





Piracy and file sharing: challenges and perspectives for the Digital Renaissance

technical point of view

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version 2.0


The background

- **AXMEDIS has been initially developed during a large IP project of the EC with the participation of more than 45 partners, among them,**
 - ◆ content producers, collecting societies, content distributors, research centers, broadcasters, editors, integrators, ISP, technology providers, cultural institutions,
- **Maintained, expanded and valorized for a range of applications.**
- **AXMEDIS is an open framework which presents the largest number of integrated functionalities along the value chain:**
 - ◆ pre-production, post production, distribution, repurposing, adaptation, clustering, recommendations, content management, profiling, semantic computing
 - ◆ DRM/CAS, verification, validation, protection/TPM,
 - ◆ web monitoring, P2P control, P2P monitoring, etc.

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Trends

- **Industry gradually abandoned DRM/TPM solutions**
 - ◆ most of them have been “rejected” by the consumers for the presence of too strong restrictions or lack of usability
 - ◆ Some of them are now returning back on their steps
- **Consumers are becoming content providers**
 - ◆ they are requesting to see their IPR respected; see last events on social networks, that included controls and restrictions.
- **A large amount of illegal downloads are performed via P2P as stated by numbers**
- **adoption of advertising business models, without any TPM have relaxed the control**
 - ◆ it is not clear what impact they have produced !!
 - ◆ Free access and advertising does not means to exclude the need to have technological protection measure/model (read as TMP, DRM, CAS or their combination) to avoid content propagation out the context.


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Some Facts on P2P

- **P2P and Internet are effective tools for distributing legal content, for example:**
 - ◆ sharing protected content with DRM (i.e., super distribution)
 - ◆ sharing of UGC, user generated content, non-covered by copyright,
- **Activities performed in Internet and/or by using P2P may be illegal as many other activities**
 - ◆ see the distribution of material related to terrorist activities, child pornography, child trafficking, etc.
- **P2P and file sharing technologies should be taken as an opportunity, since with those we can have**
 - ◆ Cost reduction for content distribution, super-distribution, for broadcasting content: webTV, IPTV, VOD, DAB, etc.


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Recent Proposed Actions

- **Recently proposed actions against piracy are still demanding technological solutions ? Are they feasible ?**
- **Actions for control when copyright infringement is verified:**
 - ◆ drastically un-connect users from internet
 - ◆ reducing bandwidth capabilities on protocols: P2P, media, etc.
 - ◆ three-strikes solution to cut off specific protocols to the infringing user.
 - ◆ two warnings before breaking the connection, the first two times the sharing of copyrighted material is detected.
- **Requesting detection from Collecting Soc., authors or third parties**
 - ◆ Implies also to provide an evidence via specific monitoring thus technology
- **Automated detection/monitoring activities, technically based**
 - ◆ understanding if the content passing on the network/protocol is covered by some right,
 - ◆ They → the recognition of the all possible content in all formats,....


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Technical implications of cut-off and/or control

- **Collaboration of ISPs: the role of copyright enforcers?**
- **Large effort in traffic monitoring and control**
 - ◆ **a sort of signal interception:** in many cases, it is regulated by law and *only* authorized for relevant felony.
 - ◆ **high costs** to control the usage of distinct protocols of the single users: distinguishing VOIP, HTTP, P2P, IPTV..etc.
 - ◆ **millions** of users for **millions** of digital content items declined on **several** versions and formats, replicated on **many** channels;
 - ◆ **very hard to trust it feasible at reasonable costs.**
- **Actions of simple filtering on**
 - ◆ Media kind or protocols are not efficient:
 - they do not cut only illegal material,
 - ◆ Moreover → New formats and protocols are created every day
 - ◆ , Never ending story...


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On the contrary: the interoperable DRM

- **Interoperable DRM/CAS has been differently interpreted**
 - ◆ a **unique standard for all**, from proprietary and patent-based standards, or proprietary
 - ◆ a **unique standard channel for all**, a politically sealed platform that has to be used as a parallel mandatory distribution channel.
 - ◆ a **unique royalty free standard for all**, impossible to find an agreement
 - ◆ a **royalty free standard layer for interoperability among all** different DRM/CAS solutions and standards that should be agreed among the different technology providers
- **The last solution would be *pragmatically the most feasible***
 - ◆ it would preserve the market for different tech. providers to promote and provide their solutions with different capabilities, functionalities, etc.
 - ◆ This is the ground on which they conquer the market
- **Technologies and tools are largely available to take these paths !!**


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Conclusions

- **Consumers are looking for attracting functionalities, THUS**
 - **New/old trend on Intelligent Packages**, well known solutions AXMEDIS/MPEG-21, MXF, MPEG-4, ZIP, or new solutions to reinvent the hot water such as: MusicDNA, CMX.
 - → technology is there !
 - **true-interoperability** in a wider manner with respect to what they have with the physical content. Commercial DRM and CAS solutions are not supporting such an interoperability
- **Content owners are interested in enforcing control,**
 - ◆ May be along the value chain, from B2B to B2C, → technology is there !
- **Monitoring solutions to control the access on specific protocols and/or portals:**
 - ◆ Monitoring of web or P2P is possible → technology is there !
 - ◆ limitations of freedom would not be accepted by consumers...
- **Regulatory actions of the enforcement are critical aspects**
 - ◆ DMCA: Digital Millennium Copyright Act → we have seen effects...
 - ◆ ACTA: Anti-Counterfeiting Trade Agreement → common best practices ??
- **P2P and file sharing in general have to be taken as opportunities for cost reduction and new business models.**


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- **Thanks!**
- **Documents and tools can be download from web sites and on shareware sites**
- <http://www.axmedis.org>
- <http://mobmed.axmedis.org>



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