



**UNLOCKING IP**  
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New models for sharing and trading intellectual property

# Global IT Standards, Interoperability, and IP

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# 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?

eg,

- 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

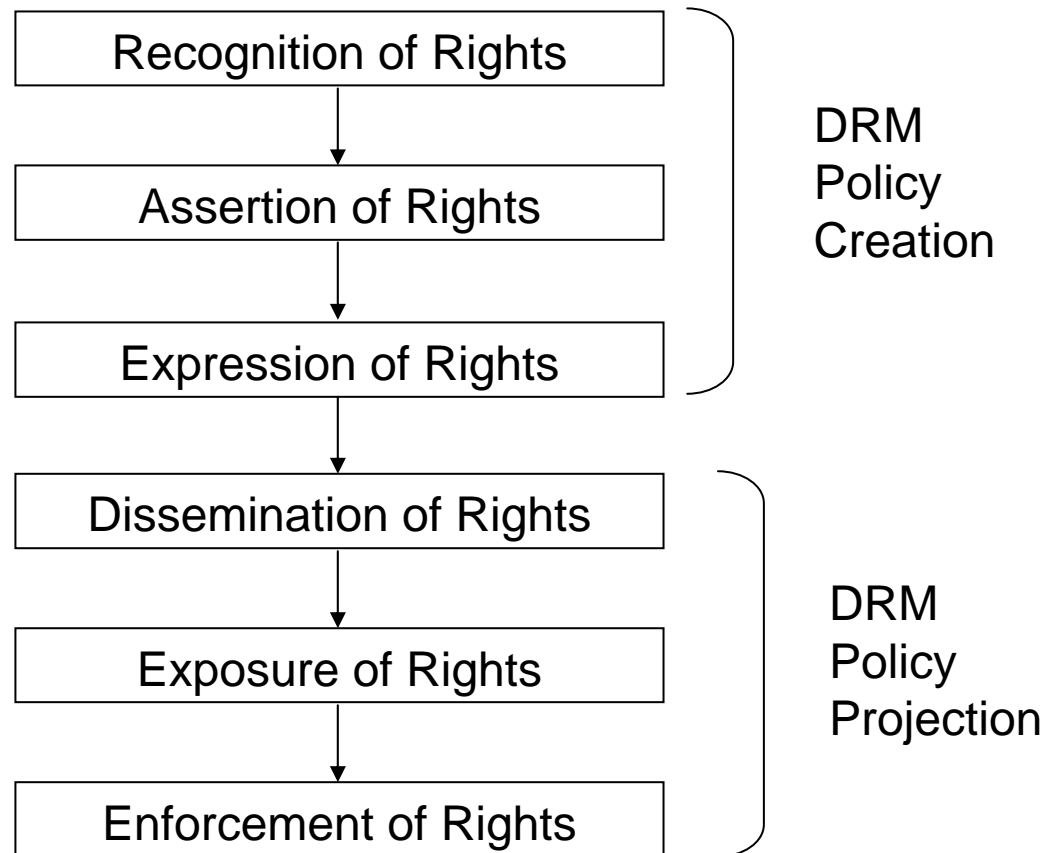
# From Print to Digital

- 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



\* **Source:** Digital Rights Management Study Interim Report, 10 June 2004 . Prepared by Intrallect Ltd on behalf of JISC. By Charles Duncan, Ed Barker, Peter Douglas.

<http://www.intrallect.com/drm-study/>

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!***



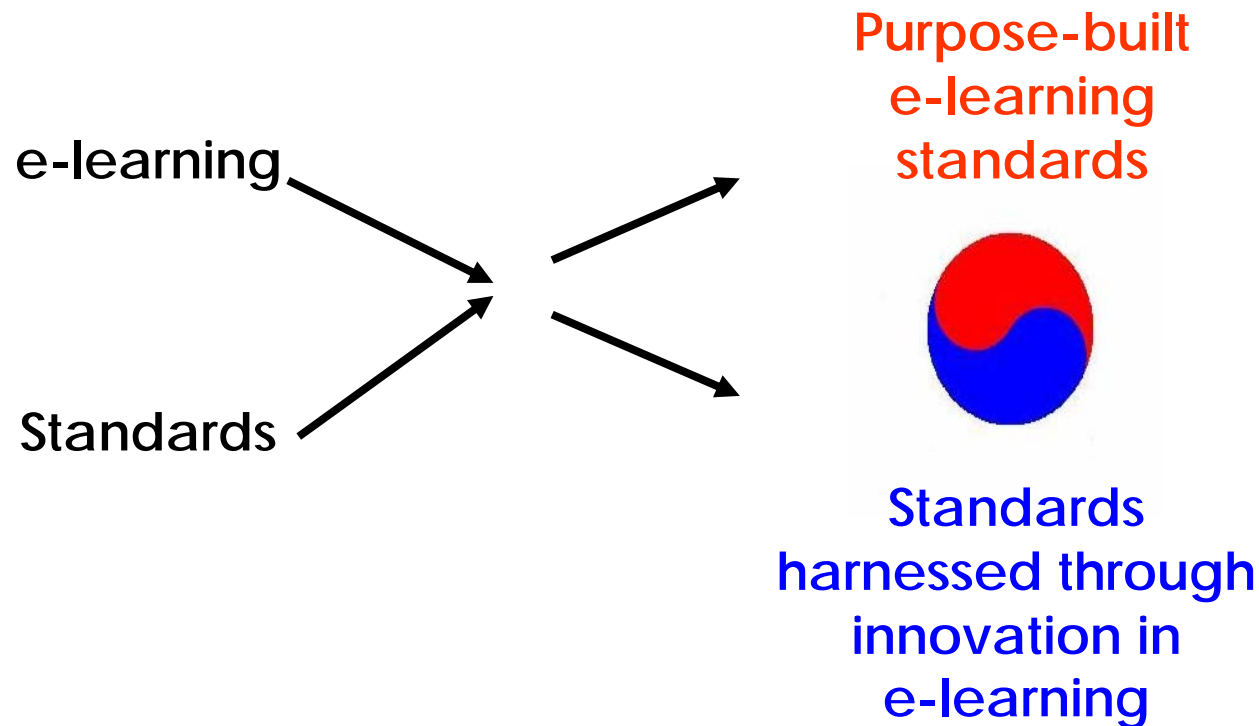
# Standards are Misunderstood

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?



# 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 DREs

# ODRL

## Open **D**igital **R**ights **L**anguage

- 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/>

# Creative Commons



- 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/>



# METSRights

**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?

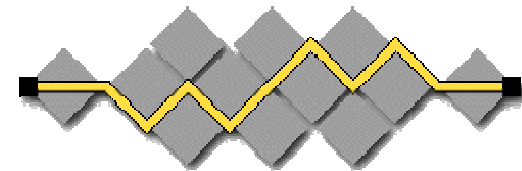
Standardisation is a key activity  
that is closely linked with  
stimulating & capitalising on  
innovation ...

it is a key foundation in  
achieving interoperability ...

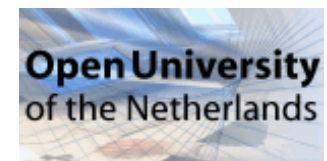
but is a bigger challenge than  
developing IPR standards



# Who



I E T F





## Who Else?

Workforce Management Coalition



United Nations Educational,  
Scientific and Cultural Organization



Education  
for All

EFA Home



eEurope

Standards that make eEurope tick !

ALIC

Advanced Learning Infrastructure Consortium / 先進學習基礎協議會

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