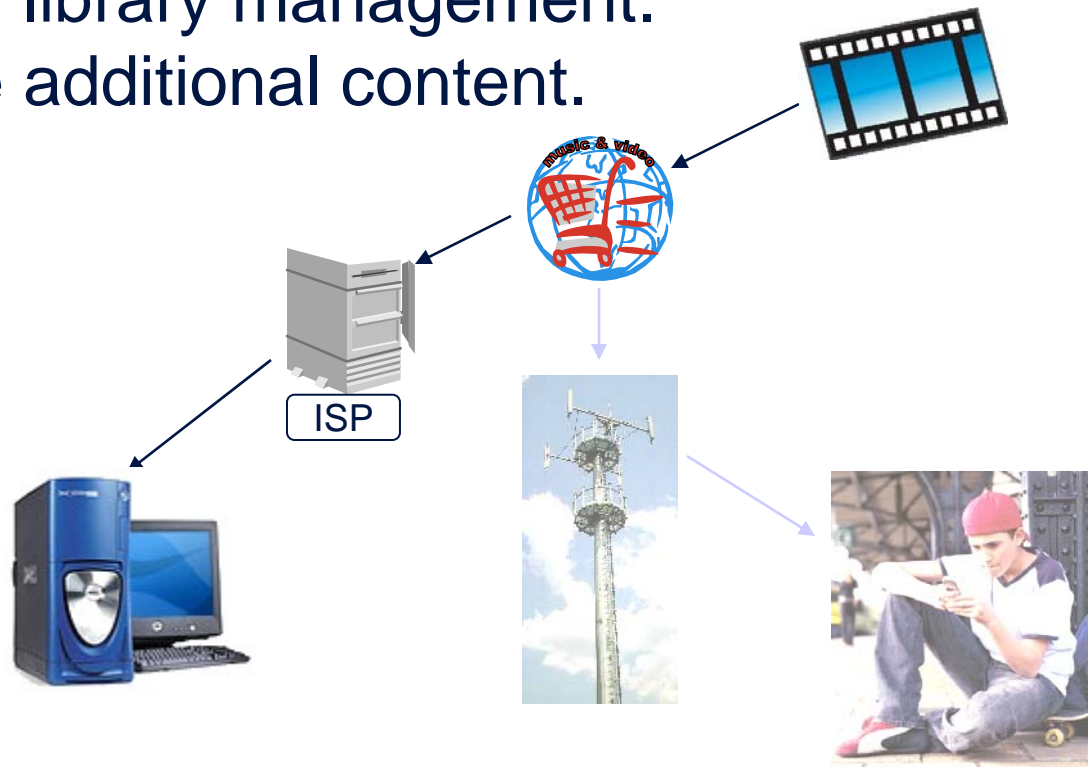
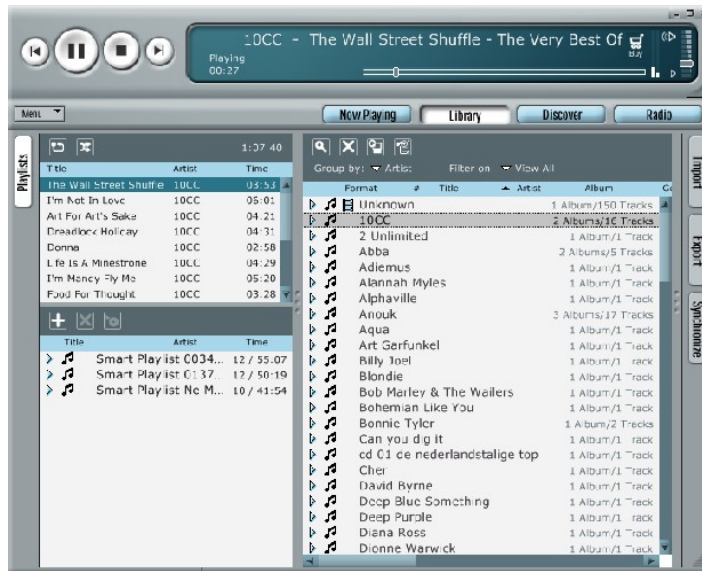
## Step 1: Content on Mobile Handsets

- Mobile distribution chain starts (naturally) by providing content to mobile handsets.
- Ring tones, wallpaper, games already successful.
  - Protected with OMA DRM v1.0.
- Music services will take off next.
  - Protected with OMA DRM v2.0.
- Video services will quickly follow.
  - Music videos.
  - News briefs.
  - Sports briefs.
  - Condensed TV shows.
  - Short movies (including adult titles).



## Step 2: PC Companions

- Increase attractiveness of content services by providing “PC Companion” application with new mobile handsets.
- Play purchased content on PCs.
- Provides back-up and library management.
- Browse and purchase additional content.



## Step 3: Portable Players & Automobiles

- Consumers will also want to play their purchased content on other portable players, and in their automobiles.
- Add these play-back devices to their mobile handset and PC Companion “domain”.
- Copy content from either handset or PC Companion.



## Step 4: Home CE Equipment

- Consumers will also want to play their purchased content on other CE devices located throughout their homes.
- New devices based on compatible open standards.
- Connect to mobile handset, PC Companion, and each other over home network.
- Content confined to, but easily shared within domain.

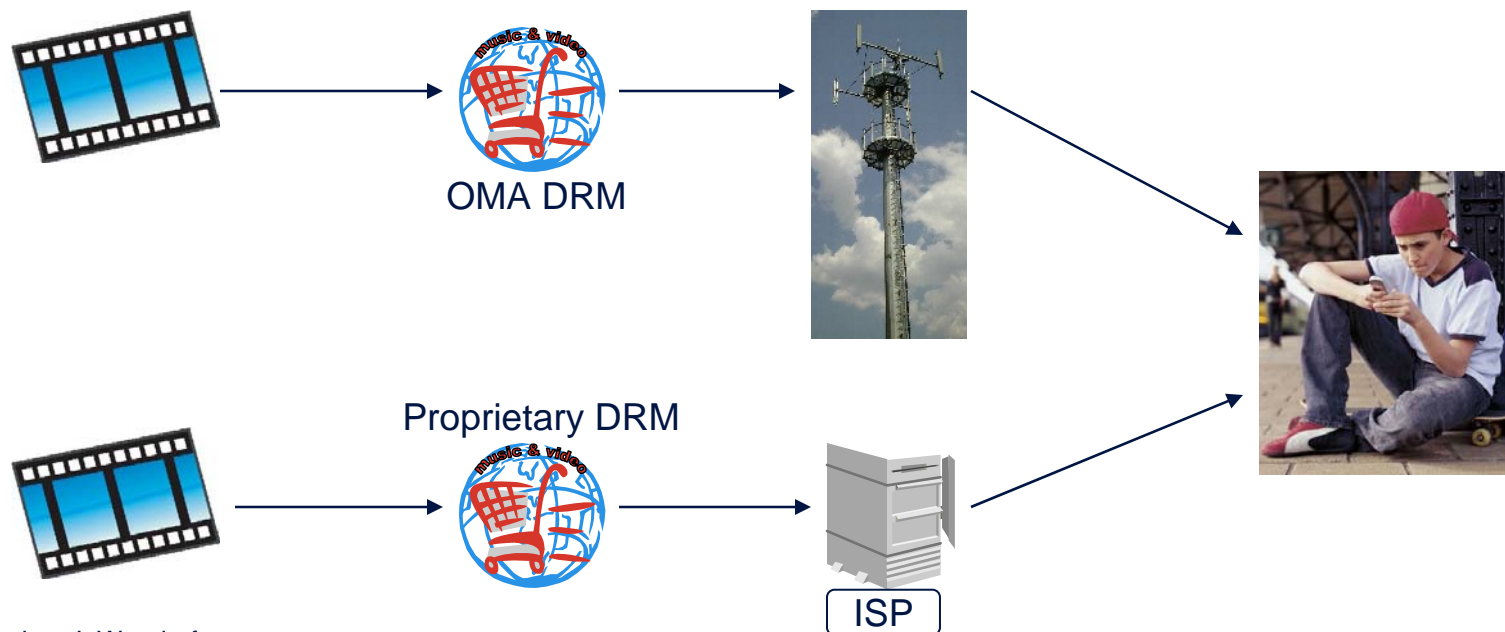


## Technical Elements of the Ecosystem

- Audio/Video codecs: AAC, AVC.
- File formats: MP4/ISO.
- Streaming protocols: IETF, 3GPP, DVB, ISMA.
- Device discovery: UPnP 1.x.
- Content protection: OMA DRM v2.0.
- Service protection: OMA, 3GPP, DVB.
- Content directories & metadata: ???.
  
- Content protection and rights management is key.
  - Determines what content is accessible.

## Need for Service Interoperability

- Different services of interest to a consumer may have different content protection systems.
- To access these services from one device, service interoperability is needed.
- The **Coral Consortium** addresses this need.



## Efficient Device Implementations

- A related issue is how to implement efficient, multi-DRM support in content receiving devices.
- The **Marlin Joint Development Association** addresses this need.
  - Specifications for a single technology toolkit to support multiple DRM systems.
  - Interoperation with Coral-enabled DRM systems.
  - Licensing & compliance program.
  - Community source program.

## Bumps on the Open Road

- Getting agreement on the selection of technical elements.
- Competitive IPR licensing terms.
- Content industry support.
- Growing a developer community.
- Establishing a conformance & interoperability testing and certification regime.
- Addressing the need for “one-stop-shopping”.



## Conclusion

- **There is a way to establish an open standards based video ecosystem.**
- Start with mobile phones.
- Immediately expand to home PCs (PC Companions).
- Then expand to portable players, automobiles, and home CE equipment.
- Grow the content access “domain” of the consumer.
- We invite you to **join us** in addressing the challenges that lie ahead.
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