Global IT Standards, Interoperability, and IP

Jon Mason
jmason@educationau.edu.au

Tim Hand
tim.hand@det.nsw.edu.au
Overview

• Input from You!
  - Expectations & assumptions

• Education & Training context

• Standards & Interoperability
  – Why standards?
  – What are the relevant standards?
  – DREL & DRM
  – The Wider Picture
The Terminology Trap

What are we talking about?

ey,
- Term (time)
- Term (conditions)
- Term (vocabulary entry)
The Other IP

Internet Protocol
- Part of TCP/IP
- the address space that domain names use

IPv6 – next generation IP developed by IETF
- Alleviates diminishing space under current system
- Specifies more than a billion x billion addresses per square metre on Earth!

http://www.ietf.org/html.charters/ipv6-charter.html
“A Standard is a published document which sets out specifications and procedures designed to ensure that a material, product, method or service is fit for its purpose and consistently performs the way it was intended to.”

Standards Australia
What is IP?

Expressed as ...
- Patents
- Copyright
- Trademarks
- Trade secrets
- Service marks
- ...

Applies to ...
- Ideas
- Designs
- Inventions
- Literary works
- Artistic works
- Processes
- Models
- Devices
- ...
Questions & Issues

• Where does IP reside in Education & Training?
  
  – What do you consider to be the key IP within your organisation?
  – Does it give you a business advantage?
  – How valuable is it? How do you place a value on it?
  – Do you have a policy in relation to protecting it? How does it relate to your business strategy?
  – What considerations should you take into account in developing an IP policy for an educational organisation?
  – Is IP sometimes hidden, or hoarded?
  – What is the impact of moving from the print world to the digital world?
Where is IP in Education & Training?

- Teaching and Learning resources
- Research outputs
- Scientific inventions
- Software
- Course and curriculum design
- Business processes (isolated examples)
- Student data profiles (yet to be explored)
- Professional Services
- Institutional Brand
- ...

Questions & Issues

- “Unlocking IP” implies more than just IP Rights. What other facets of IP are there?
- Is there a difference between “intellectual property” and “intellectual capital”?
- How does IP relate to Knowledge?
- Are Content and Process always distinguishable in the digital domain?
- What is the relationship between Standards & Innovation?
- What standards are necessary anyway?
Questions & Issues

• How do you encourage knowledge sharing while also protecting IP?

• What is the value in knowledge and how can it be quantified/valued?

• How does IP persist in digital environments when it is constantly re-purposed?

• IP Law and IT - which is the driver?

• Is there a way of balancing the two positions of Copyright and Copyleft?

• Will IT always be ahead of DRM?
Rights
From Print to Digital

- Digital technology has unlocked IP but its management has become very complicated:
  - New laws have been & are being developed
  - New models of IP are emerging
  - Standards re IP management in their infancy
  - Digital ‘stuff’ is inherently malleable
    - Content
    - Structure
    - Process
    - Presentation
    - ...Rights are unbundled compared with Print world
  - ‘born digital’ syndicated content has no analogue in the print world
  - Replication & Distribution at close to zero cost.
Ed & Training IPR Requirements

- Attribution (moral rights)
- Seamless & easy ‘workflow’
- Systems that share content
- Need to handle ‘compound content’
  - Need to unbundle
  - Need to recombine
JISC Rights Management Model

- Recognition of Rights
- Assertion of Rights
- Expression of Rights
- Dissemination of Rights
- Exposure of Rights
- Enforcement of Rights

Standards
Why Standards?

• A natural artifact of any human society
• Communities of practice develop standards (& conventions, protocols, fashions, etc)
• Signal marketplace maturity of an industry
• All successful industries depend on standards
• Help create ‘trust’ infrastructure

But!
Standards are Misunderstood

As:
• A means for corporate dominance in a market
• A means for government regulatory control
• Limiting personal freedom of expression
• Limiting frontier thinking & innovation

And, there’s wide usage of the term!
What Standards?

Purpose-built e-learning standards

Standards harnessed through innovation in e-learning

e-learning

Standards
What Standards?

- DREL & DRM
- DOI
- Metadata
- Content Management
- Access Management
- Identity Management
- ...

What Standards?

DREL & DRM
Definitions

- **DREL** - Digital Rights Expression Languages
  The expression of IPR via consistent grammar & vocabulary
  - ODRL
  - MPEG REL
  - METSRights
  - CreativeCommons
  - Adobe Content Manager
  - & others ...

- **DRM** - Digital Rights Management
  The management of IPR via digital means - defining, tracking & enforcing permissions & conditions. Depends on DRELS
ODRL

Open Digital Rights Language

- Initiated by IPR Systems (Australia)
- Rights expression & data dictionary
- Intended to be machine actionable
- Adopted by Open Mobile Alliance

http://www.odrl.net/
MPEG-REL

- Part 5 of MPEG-21
- MPEG serves large & powerful community (publishing & entertainment)
- Largely based on XrML (Content Guard)
- Standardised as ISO/IEC 21000-5:2004
- Intended to be ‘unambiguously’ machine actionable

http://www.iso.ch/
CreativeCommons

- Initiated in 2002
- Based on open licensing scheme of FSF/GNU
- Machine readable but not machine actionable
- Relies on copyright law for ‘protection’
- CC metadata record has two parts
  - Work (DC metadata)
  - License (a range to choose from)
- Not a DRM enforcement mechanism

http://creativecommons.org/
METS (Metadata Encoding Transmission Standard)

- Developed by & serves academic & library community (digital libraries)
- Most projects deal with archival works
- Machine readable but not actionable beyond display of data element content
- No automated control – but not intended

http://www.loc.gov/standards/right/METSRights.xsd
Systems Boundaries

**Digital** rights management brings new complexity & can imply management of:

- Identity (people & resources)
- Access
- Content (end-to-end, creator-to-consumer)
- Distribution & tracking
- Enabling & constraining technologies
- ‘Trusted Computing’
Copyright

• Protects the expression of ideas – not the ideas themselves
• Protects creative effort through exclusive rights
• But also protects against monopoly
Copyleft

**GNU** General Public License:

- Provides the public with legal permission to redistribute & modify a work (usually software)

- Viral clause – provides mechanism & condition for delivering free software: all modifications &/or extensions are subject to same license

http://www.gnu.org/copyleft/copyleft.html
Issues (1)

- IPR challenging enough outside digital domain
- Neither the law nor the available methods of DRM is keeping pace with technology
- DRM not just a machine-machine issue (rights & terms subject to human interpretation)
- Copyright Law – applies only to ‘works’ that are demonstrably original
- International context – laws & rights all vary
Issues (2)

• Standards are in their infancy

• Involving key practitioners in standards development
DRM Implementations

• Microsoft Office 2003 Permissions
  – Unrestricted Access
  – Do Not Distribute
  – Restrict Permission as ...

• Adobe Acrobat
  – View
  – Copy
  – Print

• OeBF (Open eBook Forum)
  – Profile of MPEG-REL
What Standards?

The Wider Picture
Unlocking IP?

Standardisation is a key activity that is closely linked with stimulating & capitalising on innovation ...

it is a key foundation in achieving interoperability ...

but is a bigger challenge than developing IPR standards
Who Else?
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