The case for a Digital Lending Right

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My method is to look at something that seems like a good idea and assume it's true.
Bill Joy, co-founder, Sun Microsystems

Abstract

Those involved with book creation, distribution and consumption are about to encounter the winds of change currently assailing the music industry. The main causes of this impending upheaval are: 1) dramatic improvements in e-book technology, 2) the number and scale of current book digitisation projects, 3) the failure of Digital Rights Management technology to prevent unrestricted proliferation of digital resources, 4) public expectation that information and resources are immediately accessible and 5) the change in information seeking and consumption habits from consulting few resources in depth to "horizontal skimming" of many.

These developments catastrophically reduce the efficacy of current copyright laws to balance the competing public interests of the encouragement of creators against promoting widest possible access to their creations.

This paper presents an approach to the rebalancing of these public interests based on embracing inevitable technological changes. The proposed approach promotes efficient and free public access to copyrighted books, and rewards creators based on how and how often their works are accessed. Like the Public Lending Right, the proposed "Digital Lending Right" is funded by taxation to encourage a richer and better-informed society through the creation and consumption of publicly accessible content.

IN 2006 EMI, the world's fourth-biggest recorded-music company, invited some teenagers into its headquarters in London to talk to its top managers about their listening habits. At the end of the session the EMI bosses thanked them for their comments and told them to help themselves to a big pile of CDs sitting on a table. But none of the teens took any of the CDs, even though they were free. "That was the moment we realised the game was completely up," says a person who was there. [ECONOMIST 2008]

Introduction

As it was with CDs, so it will be with books: the distribution and consumption of information is moving from analogue to digital, from the physical to the electronic and from the whole book to the chapter, the page, and the paragraph.

After several false starts, e-book readers providing a high quality reading experience will finally become popular and cheap consumer devices during the next 3 years. Small, lightweight and wireless networked readers such as Amazon's Kindle will rapidly evolve in function and as happened with the digital camera and MP3 player, will become sophisticated, widely used and inexpensive commodity items.

Also within 3 years, almost all published resources held by most libraries will be available in digital form. Google's book scanning project started in 2004 is reported as having a 10-year target of 32 million books [Note 1].

Large commercial digitisers such as Google and Amazon will form partnerships with authors and publishers to profit from their investments in digitisation.

Readers will expect the same convenience of online purchasing and downloading that has been embraced by consumers of music [Note 2] and the online-book retailing industry is gearing up to meet this demand [Note 3].

Whilst fiction will still be read from start to finish, non-fiction will increasingly be searched and consumed from hyperlink to hyperlink, from paragraph to paragraph [Note 4]. Academics will construct sophisticated analysis and commentary systems linking texts [CLIR 2008] and services promoting shared tagging, annotation and embedded-hyperlinking of books will proliferate to add value to these electronic resources, resources which will be otherwise of little commercial value due to the practical ineffectiveness of copyright to regulate distribution and use [KELLY 2008a].

Most of the content being consumed in this fast-moving, digital world is protected by copyright.

Copyright is an attempt to balance two competing public interests: the encouragement of creators by rewarding them for their efforts and the widest possible access to (and hence social benefit from) their creations. However the increasing availability of works in digital form and the failure of digital resource management (DRM) technologies to prevent unauthorised copying have led to a practical failure of copyright to protect the interests of creators.

This paper proposes an approach to addressing this dilemma based on the compulsory licensing of Australian publications for private, non-commercial use by Australians, and rewards rights holders in proportion to the number of times their works are accessed. Like the Public Lending Right, the proposed "Digital Lending Right" is funded by taxation to encourage a richer and better-informed society by the creation and consumption of publicly accessible works.

The proposed approach deals fairly with the problem of "orphan works" (those works protected by copyright but whose owner is either unidentified or unlocatable, thereby making the negotiation of access impossible), and out-of-print works by encouraging new usage of often obscure and hard-to-access works and by compensating rights holders if and when they are identified.

Copyright in crisis

The exchange of recorded information has moved rapidly from physical to electronic; from analogue to digital. This revolution has brought many advantages: speed, accuracy and virtually free transmission, storage and replication. It has brought abundance. This revolution is the basis for unprecedented access to information and opportunity for self expression. However it's not a revolution unless there are losers. The losers in this revolution are twofold: those based on providing the physical carriage of information (the printers, the bookshops in malls) and those reliant on the inertia and substance of physical media which provides an impediment to cheap and faithful reproduction (the publishers and authors).

Kevin Kelly has characterised the internet as "a copy machine ... a super-distribution system, where once a copy is introduced it will continue to flow through the network forever" [KELLY 2008a].

Until now, the primary focus of copyright violations has concerned software, music and film. But high-profile instances of book pirating [Note 5], the increasing number of scanned textbooks becoming available online [Note 6] [Note 7], and a growing realisation that as book distribution moves from paper to digital, pirating will become even more widespread [Note 8], have justly raised concerns amongst those making a living from the provision of books.

A technological solution, digital rights management, was seen by many as the way to rebalance digital distribution in favour of rights holders. But as the failure of DRM to protect resources and the costs it imposes have become widely understood [Note 9], DRM appears to be a discredited solution, beset with systematic problems of security and usability.

Although some believe that copyright is no longer needed to encourage creation and distribution [Note 10], this paper takes the traditional view that significant benefits accrue to society from at least some form of copyright and hence an approach which protects the interests of rights holders whilst recognising Kelly's confronting reality that "the internet is a copy machine ... [and] ... when copies are super abundant, they become worthless" [KELLY 2008a].

A Digital Lending Right

The Australian Government has operated a Public Lending Right (PLR) scheme since 1974. The PLR compensates (to some degree) creators and publishers for loss of income resulting from their works being available in public and educational institution libraries. Only "Australian" creators are eligible for payments [PLR 2007].

The PLR bases compensation on an annual survey of books held by a sample of libraries. In 2006-7, the payment-per-copy of an eligible book was $1.47 for creators and $0.3675 cents for publishers. The PLR distributed just over $7M to 8525 creators and 341 publishers. The Educational Lending Right (ELR), that part of the scheme covering educational institutions, distributed a further $10.5M to 9887 creators and 374 publishers.

The idea behind PLR was the starting point for Joshua Foley's proposal for a "Digital Lending Right" which would compensate creators and publishers for loss of income resulting from digital materials being lent by libraries [FOLEY 2001]. In a related approach, albeit not from a library perspective, [ECKERSLEY 2003] explored compulsory licensing of digital materials with an extensive description of "virtual market" mechanisms. Amongst the many other related approaches are voluntary ("opt in") licensing proposals from the Electronic Frontier Foundation [EFF 2008] and [FISHER 2004].

The problems associated with DRM have prompted numerous explorations of alternative ways of balancing fair compensation with widespread access. A commonly proposed approach is "compulsory licensing". Compulsory licensing is a legally enforced licensing of copyright holders' exclusive rights without their permission, but usually with compensation. Typically, the government would make an exception to copyright law to make certain material protected by copyright available for some uses without requiring the permission of the copyright holder, but in such a way that the copyright holder would not be disadvantaged.

For an alternative perspective on DRM and incentives to creators based on personalisation of content and detection of infringers, see [AICHROTH 2003]. For a related discussion on licensing of the intellectual content of text books as a method of reducing costs see [GRANOF 2004].

The compulsory license approach brings with it problems such as potential fraud and economic inefficiencies (unfair distribution of payments, unfair funding, distortion of supply and demand through non-market manipulation of incentives to create and costs to consume) as analysed by [ECKERSLEY 2003], [LIEBOWITZ 2003] and [DHAMIJA 2003]. However, a compulsory licensing proposal has to be evaluated not only on how it addresses such problems but also on how it provides fair access to orphaned and out-of-print works, and how it compares to the polar alternatives of attempted DRM management of resources (characterised as "information feudalism") and the practical abandonment of enforceable copyright ("information anarchy").

If commentators such as Kelly [KELLY 2008a] [KELLY 2008b] and Lessig [LESSIG 2001] are correct in their belief that information, once digital, is impossible to control and that it is counterproductive to attempt to do so (and the evidence of widespread "file sharing" and abandoned DRM schemes lend overwhelming credence to their arguments), then there doesn't seem to be any perfect system for balancing the competing interests of rights holders and the public; our task is to make the best of the reality we inhabit.

A proposed system

A limited-scope compulsory licensing system is proposed which will allow Australians to freely access all books published in Australia for private (non-commercial) use and which will compensate rights holders in proportion to how and how often their works are accessed. The proposed system takes the form of a national repository of digitised books, funded from general taxation and operated by a commercially disinterested arm of government within the library sector.

Coverage

The coverage of the proposed system is determined by two conflicting requirements. The first is to create a critical mass of material which will provide a viable alternative to piracy for information seekers. The second is the difficulty of navigating international copyright agreements [Note 11].

This proposal limits the scope of its compulsory licensing to books published in Australia, but unlike the PLR, it extends compensation to all rights holders, regardless of their nationality or place of residence. It will strongly encourage rights holders of books published outside Australia to submit their books for inclusion in the system, and it is hoped that the successful operation of the proposed system will provide an economic incentive for them to do so.

Being non-exclusive, the compulsory license allows the rights holder to make any other use of their works.

This system is intended to only cover private educational and entertainment uses; it does not provide access to works for other uses, such as commercial and government use. Some works, such as business/market intelligence and surveys, are targeted exclusively at commercial or government users, and hence are exempted from compulsory licensing. Otherwise, all books ever published in Australia, both public domain and subject to copyright, are included.

Form

The books in the repository will be stored digitally. Some recently and currently published books may be provided to the repository by their rights holders in digital format. However, many recent books and all old books will need to be scanned and their text OCRed. Contributions of digital books will be encouraged by recouping the cost of books requiring digitisation from payments to rights holders.

Books will be fully searchable (to the extent allowed by OCR quality) and viewable by the page and downloadable using similar presentation methods employed by several online book viewing web sites (such as Internet Archive's Text Archive, Google Books and Amazon).

Access

The repository will only be accessible from within Australia.

Visitors will be able to search for books based on author/title/date/subject metadata and the full text contents of books. Search results will show work summaries from which the visitor may proceed to view more details about the book, browse page by page, search for text within the book, possibly view annotations, reviews and scholarly commentaries, and optionally download a digital copy of the book for local viewing. There will be no cost to visitors accessing the repository.

The downloaded copies of the book will be available in common formats and will not be protected by DRM technologies. The downloaded file will be able to be transferred to another device owned by the downloader. However, the conditions of download will forbid the downloader from redistributing the contents because such secondary distribution would subvert the usage-based accounting mechanisms.

Instead, downloaders will be encouraged to distribute a URL containing a simple, short persistent identifier of the work which will take the recipient to an information page about the work within the repository so that the recipient can browse and download the file themselves. This identifier will be included along with the conditions of access at the start of every downloaded file.

The system will be designed to encourage this "redistribution by reference rather than content" behaviour; it will make it very easy to browse works online and download entire works, and hence will remove the incentive to break the conditions of access by redistributing contents.

On each entry to the system, visitors will be required to agree to the access conditions:

- that they are accessing the system for private use, not for commercial or government related purposes
- that they are accessing the system from Australia
- that they will not redistribute any works they download
- that they will not attempt to subvert the accounting of usage by the system to inflate or reduce access statistics (used for generating payments)

Visitors will not be identified by name. However, the system will record the visitor's apparent network (IP) address and will attempt to correlate visits, accesses and downloads using a browser "cookie". Recording this information greatly assists detection of fraudulent use (or "gaming") of the system by rights holders attempting to boost accesses to increase payments by revealing suspicious access patterns. However, visitors will need to be assured that this information is not being recorded and analysed to create a central database of "who is reading what" but solely to facilitate fraud detection and accurate usage information as a basis for fair payments.

Restricting access to web sites by network (IP) address is highly effective but not perfect [Note 12]. Hence, some successful accesses from endpoint IP addresses outside Australia are inevitable. This will be one way digital copies will "leak" outside Australia; other leakages will occur when people within Australia email or otherwise redistribute material. However, as the music industry has come to understand, there is no technological solution which can prevent redistribution of digital materials; the best approach is the provision of systems that favour the desired behaviour.

Payments

Rights holders may register to receive payments which are based on the usage of their works taking into account online page views and downloads. Rights holders will be compensated regardless of their nationality or place of residence. Rights holders of currently orphaned works will be compensated if and when they are identified.

Information from the Australian Bureau of Statistics (ABS) is used below to arrive at an estimate of the provision that will need to be made for payments to rights holders.

Over the financial year 2003-04, 80 million new books were sold by book retailers in Australia, valued at $1407M [ABS 2005a]. Over the same period, Australian book publishers sold a total of 129 million new books worth $1353M [ABS 2005b]. Sales by book publishers direct to final consumers (including libraries) accounted for $306M, and sales to retailers and other businesses intending to on-sell books accounted for the remainder of $1047M; of this sum, $191M worth of sales were exports.

The number of Australian titles sold was 84.4 million at an average publisher selling price of $8.89 (mass market paperbacks averaged $5.63, trade paperbacks $11.68, hardbacks $14.13 and books for the education market $8.21).

The ABS reports total royalties and fees paid by publishers to authors, artists, designers, illustrators, editors and others was $87.9M, and records "Ratio of royalties and fees to sales of Australian titles" as 11.6%. Given an average publisher selling price for Australian titles of $8.89, at 11.6%, the average royalty was $1.03. An average profit margin of 10.1%, equating to $0.90, was also reported.

Unfortunately, other costs broken down by title source (imported and local) are not given. However, printing costs of $317M over 84.4M Australian titles gives a printing cost per book of $3.75 per book. Wages paid to employees of the publishers designated as artists, designers, illustrators, editors, publishers, typesetters is probably mostly attributable to Australian titles and accumulated at $55M, or $0.65 per book.

Consequently, an approximate estimate of cost breakdown for an average Australian title from the ABS publisher data [ABS 2005b] is:

	$
Royalties to authors, artists, editors	1.03
Wages to inhouse artists, editors, publishers, typesetters	0.65
Printing	3.75
Profit	0.90
Other (not classifiable from the report)	2.56
Total	8.89

There is not enough information in the ABS report [ABS 2005b] to apportion costs such as sales and marketing, distribution, other wages and other doubtful debts amongst imported and Australian titles, but some of these costs apply regardless of electronic or physical production (such as costs of office support, office rent, interest). If we make an assumption that half of the unclassified $2.56 is unavoidable expenses of producing books, regardless of the distribution method, and if we then subtract printing expenses (no longer required by electronic publishing managed by compulsory licensing), we arrive at a cost per Australian-title book to the publisher, including profit, of $3.86.

That is, if the 84.4 million copies of Australian titles produced by publishers were all sold in Australia (they weren't, but it isn't clear how many were exported although the value of exports was $191M), then a total of 84.4M x $3.86, or approximately $325M in compulsory license fees would fully compensate publishers and authors for their rights in 2004-2005 dollars, or approximately $360M in 2008 dollars.

Of course, some physical book sales would remain; there will be many consumers who want the physical book, and many titles for which the physical book is by far the superior format. As well, the compulsory licensing system will only allow usage for private, non-commercial purposes, so businesses and government will still need to purchase books, printed or electronic. However, $360M per annum is the upper limit of the compensation required at current usage levels.

Faced with a marginal acquisition cost of almost $0, readers could be expected to "consume", or at least download, more books. Books, requiring long periods of undivided attention, tend to take longer to "consume" than music, so exactly how much demand would increase is hard to estimate. A large part of demand for books at cost $0 is already met by libraries, and to a lesser extent from the hundreds of thousands of public domain online books available from services such as Project Gutenberg [PROJECT GUTENBERG] and Internet Archive's Million Book Project [INTERNET ARCHIVE MILLION BOOKS].

Additionally, a compulsory licensing system rewards rights holders of books now out-of-print, which by definition cannot be contributing to the new book sales reported by the ABS publisher survey. It could be argued that being out-of-print is a rational commercial market reaction to demand, and hence that accesses to such works will be negligible. However, as recent exploration of "long tail" of demand has demonstrated, the aggregate demand for relatively low-demand materials can be significant [ANDERSON 2004].

Assuming usage may double under compulsory licensing, resulting in a doubling of royalties and profit to creators and publishers, a reasonable estimate of the cost of compulsory licensing is $700M per annum.

As the repository grows (hopefully augmented with content contributed by overseas publishers) and usage expands, payments would be expected to increase proportionally.

The proposed system will record online page views and numbers of downloads. There are many practical policy details to be decided which are beyond the scope of this paper, such as how many pages of a work can be viewed by a visitor for "free" (that is, before the Government has a licensing liability for that work: physical and online bookstores currently allow visitors to reasonably browse titles for free before purchase), and how usage for non-free page views should be priced against book downloads.

Funding

It is proposed that payments to rights holders will be funded from general taxation. It can be argued that the encouragement of creators and access to information and entertainment is a public good, as are public libraries, public education, street lighting and policing. Although there may be philosophical or ideological arguments for or against that proposition, it is not the purpose of this paper to canvas them. The reasoning behind this compulsory licensing proposal is to address a failure of copyright to protect rights holders in the current digital environment and hence to ensure an ongoing stream of creations in the public good, and to do so as efficiently as possible. Alternatives to general taxation, such as duties on IT-related hardware and ISP taxes have been widely discussed (see for example, [ECKERSLEY 2003]) but all have at least as much opportunity for unfairness and inefficiency as raising the required revenue from a general progressive tax base.

Putting the amounts into context, it was estimated above that a pool of $700M would be sufficient to double the current "reward" to rights holders (creators and publishers), anticipating a doubling of usage stimulated by instant and easier access to a larger body of works (particularly those out-of-print) and practically zero cost of access.

There are two broad observations on the propriety of such expenditure.

Firstly, a roughly similar amount would be "saved" by Australians not having to purchase books for private use from after-tax income. Assuming a retail markup of 50% hence an average price of around $12, sales of 84M books would cost Australians around $1000M, but an unknown number of these 84M will continue to be purchased for private use as well as by commercial and government buyers. Hence a tax increase to pay for double the current consumption of Australian books (implicit in $700M figure) would be roughly neutral for Australian taxpayers with average book-buying habits.

Secondly, $700M is a significant but not huge amount in the context of the Australian Federal budget. It is just over 3% of the last budget surplus and less than 0.06% of national GDP [BUDGET 2008a]. The proposed "normalisation"/increase in the tax on "alcopops" is estimated to raise an increment of $893M in 2011-2012, and even the savings from the removal of a relatively minor concession such as the fringe benefits tax exclusion on meal cards is estimated to save $250M in 2011-2012 [BUDGET 2008b].

To the direct costs of funding the compulsory licensing must be added the loss of GST revenue from Australian retail book sales for private uses (unascertainable from ABS data, but assuming around total retail sales of around $1000M of books for private purposes, this GST loss may be $100M).

It is proposed that the operation and administration of the system is partially self-funded from rights-holder registration fees. The current PLR/ELR scheme distributes payments to a combined total of over 19,000 claimants and costs $0.375M per annum to run. It is estimated that rights holders' registration and payments in the proposed system will cost no more than an order of magnitude more than this, that is, under $4M per annum, less than 1% of the distributed payments. It is proposed that these costs be at least partially recovered from rights holders as initial and annual registration fees which will discourage frivolous or ambit registrations.

It is proposed that the costs of digitisation of a work be subtracted from initial payments to rights holders unless the rights holders contribute the work in digital format to the repository. Although digitisation costs will vary according to work size and format, the Open Content Alliance assert that an average book costs $30 to digitise [HAFNER 2008].

It is also proposed that the Government funds the access and delivery parts of the system from general taxation. The major costs involved are the initial digitisation of what is likely to be around 1.5 million books at a cost of $45M [Note 13]. Again, this is a considerable sum of money, but the cultural benefits of having such an incredible wealth of material instantly and freely available to the citizens of Australia makes this cost seem relatively insignificant.

Management

It is proposed that the system be operated by library professionals within the Government sector. It is vital that the operation of the system is conducted in a commercially disinterested manner by a trusted information professional group at arms length from rights holders and funding sources.

Anticipated obstacles and open problems

Being such a departure from traditional modes of providing access to information, the Digital Lending Right will encounter many objections and obstacles and will need to resolve many issues. It is beyond the scope of this paper to do more than merely raise some of the anticipated issues in the hope that they will stimulate discussion and further work.

Do digital books really make sense?

Despite great advances in display technologies, there is some scepticism that reading books on an electronic device will ever be preferred over paper. There are many advantages to electronic presentation, to be sure: adjustable font size, enormous capacity in a small, light-weight form, almost instant access, searching and annotation amongst others. But how rapidly will readers embrace digital books?

Extension of compulsory licensing arguments/scenarios to books

Most of the analysis of compulsory licensing has focused on music. However, music and books are consumed very differently: a piece of music is often replayed repeatedly, whereas books are reread comparatively infrequently.

If such a system were truly fair to rights holders, a voluntary licensing system would work just as well.

Compulsory licensing is initially required to create a critical mass of works. A system with only a few voluntarily contributed works is likely to fail because it is unlikely to contain works people will want, hence they will be disinclined to use it and hence the few works it does contain will be exposed to a small audience.

Equity for households without internet access

According to an Australian Bureau of Statistics survey over 2006-07, 64% of Australians have internet access at home [ABS 2008]. Some extra percentage will have access at school, work or from a local library, but for those without convenient access, a compulsory licensing scheme funded from their taxes may be of less use. However, there is reason to believe that internet access will continue its steady increase as shown in the ABS report, boosted by Government programs to make fast and affordable broadband accessible to 98% of Australians [DBCDE 2008].

Perceived protection of Australian book titles

Overseas publishers will interpret the effective cost of Australian titles to the Australian public being reduced to $0 as a subsidy, and hence anti-free trade. However, this observation can be countered by offering the same conditions and compensation to any overseas publisher wishing to voluntarily license their content to the repository.

Compulsory licensing will drive Australian publishers offshore

Publishing in Australia is optional and some publishers may choose to go offshore to avoid compulsory licensing. However, the operation of the proposed system is supposed to work in favour of creators and publishers; it is intended to be a viable approach to preserving fair income for rights holders in the face of the challenges to digitisation, and to increase usage of their works and hence income by making those works easier to access. Unless this proposal is viewed as overwhelmingly favourable by creators and publishers it will not be implementable.

The interests of booksellers and printers

Regardless of compulsory licensing, the decline in physical product will affect the book and printing industry just as it has substantially reduced demand for physical music retailing and music CD manufacture. This proposal may be an obvious target for such interest groups, but the changes themselves are inevitable.

Usage Fraud

The compulsory licensing scheme described by [ECKERSLEY 2003] proposed the universal distribution of secure hardware to support allocation of rewards to creators based on a voting mechanism. However, the task of designing, commissioning, distributing and maintaining secure hardware is a significant hurdle to overcome for the introduction of a compulsory licensing system.

Hence, this proposal uses simple page views and downloads as the basis for compensation to rights holders. However, the capabilities of secure hardware in addressing fraud need to be compensated by sophisticated analysis of access patterns. This problem is related to but not identical to the detection of "click fraud" in online advertising networks which generate billions of dollars of revenue, and hence is the subject of intense study (see, for example [METWALLY 2007]).

Registration fraud and disputes

It is inevitable that unscrupulous interests will attempt to collect payments from compulsory licensing which are not rightfully theirs. A compulsory licensing system should publicly disclose the registered rights holders for works. Disputes between claimants should be resolved by the legal system.

Privacy

The confidentiality of material accessed must be a primary requirement for the implementation and operation of the proposed system.

Payments

There are many thorny issues regarding levels of payments for works. The current PLR and ELR systems do not base payment on literary merit, or number of pages or any other similar criteria. Is this the right approach for a broader compulsory licensing system?

For example,

- Should a 1000 page textbook earn the same per download as an 8 page poem? What about the same per page?

- If payments are fixed regardless of work size, would rights holders be motivated to split a work into several separately licensed works, hence gaining multiple usage payments from someone reading the entire "real" work?

- Should payments per use gradually decline over the life of a work? That is, all things being equal, should the use of a 40-year-old book "earn" less than the use of a 1-year-old book?

- Should payments per use decline as usage increases? That is, all things being equal, should the one-millionth use of a work "earn" less than the tenth usage?

  (Some policy decisions may tend to favour/encourage creation of new works, and a system with such incentives to create new works may have social benefits. However, they would also change our current conception of copyright in which rights are neither diminished over the term of the copyright nor calibrated in response to widespread use.)

- Should readers be able to "cancel" a download "vote" (if they thought the material worthless), or optionally and anonymously make an additional payment to the rights holder with a blinded, paid-for "vote" [Note 14]

- Should the usage data for any individual reader (which is input to payment allocations) be capped within a twelve month period, such that usage above a certain threshold is sampled?

- Should rights holders (or others) be allowed to advertise in the online system or insert advertising material in book downloads?

Value added services

- Should the proposed system support public tagging and commentary on works, scholarly analysis, custom formatting, and as yet unimagined 3rd party commercial services which build on and add value to the contents of the repository?

Conclusion

With the outlay of modest expenditure, the same as that required to construct a couple of kilometres of highway [Note 15], we can digitise all the books ever published in Australia. Managed appropriately in a national repository, this resource would be instantly and freely accessible to all Australians, its contents becoming reusable and addressable as part of the fabric of the web, offering unprecedented opportunities for scholarship and entertainment.

The proposal for compulsory licensing of books published in Australia outlined above seeks to resolve the dilemma we confront when defending the interests of rights holders whose creations can longer be protected from unauthorised copying. Digitisation, the internet and the world wide web have caused a revolution in the use and reuse of information and created opportunities for access, learning, expression and interaction that previous generations could barely comprehend. They have also fashioned an environment in which the traditional mechanisms of copyright have been critically and irretrievably undermined.

If, as a society, we want to continue encouraging the writers, scholars, artists, musicians, compilers and editors in our midst, if we want to continue enjoying the fruits of their creations, then doing nothing is not a rational option. Pretending that the genie can be put back in the bottle or that DRM can be somehow made to work is not a rational option.

Compulsory licensing provides a way forward. It provides fair mechanisms for compensation to rights holders in return for unparalleled access and reuse. It provides a fair remedy to the problem of lost opportunities resulting from the wasteful under-utilisation of orphaned and out-of-print works. But the introduction of compulsory licensing also brings attendant issues related to levels of compensation, fraud detection and privacy which must be explored.

It is hoped that this paper will encourage others to rise to this challenge.

Notes

[Note 1]

"The most volumes listed in any catalogue is thirty-two million, the number in WorldCat, a database of titles from more than twenty-five thousand libraries around the world. Google aims to scan at least that many. 'We think that we can do it all inside of ten years,' Marissa Mayer, a vice-president at Google who is in charge of the books project, said recently, at the company's headquarters, in Mountain View, California." [TOOBIN 2007]

[Note 2]

In April 2008, Apple's iTunes store became the largest music retailer in the USA [APPLE 2008]

[Note 3]

"Our vision for Kindle is every book ever printed in any language, all available in less than 60 seconds." [BEZOS 2008]

[Note 4]

"The average times that users spend on e-book and ejournal sites are very short: typically four and eight minutes respectively. It is clear that users are not reading online in the traditional sense, indeed there are signs that new forms of 'reading' are emerging as users 'power browse' horizontally through titles, contents pages and abstracts going for quick wins. It almost seems that they go online to avoid reading in the traditional sense" [UCL 2008]

[Note 5]

The final instalment in the Harry Potter series, "Harry Potter and the Deathly Hollows", was available for free download several days before it went on sale in bookshops [RILEY 2007].

[Note 6]

College students are increasingly downloading illegal copies of textbooks online, employing the same file-trading technologies used to download music and movies. ...

"In any given two-week period we found from 60,000 files all the way up to 250,000 files," said Edward McCoyd, director of digital policy for the publishing association. Mr. McCoyd, who leads the Online Piracy Working Group, said the group has been performing periodic scans for piracy since 2001, and that it has seen a gradual increase in the number of titles available.

"It is troubling that there is a culture of infringement out there," said Mr. McCoyd. But as more publishers offer books online and readers become more familiar with digital formats, he added, more people are likely to illegally download them." [YOUNG 2008]:

[Note 7]

Books on BitTorrent: see for example, isoHunt books: http://isohunt.com/torrents/?ihs1=6&iho1=d&iht=9&age=0. "Textbook Torrents", another popular torrent tracker for text books, has recently encountered hosting problems and is best found with an internet search.

[Note 8]

"Bit by bit, everything that can be digitized will be digitized, making intellectual property ever easier to copy and ever harder to sell for more than a nominal price. And we'll have to find business and economic models that take this reality into account." [KRUGMAN 2008]

[Note 9]

See for example [ECKERSLEY 2003] (in particular section 3.3.2) and [DOCTOROW 2005]. DRM systems were originally seen by large music distributors as offering rights protection are now being abandoned [KRAVET 2008].

[Note 10]

See for example [KU2002]

[Note 11]

See "Virtual Markets for Virtual Goods" section 4.1 [ECKERSLEY 2003] for a treatment of the international obligations under WIPO, TRIPs and the Berne Convention, and [DRAHOS 2002] for an extensive description of the current trade-linked intellectual property environment.

[Note 12]

A commercial supplier of IP address geolocation services claims to have an audited accuracy of 99.9% at the country level [QUOVA 2007].

[Note 13]

It is difficult to estimate the total number of Australian published books which may be digitised. However, sampling of the National Library of Australia's National Bibliographic Database suggests that there may be approximately 1.5 million unique Australian titles held by Australian libraries. Assuming a digitisation cost of $30 per title [HAFNER 2008], a project to create publicly accessible digital versions of all Australian books would cost approximately $45M.

[Note 14]

Perhaps by purchasing a blinded (anonymous) donation then anonymously depositing to the rights holder's account maintained by the system (see voting with blind signatures, [SCHNEIER 1996] page 126).

[Note 15]

[COBIN 1999] states "In 1996 dollars, the Federal Highway Administration has calculated the "weighted rural and urban combined" costs per mile of interstate highway to be $20.6 million", citing the source: "Typical Interstate System Cost per Mile", Document Route Symbol HNG-13 (March 21, 1997), U.S. Department of Transportation, Federal Highway Administration, Federal - Aid & Design Division.

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