Pensieri ed azioni per un’economia sostenibile dei media nella società

Leonardo Chiariglione, CEDEO.net

Seminario Aperto FUB, Roma – 2008/01/20

The nature of content

- Contents are the result of human endeavours exerted in a social context
- Creators claim ownership of the results of their endeavours when they are made public
- In most cases creators need the help of some intermediaries to reach the consumer

Rights Management
A discovery of our age?

- Actually, no…
- I do not know for the author of the Gilgamesh epic
- It was very clear to Martial that the epigrams were his
- British printers considered themselves the “proprietors” of the books they printed
- Etc.

Media economy and society: ca. 100 AD

Marcus Valerius Martialis – epigram I. 53

Commendo tibi, Quintiane, nostros -
Nostros dicere si tamen libellos
Possim, quos recitat tuus poeta –
Si de servitio gravi queruntur,
Adsertor venias satisque praestes,
Et, cum se *dominum* vocabit ille,
Dicas esse *meos* manuque missos.
Hoc si terque quaterque clamitaris,
Impones plagiario pudorem.

Media economy and society: 1515 AD

Ludovico Ariosto and "Orlando Furioso"

He feared that people would copy his poem without rewarding him

So he wrote a business proposition to the Duke Alfonso d'Este, lord of the city of Ferrara:

"YOU fine those who pirate my works and WE share the proceeds"

Media economy and society: 1710 AD

The Queen Anne Act

Whereas *printers, booksellers, and other persons …*

have of late frequently taken the liberty of printing, reprinting, and publishing…

books and other writings, without the consent of the authors or proprietors of such books and writings…

for preventing therefore such practices for the future, and for the encouragement of learned men to compose and write useful books; may it please your Majesty…

that the author of any book…

who hath not transferred to any other the copy or copies of such book…

shall have the sole right and liberty of printing such book…

for the term of one and twenty years

Media economy and society: 1789 AD

U.S. Constitution
Article 1, Section 8, Clause 8

The Congress shall have Power…

To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries

Duration: 14-years renewable once if the author is still alive

Media economy and society: 1793 AD

The law of 19 july 1793

Art. 1: *les auteurs d'écrits en tous genres, les compositeurs, les peintres et dessinateurs qui font graver les tableaux et dessins, jouiront leur vie entière du droit exclusif de vendre, faire vendre, distribuer leurs ouvrages dans tout le territoire de la République et d'en céder la propriété en tout et en partie*

Art. 2: *leurs héritiers ou cessionnaires jouiront du même droit durant l'espace de dix ans après la mort des auteurs*

Media economy and society: 1886 AD

Berne Convention

- Authors can **exercise the right** in the countries member of the Union to
  - Claim authorship of their works
  - Object to any distortion or mutilation prejudicial to their honour or reputation
  - Authorise the reproduction of their works
- **Mitigated by** permission granted to users to
  - Make quotations from a published work
  - Use works by way of illustration in publications, broadcasts or sound or visual recordings for teaching
  - Reproduce works in certain special cases

Media economy and society: ca. 1950 AD

Levies

- Most European countries
  - Grant consumers the right to make private copies, based on the principle that these are not likely to create substantial “damage” to copyright holders
- But in exchange most European countries…
  - Apply a levy on recording equipment (blank tapes, audio and video recorders etc…)
- The proceeds go to rights holders as a compensation for the loss of revenue by private copying (not for piracy)
- Rights Collecting Societies try to extend the levy to computers, hard disks, Internet etc.

Media economy and society: 1970 AD

ISO 2108:2005 Information and documentation – International standard book number (ISBN)

Defines a 10-digit number called International Standard Book Number (ISBN) that can be printed on the cover of all books

ISBN enables efficient right management systems

- The clerk at a bookstore automatically read the ISBN code when a book is sold
- A computer manages the inventory and report sales back to publisher

Media economy and society: 1976 AD

The Copyright Act

- Fair use" is granted as an exception to copyright based on four parameters:
  - Character of the Use:
    - e.g. for educational or non-profit purpose
  - Nature of the Work:
    - e.g. the work is factual as opposed to being creative
  - Portion of Work Copied:
    - e.g. a small portion of the work
  - Effect on the Market Value of the Work:
    - e.g. small impact on the value of the work as a consequence of the use
- Fair use is not a blank sheet authorisation, as you can still be sued...

Media economy and society: 1992 AD

United States Audio Home Recording Act

- Serial Copy Management System (SCMS) is imposed in all digital media recording equipment
- Publishers can determine how many copies customers can make of a given work
  - Free copy
  - One copy
  - No copy

Media economy and society: 1996 AD

WIPO Copyright Treaty

- Punish altering of Rights Management Information
  - Identifying work, author, rights owners
  - About terms and conditions of use
- Outlaw devices whose primary purpose is to circumvent any process, mechanism or system to prevent or inhibit exploitation of rights holders' rights

Media economy and society: 2001 AD

Creative Commons

- Rights holders can retain a subset of their rights
- 4 types of use have been defined:
  - Attribution, i.e. give credit to rights holder
  - Commercial use, i.e. make commercial use
  - Derivative works, i.e. make derivative work
  - Share alike, i.e. share under same license as original
- Of the 16 possible licences only 6 are in use
  - Attribution alone (by)
  - Attribution + Noncommercial (by-nc)
  - Attribution + NoDerivs (by-nd)
  - Attribution + ShareAlike (by-sa)
  - Attribution + Noncommercial + NoDerivs (by-nc-nd)
  - Attribution + Noncommercial + ShareAlike (by-nc-sa)

Rights Enforcement
Not a discovery of our age

- Circus curtains
  - To prevent non-paying bystanders from watching the show ;-)
- Collective Societies' inspectors
  - To check the use that is made of author's works
- Analogue pay TV scrambling
  - To control access to content by suppressing video synchronisation
- Video watermarking
  - To mark the video signal to enable tracing its source
- Macrovision VHS Copy Protection
  - To prevent duplication by altering synchronisation
- DVD Content Scrambling System
  - To prevent access to content in clear text by encrypting the bits on the DVD
- Audio watermarking
  - To manage distribution of sound content
- ...

We live in a digital age

- Everything gets digitised because
  - More and richer content
  - Easier and more effective access
  - Vastly improved user experience
- So do intermediaries use digital technologies to manage and enforce their rights
- They call it Digital Rights Management...

Digital Rights Management should not be an ambiguous term

- Two uses of Rights Management
  - Management (what else?)
  - Protection e.g. via Technical Protection Measures
- A definition of DRM:
  - DRM System: A system of IT components and services which strives to distribute and control content and its rights.
- Remember:
  - If you publish a work with a CC license expressed in RDF, you are using a DRM technology
- DRM=Digital Restriction Management
  - Yes, as much as GPL and a Creative Commons licence are forms of Legal Restriction Management

What should we do with DRM?

- Rights Management has been around for at least 2000 years
- It does not help to make arguments against DRM saying:
  - "It will never work"
  - "Only media behemoths stand to gain"
  - "Users only stand to lose from DRM"
- Some of this may be true but it leads us nowhere
- You cannot "stop DRM"
  - Industry has already invested a lot in DRM
  - DRM is NOT just protection

Analogue media – digital media

- Analogue IP business = management of scarcity
  - Moving atoms is hard
  - The physical distribution channel can only handle that much
  - Barriers can be built all over the place
  - In an LP or CD 2 songs are good 8 less so
  - Staggered distribution of movies over different channels
  - …
- MP3 and DivX = management of abundance
  - Users can
    - Find
    - Choose
    - Mix and mash
    - Share

    what they want
  - Anytime, anywhere on any device

The challenges of digital media

- The endless possibilities of technology
- The taste of the future experienced by end-users
- Managing abundance
- Ensuring there remains an incentive to create
- Shortening the link between creators and end users
- Respecting existing laws/international treaties
- ….

The solutions?

1. Let's keep things as they are
2. Let law chase technology
3. Let 100 DRMs blossom
4. Let "free content" be the antagonist of "DRM content"
5. Let's introduce a "content tax"
6. Let's distribute unprotected content
7. Let's assume that content has no value
8. Let's be rational…

Let’s keep things as they are

- The argument
  - We have plenty of laws that can be used to perpetuate the status quo
  - Courts can be used to make the necessary adaptations
- Can it work?
  - You just have to turn the knob of levies…

Let law chase technology

- The argument:
  - Any disruptive use of new technology is vigorously fought with legions of lawyers
- Does it work? Maybe, but the reality is
  - Look at the market place
    - **Mp3.com** use to thrive but keeps on losing money
    - **Napster** used to thrive but now it keeps on losing money
    - **P2p networks** thrive but there is no money to make
  - Look at society
    - "Innocent" users are brought to court
    - The user experience is not what it could be
    - Rights holders' assets keep on being looted

Let 100 DRMs blossom/1

- The argument:
  - I own the right to this content and will make it available for a fee using the technology I choose
- Does it work?
  - In Europe there are less subscribers to proprietary pay TV (after 12 years) than DTT set top boxes (after 8 years)
  - Music on line services (Napsters et al.) are still losing money

Let 100 DRMs blossom/2

- Does it work (cont'd)?
  - Apple
    - Makes no money from iTunes
    - Earns good money on the trendy MP3 player called iPod
    - 20 iTunes tracks sold per iPod on average
  - DivX
    - Subscription service goes nowhere
    - Tens of millions boxes with DivX logo sold
- Content wants to be liquid...

Let “free content” be the antagonist of “DRM content”

- The argument:
  - Content with a Creative Commons license is good
  - DRM-protected content is evil
  - The two shall never meet
- Can it work?
  - It depends on what the relative profitability of free content and DRM content will turn out to be

Let's introduce a "content tax"

- The argument
  - In an Alternative Compensation Scheme (ACS) people use digital content freely while creators are remunerated based on use of their works
- Can it work?
  - In general ACSs require
    - Some sort of flat taxation
    - Pretty serious and intrusive DRM technologies
  - But it must be implemented worldwide

Let’s distribute unprotected content

- The argument
  - People are shunning content distributed with proprietary DRM systems, so let’s give them the real thing
- Can it work?
  - Yes, if content is watermarked and bits flowing through the network are policed

Let's assume that content has no value

- The argument
  - Content has no monetary value
  - What is attached to content has
- Can it work?
  - Sure, but we must make sure that there will still be people producing content

Let's be rational... and design a solution that

- Incentivises creation
- Supports user generated content
- Manages abundance
- Accommodates the possibilities of technology
- Is not intrusive
- Satisfiers end-users' taste of digital media experience
- Does not upset but enhances the user experience
- Supports all sorts of solutions (e.g. as listed before)
- Allow third parties to plug in their services
- Is standards-based i.e. inexpensive
- Is flexible to design, build and operate value chains
- Is implemented as Open Source Software
- Is available as a technology platform...

De his rebus quibus homines et praesertim principes laudantur aut vituperantur

Resta ora a vedere quali debbano essere e' modi e governi di uno principe con sudditi o con li amici.

E, perché io so che molti di questo hanno scritto, dubito, scrivendone ancora io, non essere tenuto prosuntuoso, partendomi, massime nel disputare questa materia, dalli ordini delli altri.

Ma, sendo l'intento mio scrivere cosa utile a chi la intende, mi è parso più conveniente andare drieto alla verità effettuale della cosa, che alla immaginazione di essa.

E molti si sono immaginati repubbliche e principati che non si sono mai visti né conosciuti essere in vero; perché elli è tanto discosto da come si vive a come si doverrebbe vivere, che colui che lascia quello che si fa per quello che si doverrebbe fare, impara più tosto la ruina che la perservazione sua...

A direction for a solution

- Digital Rights Management (DRM) systems are widely used
- DRM is tailored to the needs of rights holders
  - There is a Rights Holder at the beginning bestowing rights in a chain
- Independently designed, deployed and operated DRM systems are a source of frustration and opposition by consumers – lack of interoperability
- What is interoperability?
  - From the consumer viewpoint: the ability to play the same type of content from different sources with the same device
- Interoperability is also important to value chain users when they do business between them

How to achieve interoperability

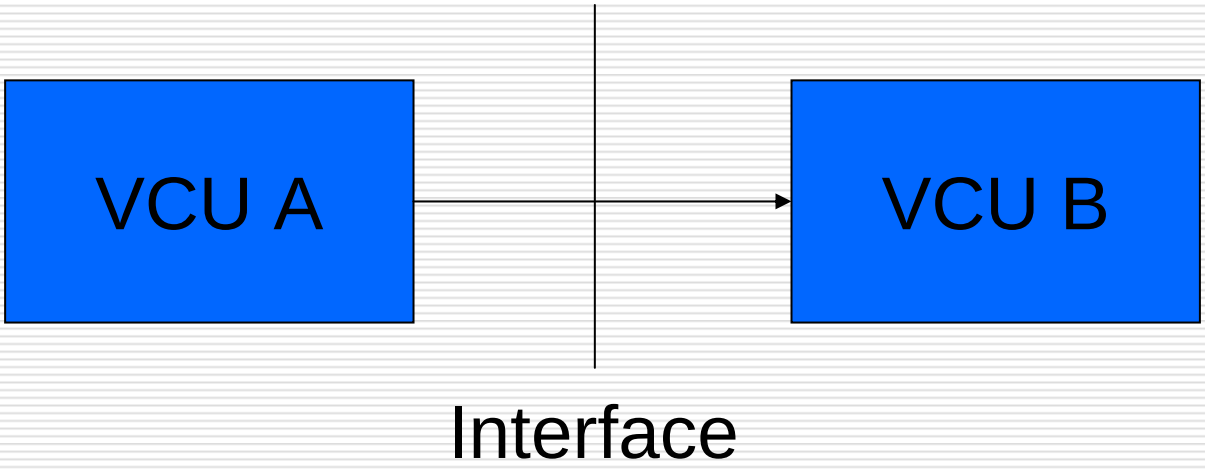
- All devices support all DRM systems
  - Many DRM systems
  - New DRM systems continue to be invented
  - Any new DRM system implies some more IPR whose cost is to be added to the device cost
  - A technology is not necessarily available for licensing
- A service makes conversions
  - A content/service provider may not be interested in letting its content to be converted
  - Who pays for the service?
- There is a DRM standard

Which DRM standard?

- A DRM standard must
  - Satisfy the **manifold needs** of media value chain players
  - Allow continuous injection of **innovation**
- It is impossible to provide a DRM standard for all types of value chains
  - They are just too many and more are coming
- It is doable to provide standards for low-level functions (*Primitive Functions)*
- Value chains can then be assembled from primitive functions
- The DMP standard is
  - The Interoperable DRM Platform (now at version 3.1)
  - Its OSS Reference Implementatiov Chillout®

A definition of DRM interoperability

- The possibility for Value-Chain Users (including End-Users) to technically execute value-chain Functions through Interfaces and Protocols of open specification with predictable results



The solution: scalable and interoperable DRM

- **For rights holders**
  - It is possible to **manage** content when releasing it to the value chain (as e.g. in CC or some ACSs)
  - It is possible to **protect** content when releasing it to the value chain, if the rights holder so requires
  - **Low barrier** to access the value chain because content is handled by *standard equipment*
- **For intermediaries**
  - **Low cost** to *set up*, *manage* and *evolve* a value chain because *standard technologies* from *multiple suppliers* are employed
- **For end users**
  - **Freedom to choose** from *multiple sources* of content because it is handled by *standard equipment*

Benefits of interoperable and scalable DRM

- **Flexibility**: users can build any value-chain
  - suiting their own business models
  - without strings attached from alien business models
- **Cost effectiveness**: the same tool
  - has multiple uses
  - is provided by competing suppliers
- **Ability to evolve**: value-chains can be extended
  - adding an existing tool
  - Add a new tool
- **Interoperability**
  - full interoperability within a value-chain
  - a level of interoperability across value-chains
- **Openness**
  - proprietary tools can be used while preserving interoperability

Definition of standard

- Webster's – 1
  - A conspicuous object (as a banner) formerly carried at the top of a pole and used to mark a rallying point especially in battle or to serve as an emblem
- Webster's – 2
  - Something that is established by authority, custom or general consent as a model or example to be followed
- Encyclopaedia Britannica
  - (Technical specification) that permits large production runs of component parts that are readily fitted to other parts without adjustment
- Leonardo
  - Codified agreement between parties who recognise the advantage of all doing certain things in an given way
- The actual "process" (de jure or de facto) is irrelevant, provided it is
  - Fair to all parties concerned (otherwise it is a market distortion)
  - Carried out to match the needs of users (otherwise it is not very useful)

DRM in MPEG standards

- MPEG-1 – nothing
- MPEG-2
  - EMM (Entitlement Management Message)
  - ECM (Entitlement Control Message)
- MPEG-4
  - IPMP Hooks
  - IPMP Extensions
- MPEG-21

Basic DRM technologies in MPEG-21

- Digital Item
- Digital Item Identification
- DRM Tool Management
- Rights Expression Language
- Rights Data Dictionary
- Digital Item File Format
- Digital Item Streaming
- Event Reporting

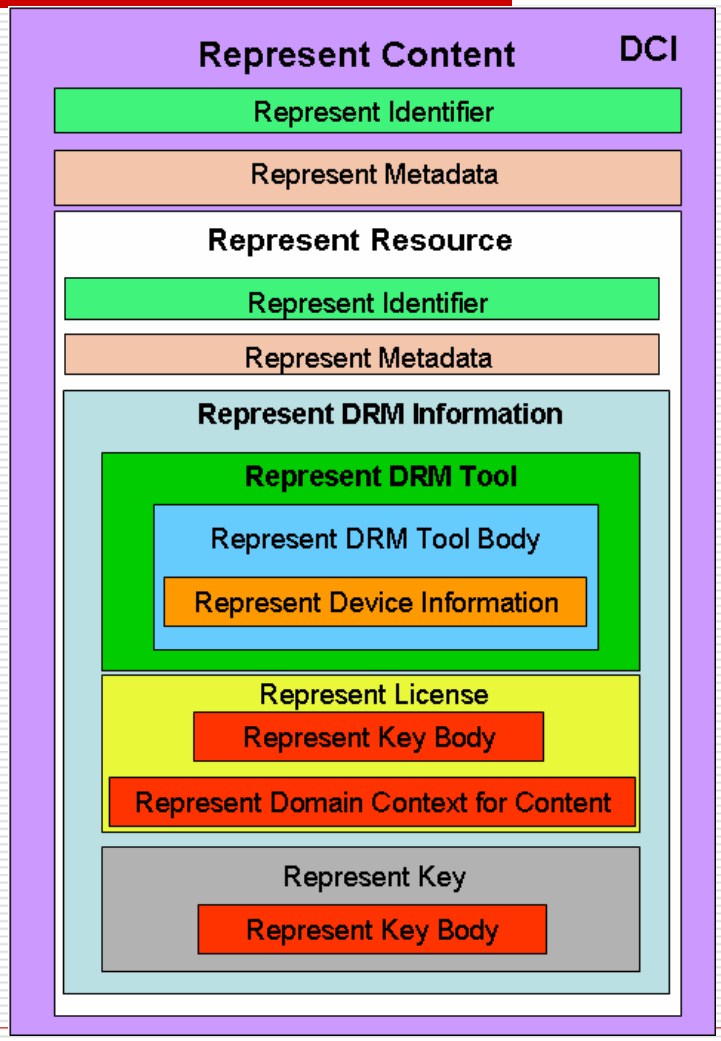
The Digital Media Project (DMP)

- Launched as Digital Media Manifesto in July 2003
  - Manifesto published in September 2003 (http://www.chiariglione.org/manifesto/dmm.htm)
  - The “digital media stalemate” identified
- DMP established as a not-for-profit organisation in December 2003
  - http://www.digital-media-project.org/
- DMP’s mission: to promote continuing successful development, deployment and use of digital media that respect
  - Rights of creators and rights holders to exploit their works
  - Wish of end users to fully enjoy the benefits of digital media
  - Interests of various value-chain players to provide products and services

The IDP-3.1 Approved Documents

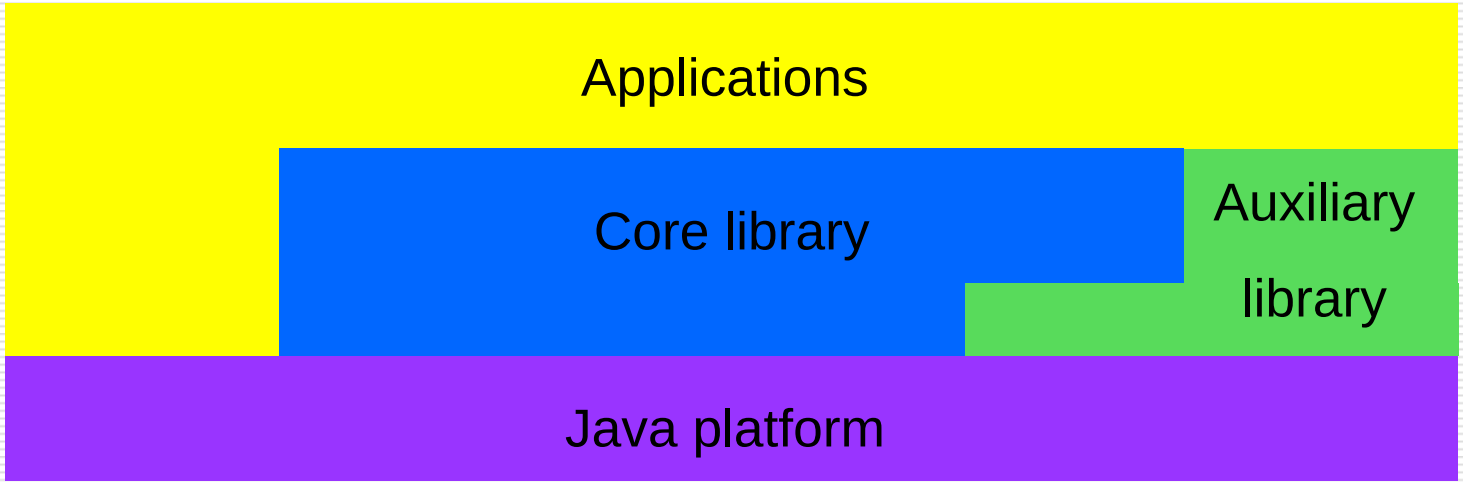
AD	Title	Type
#1	Value-Chain Functions & Requirem.	Infor.
#2	Architecture	Infor.
#3	Interoperable DRM Platform	Norm.
#4	Use Cases and Value Chains	Norm.
#5	Certificat. & Registrat. Authorities	Norm.
#6	Terminology	Infor.
#7	Reference Software	Norm.
#8	End-to-end Conformance	Norm.
#9	Mapping of TRUs to Digital Space	Infor.

Digital Item



The Chillout® reference software

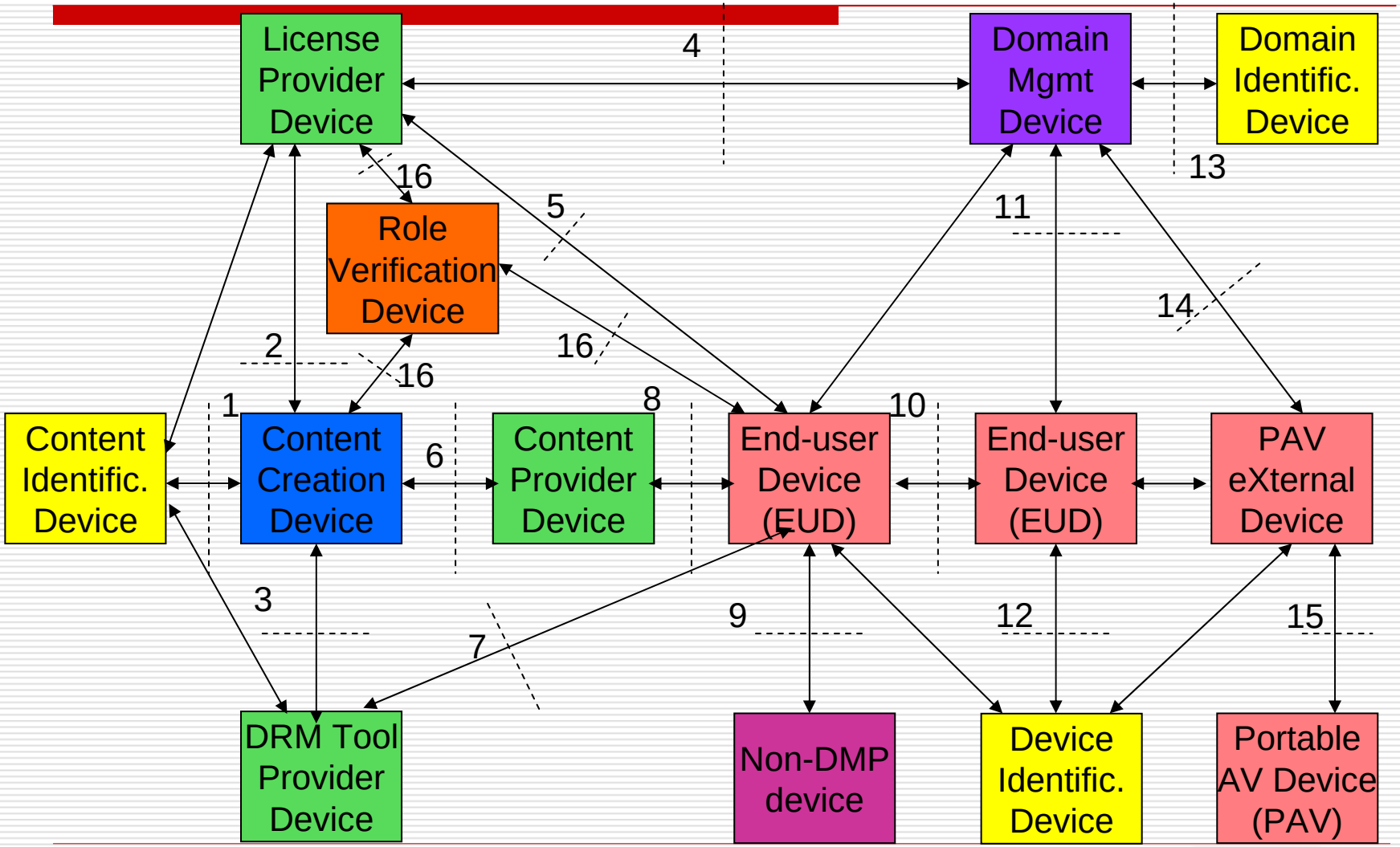
- A set of Java libraries
- Exposed as web services
- Organised as
  - Core library: implements the IDP specification
  - Auxiliary library: encapsulates a number of functionalities
  - Applications: a set of sample applications (devices, ...)



Mapping of Traditional Rights and Usages to the digital space

- Tim wants to quote 10 s from time code 1h:15m:25s of “My best quote of the year” available as protected Content
- Tim obtains a license to quote 10 seconds of “My best quote of the year”
- Tim makes a Digital Item containing
  - The 10 s of the movie
  - The License obtained for Quoting the movie

A network of DMP Devices



Public authorities and interoperability/1

- PA do nothing
  - General lack of interoperability implies that consumers do not benefit fully from the Information Society potential
  - Some businesses are less constrained in their decisions while others are severely limited in their access to new opportunities

Public authorities and interoperability/2

- PA actively promote an open standard interoperable solution
  - If the standard interoperable solution is supported by industry then Consumers may begin to find interoperable content and devices
  - Business constraints remain as above, with the option of supporting interoperability

Public authorities and interoperability/3

- PA mandate a company/organisation to run the interoperable solution
  - Creators have a low threshold to access distribution through the services of the said company/organization
  - If industry decides to use the services of the said company/organization, consumers may find more interoperable content and devices
  - The said company/organization competes with businesses that do not use the interoperable solution

Public authorities and interoperability/4

- PA mandate service providers to use the interoperable solution in parallel to their proprietary services
  - Creators have a low threshold to access distribution through the services of the said company/organization
  - Consumers can always find the content they want using the interoperable solution
  - Businesses retain full control of their business with both proprietary and interoperable solution at some additional costs

Public authorities and interoperability/5

- PA mandate exclusive use of the interoperable solution
  - No consumer confusion
  - Businesses are prevented from using proprietary solutions

About “dmin.it” and “digital media”

- **dmin.it** is an interdisciplinary, open, non-profit group, with the goal to define and propose areas where Italy can gain a leading role in the exploitation of “digital media”
- **Digital media** is any digitally represented content which can be transported over digital networks and processed by programmable devices

The dmin.it idea

- Find the good equilibrium point between
  - The right of operators to provide services using the technologies that best support their business
  - The right of consumers to access services with a minimum level of interoperability if they so wish
- Design the equilibrium point
  - For the national territory
  - Respecting international treaties
- Achieving the equilibrium point will
  - Create a homogeneous market of 60 million people
  - Provide lifeblood to the national culture industry
  - Stimulate innovation in the digital media market

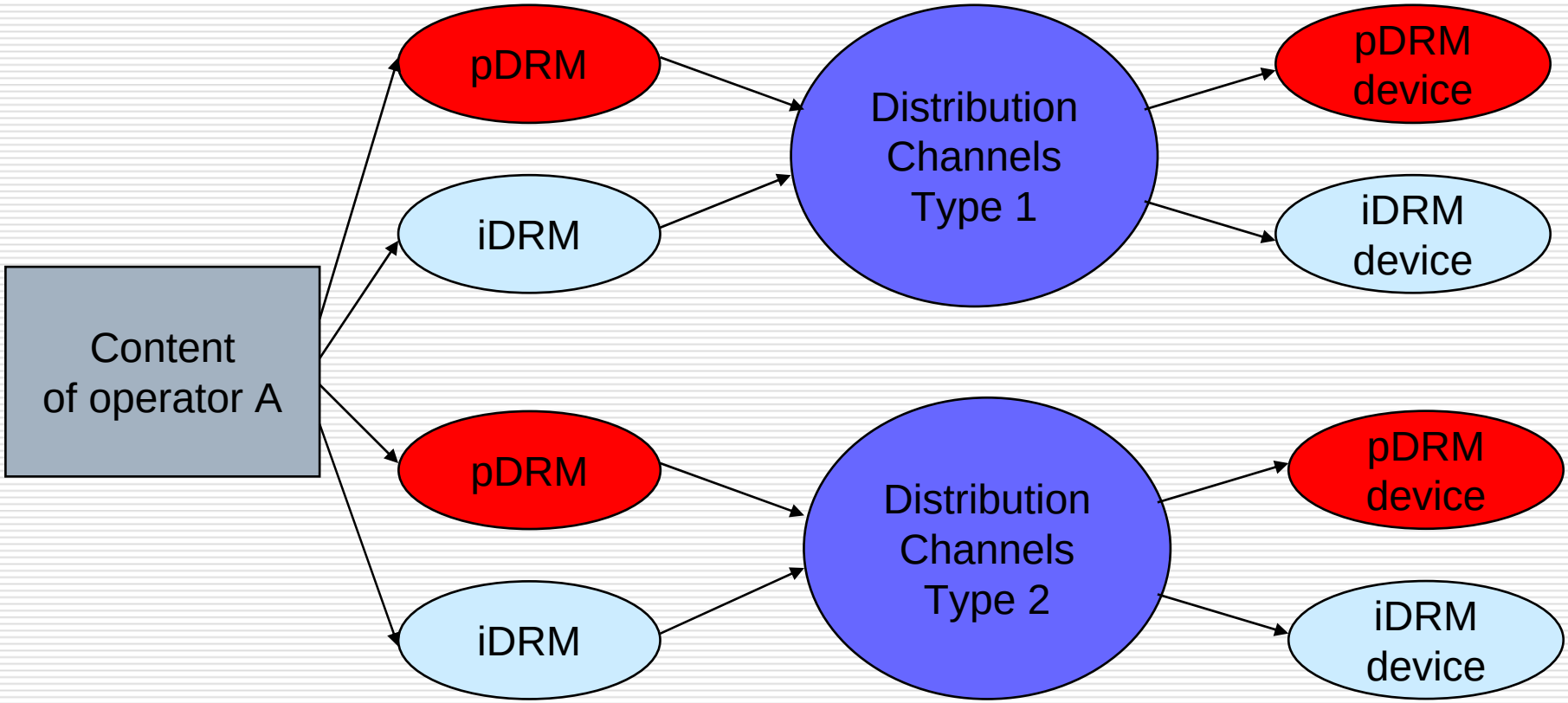
The dmin.it proposal

- The **dmin.it proposal** concerns actions designed to maximise the flow of digital media
- It requires actions in three different areas:
  - Digital media rights management
  - Network access
  - Online payment systems
- An operator may utilise both interoperable and proprietary formats, network and payment services
- All other users (creators and consumers) are given the choice to access proprietary or interoperable services

iDRM

1. An iDRM specification is adopted at the national level
2. A service provider releasing content using a proprietary technology must
    1. Release it also using the iDRM technology
    2. At conditions that are not discriminatory compared to the proprietary technology
3. Anybody may implement devices and services, request and obtain conformance certification for them and offer them to interested parties
4. The iDRM specifications are
    1. Public
    2. Implemented as Open Source Software (OSS)
    3. Not prescriptive of a particular business model
5. The governance of the iDRM ecosystem is managed by representatives of the affected parties

iDRM – how it works

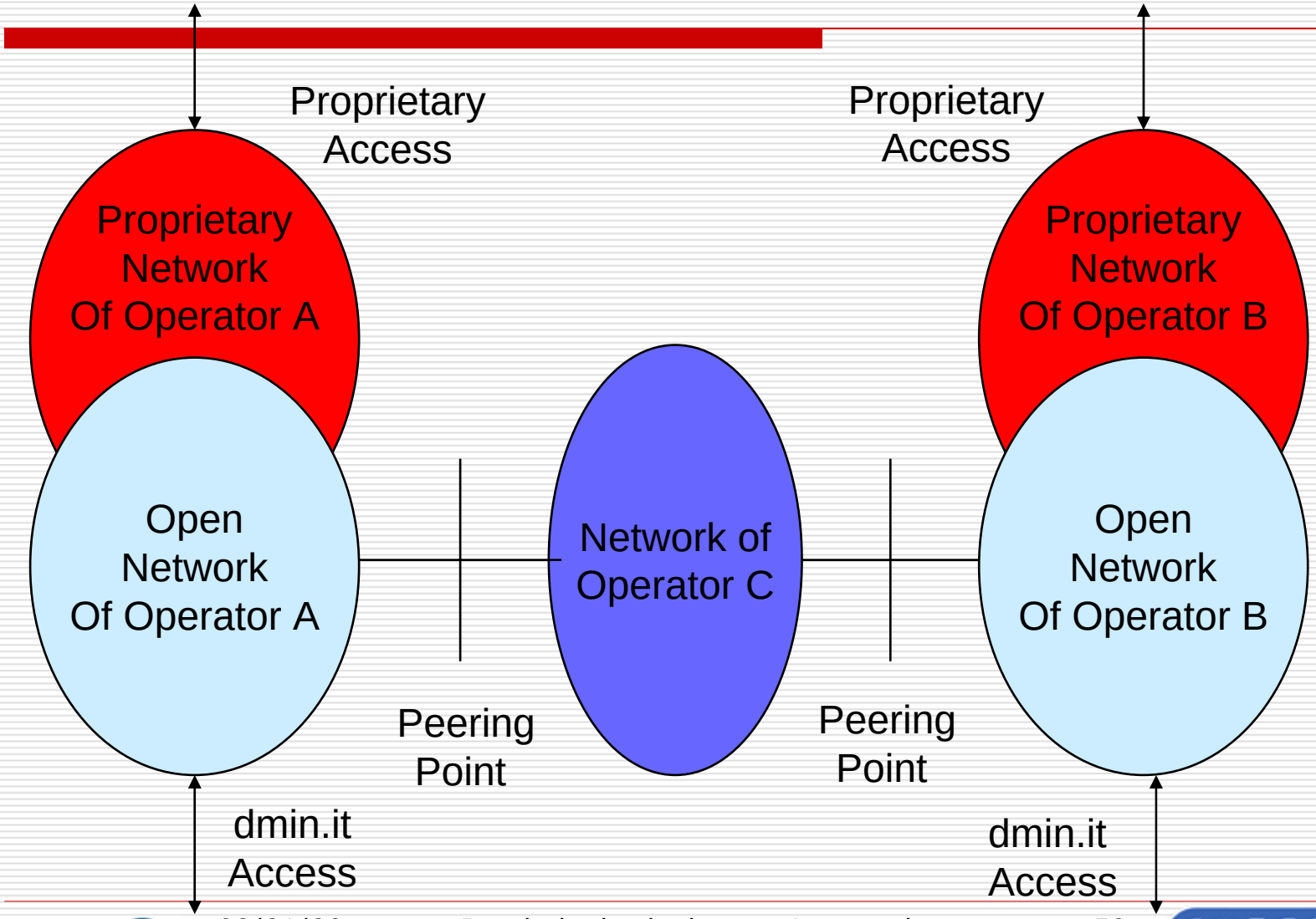


pDRM: proprietary DRM
iDRM: interoperable DRM

iNet

1. Two-way broadband operators can offer bundled and/or unbundled access to their networks with technical characteristics of their choice
2. A user of the network (content provider, intermediary or end user) may request and obtain from a two-way broadband operator
    1. The pure two-way service-agnostic access to the "big Internet"
    2. With technical features already offered by the operator
    3. At conditions that are not discriminatory compared to other offers of the operator
3. Two-way broadband operators
    1. Guarantee network service interoperability
    2. Agree and provide specific QoS levels at peering points so as to provide users end to end QoS levels

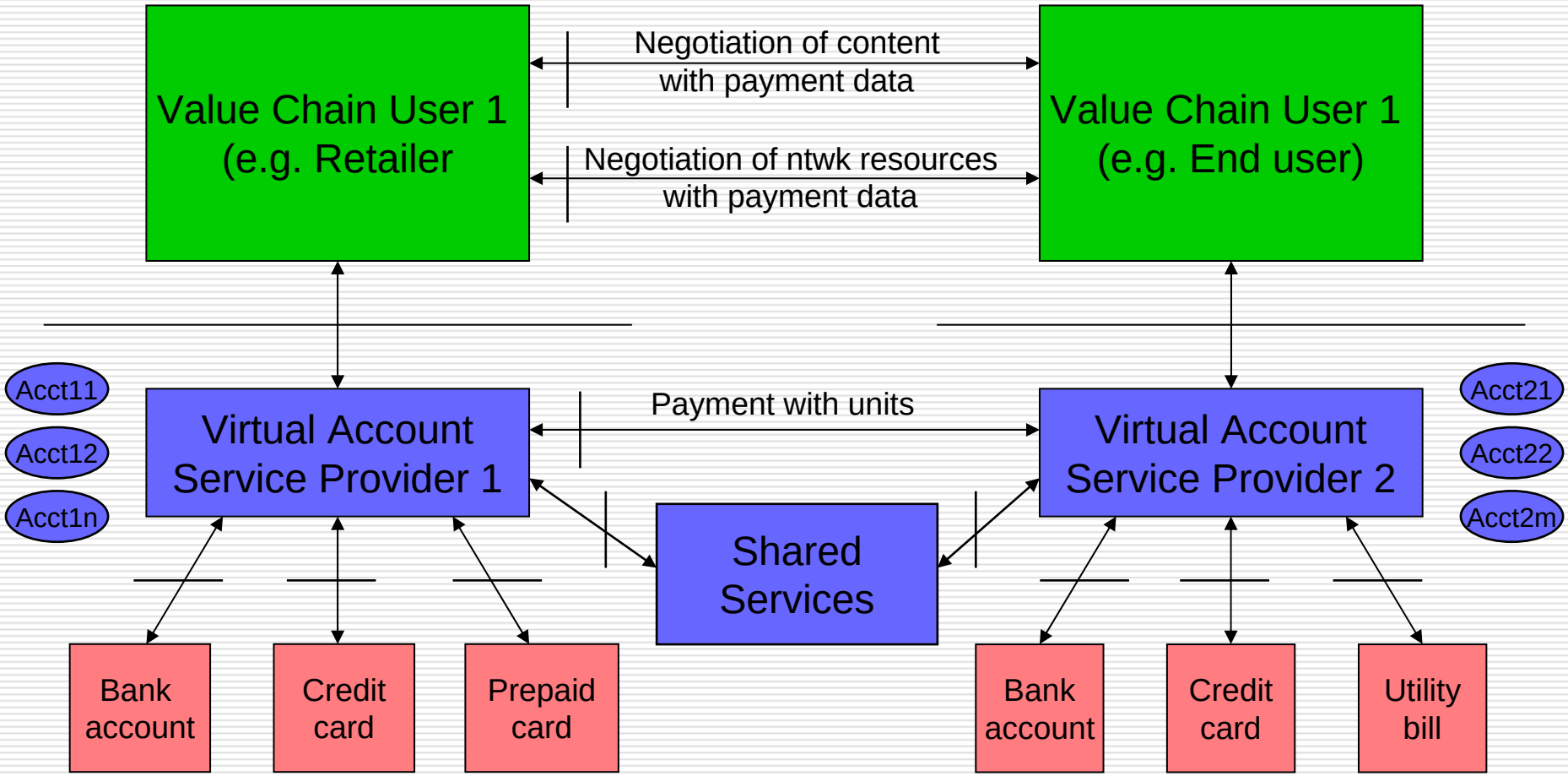
iNet – how it works



iPay

- Anybody, subject to banking regulations, can offer “virtual account” services where accounted are guaranteed “real” payment systems, e.g.
  - Bank accounts
  - Credit cards
  - Prepaid card
  - Utility bill (gas, phone etc.)
  - etc.
- Synchronisations between virtual and real circuits performed at regular times or on demand
  - Transaction costs only apply at synchronisation time

iPay – how it works



Dmin.it has selected IDP-3.0 and Chillout

- Using a rigorous process of calling for and selecting technology
- A growing community of users (“dmin.action”) is building Chillout-based applications
- Applications developed/under development are
  - P2P iDRM
  - VHS 2.0
  - idDRM
  - iIPTV
- Dmin.it participants are looking for funds to develop and experiment with iDRM and iPay applications

Proposta di intervento normativo Art. 102-*quater*

- Ogni qualvolta utilizzate nel presente titolo le espressioni che seguono avranno il significato di seguito indicato:
  - *Misure tecniche di gestione e protezione dei diritti interoperabili*: Le tecniche o i componenti destinati a gestire ed eventualmente tutelare, secondo le specifiche tecniche di interoperabilità, l'uso delle opere da parte degli utenti in conformità agli accordi con i titolari dei diritti;
  - *Misure tecniche di gestione e protezione dei diritti proprietarie*: le tecniche o i componenti che non sono basate sulle specifiche tecniche di interoperabilit
  - *Specifiche tecniche di interoperabilità*: Le specifiche di misure tecniche di gestione e protezione individuate in conformità all'art. 2 di questa legge
  - *Dispositivi interoperabili*: i dispositivi di creazione, distribuzione, elaborazione e riproduzione di contenuti digitali realizzati secondo le specifiche tecniche di interoperabilità
  - *Dispositivi proprietari*: i dispositivi di creazione, distribuzione, elaborazione e riproduzione di contenuti realizzati secondo specifiche diverse dalle specifiche tecniche di interoperabilità

Proposta di intervento normativo Art. 102-*quinquies*

2. Nel caso in cui un titolare di diritti decida di comunicare, distribuire e diffondere opere usando misure tecniche di gestione e protezione dei diritti proprietarie, questi deve parallelamente attuare una comunicazione, distribuzione e diffusione sullo stesso canale usando misure tecniche di gestione e protezione dei diritti interoperabili a condizioni economiche non discriminatorie nei confronti della propria offerta proprietaria.

Proposta di intervento normativo Art. 102-*sexies*

- Le Specifiche tecniche di interoperabilità, le modalità del loro aggiornamento ed i criteri per la verifica della conformità di una specifica misura tecnica di gestione alle Specifiche tecniche di interoperabilità sono stabilite con Deliberazione approvata dall'Autorità Garante delle Comunicazioni (di seguito l'Autorità).
- Le specifiche tecniche di interoperabilità devono rispondere a criteri di apertura che ne consentano il controllo pubblico e l'esercizio da parte dell'Autorità dei poteri di cui al comma precedente, in particolare la possibilità di aggiornare ed estendere le Specifiche tecniche di interoperabilità.

Proposta di intervento normativo Nuovo articolo/1

- È costituito all'interno dell'Autorità un Comitato di controllo per le misure tecniche di gestione e protezione interoperabili (di seguito il Comitato di controllo)
- Il Comitato di controllo è costituito da rappresentanti degli autori, produttori, editori, fornitori di servizi e consumatori.

Proposta di intervento normativo Nuovo articolo/2

- I compiti del Comitato di controllo sono:
  - Determinare le modalità che assicurino un adeguato livello di sostenibilità economica della governance delle Specifiche tecniche di interoperabilità;
  - Amministrare il processo di verifica della conformità dei Dispositivi e dei Contenuti interoperabili alle Specifiche tecniche di interoperabilità;
  - Fornire al Consiglio dell'Autorità Garante delle Comunicazioni proposte e pareri di natura tecnica ed ecomica per le Deliberazioni che l'Autorità è chiamata ad emettere;
  - Dirimere le controversie tra i soggetti che adottano misure tecniche di gestione e protezione interoperabili e gli utilizzatori delle opere a qualunque titolo, incluse le loro associazioni.

Proposta di intervento normativo Nuovo articolo/3

- In generale curare la gestione ordinaria delle Specifiche tecniche di interoperabilità;
- Proporre azioni volte a correggere, mantenere tecnicamente competitive od estendere le Specifiche tecniche di interoperabilità
- Gestire il processo di correzione, mantenimento della competitività tecnica ed estensione dell'ambito delle Specifiche tecniche di interoperabilità;
- Valutare periodicamente l'adeguatezza dell'uso delle Misure tecniche di gestione e protezione interoperabili alle necessità sociali e culturali del paese ed eventualmente proporre azioni migliorative o correttive.

Flag these sites

DMP

http://www.dmpf.org/

Chillout

http://chillout.dmpf.org/

MPEG

http://mpeg.chiariglione.org/

Digital Media in Italia

http://www.dmin.it/