



# An Introduction to Electronic Copyright Management Systems (Digital Rights Management)

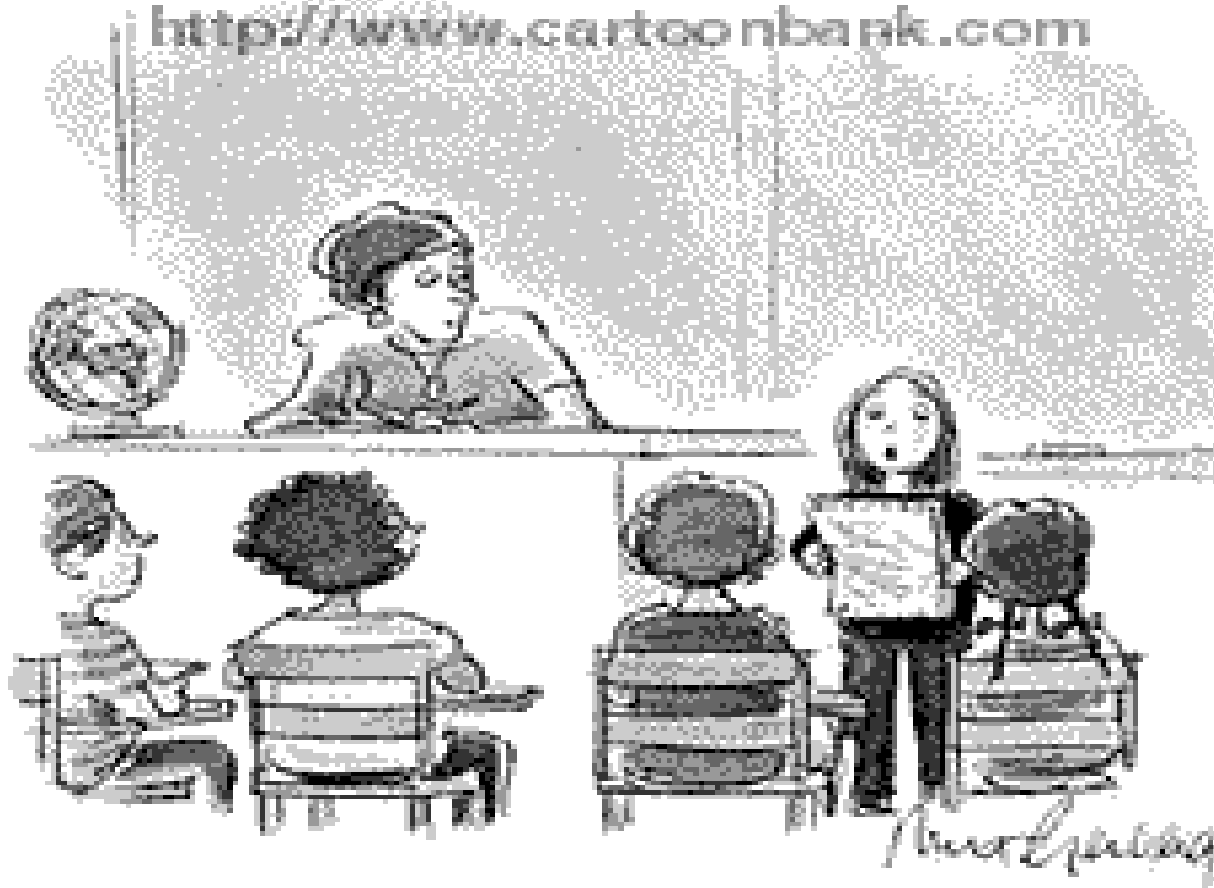
Peter L.Higgs  
Co-founder  
IPR Systems Pty Limited  
phiggs@iprsystems.com



# What are Electronic Copyright Management Systems (ECMS) or “Digital Rights Management Systems (DRM)”

“Digital Rights Management (DRM) involves the description, identification, trading, protection, monitoring and tracking of all forms of rights usages over both tangible and intangible assets - both in physical and digital form - including the management of the Rights Holders relationships”

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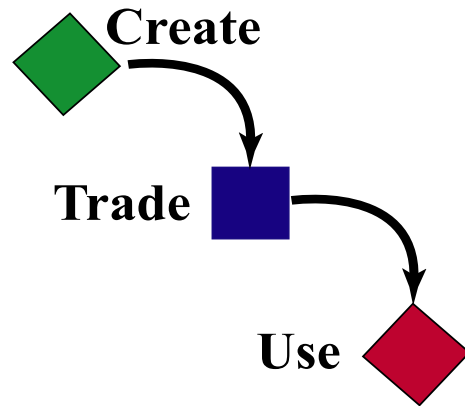


## The Internet and Intellectual Property

- Digitization of everything:
  - Information, books, film, learning resources, music, images, data, knowledge ...
- Re-examination of processes, costs and revenue:
  - Free and instantaneous distribution of digital work
  - Direct relationship from creator to consumer
  - Profits being sought from previously sub-commercial assets especially "rights"
- New opportunities and threats
  - Demand for new systems to support & manage
  - What IP do I have, what do I require, what can I trade?
  - Deliver the appropriate "rights" or "licenses"
  - Deliver the media that are subject to these rights

**... The Knowledge Based Economy**

# Digital Re-use is Key



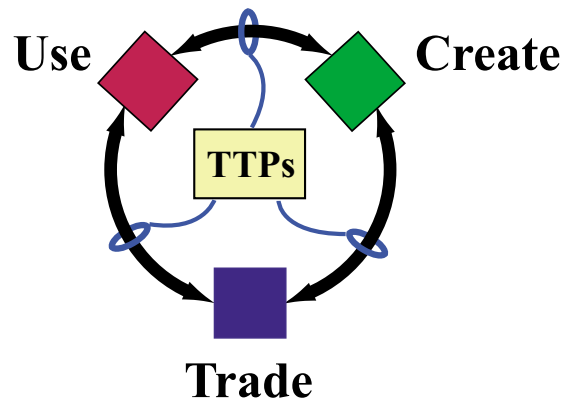
Ubiquitous networking and Digital Media means we are moving from:

## Traditional Media “Creation Waterfall”

- Pay for possession
- Limited re-use rights available
- Up front purchase of simple rights
- Therefore expensive to move to digital environment

Towards

## “Creation Cycle”



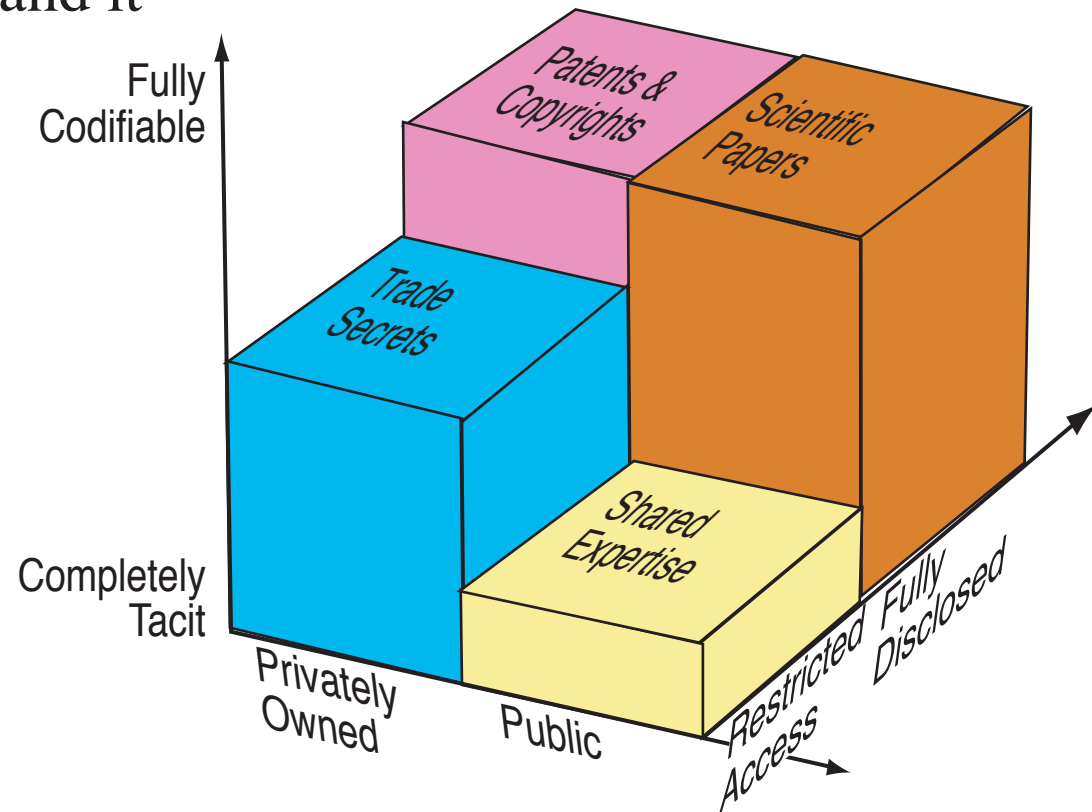
- Blurring between creation and use towards re-creation and re-use
- Pay for usage, not possession
- Share the rights, share the revenue
- Require Trusted Third Parties (TTP) to validate rights and trades

*From “food chain” to dynamic “creation ecology”*



# Intellectual Property Rights

It is not a mysterious blob or black box  
It can be understood by non-lawyers  
It is logical & it has structure  
Creators must manage it or they will lose it.  
Recreators must understand it  
or they wont be  
able to work



Foray David Economic Knowledge Matrix

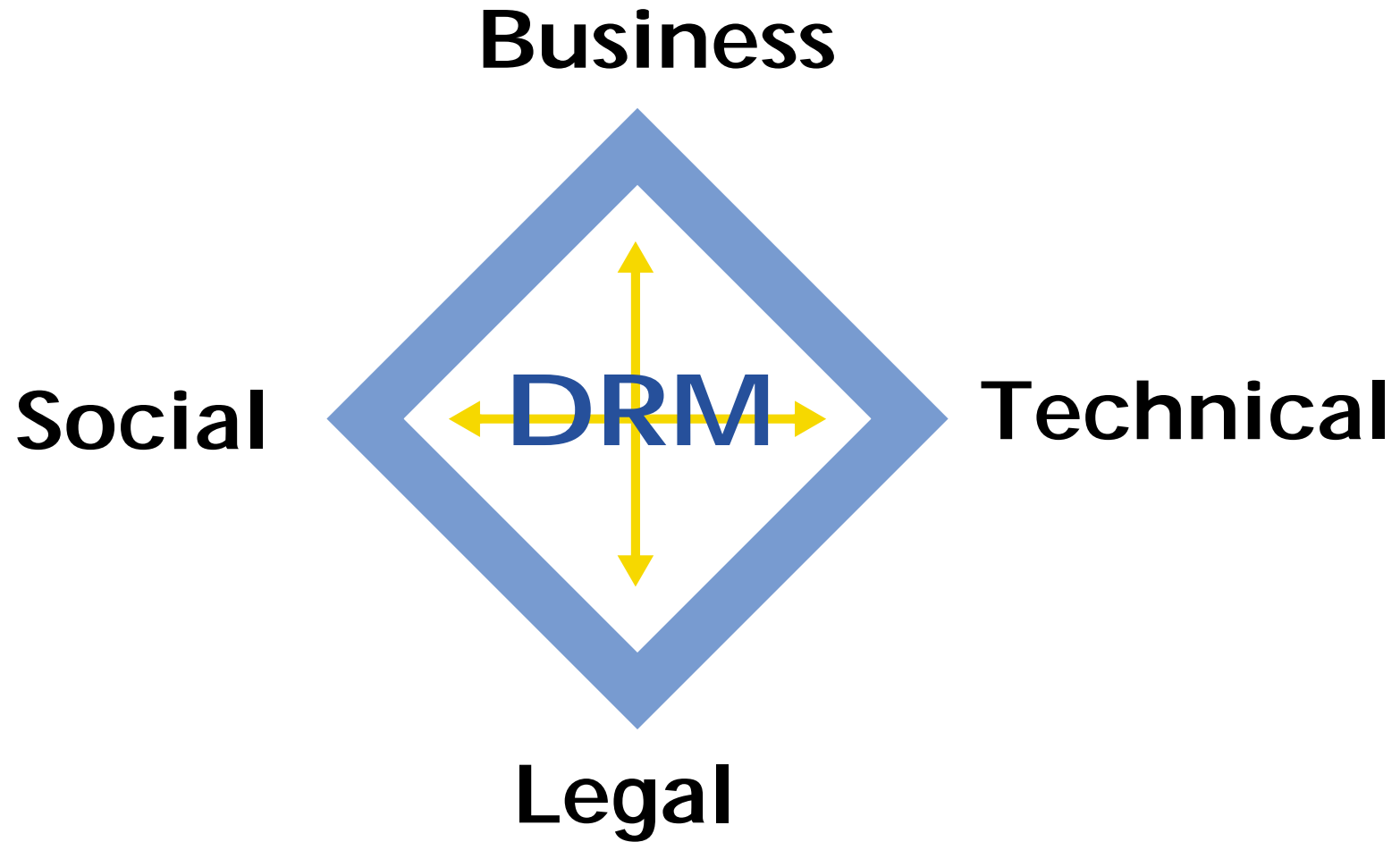


## The Questions

- What have I got to Trade?
- How can I trade it?
- How can I describe and promote it to the market without giving the IP away?
- What usages of it are valuable to others?
- How can I balance the likelihood and impact of my risk and my rewards?

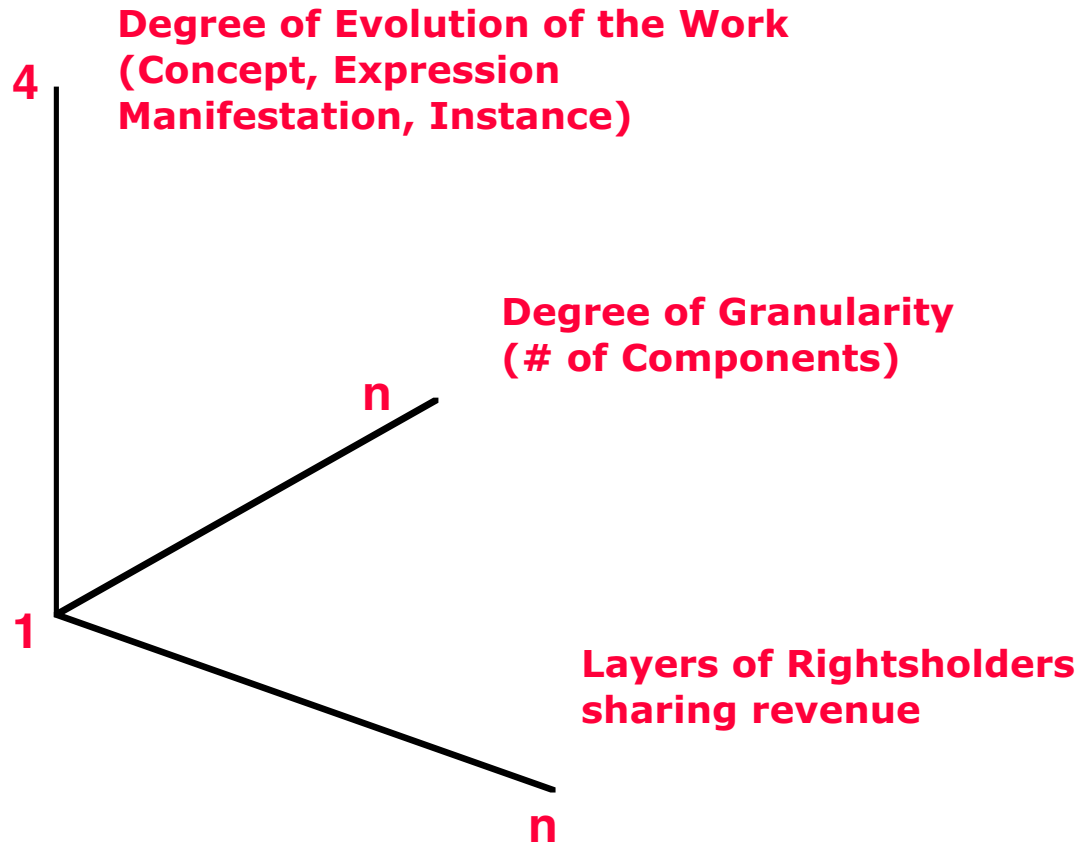


# DRM Perspectives





# What have I got?: Three Dimensions of Rights and Works

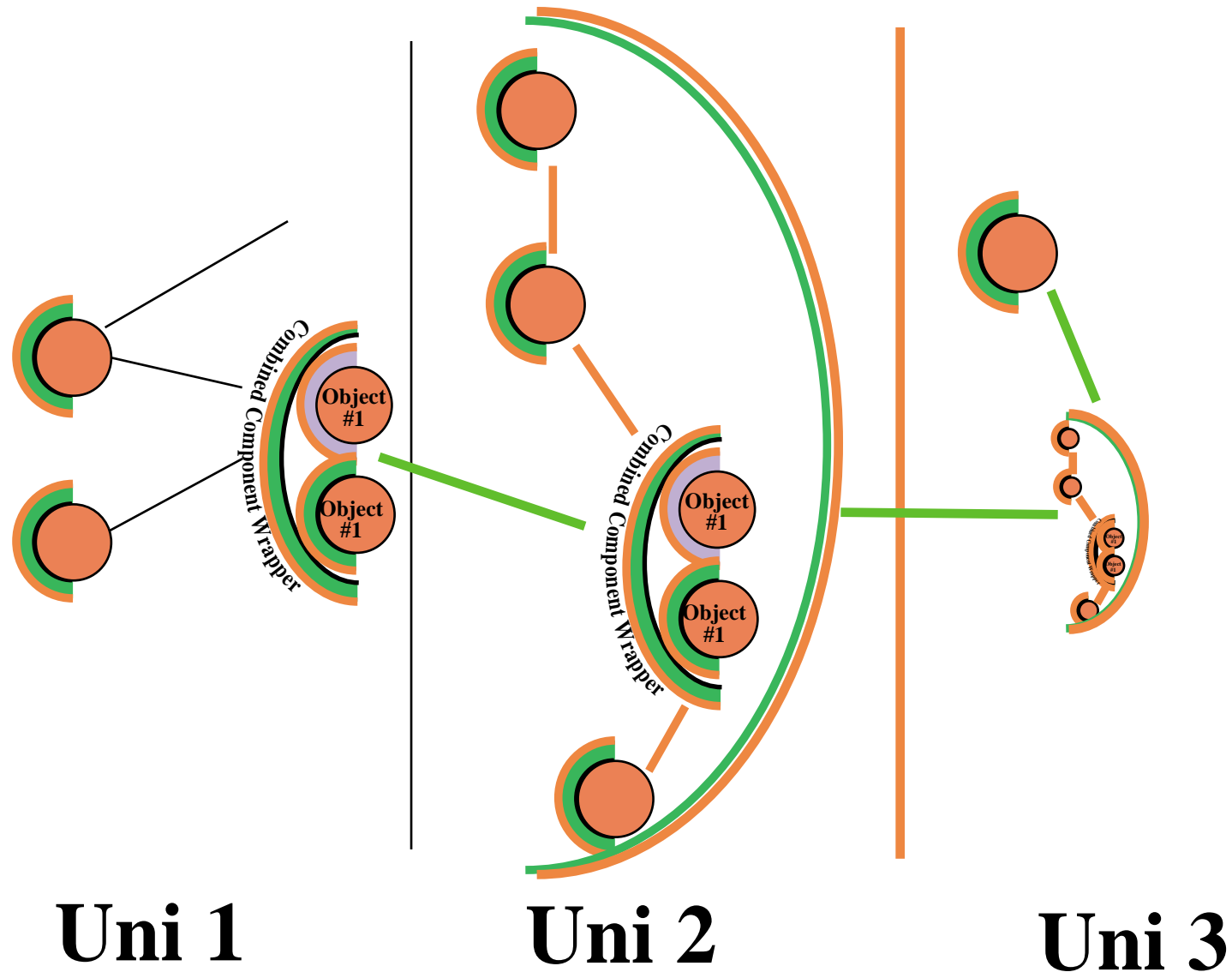




## Dimension One: Granularity

- Discrete Components within Components within Components: heterogenous or compound work
- A compound object can be decomposed to its individual components and each sold separately.
- Examples:
  - Illustrations within a book
  - Anthology
  - Spanish Translation of a book
  - Subtitles of a movie
  - Learning objects combined into a module into a course into a syllabus
- Can be described as a “Manifest” or “Bill of Materials”
- It is not a “Recipe”

# Granularity: Components within Components





## Dimension Two: Layers of Rightsholders

- A work can have more than one rightsholder in a particular usage or market.
- They share the rights, possibly share the revenue
- A result of a “recipe”. You can’t decompose a cake but you can slice it.
- Eg a collaboration on a script or an editor and author
- A single learning object in a Uni could have revenue split between:

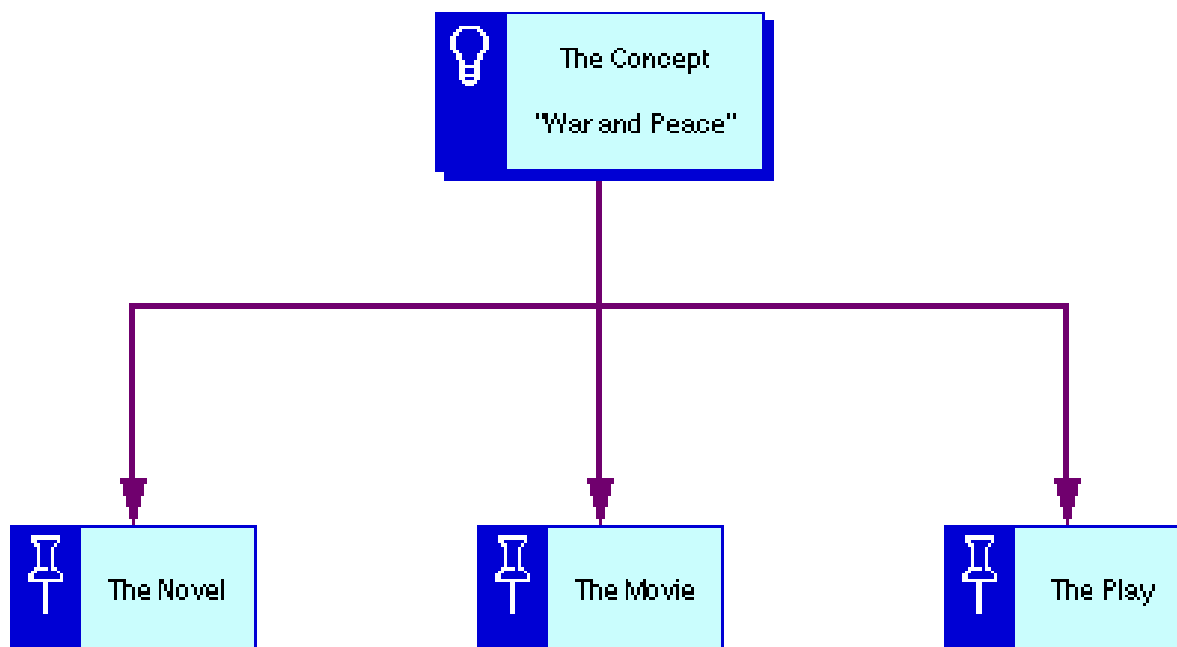
– Commercialisation company	20%
– Company Paying for original development	10%
– University	20%
– Department	10%
– Learning Design Expert	5%
– Programmer	5%
– Academic Expert and originator	30%



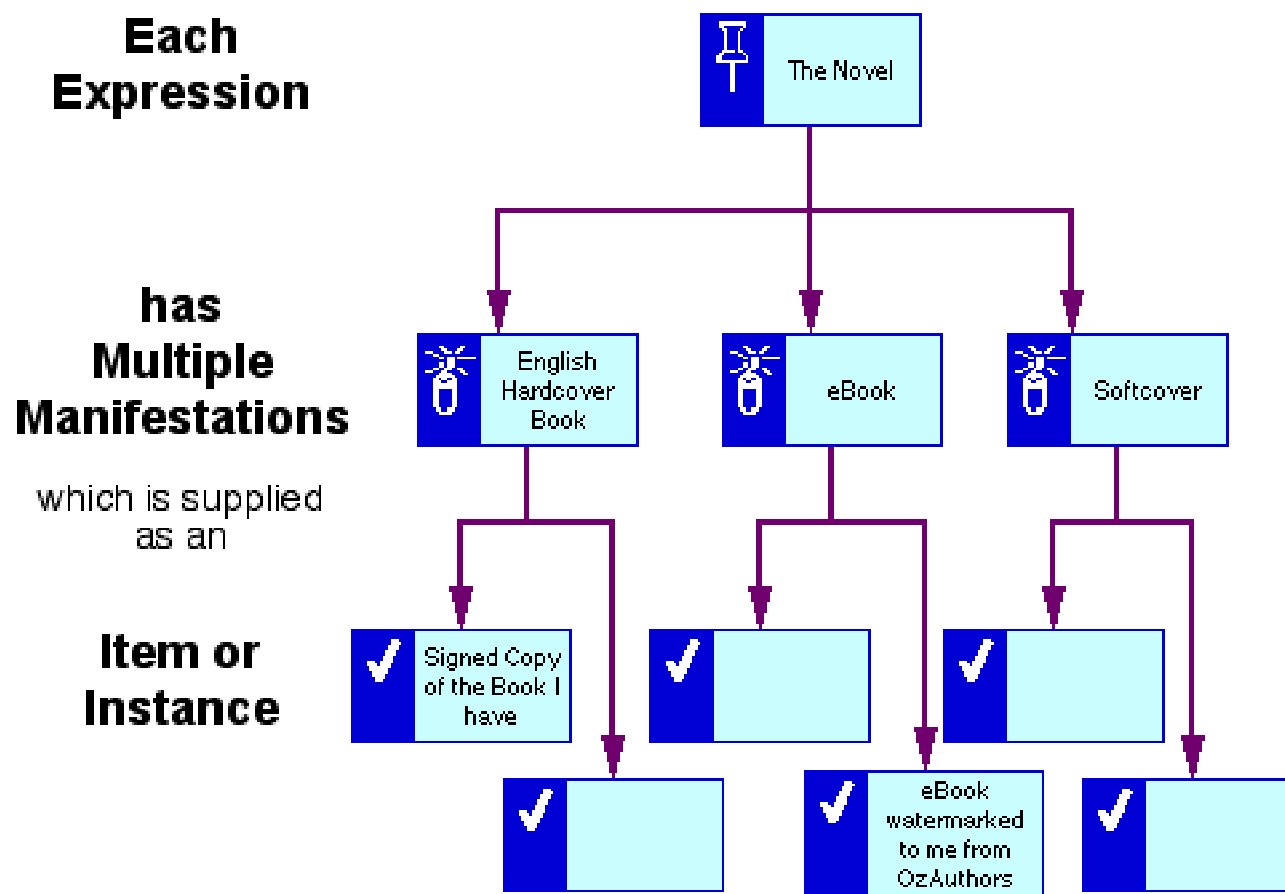
## Dimension Three: The International Federation of Library Associations Hierarchy of "Works"

**The  
Asset,  
Artefact  
or  
Concept**

**has  
Multiple  
Expressions**

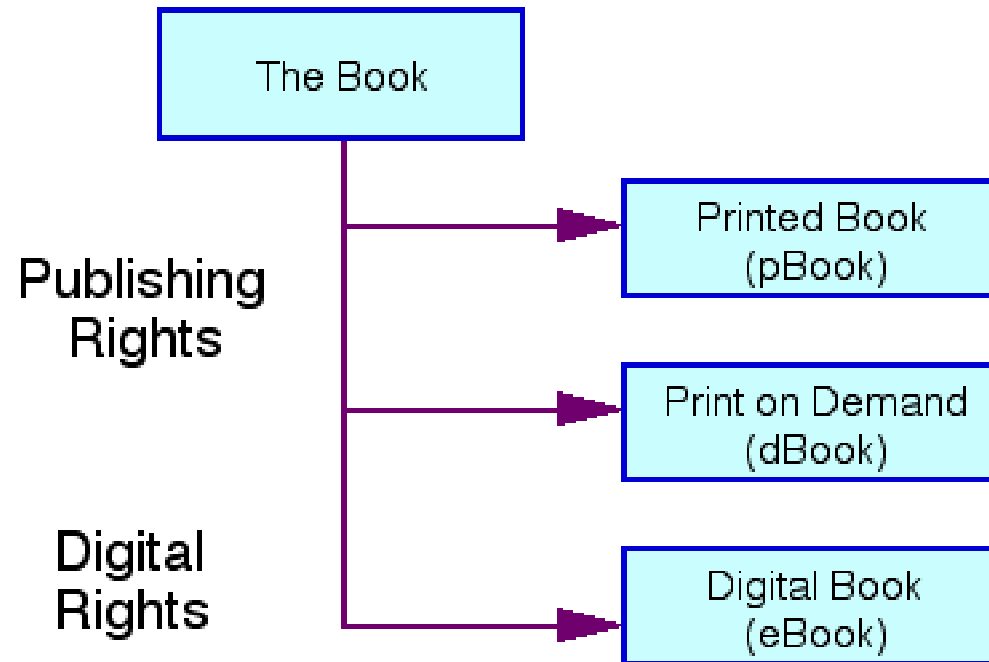


# IFLA Expressions and Manifestations



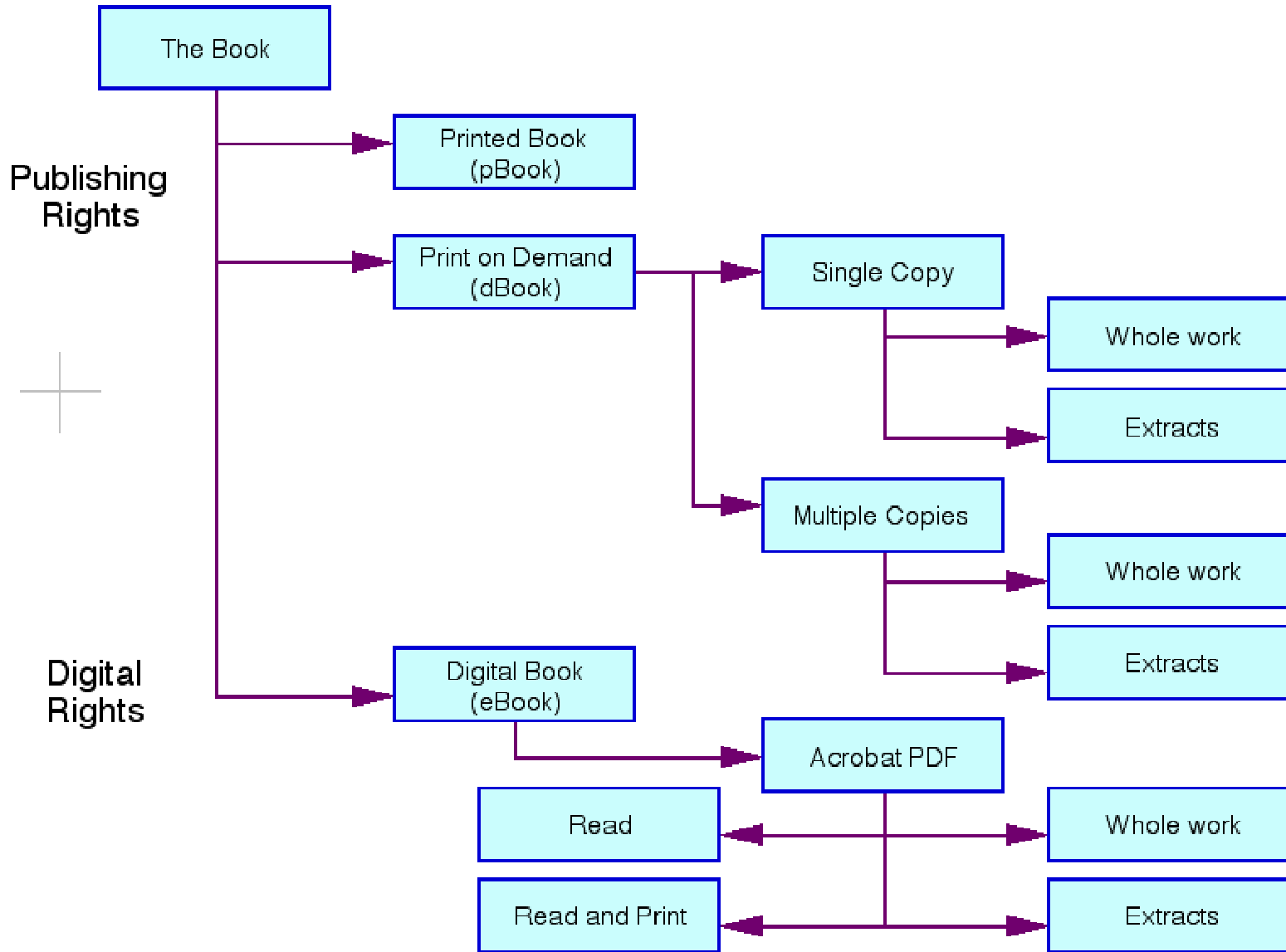


## Book Manifestations



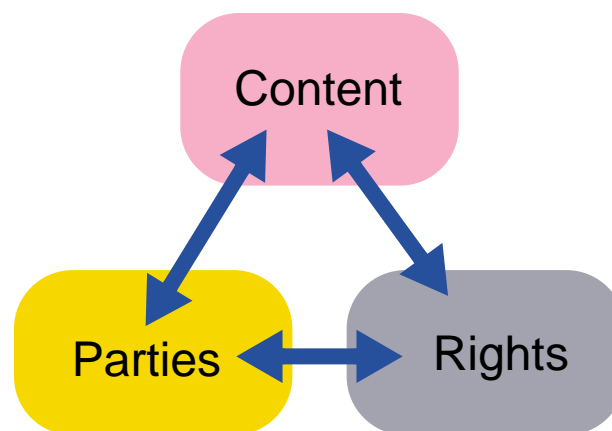


# The future of Books: Which Format do you need?

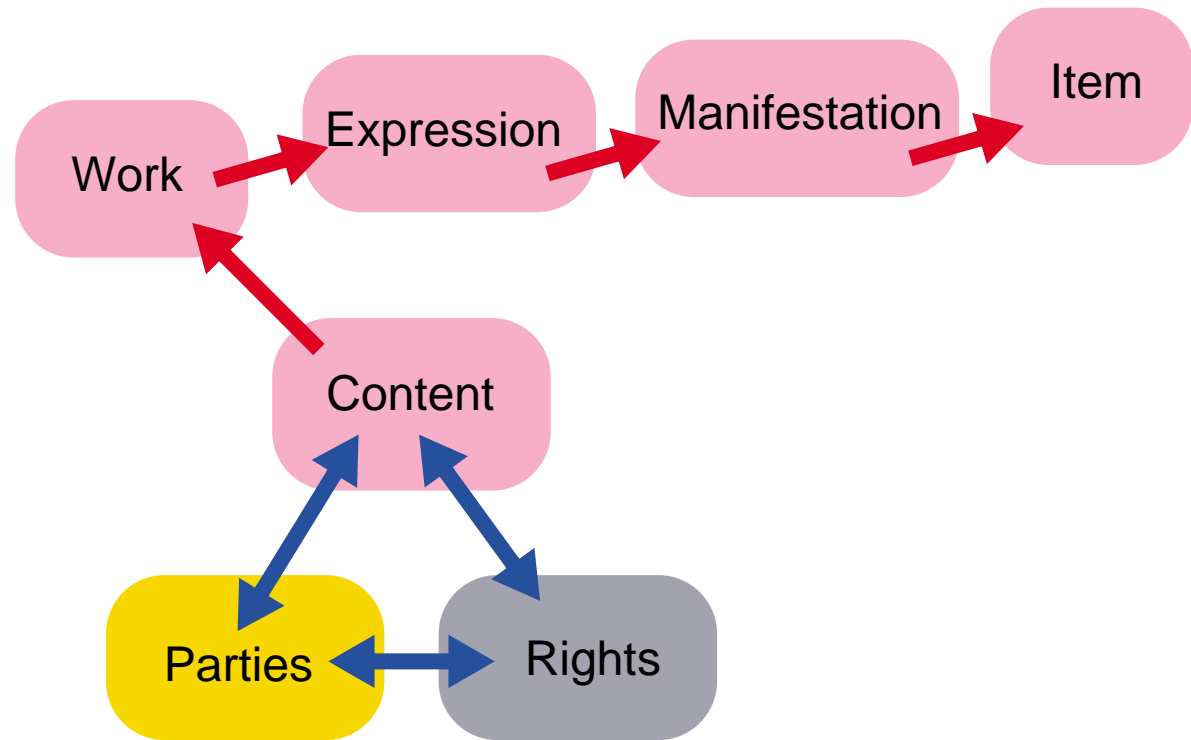




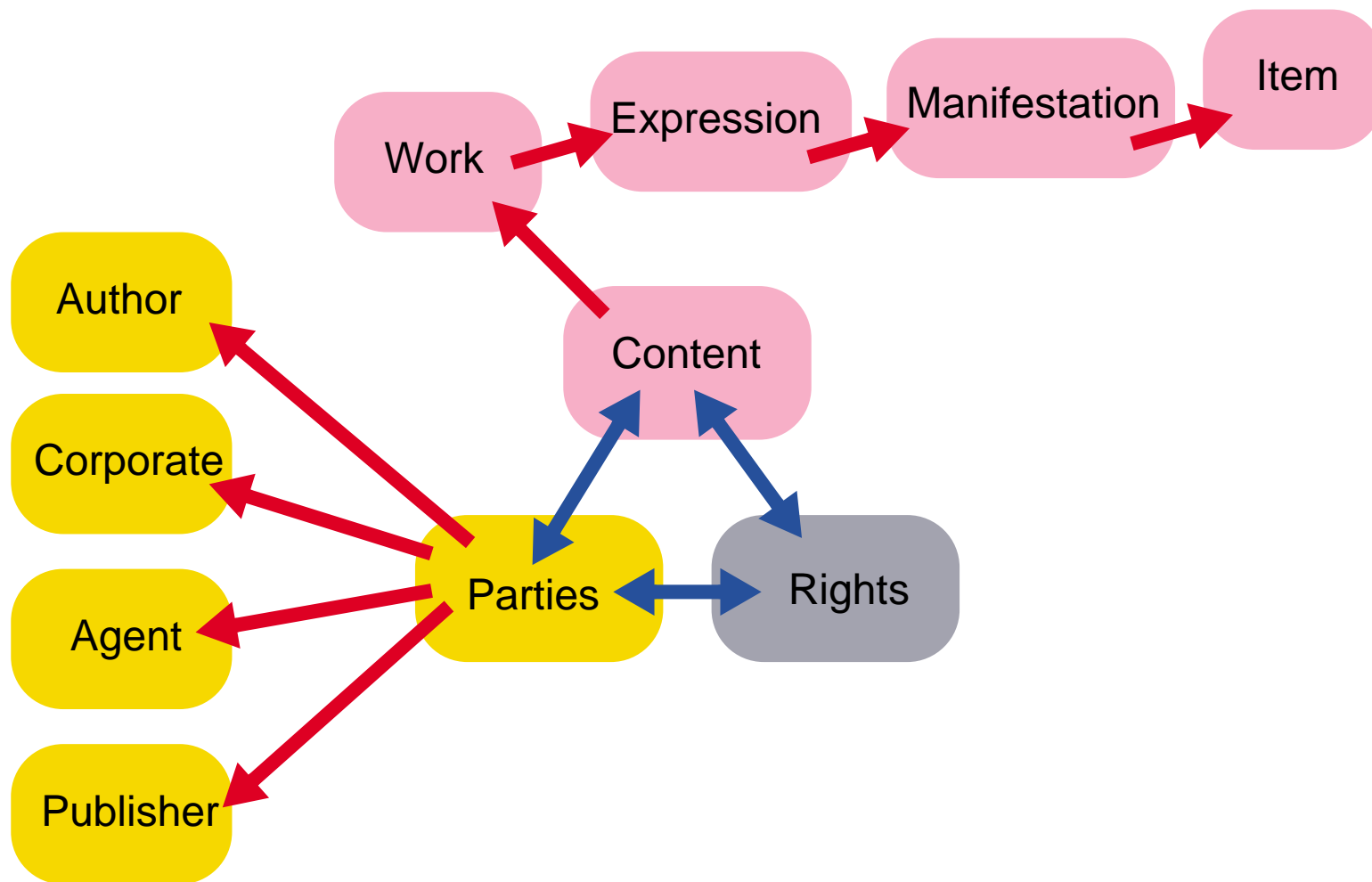
# Rights Metadata Model



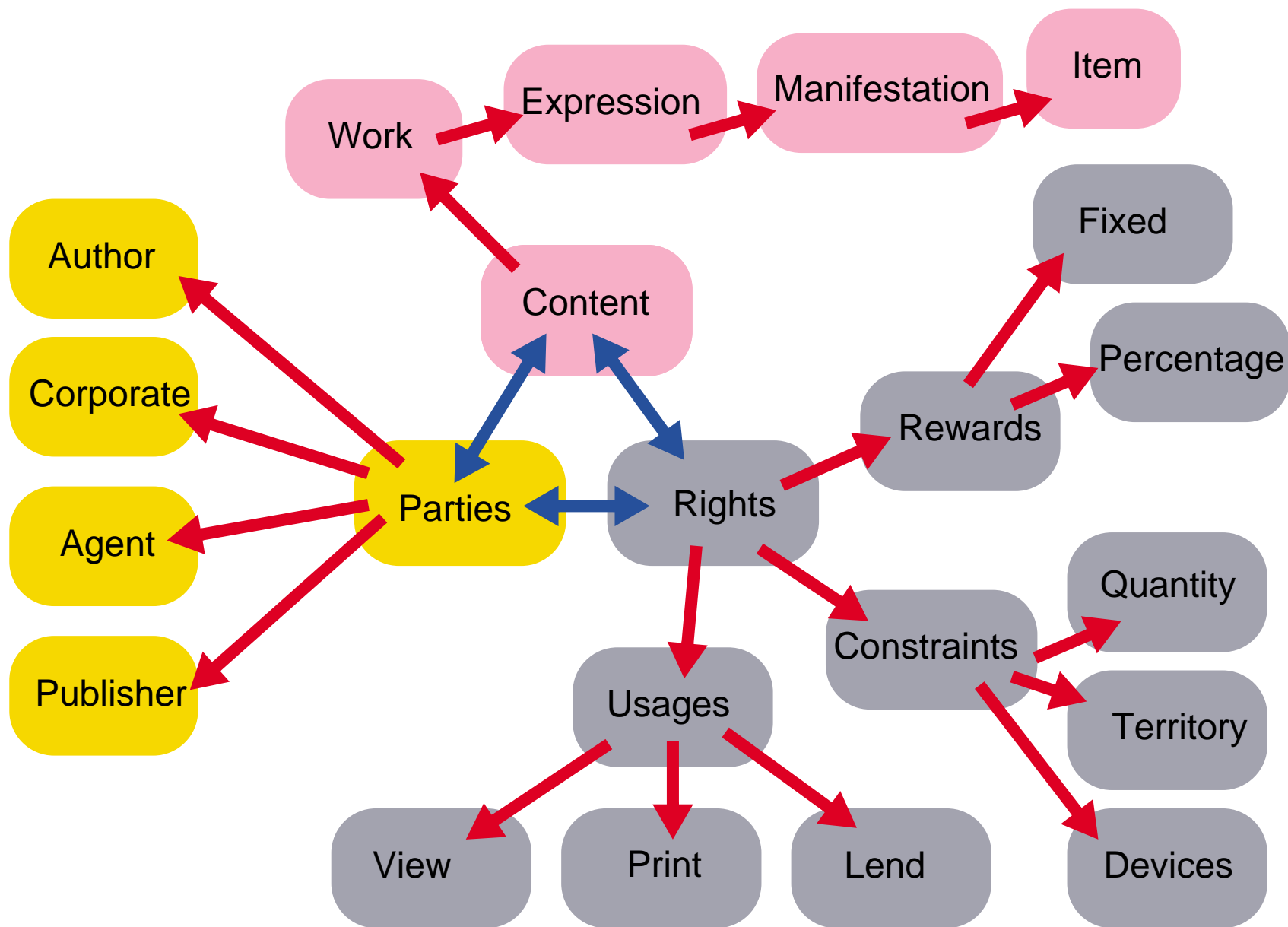
# Rights Metadata Model



# Rights Metadata Model



# Rights Metadata Model



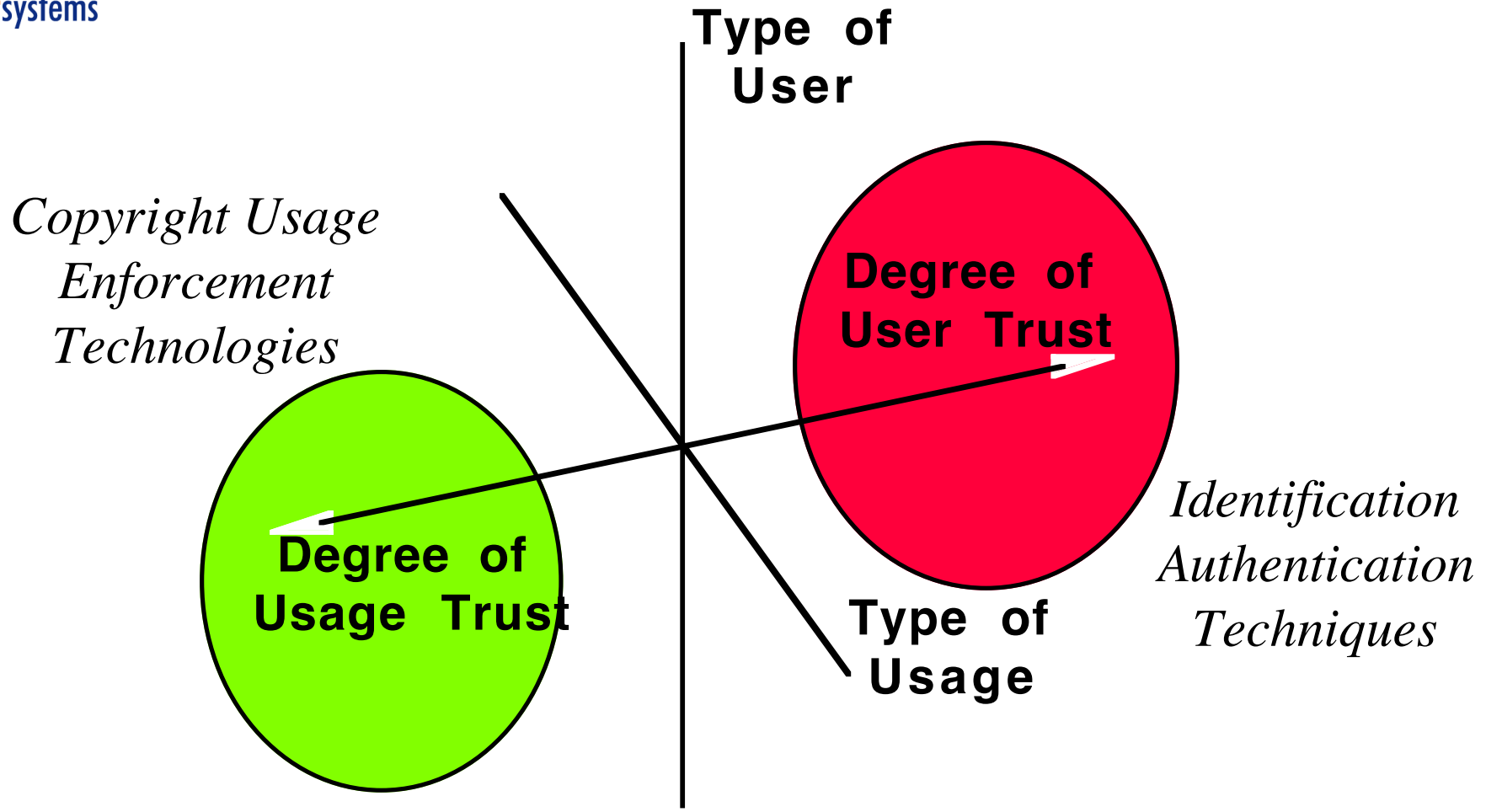


## 5 Co-ordinated Strategies for Effective DRM

- Management of the rights of works through their complete stage of evolution
- Supply Media that is appropriate for Use
- Clarity of permissible usages
- Identification using Digital Object Identifiers, watermarks to manage provenance and more easily identify cases of misuse.
- Real world negotiation, follow up and sometimes legal action of deviations from permitted usages.

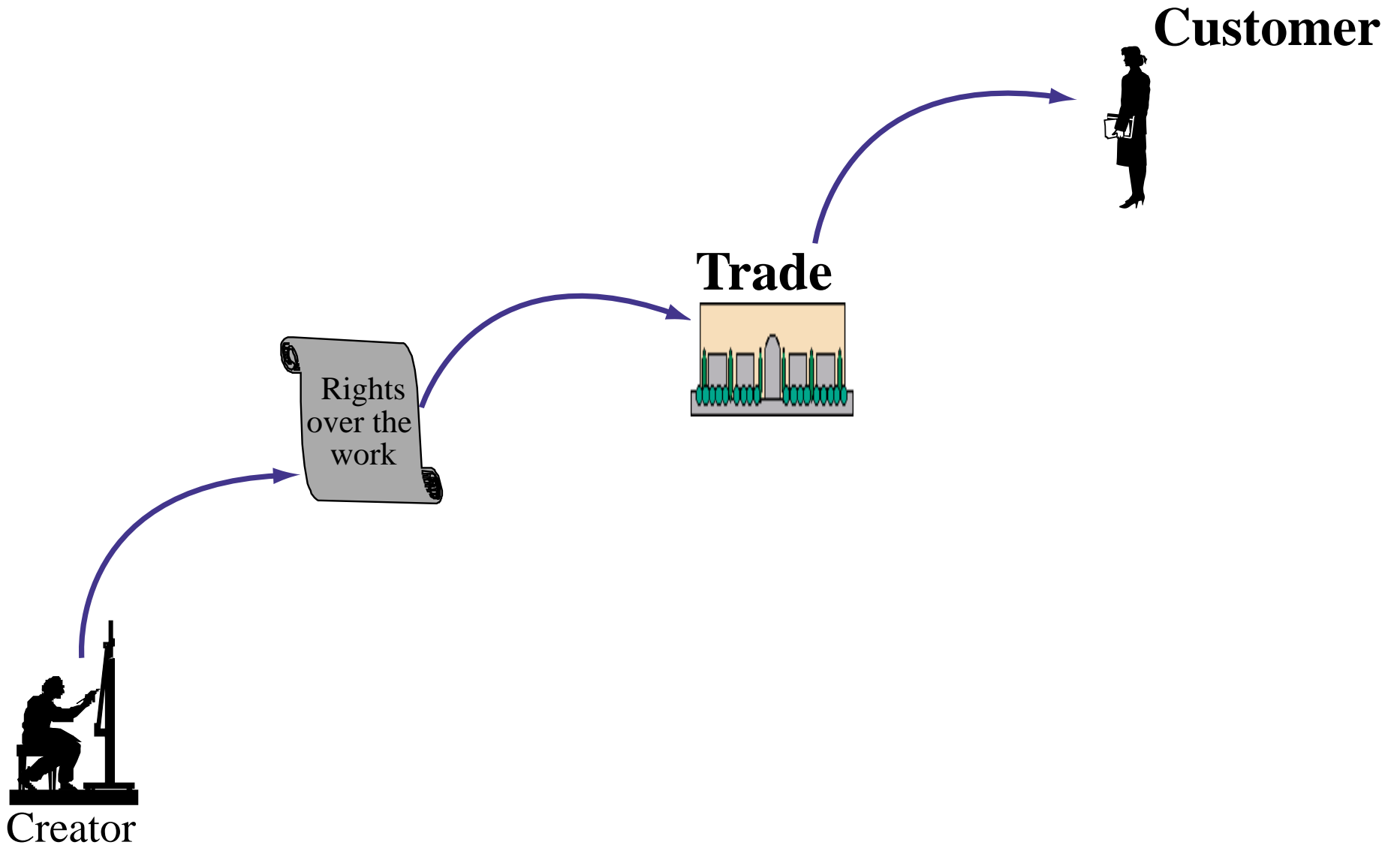


# Rights Usage Matrix



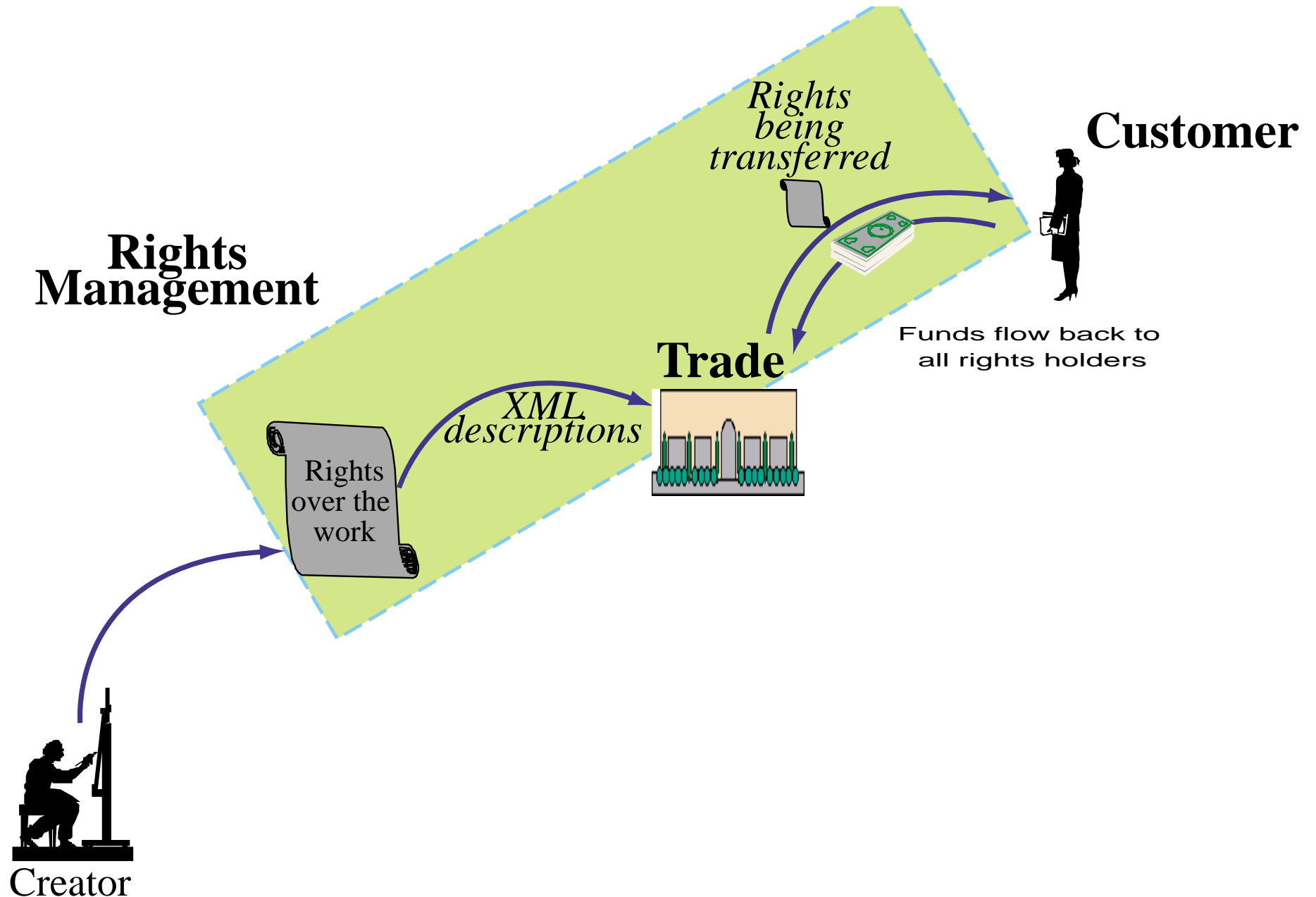
# Elements of the Supply Chain

supply  
chains  
for the  
knowledge  
based  
economy



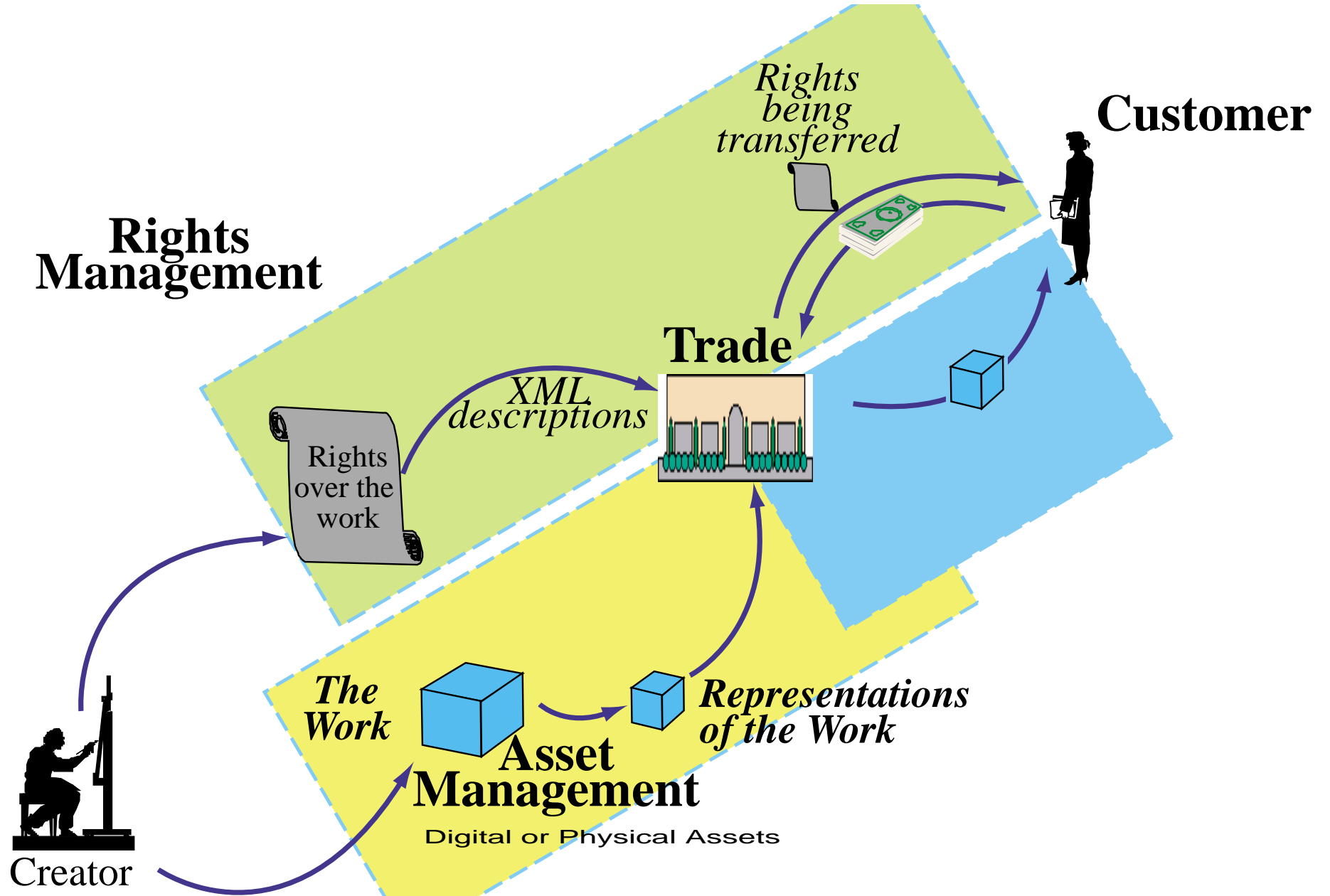
# Elements of the Supply Chain

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economy



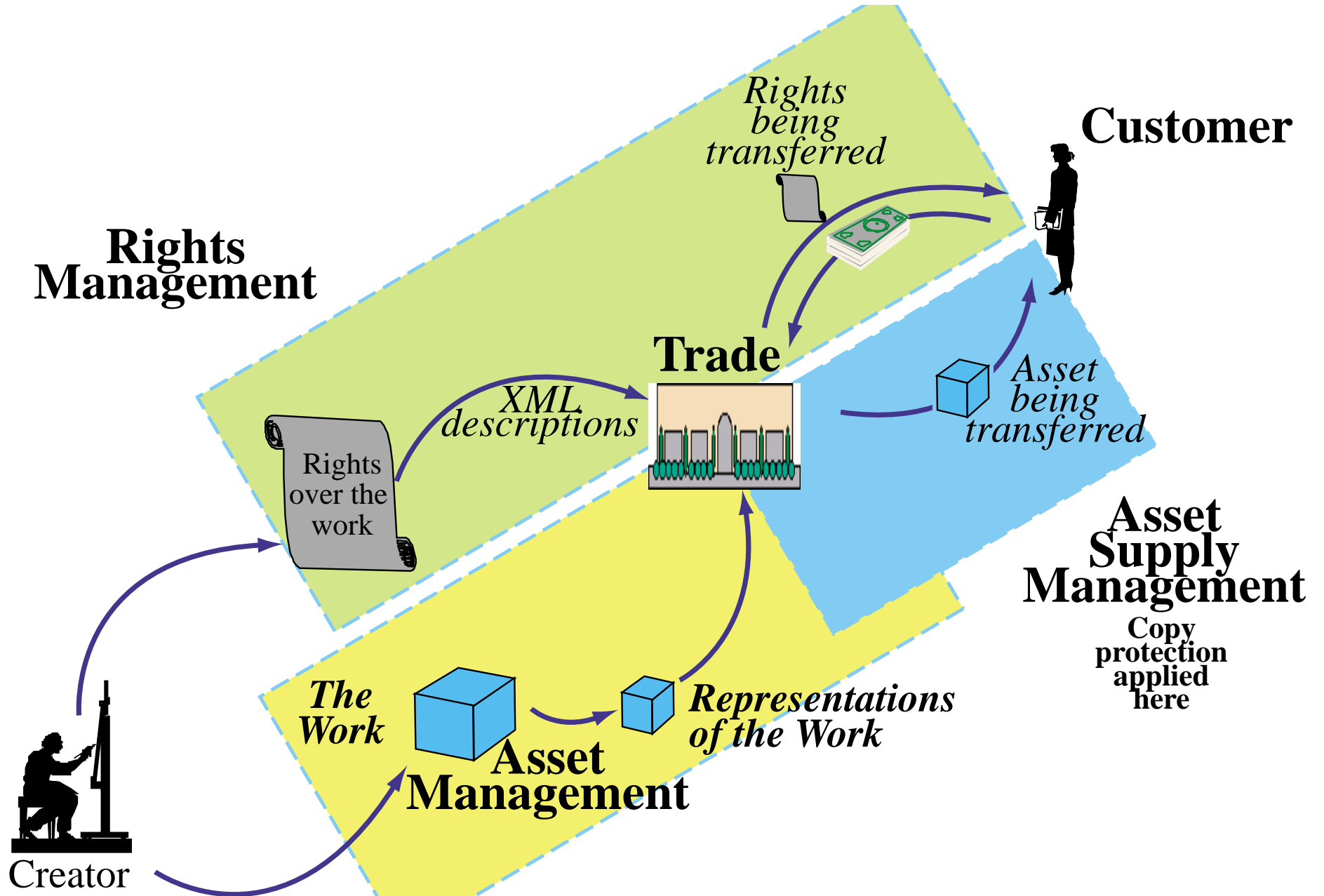
# Elements of the Supply Chain

supply chains for the knowledge based economy



# Elements of the Supply Chain

supply chains for the knowledge based economy





## Copyright Enforcement Technology Vendors

Aegisoft

Alchemedia

ContentGuard

CyberSource

DigitalOwl.com

Digital River

IBM

InterTrust Technologies

MediaDNA

MediaShell

Microsoft

Perimele

Preview Systems

SealedMedia

Reciprocal

RightsMarket.com

SunHawk

Versaware

Yankee Rights  
Management



# Displayed List of Found Works

The screenshot shows a Microsoft Internet Explorer browser window displaying the OzAuthors website. The address bar shows the URL: <http://www.ozauthors.com.au/?hid=4980&pid=2109>. The website header includes navigation links: home, login, about, help, contact us, and the OzAuthors logo. A secondary navigation bar contains: Meeting place, Publish work, Writing tools, HSC english, Shopping bag, and Archives.

The main content area is titled "Search subjects" and includes a "Browse subject categories" link. Below this, there are three search results, each with a "more" link and an information icon:

- Writing for the Education Market**  
Dale Spender  
Dale Spender / 1st Ed. / July 8, 2000 P G  
Provides information on the changing face of educational publishing
- Barracking for the Bull: Kylie Tennant and Her Work**  
Lynne Spender  
Lynne Spender / 1st Ed. / January 6, 2000 P G  
A review of Kylie Tennant's life and work.
- Playing IT Smart: Learning And Earning In The Dotcom Age**  
Dale Spender  
Dale Spender / 1st Ed. / April 7, 2002 P G  
Social impact of digital technology on living and working in an information age.

The left sidebar contains several sections:

- Join OzAuthors**
  - about OzAuthors
  - membership benefits
  - join as an author
  - project timeline
- My OzAuthors**
  - my account
  - shopping bag
  - bookshelf
  - booklist
- Adding work**
  - add a new work
  - preflight checklist
  - writing tip
  - policy & conditions
  - show current works
- Quick search**
  - Search box containing "spender" and a "go" button.
  - Radio buttons for Keyword, Title, Author, and All (selected).
  - Power Search icon.

The status bar at the bottom shows the current URL: <http://www.ozauthors.com.au/?cmd=show&aoi=wwe-15> and the Internet Explorer logo.

## Works Detail Screen



The screenshot shows a Microsoft Internet Explorer browser window displaying the OzAuthors website. The address bar shows the URL: <http://www.ozauthors.com.au/?cmd=show&aoi=www-15>. The website header includes navigation links: home, login, about, help, contact us, and the OzAuthors logo. Below the header is a menu with options: Meeting place, Publish work, Writing tools, HSC english, Shopping bag, and Archives.

The main content area displays the details for a work titled "Playing IT Smart, Learning And Earning In The Dotcom Age" by Dale Spender. The author's name is linked to a profile page. The description states: "Social impact of digital technology on living and working in an information age." The category is "General". Available formats include PDF and audio (indicated by a speaker icon and an "info" icon). There is an "Add to my booklist" button with a pencil icon.

Below the main details is a "Publication details" section with the following information:

Publisher	Dale Spender
Pub. date	April 7, 2002, AUSTRALIA
Edition	1st Ed.
ISBN	1 74064 000 4
Form	Article
Words	9,800

At the bottom of the main content area is a "Description" section.

The left sidebar contains several sections:

- Join OzAuthors**: about OzAuthors, membership benefits, join as an author, project timeline.
- My OzAuthors**: my account, shopping bag, bookshelf, booklist.
- Adding work**: add a new work, preflight checklist, writing tip, policy & conditions, show current works.
- Quick search**: search box with "spender" entered, a "go" button, radio buttons for Keyword, Title, Author, and All (All is selected), and a "Power Search" button.
- Browse subjects**

The browser status bar at the bottom shows "Done" and "Internet".

# The Works Detail Screen and Available Expressions

- contact details
- personal details

---

**Manage Members**

- incomplete
- not reviewed
- accepted
- inactive

---

**Manage ebooks**

- incomplete
- being processed
- requires review
- accepted and live
- inactive
- generate previews
- lock documents

---

**ebook reports**

- view logs
- licence activities
- parameters

---

**My OzAuthors**

- shopping bag
- bookshelf

---

**Quicksearch** ⓘ

Keyword     Title  
 Author       All

---

**Find an ebook** ⓘ


## Great Moments in Science

---

**Author/s:**            [Karl Kruszelnicki](#)

**Literary form:**        Other

**Subject categories:** Science/General



---

**Description**

"So you thought science was dull and boring! That's not the way Karl Kruszelnicki tells it - all the way from how to make a mummified cat go "woof" to morphine in milk (so that's shy I go for Milo shakes!). Great stuff for the curious, like me". - Professor John F. Lovering, Dean, Faculty of Science, University of Melbourne.

---

**Publication details**

<b>Published date:</b>	24/01/01		
<b>Publish country:</b>	AUSTRALIA	<b>Parts:</b>	36 Chapters
<b>Edition:</b>	1st	<b>Words:</b>	13500
<b>ISBN:</b>	1-74064035-7	<b>Illustrations:</b>	0

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**Purchase options**

Usage	Details	Price (\$AUS inc.GST)	Add to my bag
<b>P</b> Preview	5 pages online	Free	<a href="#">view</a>
<b>G</b> Read	For any computer	\$10.00	<a href="#">buy</a>
<b>IP</b> Read & Print	Locked to a single computer	\$10.00	<a href="#">buy</a>



# Creator View: Setting Protection Level and Prices

The screenshot shows the OzAuthors website interface. At the top, there is a navigation bar with links for home, logoff, help, about, and contact us. Below this is a secondary navigation bar with links for Meeting place, Publish ebook, Writing tools, Shopping bag, Hotpicks, and HSC english. The main content area is titled 'Publish ebook' and shows the title 'What Love Can Do'. A section titled 'Usage rights & pricing' provides instructions on how to set the price and security level. A table below this section allows the user to select usage options (Preview, Read, Read & Print) and security levels (Secure, Not Secure) with corresponding prices. The interface also includes a sidebar with various menu items like 'Manage details', 'Manage ebooks', and 'Publishing guide'. At the bottom, there are buttons for 'exit to menu', 'SAVE & go to menu', and 'SAVE & continue', along with a footer containing copyright information and a disclaimer link.

home | logoff | help | about | contact us **OzAuthors**

Meeting place | Publish ebook | Writing tools | Shopping bag | Hotpicks | HSC english

**Manage details**

- password
- personal
- contact
- profile
- account
- preview profile

**Manage ebooks**

- publish an ebook
- incomplete
- being processed
- requires review
- accepted and live
- inactive
- register member

**ebook reports**

- sales & activity report

**My OzAuthors**

- shopping bag
- bookshelf

**Publishing guide**

- how to prepare
- how to publish
- formatting an ebook
- service options
- registering first

**Quicksearch**

go

Keyword  Title  
 Author  All

**Find an ebook**

Antiques go

**Publish ebook**

**Title/Sub Title:** What Love Can Do

**7 Usage rights & pricing**

\* move the cursor over the question for more information \*

This is where you can determine how much your ebook is sold for, in what format and with what level of security. All ebooks submitted to the site will have the first few pages available for previewing so that readers can get a feel for the ebook and its content.

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Usage	Details		Price
Preview	<input type="text" value="5"/> pages	Low-resolution Image (GIF)	Free
<input checked="" type="checkbox"/> Read	<input checked="" type="radio"/> Secure	<input type="radio"/> Not Secure	<input type="text" value="\$5.00"/>
<input type="checkbox"/> Read & Print	<input checked="" type="radio"/> Secure	<input type="radio"/> Not Secure	<input type="text" value="\$0.00"/>

**exit to menu** **SAVE & go to menu** **SAVE & continue**

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Internet zone

# Creator View: Setting % of Revenue for Disbursees

**Manage ebooks**

- publish an ebook
- submission status
- your live ebooks

**ebook reports**

- sales
- activity

**My OzAuthors**

- shopping bag
- bookshelf
- booklist

**Publishing guide**

- our checklist
- formatting
- pricing
- security
- fees and revenue

**Quicksearch**

 go  
 Keyword  Title  
 Author  All

## Revenue disbursement

You must now confirm the people and parties who are to receive revenue from the sales of the ebook and assign the percentage of revenue due to them.

If you are the primary digital rights holder and self-publisher you will be the sole recipient of 100% revenue. Should other contributors or parties require payment and they are not visible in the list, please ensure that they are [registered as a Contributor](#) then use the [Member Registry](#) to locate and insert their name into the fields below.

You must then assign a reason for their receiving payment via the menu list and assign the appropriate percentage of revenue due to them.

The details entered below are for administrative purposes only, and will not be published information. Please see our Revenue and Reporting section for details on revenue calculations, reporting and remittance information.

### Confidential information

Member Name	Suburb	Reason	%	
1 Jack Benlow	Stirling	By (author)	80	<input type="checkbox"/>
2 Lynne Spender	Coogee	Translated by	10	<input type="checkbox"/>
3 Diane Fordham	Sandy Beach	Abridged by		<input type="checkbox"/>
4		Footnotes by		<input type="checkbox"/>
		Foreword by		<input type="checkbox"/>
		Illustrated by		<input type="checkbox"/>
		Introduction by	100	<input type="checkbox"/>
		Memoir by		<input type="checkbox"/>
		Notes by		<input type="checkbox"/>
		Other		<input type="checkbox"/>
		Photographs by		<input type="checkbox"/>
		Preface by		<input type="checkbox"/>
		Prologue by		<input type="checkbox"/>
		Retold by		<input type="checkbox"/>

+ add new member  
- delete selected member  
find ID

exit to menu
SAVE & go to
continue

# Customers Shopping Bag

Oz
Authors

home | logoff | help | about | contact us

Meeting place
Publish ebook
Writing tools
Shopping bag
Hotpicks
HSC english

**Manage details**

- login settings
- contact details
- personal details

---

**My OzAuthors**

- shopping bag
- bookshelf

---

**Quicksearch** i

go

Keyword     Title  
 Author     All

---

**Find an ebook** i

Antiques

go

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- C download & view
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i

shopping bag — checkout — receipt — download ebook

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Here is a list of the books you have chosen to purchase at OzAuthors. Should you wish to make any changes to your purchase, click on the edit button to return to the ebook details screen.

Should you wish to delete an ebook from your order, tick the checkbox and **UPDATE** the screen.

Items in your shopping bag:

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<a href="#">Fire Horse</a> Part 1 - In the eye of the vortex Denis Way 28 Aug 2000	<span style="color: orange; font-weight: bold;">C</span> <span style="font-size: 0.8em;">E</span>	Locked to a single computer	\$4.00	<input type="checkbox"/>
<b>TOTAL:</b>			<b>\$4.00</b>	

update
checkout

# Customers Bookshelf of past purchases.

OA

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◀ start • ◀ previous • page 4 of 5 • next ▶ • end ▶▶ • return to details ◀

*Great Moments in Science*

## Acid rain



What have they done to the rain? A hard rain is already falling and it's called Acid Rain. The best way to see the effect of Acid Rain is to look at Stone Lake in Sweden. Around this lake is a rock wall which was piled together by some Vikings about 1000 years ago. The Vikings were being besieged by attackers and behind this rock wall they were able to hold off the attackers for about a year. They were able to drink water from the lake and they chopped down trees to keep them warm. They also ate vegetables grown with the lake water and they ate the trout from the lake.

Now, for the first time since the Ice Age this lake no longer has any trout. In fact 20% of the 100,000 lakes in Scandinavia no longer have any trout in them due to Acid Rain. What has happened is that oxides of sulphur and nitrogen which are emitted from power plants, from cars, and from metal smelters, have entered the atmosphere. They've then dissolved in the water-vapour carried around as clouds, and dropped to the Earth as Acid Rain. This rain can be more acidic than lemon juice — in fact, in Wheeling, West Virginia the rain was once measured at pH 1.5 which is just a bit less acidic than battery acid and a whole lot stronger than vinegar.

Ironically, one of the causes of the spread of Acid Rain was the Environmental Protection Act of 1970, which the Americans introduced to reduce local pollution. This resulted in higher smoke stacks being built and in this way the pollution has spread further afield.

*Wales*  
*Eager trout receive acid rain immunizations*





# DRM: New Business Models?

Permissions on : Through the Looking-Glass

## **Copy**

You are permitted to copy 10 text selections every 5 days.  
You have copied 0 text selections over the last 5 days.

## **Print**

You are permitted to print 10 pages every 5 days.  
You have printed 0 pages over the last 5 days.

## **Lend**

This book can be lent.

## **Give**

This book can be given.

## **Read Aloud**

Book cannot be read aloud

Info

Bookmarks

Find

Preferences

Support



# DRM: New Business Models?

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Book cannot be read aloud

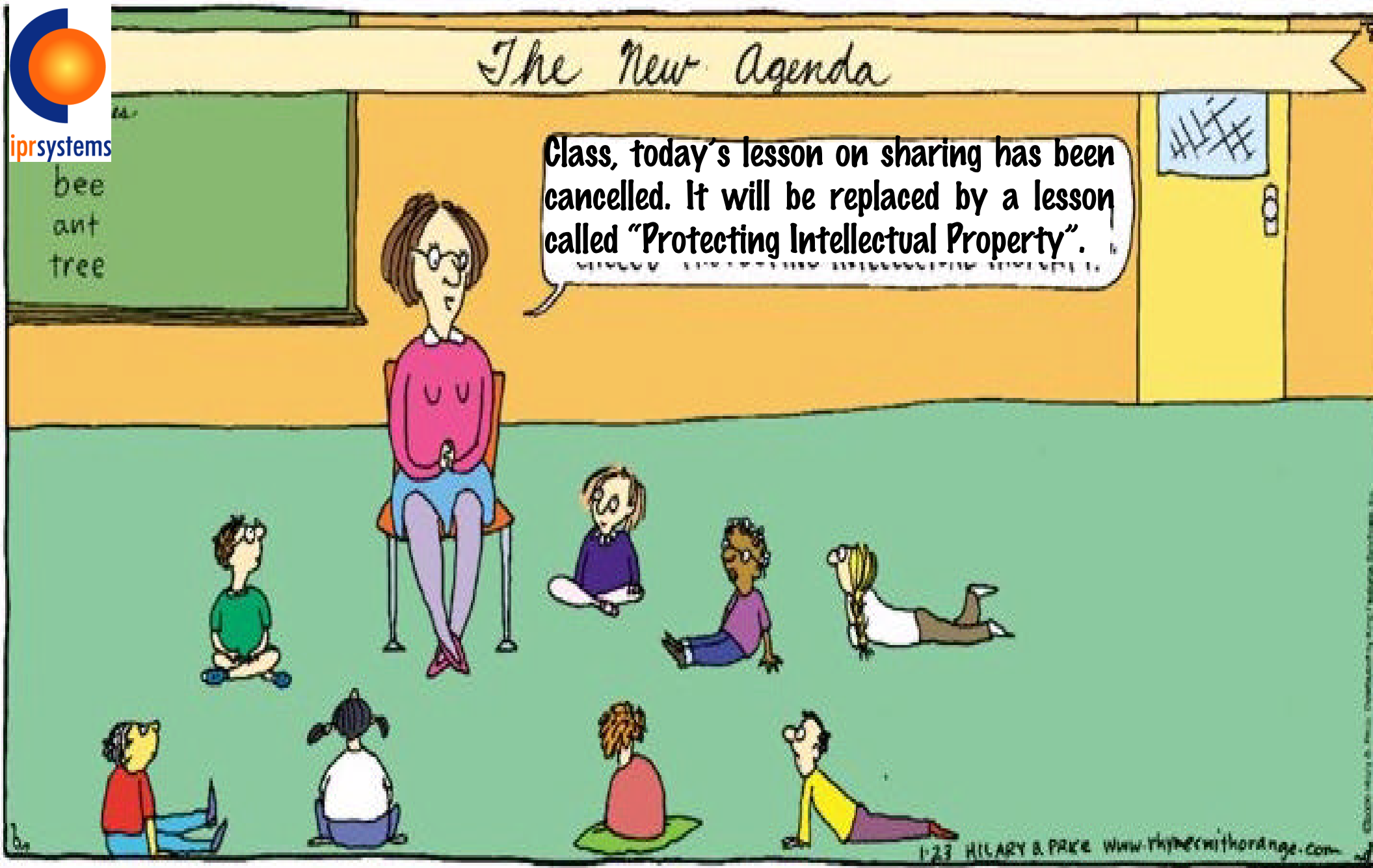
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Preferences

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