

Intellectual Property in the Information Age

Ed Steinmueller

Professor of Information and Communication Technology Policy
SPRU – Science and Technology Policy Research
University of Sussex

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The Conventional Arguments for IPRs

1. Appropriability

Without IPR there will be a race to the marginal cost of reproduction of invention. Because this marginal cost is near zero, there will be no incentive to create the invention in the first place.

The Optimistic View

The resulting system of incentives will create such a rich collection of technological alternatives (near substitutes) that the 'exclusivity' provided by IPR will *not* result in substantial market power.

The Pessimistic View

Nature is *not* so bountiful and monopoly rents are simply the 'cost of progress,' e.g. without IPR, it might have been difficult to produce the rate of advance in medical treatment, especially involving pharmaceuticals, that we saw during the 20th century.

2. The Moral Rights Argument

IPR is not about economic incentives but the moral principle that individuals should be entitled to the fruits of their labours (unless they have sold those rights)

The Critical Literature on IPRs

Most of the existing critical literature on IPRs focuses on the pessimistic view, partly because it is not only 'nature' but also human institutions that influence market power.

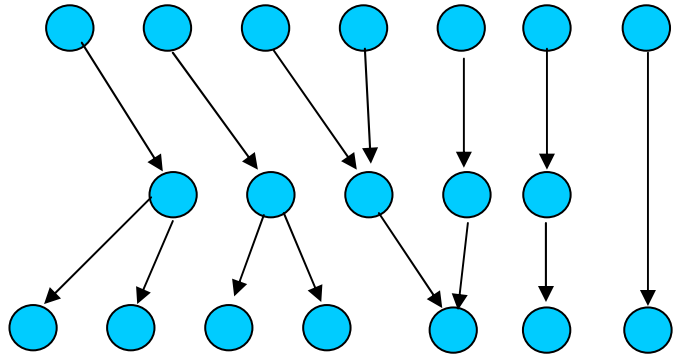
Examples include compatibility standards, health and safety, etc.

For many reasons, patents may create a persistent position of market power that suggests to some 'undue enrichment' and provokes calls for some form of regulation.

This literature might be improved by a more systematic identification of patents and copyrights (I will ignore trademarks) that have, in fact, generated rents.

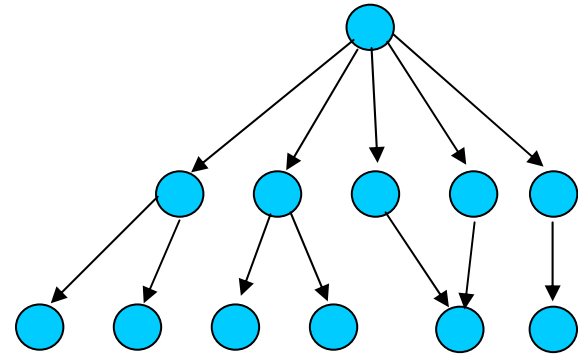
In particular, I believe that the extent of market power is influenced by some type of technological interdependency.

IPR Interdependence Structures



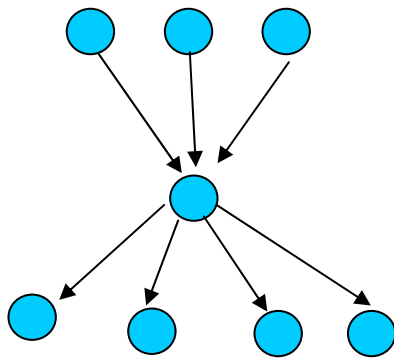
Bountiful

Supporting the optimistic view



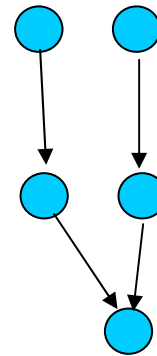
Foundational

Nelson/Arrow on Basic Research



Essential

Supporting the pessimistic view



Linear

A case for mercantilism

IPRs in the Context of the Information and Knowledge Society Rhetoric

The substantial improvement in the infrastructure for data communications has created unprecedented opportunities (and challenges)

1. It is now possible to publish information ‘for the world’ at very low cost
2. It is also possible to pirate ‘for the world’ at very low cost

As the result of many influences (i.e. the Internet alone is only a part of the explanation), an ‘emergent policy’ in both the US and the EU has been to strengthen IPR and to broaden its applicability.

It is tempting to interpret these developments somewhat schematically as an instance of ‘market triumphalism’

With many countries renouncing collectivism and others embracing liberalism with some kind of social justice ‘bolt on’ – what exactly is wrong with extending the market for information and knowledge?

As my earlier remarks on technological dependency suggested – the answer is potentially nothing.

How might a stronger IPR regime not be in the public interest?

1. A high degree of technological interdependency coupled with an unwillingness to deal based upon a) rational self interest or b) irrationality

An example of a) is ... Because the knowledge and information represented by IPRs is often an input rather than simply a commodity sold to final consumers, we encounter various 'royalty stacking' arrangements that may inhibit the development of applications.

An example of b) is ... Companies may choose to restrict access on the principle that licensee may be able to better exploit the technology than the licensor. Economists may reply – 'make better contracts' but business decision makers live in a real world of incomplete contracts and fundamental uncertainties.

2. We should not ignore the issue of 'transaction cost.' In the theory, transaction costs should not be a major barrier and, historically, licensing was a more straightforward process. This may, however have changed.

Changes in the Technological Landscape

The variety of technologies involved in the production of goods and services is on the increase (fact)

If, historically, a patent was meant to protect a key process or product, produced by a vertically integrated company, it is more likely today that a patent involves a component meant to be integrated into a larger system (fact)

These issues are further complicated by the linking of inter-operability or compatibility standards with patents – an increasing area of litigation and controversy (fact)

The potential for ‘hold up’ may have increased (licensing arrangements are rarely public) and the royalty stacking and patent thickets specifically designed to raise rivals’ costs or deter entry may have become more serious (speculation)

Considering the ‘user’

Users of technology have become significant patent holders – e.g. in electronics technologies we have seen companies from almost every market segment patenting (fact)

However, the aim of the paper that I have distributed for this conference and related work that I have done for Eli Noam and colleagues at Columbia University on peer-to-peer file sharing involves considering the following thought:

“But if you copy a piece of software a thousand times, what is the cost? ... Infinitesimal ... this is a problem ... and it isn’t just a problem of economics. We have a system of values, of morality, based on people competing with each other to copy things, at the lowest possible cost per unit. But when the cost, the object of all of this competition, effectively disappears, what happens to our system? Life gets very puzzling.”

Jones, Gwentyth (1998). *La Cenerentola*.
The Mammoth Book of Best New SF 12.
G. Dozois. London, Robinson: 510-24.

Three Puzzles Created by Technological Capabilities

1. Peer to Peer Content Distribution and the meaning of Lending Libraries
2. The Deep Linking Paradox and Copyright on the WWW
3. Path-dependence and the MP3 revolution

1. P2P as a Library Architecture (1/2)

At present P2P video is engaged in creating a 'library' of audio and video offerings. The size of this library is relatively unconstrained since only a few dozen individuals with a keen interest in a particular subject – say the Austin City Limits PBS television series or the collected vocals of Sherry Dawn, a local pub singer in Darwin, Australia – are necessary to create a 'community of interest' of this sort.

We know from recent work on 'The Long Tail' that the number of 'sections' for which enthusiasts may emerge could be very large indeed.

All of these sections can be drawn together using P2P indexing technologies or other technologies (there are many). They may contain 'white,' 'grey' (infringing but enforcement is unlikely), and 'black' content.

More intense enforcement of copyrights will be a stimulus to expand 'open' territories – ones that are white or grey.

Copyright enforcement will also create outlaw 'clubs' behind 'virtual doors' in which infringing content is exchanged.

1. P2P as Library Architecture (2/2)

Thought Experiment 1:

Suppose that it were possible to 'deposit' some part of your content collection in a 'closed' library that had software permitting the streaming of content that was not being used by another user. How is this different than a lending library holding physical media? Would the copyright owners accept such an arrangement as being legitimate?

Thought Experiment 2:

Is one possible accommodation between an 'open' (free) and 'proprietary' (pay per play) section of such a library is the tolerance of (infringing) lower quality reproduction with DRM-protected 'premium' content?

Thought Experiment 3:

In a world with an indefinitely large number libraries don't music publishers get to be the authoritative source. Hence, is there a strategy in which music publishers 'tolerate' (don't sue) private clubs while, at the same time, chasing 'mass copyright infringement.'

In short, the co-existence of white, grey, and black content is virtually assured and it is the dynamics of the resulting 'markets' (uses) that should be the focus of attention.

2. The Deep Linking Paradox and Copyright on the WWW

The creation of content for the WWW and its distribution over the Internet often relies upon the traditional ‘advertising supported media’ formula – content is free, but you have to receive it with advertising.

For example, Fortune and Slate magazines subject the reader to an introductory advertisement before entering the site proper... Both allow paid subscribers direct access to content.

What happens when someone bypasses this ‘front page’ and provides a link to content?

In Denmark, newspapers have successfully sued news search services for providing such ‘deep links.’

On the one hand, barring deep links may be important to preserve advertising revenue.

On the other hand, where will this bar stop – does it mean that search engines like Google will not be able to index content?

3. What are the social welfare costs of pursuing copyrights? (1/5)

We have heard a lot from the RIAA and others concerning the losses to music and other content publishers stemming from copyright infringement.

Have there been any beneficiaries beside consumers created by this infringement?

3. What are the social welfare costs of pursuing copyrights? (2/5)

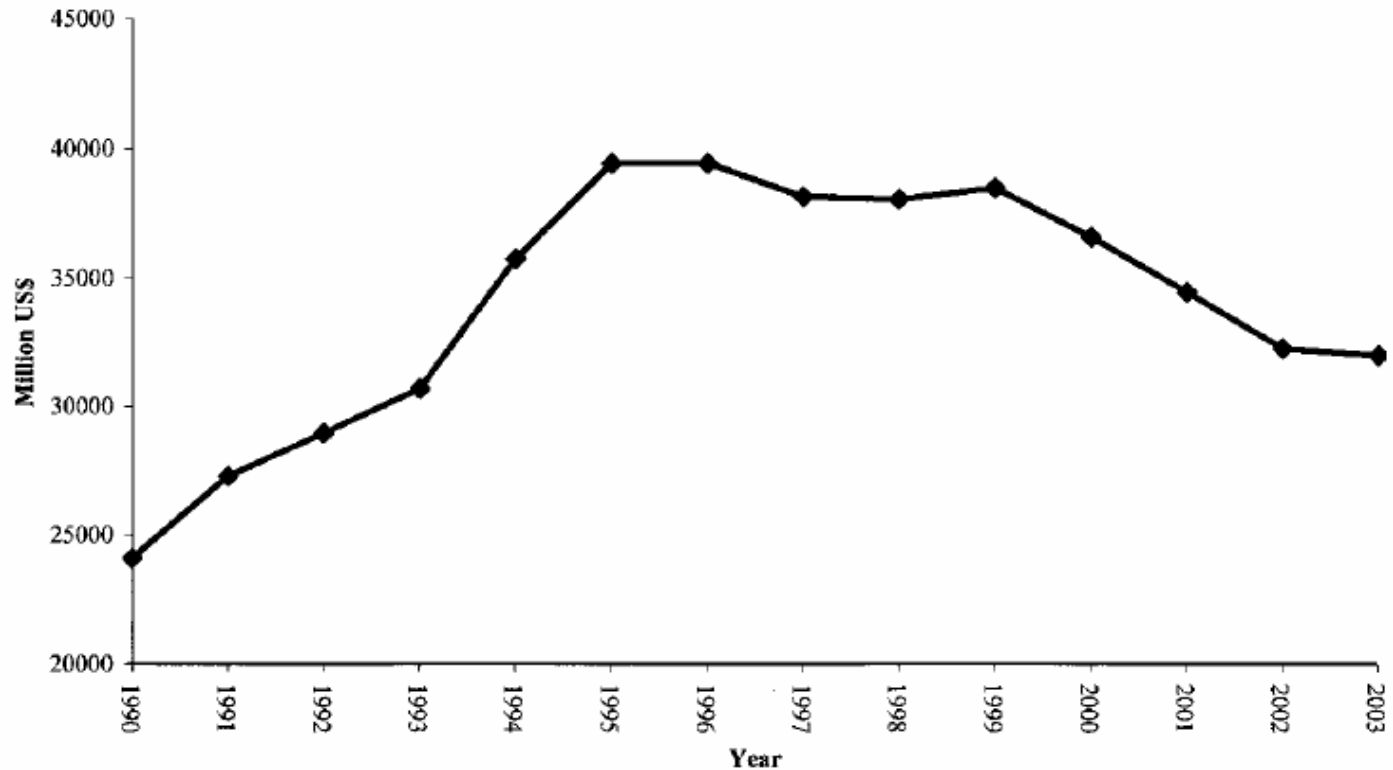


Figure 1.—Global music sales in million US\$ (IFPI 2004a).

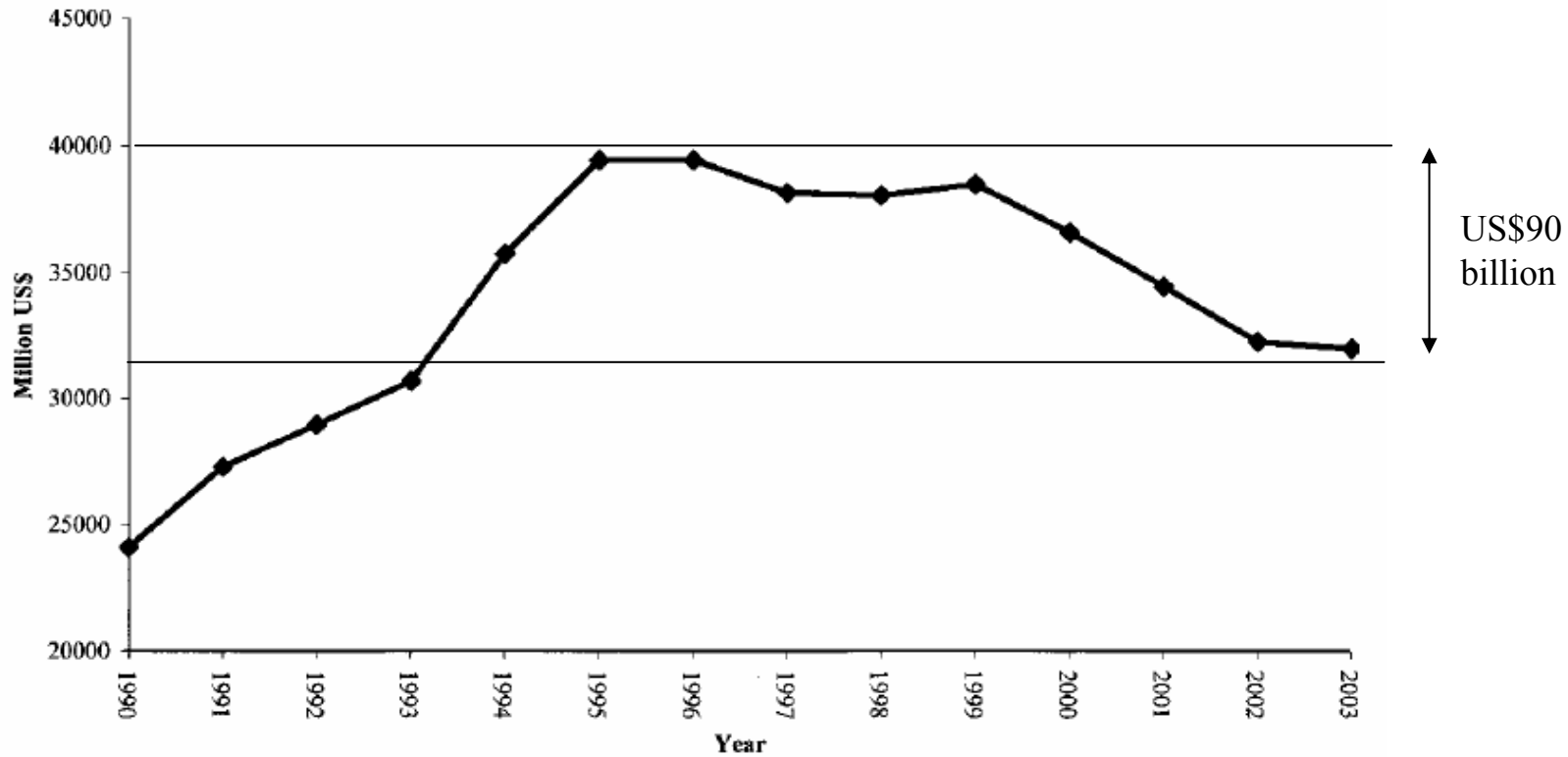
Note: Local currency values are converted to dollars at the exchange rate of each year. Music videos are included since 2001.

Sources:

Zentner, A. (2006). "Measuring the Effect of File Sharing on Music Purchases." The Journal of Law and Economics 49(1): 63–90.

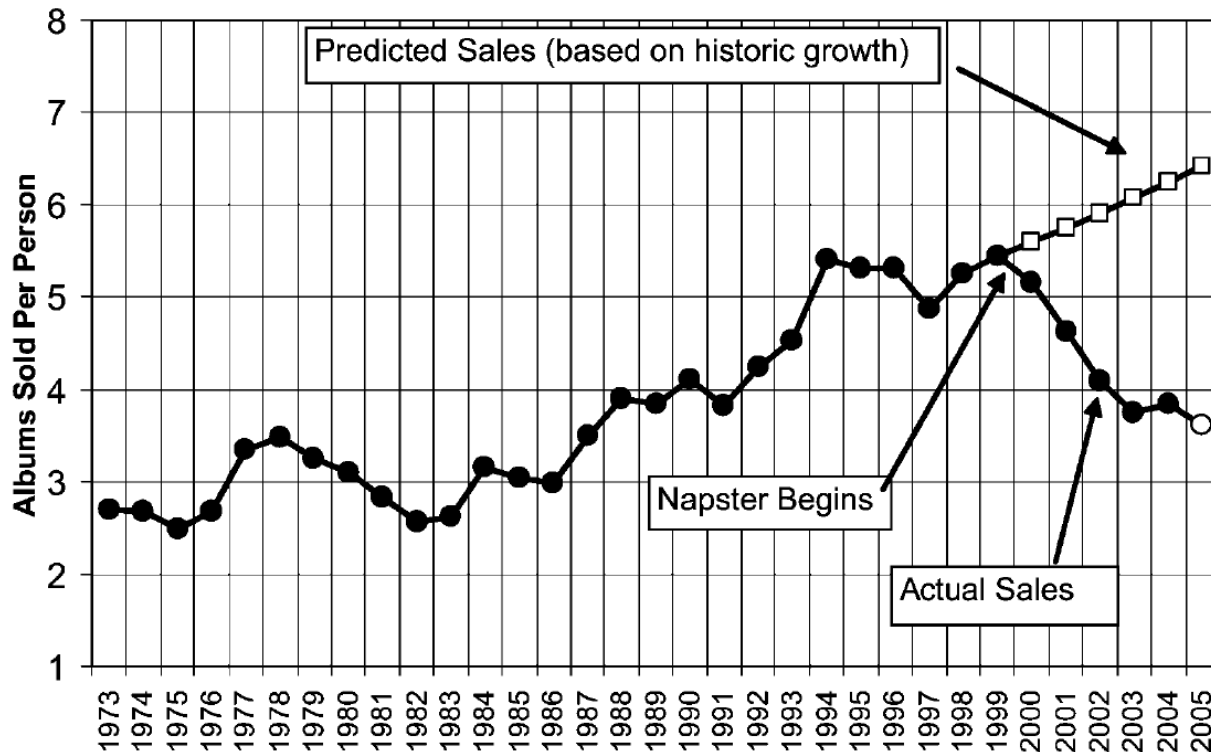
IFPI (International Federation of the Phonographic Industry) (2004a), "The Recording Industry in Numbers." London: IFPI.

3. What are the social welfare costs of pursuing copyrights? (3/5)



One Measure of Downloading Impact

3. What are the social welfare costs of pursuing copyrights? (4/5)

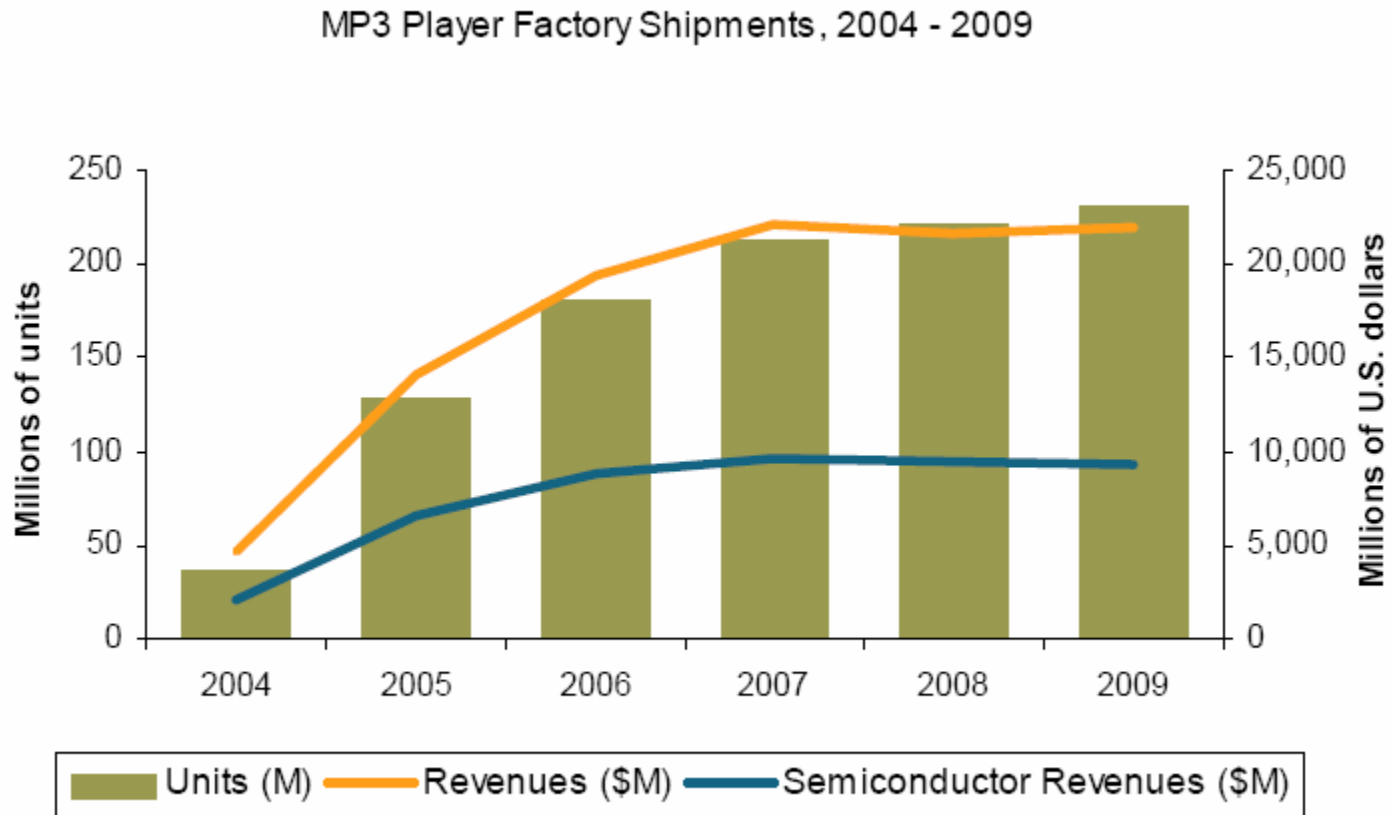


Another Approach: US Only and Not Monetised

[However – This might lead to a monetary estimate of US\$ 41 billion]
(300 million Americans times 3 albums times US\$15 per album avg. price)

Source: Liebowitz, S. J. (2006). "File Sharing: Creative Destruction or Just Plain Destruction?" Journal of Law and Economics XLIX(April): 1-28.

3. What are the social welfare costs of pursuing copyrights? (5/5)



Source: Chris Crotty, "MP3 and Portable Media Players: Reaching for the Stars,"
iSupli – Applied Market Intelligence, March 2006,
http://www.isuppli.com/catalog/L3_cons.asp?sr=CONS&se=14, Accessed 9
September 2006

Summary and Conclusions

1. Pursuit of a strong IPR regime creates a number of social welfare risks concerning the creation of market power, a well known principle.
2. These risks might be heightened if we are moving into an era where more frequent contracting and recombination of information or knowledge is necessary to make products and services (transaction cost argument).
3. The existence of the Internet creates an 'ambiguous territory' regarding IPR.
4. Competition between white, black, and grey content will persist and influence the ability of users to experience and re-use media in ways that they value.
5. Strong IPR creates important paradoxes due to the collision of the proprietary and voluntary domains.
6. This collision has larger implications for the rate and direction of technical change that we should address.