EXECUTIVE BRIEFING SERIES

RIGHTS AND WRONGS: WHAT SHOULD WE DO ABOUT COPYRIGHT?

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1 ABSTRACT

Technology aids communication and communication spurs technological development and discovery. Throughout the past each new technology has offered new forms for the content of human expression and, most commonly, further ways in which this content – its message - can be provided to more people, more quickly and at lower cost.

So what should happen when the cost is nigh on zero and we can reach everyone in the world almost instantly? It cannot all be free: the twist is that there is a creative effort involved in formulating the original content. Just as there is effort and usually a deal of research involved in developing a new technology.

The intellectual effort involved in creative arts has always been recognised in the past but usually the barriers to artless replication have been easy to establish and maintain. There is usually strong legal support, but the history of the actual practice of replication suggests that, as the costs of replication fall, then the ability of the previously established legislative arrangements to maintain artistic rights loses adhesion. When the underlying business model which the legislation supported has changed, either the legislation needs to be changed or the underlying business model needs to adapt.

We argue here that, in a fully digital era, both have to change. Quite how this is to be achieved in a world which, in practice, is far from behaving as a single, culturally monotonic market place is a tough question. But it needs to be addressed.

It is intellectually lazy, and ultimately nugatory, to accept the commercial figures of previous business practices as a rationale for increasingly draconian impositions on the use of technology. An example is that argued for by music and film (or video) rights owners and evidenced in poor legislation such as the UK's Digital Economy Act 2009.

The UK administration is not alone in being swayed by lobby groups representing the old ways. The more powerful the organisation, such as WIPO[1], the more pressure placed by the lobby groups. And the less that necessary change is even discussed let alone implemented. As a consequence a revolution will take place by default, possibly through peer to peer working, subtly, and bit by bit. That is the digital way.

[1] World Intellectual Property Organisation.

2 PREAMBLE

The year may be 950AD and Mithril has just finished telling a long story – all about some fabled future time when crystals will hold the memory of all that has been and all that will be. It has a familiar ring to it. Until that time the story will have to be told from memory and handed down. Those to whom the tales are told may wonder at them, they may tell their friends about the wonderful things of which so much was spoken.

But times change. Someone realised that they could remember the whole suite of legends and repeat them and make them more relevant to their audience. It was an art form that was the essence of communication, of education and of the long path of the development of civilisation.

How long this took we won't know. Certainly this process had been taking place long before 950AD. Scribes writing accounts for their masters on clay tablets in Sumerian cuneiform script 3000 years earlier will have been doing something similar even if what was scribed into the clay were only brief notes of transactions and their value.

We value original art, for example, and we may trade or auction paintings for sums equivalent to a banker's bonus. Those who forge, copy or who would use the same technology to produce an almost indistinguishable verisimilitude ... we may place them in jail.

3 ABOUT THE ISSUE

The technological background to rights, technology and copying goes something like this:

- As each new communication technology comes along the reactionary view is that it will make the previous technologies redundant. The reality is that a previous technology becomes a specialist practice but it never vanishes.
- As each new technology comes along there is a drive to protect its use and to protect the tangible items which can be created and replicated with it.
- The content encapsulated in earlier technologies either becomes very rare and valuable in its own right or becomes so commonly accessible as to lose any sense of protection.
- Each new technology is initially expensive - on resource, technique, time or some other value – and it becomes significantly cheaper as wider use is made of it and better methods are developed.
- New technologies provide methods to move content from one format into another.
- As the costs of using a new technology fall then many more people expect to be able to use it as of right.

What is missing here is the recognition of the intellectual effort engaged in creating the content, so the matching creative thesis includes these ideas:

- The ability to have creative thoughts is universal; anyone can play.
- Some ideas can be expressed spontaneously; others take much development to materialise.
- Investors in development or production may wish to attempt recovery or profit.
- Humans share ideas and experience. This is automatically a point of creative leakage. It would be so convenient if there were a way to allow an audience to enjoy a performance but for them to have forgotten it the moment they leave the theatre, allowing the experience to then be resold[2].
- Not all creativity has the same value, and value is a judgement not an absolute.
- The duration of the validity of protection is greatly debatable.
- Creativity only achieves a value when others experience it. This is the link to technology.

We accept the concept of paying for content particularly if it is presented on something physical. It is then something which can be owned, shown to others, traded or exchanged; it has a physical value which we can recognise. The physical object becomes a token of the intellectual and production input which it encapsulates and the owner identifies with, or relates to, its originator by owning a physical token of it; think of CDs and of DVDs.

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[2] Claims have been made about some London musicals that they are forgettable. But these must be exceptions!

When that link is broken we risk devaluing our appreciation and losing our respect for it – this is a human trait. This is the case for content which is available in digital form: the form of delivery is almost free. So we tend not to respect it because the physical tangibility is lost. We assume it is really free, that it can be discarded when not needed and picked up from somewhere else when desired once more.

4 RIGHTS, RESPONSIBILITIES, CONVENIENCE AND CONSCIENCE

From a legal perspective the protection of rights is a simple commercial issue but, actually, it is our performance in the ethical domain which is challenged. The forces are those of rights, responsibilities, conscience and convenience. In very recent years, the concept of moral right – that of the creator – must be included. From this view technology is the enabler of opportunity, the enabler of change but not the causative force.

As noted, we value original art, for example, but society deprecates the forger who would use the same technology to produce an almost indistinguishable verisimilitude. We may place them in jail and, metaphorically, cut off their tongue.

So why do we not react in the same violent and retributive way when anyone takes a recording of music or video and simply copies it and passes it on? What suite of modern day ethical and moral considerations – ones which would ordinarily guide our daily social behaviour - are being bypassed. Why does this happen?. And what might be done about it?

4.1 THE MORAL COMPASS

Apparently some of the younger generation considers rights acknowledgement as a rather quaint concept as far as entertainment content and computer software go. Theft is so easy that new content is readily formed by plagiarism. It has been said before that bad poets copy but good poets steal, so what is new?

For the current generation it may be a badge of passage to garner a rich collection of content without due payment and it may be a badge to be worn for the rest of life[3]. Older folks – those who might have been raised in an era before access to the internet was considered to be a right – might recall a time when they were aware that making a copy of a VHS tape or making a cassette copy of a vinyl disc was knowingly breaking the law[4]. Even they may have lost this moral compass point. Here are some pointers why:

- Because it is easy to do.
- Because everyone appears to be doing it with impunity.
- Because the risks of being caught doing it for yourself are miniscule.
- Because the action cannot be traced – or at least that is what many may think.
- Because whoever it is whose creativity is being plundered is already rich enough.
- Because finding the content in a legal and affordable form is nigh impossible.
- Because the content already exists in one form legally and it is needed in another.

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[3] Over 500 million people, or nearly 10% of the world's population, is registered with FaceBook. Possibly this is as much as 30% of the first world, about whom quite detailed personal detail is gathered and retained for all time.

[4] The blank tape levy never legalised this in the UK though it did in some other nations.

- Because it is needed for study.
- Because it would never be bought – it is not that desirable.

5 HISTORICAL BACKGROUND

In England the story starts from the 1300s onwards, and there has been an ongoing wrestle with rights and wrongs since then. The concept of a movable type press seems to have been established in the 1450s in Europe and Caxton brought the principle over to England and printed the first book – a pornographic novel known as Chaucer's Canterbury Tales – from his press in Westminster in 1476.

Up to that time publishing was limited to whole pages which were inscribed on copper plates or carved from wood blocks. The Stationer's Company, set up in 1403, attained Royal Charter status in 1557. Only members could register books as lawfully printed. Rights management was a side effect as registration was a way in which works critical of the government could be managed whilst allowing official indoctrinating works such as the Bible to be speedily reproduced with much fewer errors. Stationers were legally empowered to seize books that did not meet the standards of content set by the church and state during the Tudor and Stuart periods. Offenders could be brought for judgement before ecclesiastical authorities such as the Bishop of London and Archbishop of Canterbury[5].

5.1 STATUTE OF ANNE

The Statute of Anne came into force in 1710 following the collapse of the licensing regime around 1695, after Parliament did not renew the Licensing Act of 1662. The Statute of Anne was primarily a protection for publishers and not necessarily creators, as the aim of booksellers was to gain a licence in perpetuity for any works.

- It established a punitive regime for those who reprinted works or those who printed without registration.
- A copy of each work was to be provided to the King's library and the libraries of Oxford and Cambridge so that the works could be accessed by the public. Thomas Bodley had struck such an agreement with the Stationer's Company in 1610 when he agreed to lodge a copy of each book he printed with Oxford University.
- It established an initial 14 year period of protection which could be extended if the author were still alive, and a 21 year period for those items already in print.
- There was a recognition that items for which there was no identifiable author or for which the protective period had expired were effectively in the public domain.
- The statute had the aim of encouraging public learning and to regulate the book trade and limit the power of the Stationer's Company. Benefit to authors was not the primary focus.

Some of these principles continue to this day including the provision of copies, the concept of a period of protection of right, the concept of works out of copyright and the encouragement of learning.

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5 A situation quite in parallel with that seen in current day theocratic and monopolistic states such as Iran, Burma and North Korea.

Technological changes made various forms of copying and printing easier and cheaper. Literacy increased greatly and this increased demand for books, engravings and pamphlets. The introduction of education for children created the need for school books and the need for copyrightable materials to be freely available for educational purposes. However a Royal Commission in 1878 observed:

> "The law is wholly destitute in any sort of arrangement, incomplete, often obscure, and even when it is intelligible upon long study, it is in many parts so ill-expressed that no-one who does not give such study to it can expect to understand it."

6 COPYRIGHT IN RECENT HISTORY

The first serious international approach took place in 1886 - the Berne Convention – and was followed by the UK Copyright Act of 1911. This introduced the concept that a copyright arises in the act of creation, and the impact of new technologies was recognised. Thus new types of content included sound recordings, where copyright was extended to prevent others copying the recordings or playing them in public. Copyright in literary, dramatic and music works could be infringed by making them available in other media types such as film or other mechanical methods such as fairground organs.

The 1956 Copyright Act aligned with international law and with further technological developments such as radio and television broadcasting. There was protection for musical and dramatic performances and for the use of content for educational purposes. More recently the Copyright, Designs and Patents Act of 1988 included patents and registered designs and drew the distinction between various forms of creativity with a broad air brush line. It brought confusion which remains to this day.

The 1956 Act established that rights could exist in unpublished literary, musical, dramatic or artistic work in any form, any quality, any scale and any craftsmanship. It extended copyright restrictions to reproduction in any material form, publishing, performance, broadcasting, transmission by diffusion, adaptation such as translation, transformation to a different style, or an arrangement or transcription of a performance. Finally it established that the person commissioning a creative object is entitled to certain rights while an editor, sound recorder or producer has rights in relation to the publication and an author is entitled to copyright in other respects.

The 1988 Act went a bit further and added the concept of secondary infringement such as possessing or dealing with infringing copies and providing the means for making infringing copies. Importing infringing copies was also covered. The Freedom of Panorama was included – images taken of or made in public spaces and things visible within it - as was copying an artistic work for the purposes of advertising its sale, copying and distribution of copies of abstracts and technical articles, playing sound recordings for a non-commercial club or society, recording for time shifting, free public showing of broadcasts, provision of subtitled copies, and archive recording.

Finally it set up the concept of the moral right of the creator. This right must be asserted at the time of publication. It provides for objecting to derogatory treatment of a work, the right to object to false attribution and a right to privacy in certain films and photos.

In all countries that are members of the Berne Convention copyright is automatic and does need not be obtained through official registration with any government office, although doing so provides *prima facie* evidence of validity. Once an idea has been reduced to tangible form, for example by securing it in a fixed medium (such as a drawing, sheet music, photograph, videotape or computer file), the copyright holder is entitled to enforce their exclusive rights. The original copyright owner may be the employer of the author rather than the author himself or herself if it is a "work for hire", and this may depend on the terms of contract.

6.1 EU DIRECTIVES

The rights are largely extended by the EU Directives and those noted below indicate how complex the issue of creative protection has become: :

- Council Directive 87/54/EEC : Legalised protection of topographies of semiconductor products.
- Council Directive 91/250/EEC : Legalised the protection of computer programs.
- Council Directive 92/100/EEC : Determined rental and lending rights and certain rights related to copyright in the field of intellectual property.
- Council Directive 93/98/EEC : Harmonized the period of protection of copyright and certain related rights.
- Council Directive 93/83/EEC : Coordinated certain rules concerning copyright and rights related to satellite broadcasting and cable retransmission.
- Directive 96/9/EC : Covered the legal protection of databases.
- Directive 2001/29/EC : Harmonised certain aspects of copyright and related rights in the information society. This is often called the EU copyright directive.
- Directive 2001/84/EC : Covered the resale rights for the benefit of the author or creator of an original work of art.
- Directive 2004/48/EC : Dealt with the enforcement of intellectual property rights.

The EU Directive 2001/29 was, at the time, the most heavily lobbied measure passing through the European Parliament and, in its final form, it included very narrow exceptions to anti-circumvention measures and exclusive rights. Thus it is often regarded as a victory for copyright owning interests - publishing, film, music and major software companies - over content users' interests.

Some helpful limitations were set out including the transient or incidental copying as part of a network transmission. Hence internet service providers are not liable for the data they transmit, even if it infringes copyright, and neither are television or radio companies who make copies for playout servers. This is a relevant issue for ISPs and peer to peer services. There is a distinction between the reproduction right and the right of communication to the public or making available to the public. The latter is specifically intended to cover publication and transmission on the internet.

6.2 THE DIGITAL MILLENNIUM COPYRIGHT ACT 2000

The Digital Millennium Copyright Act (DMCA) in USA criminalised production and dissemination of technology intended to circumvent measures that control access to copyrighted works. A key exemption was the direct and indirect liability of internet service providers and other intermediaries.

Exemptions for circumvention exist where the format has become obsolete (video games), dongles for computer programmes where the apparatus to run it is no longer reasonably available in the market place, literary works that render the text unusable by text to speech converters, firmware in wireless telephone handsets required to enable the user to connect lawfully, or AV works which use security systems that create security flaws on a user's computer equipment[6].

DCMA does not specify what should happen with links to infringing material and it makes it too easy for copyright owners to encourage website owners to take down allegedly infringing content and links which may, in fact, not be infringing. When website owners receive a takedown notice it is in their interest not to challenge it irrespective of any fact of infringement, simply because they avoid the risk and costs of litigation.

6.3 DVB AND THE COPY PROTECTION SPECIFICATION

The DVB project published its Content Protection and Copy Management (CPCM) protocol in 2007[7]. It is intended to manage content usage from acquisition into a compliant system until its final use or export from the system. Within this scope it protects all content forms such as audio, video and associated applications and data.

Acquisition into and exchange of content within a CPCM environment by networked consumer devices should be easy. The authorised domain is one of the key concepts in the specifications. It should result in the registration of all of the media apparatus within a single ownership both within the main home, secondary homes, vehicles and mobile, and the need to register, uniquely and ideally autonomously, any CPCM compliant content within that system before it can be used.

How practical this is for the consumer or the content provider to control in practice remains to be seen. From a consumer's point of view the protocols form a hidden set of obstacles which are inevitably going to fail to inter-operate. It has the smell of foxhunting about it – the unspeakable chasing after the inedible – and it would seem to represent the collusion of commercial interests in the apparent absence of consideration of consumer convenience.

6.4 THE UK DIGITAL ECONOMY ACT 2009

The UK's Digital Economy Act 2009 may have been subject to intense lobbying by those representing the interests of the established business models in rights management. It is a curious thing but legislation brought into play as an immediate reaction to threats or vested interests tends, so often, to be flawed. This act covered a number of topics but the ones with which we might be concerned include:

- The online infringement of copyright, including music companies' rights, and penalties for infringement.

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6 This is a reference to Sony's approach to copy protection which became a major issue in 2002 when it was revealed that Sony CDs could introduce a root kit modification to the BIOS of PCs.

7 See also the Digital Living Network Alliance (DLNA) specifications for networked consumer apparatus.

- Internet domain registries.
- Amendment of the Communications Act 2003 requiring Internet service providers (ISPs) to disclose details of customers who repeatedly infringe copyright, on production of sufficient evidence, with a possible fine of £250,000 for non-compliance.
- The requirement that ISPs block access to sites that allow "substantial" infringement.

The Act enabled temporary suspension of Internet connections for repeat infringers of copyright following warnings from their ISP. Other provisions in the bill include an amendment to the Copyright, Designs and Patents Act 1988 to increase the criminal liability for making or dealing with infringing articles and making, dealing with or using illicit recordings to a maximum of £50,000, so long as it is done during the course of a business. It seems it tacitly accepts that private use, being not in the course of a business, is acceptable.

TalkTalk, one of Britain's biggest ISPs, criticised the bill and have said that they will fight in court requests to cut the Internet access of its subscribers. An article in New Scientist magazine claims that the bill is inspired by the Anti-Counterfeiting Trade Agreement which itself is designed to halt losses from Internet piracy. As the term ISP covers web hosts and domain registrars this may be used to cut off, or censor, websites in the UK which infringe content.

7 THE COMPLEXITY AND THE SUMMARY

Copyright should cover all created works: those intended for television services form only a part. What defines a creative work could be strongly debated but, broadly it is art – and thus it is a creation - if someone says it is.

The distinction between a design, an artistic work and a patentable process including software and associated algorithms has become blurred. It is increasingly impossible to devise something which is so novel that it does not build on some technology, artistic expression or mode of publication which has been somewhere in the world registered or placed in the public domain, for example, as an expression of prior art. The sheer numbers of those graduating in all fields around the world ensures that this mayhem will increase. And there is no obvious remedy, neither for those whose efforts take their work to high commercial value nor for those whose effort, being just as worthy, but which unknowingly invoke the works of others.

The current state of copyright owes a lot to the past so here is the heads up view so far:

- Copyright is an old legal concept. It goes back, at least in England, to the 13th century.
- Mostly it continues to reflect the commercial interests of the publishers and not the creators.
- It is very difficult to work out ways in which each individual creator – and we can all be creators now – can be recognised and rewarded should any of our efforts be taken up. Raising copyright fees simply based on traffic or the sale of blank media is the easy bit. But it is also like asking every honest person to pay the cost for the few, possibly commercially significant, dishonest operators. So much easier to share out any revenues to the top 100 in any field.
- Improvements in technology in medieval times were tracked by increases in literacy and thus demand. The parallel today is that computer literacy is rife and thus so is demand. Our knowledge-based economy places a high value on education and the use of computing devices.
- Technology developments allowed new formats for creative works and enabled the increasing use of one format to convey the impression of another.
- Legislation has either lagged technology or social behaviour – usually both. Historically there has been a delay between an emergent technology and legislation intended to protect its abuse. There has been no need to have an accurate future vision which would inform how an emergent technology might be used. That is not the case today.
- In more recent times greater recognition of the role of the creator has been given. But these days we can all be creators at some scale. Perhaps the fall in individual artist record sales is not due to copying but simply that competent musical expression is now to be had more widely – there is more good music being created.
- We still suppose that there will always be a publisher through whom all things may pass.
- Existing legislation tries inadequately to bridge the widely different cultural and commercial backgrounds in the regions of the world, and mixes subjective arts with the objective domain of patents and designs.

- Current legislation tries to be prescriptive about social and ethical norms in a domain where these are challenged more quickly than any analyst's report identifies.
- There is no such thing as an idea diode – once knowledge is released it cannot be recalled.

8 THE PROBLEM SPACE

The problem is the collision of hard digital technologies with the soft side of rights protection.

A few centuries ago it was expensive to set up a printing press. Paper was necessary and it too was expensive. A display screen is effectively infinitely reusable paper, and the technology has improved the lifetime, durability, power usage and reduced manufacturing cost. Barely a century ago an audio performance had to be heard live or not at all. Now the audio performance can be made available at an arbitrarily good quality at any time anywhere in the world. Once upon a time the Master of Revels determined what could be performed in public: now almost anything can be presented as a visual art, captured in 3D and shown at any time anywhere in the world.

Copying a book is a process of bits to be captured, stored and distributed. The same is true for all of the forms of art. Even works in three dimensions can be accurately copied and printed at any scale using scanners and 3D printers. Quite possibly other senses such as smell and touch will be assaulted by new sensations which can be distributed over arbitrary distances. These too will clamour to come under the spell of copyright protection.

The physical cost of content in digital form is almost negligible. All the HD movies that an individual might retain and watch in an adult life at eight hours per day only amounts to some 28TB. At current costs that would cost less than £1500 but, with the inevitable fall in cost per byte, an adult starting their watching life now might see that cost fall by a factor of 60 or 100 by the time of their 80th birthday.

The power required for distribution, routing, storage management and presentation devices may become a limiting factor if present data infrastructures persist. Peer to peer architecture distribute the power and look like cloud computing. The concept of the ISP as the communications gateway may change as a consequence and other nations follow the example of Finland in declaring access to the internet as a human right. Centre-less ISP operation may be one of the *de facto* solutions to excessive loss of personal privacy to corporations and governments who see the public simply as revenue sources. The technologies for this exist, and the potential to engage anonymity is a key feature of digital communications.

Curiously, peer to peer operation is just the kind of technology which is being claimed to cause so much problem for entertainment content. It may be time for a study to see how it may be managed for the adroit benefit of those who created, prepared and published or made available creative works.

We need to consider the role of the human and the role of machine along the whole creative chain. In an earlier era the dividing line between machine and human was easy to make. A human punched out a pianola roll and the organ grinder made out of it a performance. There is a case to be made for creators of the original musical work, the musical arranger, the manufacturer of the playing machine, the producer of the pianola roll and the showman in charge of the presentation to the public. Each has a role.

What other rights are to be observed? The person who makes a sketch of the scene of the performance? The person who takes a photo of it? The person who makes a video of it? The person who makes an audio recording of it? The person who makes a note of the melody or of some aspect of its arrangement? The person who describes it accurately to a friend who might lack the hearing or sight which might be considered so essential? The person whose family video just happens to have this as the equivalent visual or audio wallpaper. Or the person who takes a mobile call in the vicinity?

For each of these a specific remedial solution could be composed, but it would not be one which could be applied generically. And what should happen when a machine appears to invent, compose something or play something novel apparently in its own right? Any programming may not necessarily be deterministic so it is hard to claim that the programmer(s) have a hand in this[8]. Or the manufacturer of the machine or its component parts none of whom could have had any inkling of its potential for such creation. Who is the author of heuristic works or works which depend on the unknowing participation of others. Where should a border line be drawn?

When does a creative act experienced posthumously become owned by the public? Is an archaeological find 2000 years old a copyrightable creation? If so, for whose benefit is this justified, particularly since the concept of current nations is so very recent and is destined to be volatile?

Orphan works, those for which the original creator or their representative can not be ascertained by reasonable enquiry, remain a problem. Archive photographs and folk music tunes are examples of materials which might rapidly fall into this area. But does a work which is created anonymously in the public domain –grafitti for example – have an owner?

That raises the issue of fair use as there is little justification in enabling rights owners to claim a right of a specific use. It is up to the individual if they wish to read their book aloud or ask some else to read it to them, or to write out the text of an audio work. Or, as some feel enraged to do, burn, blow up, disrupt and destroy the work of others.

At some time in the future software will inevitably come into existence which will automatically learn how to decrypt anything and to present it in any form.

[8] A paper was introduced at a DVB meeting in 1997 and it outlined the concept of Krakatoa – a self programming environment – which used genetic program concepts with only three main principles.

9 THERE IS NO OBVIOUS SOLUTION

The solution must bring together the domain of rights and responsibilities with that of revenue earning potential, then reconcile it with the increasing need to provide access in a convenient manner and with the increasing flexibility of digital systems. We would like the solution to :

- Somehow be uniform across all media forms and all forms of presentation.
- Not penalise legitimate use of content, storage and processing.
- Not result in an administrative burden. This may conflict with the need to establish some kind of barrier which allows for payment for the content itself to be captured whilst not imposing the possibly high costs of payment for the protection of the content.
- Recognise the effort and investment taken in the creative process as some content types will only ever be experienced at the end of digital connection.
- Recognise how we use content in a world where the form in which it is provided does not dictate the form in which it is experienced. For example background on the 'phone while networking on FaceBook using Skype.
- Recognise its value in the context of the environment and the social context in which it experienced.

9.1 BLANK MEDIA LEVIES

Once upon a time there was much commercial lobbying for a tax on blank analogue cassette tape. Some territories levy a tax for digital media[9]. We need to recognise that storage may be used for content other than audio and video, and that taxing blank media brings its own suite of problems[10]. Amongst these is that:

- There is no method to feed back the revenues of a levy or tax to the creators or rights owners whose efforts might be recorded.
- Blank media may be used repeatedly and yet there is only a single levy.
- Most redistributive methods assume that the most popular current artists should be given the greater share of the levy. This significantly disadvantages equally valid minority performers.
- The levy penalises those whose use of blank media is entirely without risk of copyright infringement. This is an obvious example in which the innocent have to pay for the sins of the few.

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9 Belgium, for example taxes a 1TB external hard drive at 9€ - about 12% of current UK retail value. Finland taxes a 250GB disk at 21€. These and other territories may levy a charge for USB sticks and other memory devices.

10 See http://en.wikipedia.org/wiki/Private_copying_levy for a primer on the various levies in use.

- A levy may ignore the impact of peer to peer service delivery in which it becomes unnecessary for local storage to be excessively large.
- A levy based on retail value will decline as storage capacity increases as fast as retail price falls.
- A levy based on the capacity of storage severely penalises legitimate use, as does one based on traffic volume. One might imagine that a refund could be made were it possible to show that the media had not, could not, and would never be engaged in handling copyright material.
- A levy with a high administrative cost penalises all parties and returns even less to those whose content may be involved.
- A levy could use the monies returned to fund cultural activity and while this is laudable, it is not equitable.
- A levy which is bypassed by most of the people to whom it might be applied risks making criminals of most of its citizens whilst arbitrarily penalising the few who may be trapped. As ever it may be the lawyers who win.

9.2 FREE CONTENT AND CHARGE FOR LIVE PERFORMANCE

Content experienced as a live event certainly has great value. If recordings could be copied and distributed digitally freely this would only address the issue as far as contemporary performance is concerned. In the conventional business model there is significant profit to be made from the long term availability and use of content. And the estates of creators and performers benefit significantly, in current business models, from royalties paid long after death.

Quite a number of creators – words, music, graphics for example – intend that their works should be freely available without payment provided there is acknowledgement. Creative commons is one approach which seeks to establish a range of rights over content.

9.3 TAX THE DELIVERY METHODS

We could tax the delivery in some way – perhaps by measuring the megabyte count. There is the difficulty of recognising the media content and resolving which is legitimate and which is not. And we would need to do this without encroaching any more on personal privacy or providing methods which can, inevitably, be so abused. There will always be ways to circumvent this and the resulting anarchy will result in a painless revolution which will happen by default.

9.4 CHASE THE END CONSUMER

For some content provision it may be possible to track the eventual consumer and the time, place, apparatus and social context and to raise a charge accordingly. It might be practical if, for example, all systems, software and embedded silicon, and all forms of content the world over, complied with DVB's CPCM protocols. This is truly not likely and, as it provides the tools for censorship and restricting the freedom of communication, it is likely to be bypassed.

It will fail in practice too, as anyone who has had problems registering computer software to use on a rebuilt or replacement machine may have witnessed. The parallel for entertainment content would be the need to register a library of content so that it is usable on a newly acquired system.

9.5 ON THE HEADS OF GIANTS – LET THE PAST FREE

This is the Newton paradigm: nearly everything that is done today is dependent on the past. Today's creativity is available because it rests on the shoulders of previous giants, even if we cannot identify them.

Closely allied to this is the increasing universality of ideas and creation. The world is no longer a place of few educated persons working in privileged surroundings with a crafty bunch of woodcarving copyists waiting in the wings. In an era when, for example, Chinese universities produce more graduates each year than the adult population of the UK it is inevitable that the same idea will be created in more than one place at the same time. There is not enough time to check if an idea is prior art before using it without risking losing its window of market opportunity. Any clash has to be argued about and resolved after the event. Thus we might propose to *shorten* the period of copyright from 75 years to two years on the basis that if you cannot make a buck in that time then the content is not worth it.

Although this sounds as though it should apply more to inventions, it is just as applicable to content creation. It suggests that it is creativity itself which is up for taxation. We note that the scope of copyright legislation encompasses designs and patents.

9.6 BE THE FIRST TO MARKET – AND WITH ADDED VALUE

Those wishing to provide content want to make access ever more convenient – this is a competitive factor in reaching the market. So the principle would be to come to market as soon as possible with the best marketing strategy.

Some ideas, such as music or machines, take a large effort and not a little insight to bring to the point where they can be commercialised. There is a well established principle in patenting that should provide protection for a period provided that it is respected in all nations. How long this protection should be in place for and what effect it has on innovation or the progress of development needs discussion.

Many millions of innovations are made annually. Which ones were truly first and without any precedent would be very hard to establish.

9.7 CHANGE THE RIGHTS GAME – CREATIVE COMMONS AND COPYLEFT

We could abandon the concept of absolute copyright but introduce a spectrum of rights which have to be explicitly accepted – not even registered – at each instance that the content is made available on any device. In other words we establish a moral framework. Creative commons[11] provides a range of options.

[11] See http://en.wikipedia.org/wiki/Creative_Commons.

It intends to provide "institutional, practical and legal support for individuals and groups wishing to experiment and communicate with culture more freely." It intends to reject "a culture in which creators get to create only with the permission of the powerful, or of creators from the past" It provides an alternative to a culture dominated by traditional content distributors intent to maintain and strengthen their monopolies on cultural products such as popular music and popular cinema.

Copyleft is largely applicable to computer software. It provides that any enhancements to code shall be made with the same sharing ethos as the original and distributed similarly. In practice it implicitly recognises that, particularly in solving problems using practical machines, many people will arrive independently at a similar if not identical solution. There's an obvious advantage in making the code available for others to improve it on the same basis. It does not prevent a business opportunity from being realised: while the code itself can not be sold, services using it certainly can.

The parallel with entertainment media is manifold because it implicitly accepts the "heads of giants" principle and it requires acknowledgement of source contribution. In practice it almost certainly becomes a moral duty to declare a contribution which was significant in terms of the overall creative piece. Most creators take pride in providing such citations.

For the end user there is nothing to pay – as is the case for some software – unless you make a voluntary contribution which will assist the creators to continue their work, which many do. In recent times there have been attempts to provide content free, with the proposal that those who take it consider making a payment which reflects its value to them. This idea has been tried with complete music albums, theatrical performances and restaurants successfully[12], given that it requires that the culture within which it was implemented was one which maintained, and could afford to maintain, a moral ethos which led them to proffer a valid payment according to their perception of its worth.

9.8 CHANGE THE BUSINESS MODEL

The behaviour of youngsters online hints that existing copyright laws are not working. As rights owners plough on defending their old business model positions they resort to more extreme behaviour such as demanding that internet users are cut off after they are caught three times. No media company can afford to yield any ground on copyright but in practice established media have had to make concessions.

Universal are leading a model to move to a subscription model for music and away from unit sales. Services such as Spotify are showing a path for continuous revenue generation. Online newspapers have remained free from piracy largely because they do not charge[13]. Copying may even help to promote the real thing.

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12 Any busker knows only too well the value of honest assessment.

13 Though that might change if the early data showing a slow and low level of take up for subscriptions to the UK's Times newspaper on line is indicative.

9.9 WIND UP THE LAW – BRING IT ON

Talk to a solicitor and they are likely to say that copyright is a specialist area of law, and a very expensive one in which to become engaged. It is very lucrative, and therefore its practitioners have little interest in change: no turkey ever voted for Christmas.

To enable change, lawmakers must put aside the pressure from commercial lobbying and seek a legislative framework which better balances consumer practice, rights protection and revenue generation.

The technology used in most peer to peer services uses ISPs to form a part of the distribution network. ISPs might not be knowingly engaged in hosting the content themselves. Traffic analysis can be used to trace those whose machines could have been involved in serving copyright content. Of course, peer to peer methods carry much that is legal and not subject to copyright protection and therein lies its weakness.

Recent legal activity in England[14] resulted in the music business Ministry of Sound commissioning solicitors to seek damages from those who, it claims, have been engaged in providing file sharing of content to which it owns the rights. It appears that very few of those accused have been involved in knowingly handling the content and just a handful may have actually been sharing it.

What is more likely to have happened is suggested by the statement from ACS:Law - one of the companies involved in seeking damages for lost revenue - that they " ... have evidence one of our clients' copyrighted works was made available through a file sharing network to others from the internet connection they have. In other words the work was uploaded not downloaded and is distributed many times over and given to others who in turn make it available to many others. All this is done without reference to the copyright owner who receives no payment for this often repeated transaction denying our clients income."

Thus those accused may well be users of peer to peer software and their systems may have been used to host copyright content from time to time but it is a long call to accuse them of intentionally handling the specified copyright content.

It is worrying that the ISP was requested to provide subscriber details and, rather than determine whether there is any rationale for so doing or determine whether there was any persistent behaviour in respect of the specific claimed content and to run the risk of a law suit they have simply provided names and addresses on demand. We have already noted that this was just one of the shortcomings of some of the recent legislation.

14 See http://www.guardian.co.uk/money/2010/jul/17/file-sharers-legal-action-music-downloads

9.10 BE RADICAL – IDEAS UNLIKELY TO MATERIALISE

Let us imagine that we have a society which has, on the whole, a moral compass which is true. There are the outliers – those who would attempt to buck the trend – and there is the awkward issue of the cost of asserting rights as the legal costs for the lone person and for the corporation are, at present, strongly in favour of the larger corporation. If this were to be altered so that any claim had limited costs and penalties scaled to each side, accompanied by a very tight timescale and with precise evidential rules, then one might expect very few claims to be made because the appellants will recognise either the moral right of precedence or the Pyrrhic cost of success.

They would be much better off putting energy in to marketing and selling the content directly. There is still a rationale for a consumer to pay for content. For example by doing so there could be significant added value such as quality or collateral merchandising provided[15].

9.11 THE ZEN APPROACH

A more adaptive approach to control might take the path of working with the technologies and not trying to conform them to old methods of revenue management and control. Consider that digital delivery by Internet methods is pervasive, consumer practice is progressively what it is, much of the traffic and stored content is legal and moral evasion will take place if the price is not right.

[15] We certainly do need to ask where the quality is going because the sound, film and TV studios capture and process content to a quality level which is almost never provided to the consumer. Indeed, under most instances of broadcast or internet provision it would be impractical to do so.

10 CONCLUDING REMARKS

All intellectual works – whether artistic, musical, constructional or technological – are ultimately for the benefit of humankind. There is a cost involved in their creation development and distribution and this cost needs to be met somehow, but not necessarily directly, by the end user.

At the starting point for this paper we noted that only print received protection. The cost of entry into the printed world inhibited uptake. Governments and theocracies continue to regulate supply to manage their peoples. We are in a different era, one which is technorate, computerate, almost literate, partly numerate but almost completely ignorant (ignorate?) of the rights of content use.

It is a wonder that so many billions are still being made. It suggests that the large claims for revenue lost due to file sharing are highly inflated and based on the false assumption that the content in question would have been bought or hired. The implication is that some content is implicitly considered by some users to be overvalued; an observation which may be made of any content used as visual or sonic wallpaper.

The big enabler of this shift in cultural behaviour is digital technology – both storage and networking. Storage will become cheaper and networking can only become more intensive. The challenges to the current commercial models of retrieving a revenue from creative content will increase.

The recorded sound industry realised far too late that its content could be so readily exchanged digitally by the very same technology that it used to capture the content in the first place. It believes, wrongly I think, that it could have prevented this from happening. The video industry is now faced with a parallel event overtaking their industry. It is time to do two things:

- Change the commercial model whereby revenue recompenses expense in some measure proportional to talent and the rather nebulous concept of cultural contribution.
- Change the rights model before technology bypasses it entirely and recognise that the world is full of educated creators eager to use what has gone before to create the next wave.

Both of these imply radical change which would need to be implemented globally. That will be difficult because no content-based business would vote to cut a current revenue stream however badly it may have declined. It is these same businesses who populate the political lobbies and not the consumers.

Failure to do this could see a rapid revolution in the way in which consumers react. The significance of peer to peer working in terms of core network load, storage management and electrical power has not been fully appreciated by the entertainment content industry or by legislators. Any technologist with an experience in network architectures will point out the significance of SOA[16] and cloud computing concepts on future commercial operations – including the storage and distribution of creative, and formerly copyright, content.

16 Service Oriented Architecture (SOA) can be established to distribute processing and storage.