The Economics of Copyright and the Digital Agenda

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1 Introduction and summary

Copyright was introduced to protect the interests of creators and owners of original literary, dramatic, musical and artistic works, and films, sound recordings, broadcasts and published editions of works. The main purpose of copyright is to encourage and reward creativity and intellectual effort. The ability to enforce copyright on digital material - in particular the Internet - is a key issue in today's world. The development of electronic commerce, and the need to encourage Australian information technology industries to compete effectively in the development of global commerce, will reinforce this issue.

According to some users of intellectual property, copyright represents an intrusion into the free flow of information. There is an assumption that information should be freely available, and that copyright restricts the "free market" by giving owners a right to benefit from copying of their works. When copyright owners then get together and form a collecting society, this is allegedly introducing a further restrictive element. Copyright collecting societies have an integral role to play in the economics of copyright in an age of mass reproduction of copyright works.

Historically, copyright collecting societies were first formed to assist composers and songwriters in securing their due rewards for use of their music. This paper, however, focuses on reproduction rights organisations such as Copyright Agency Limited (CAL), whose main role to date has been to protect the interests of author and publisher members through licensing agreements with schools, universities and others who engage in significant multiple photocopying of copyright material.

With the digital revolution upon us, the issue of copyright protection has acquired a dramatic new dimension (illustrated by a series of statistical tables and charts towards the end of the paper). However, whatever the difficulties encountered in this new era, the key issue remains the same. Whether copies are made on a photocopier or sent across the Internet, a transaction is involved in principle, at least beyond the fair use provisions of the legislation.

The exposure draft of the *Copyright Amendment (Digital Agenda) Bill 1999* recognises that digital technology and the growth of computer networks,

particularly the Internet, have posed challenges to the protection and enforcement of copyright throughout the world:

- Creators and owners of copyright do not have effective rights in relation to use of their copyright material on the Internet, thus making it difficult to obtain appropriate redress or remuneration for these uses.

- Users of copyright material, such as libraries, archives and educational institutions, are concerned about being able to obtain reasonable access to copyright material on the Internet.

- Communications carriers and Internet service providers face uncertain liability for copyright infringements on their physical facilities.

The central aim of the reforms is to ensure that copyright law continues to promote creative endeavour while allowing reasonable access to copyright material on the Internet and through new communications technology. The reforms are a key component of the Government's overall commitment to encouraging the growth of the information economy.

The centrepiece of the draft Bill is a new *technology-neutral* right of *communication* to the public, which is added to the existing bundle of copyrights in literary, dramatic, musical, and artistic works, sound recordings, films and broadcasts. The new right of communication includes *making available* copyright material on-line to provide protection during on-demand, interactive transmissions, such as uploading copyright material to a server connected to the Internet.[1]

Summary: The paper is presented in five parts. Section 2 defines the economic role of copyright, which is to correct the market failure caused by under-production of copyright works when these works are insufficiently protected against illicit copying. Protection means giving owners of these works market power. The right level of market power is that which maximises community welfare — the sum of the welfare of owners and consumers of copyright works. The question in determining community welfare is whether an increase in copyright protection would increase production of copyright works and, if so, whether the benefits of increased production to owners outweigh the cost to consumers.

Copyright law and current competition policy share a common goal of enhancing community welfare. With copyright, however, there is a potential conflict. The power it confers according to a Treasury submission[2] may be used to exercise those rights in a way that would not be possible in a competitive market. However, the examples advanced by Treasury involve powerful multinational companies reducing output, making monopoly profits and discouraging innovation. Consequently, not only Australian consumers, but Australian authors

and publishers as well, are disadvantaged relative to overseas creators, producers and distributors. Eventually, such a situation may be corrected in the case of publishing by local authors and publishers meeting the market demand.

Digital technology makes piracy vastly easier and more efficient than ever before. Opinions prevailed until recently that the ease of reproduction could make the exercise of copyright practically valueless. The ability to enforce copyright differs from the time when the photocopier first made cheap multiple reproduction possible, because copying was a conspicuous activity that could, in time, be monitored.

The economic arguments do not always refrain from value judgments that copyright protection is unnecessary to attain maximal community welfare (such as, "multimedia is booming anyway" and "writers produce for the love of it"). Such statements are irrelevant in an objective economic analysis.

Alternative means of protection to copyright are often canvassed as substitutes, including technical solutions such as access control and monitoring use. Some of these, however, could lead to large increases in market power in favour of major multinational corporations. Collecting societies specifically geared to operate on the Internet may provide an alternative monitoring device, which would secure greater privacy. Such societies would remove the need for technical solutions and thus reduce the danger of the Internet becoming a vast surveillance device. In any case, technological solutions alone will not protect intellectual property. Works must be decrypted to be read, and at that point they become vulnerable to infringement.

Section 3 examines and supplements the microeconomic argument, which provides an acceptable basis for further analysis but ignores macroeconomic long-term structural change. There has been a significant increase in the share of copyright-related activities in the total economy, which has had a positive impact on other sectors of the economy and total economic growth. In the overseas transactions sphere, both visible and invisible copyright-related trade seem to be on a slow path towards balance between Australian exports and imports.

One disturbing empirical fact is a fall in the real incomes of professional authors, exceeding that of other arts professionals and the total workforce. Another worrying piece of statistical evidence is the failure of the publishing industry to continue its increase in share of economic growth since the 1980s, when all evidence points to a continued growth in excess of the economy as a whole in demand for cultural products and services. Changes in market power in favour of multinationals — and the impact of unpaid photocopying — may have contributed to these developments.

Section 4 discusses the feasibility of setting the right level of copyright protection to maximise community welfare. Given that there are no empirical data to set the optimal level of copyright, it is possible to show theoretically that two parties will

always reach an optimal outcome in the absence of transaction costs. The corollary is that the best possible solution depends on the level of transaction costs. Collecting societies minimise transaction costs compared with individual transactions between copyright owners and major user groups.

Even if they wished to do so, collecting societies are effectively prevented from exercising monopoly power on behalf of their members, by non-exclusive agency status, by government regulation and countervailing power exercised by major user groups. Being relatively small despite strong growth in percentage terms, the societies may indeed be at a disadvantage against powerful user groups, a situation which in principle causes undersupply of copyright works through loss of incentive to create new works.

User groups indeed succeeded in postponing the introduction of licensing schemes in several countries. Since then, the growth in total distributions of fees for copying to authors and publishers has led to the strongest growth in the Nordic countries, especially Norway and Denmark. This appears to be associated with strong licence penetration of the government and business sectors, as well as their primary role in relation to copying in educational institutions.

As well as increasing total community welfare by minimising transaction costs through their negotiated agreements, and minimising illicit copying, the existence of distinct markets enables collecting societies to differentiate their terms. This in principle increases total output and generates extra surplus.

Finally, collecting societies may make the difference between a work being published and not being published, based on cost. The first-copy price plus royalties collected through legitimate transactions may be too low to warrant production, or the price will have to be set above marginal cost in the absence of a licence agreement.[3] In either case, community welfare is increased by the agreement to the extent to which it eliminates free-riding.

Section 5 relates the statistical evidence of the continuing on-line revolution (see Appendix 1 for notes on the draft digital agenda Bill). It notes that much progress has been made in a few years towards an understanding that copyright enforcement is possible and essential. The paper also notes the positive view taken by the European Commission regarding the impact on the competitiveness and growth of the European economy of its new directive on the harmonisation of certain aspects of copyright and related rights in the information society. This view would apply equally in Australia with appropriate amendments to and implementation and administration of the proposed digital agenda legislation.

One of the more remarkable features of the debate on the economics of copyright has been an almost complete absence of empirical data to support or refute the arguments. We are remedying this by presenting some statistics in the appropriate sections of the paper relating to creators of copyright material, collecting societies,

the growth in copyright industries, overseas trade in copyright-related material, and computers and the Internet.

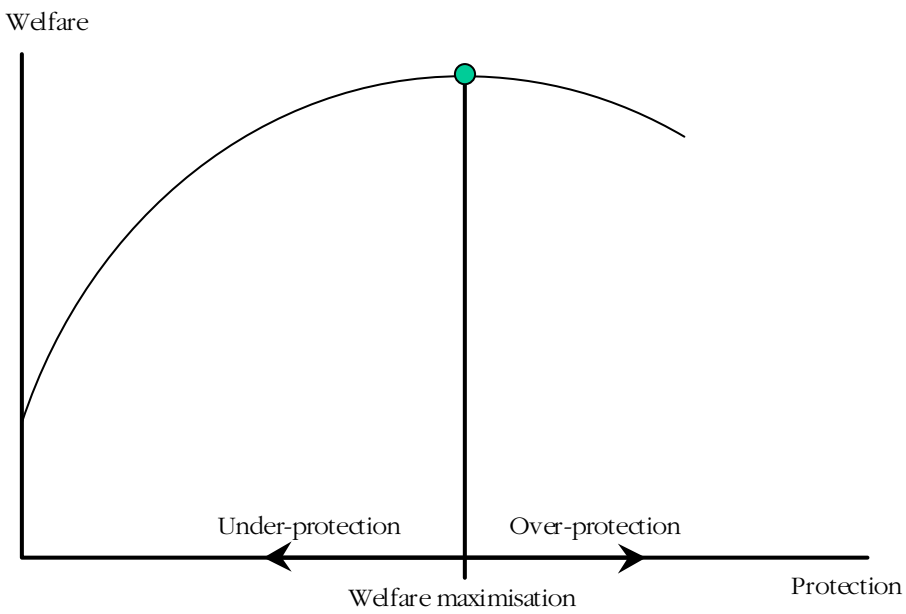
Apart from demonstrating the dramatic impact of the digital revolution, the data support the assertion that the immediate microeconomic argument ignores the general impact of dynamic long-term growth in the copyright-related industries.

2 Economic role of copyright

The economic argument involving copyright has been presented in recent years in support of amendments to the *Copyright Act 1968*, including submissions to the Copyright Law Review Committee for the previous Government's exposure draft of the lapsed *Copyright Amendment Bill 1996* and submissions to the Australian Competition Tribunal in 1998. The impact of digital technology is an integral part of the current economic analysis. The Government released its Discussion Paper, *Copyright Reform and the Digital Agenda*, in July 1997, inviting comments which were taken into account in the draft *Copyright Amendment (Digital Agenda) Bill 1999*. This is where matters stand at the time of writing.

In 1995, the Office of Regulation Review (ORR) presented its submission to the CLRC.[4] The Commonwealth Treasury largely agreed and added a new dimension

Chart 1: The welfare-protection trade-off



Source: Office of Regulation Review, *An Economic Analysis of Copyright Reform, A submission to the Copyright Law Review Committee's review of the Copyright Act 1968*, 1995:19

to the argument in its emphasis of a link between copyright law and competition policy.[5] The conventional microeconomic argument is presented mainly from these two sources.

The purpose of copyright is to protect the expression of an idea (when in a material form) from unauthorised copying.[6] This "free-riding" problem in economic terms constitutes "market failure", because without protection authors have insufficient incentive to produce a socially optimal level of intellectual works. Copyright is designed to correct an economic problem — a sub-optimal creation of works. The economic rationale argues that the property rights granted to creators of works should be those necessary to overcome the disincentive to produce, and only those (see Chart 1). The copyright regime should make correction of market failure its priority and set the correct level of market power that maximises the total welfare of producers of copyright works, and consumers of these works.[7]

Chart 1 does not specify an absolute level of copyright protection as optimal. The crucial questions are whether an increase in copyright protection would increase production of copyright works and, if so, whether the benefits of increased production outweigh the cost to consumers. The ORR submission goes on to demonstrate that crawling up the welfare line towards the top in a cautious incremental approach to protection should allow the Government to set a level closer to the optimal level of copyright. "Ultimately, determining the optimal level of protection — whether this be through the proprietary grant of copyright, the banning of copying equipment, or other means — is an empirical question, albeit a complex one." (p 20)

Section 4 of this paper contains a discussion of whether there is a more practical and straightforward approach, which may in fact be already implemented.

To recapitulate, the grant of market power to copyright owners has two conflicting consequences:

- It provides incentives for the production of copyright material by facilitating its commercial exploitation.

- It restricts the dissemination of ideas expressed in copyright material.

The material forms protected by copyright are divided into two broad categories:

- "Works" — literary, dramatic, musical and artistic works

- "Subject matter other than works" — films, sound recordings, broadcasts and published editions.

Copyright in works, broadly speaking, seeks to provide incentives for "authors", who are almost invariably individuals. Copyright in other subject matter, by contrast, seeks to provide incentives for "producers" or "makers". These are

generally companies and often make investments that would be large for an individual.[8] The source (ORR) does not elaborate on this statement. It is important to add that some producers are large multinational corporations and some are domestic companies.

Copyright law and competition policy share the common goal of enhancing community welfare.[9] Copyright law addresses the free-rider problem in order to stimulate production. Competition policy is designed to promote economic efficiency by correcting market failure arising from anti-competitive market conduct and/or structure.

Treasury argues, however, that there is potential with copyright for creating another type of failure in the area of competition, because the intellectual property conferred by copyright may be used to exercise those rights in a monopolistic way. Intellectual property rights can be improperly deployed to the detriment of competition and the goal of technological progress, resulting in reduced output, monopoly profits and stifled innovation.

Significantly, at least two of three specific examples of such behaviour in the Treasury paper relate to large multinational companies (including Microsoft). Furthermore, beyond the three examples, Treasury specifically targets restrictions on parallel imports of books, sound recordings and computer software as anti-competitive.[10] By creating a property right, copyright creates markets for books and journals that encourages more creators and producers to enter competitively into the market with new product, thereby breaking down unfair monopolistic practices.

"Free-riding" and ease of copying: At a time when the Australian Government has recently released its draft *Copyright Amendment (Digital Agenda) Bill 1999*, it is worth recollecting a finding by *The Economist* less than four years ago. This leading British journal suggested that copyright law was having particular trouble with adjusting to the new age of digital information, especially because it cannot distinguish between abuse and ordinary use. On the Internet, any number of normal activities may inadvertently break the law. "In the end copyright laws must change to reflect this new digital domain. Publishers need some assurance that their work will not be pirated to the point where they have nothing left to sell, yet a way must be found to avoid criminalising normal use."[11]

There is a great paradox in what is happening on the digital front, according to one American author. On the one hand, "it is widely believed that personal computers, cable television, the Internet, and the telephone system are converging into a giant hose that will spray huge amounts of data — intellectual property — into [our] living rooms. ... Because copyright is the mechanism for establishing ownership, it is increasingly seen as the key to wealth in the Information Age."[12] At the same time, however, economic forces will drive prices down, because "manufacturing and distribution costs collapse almost to nothing on-line".

Table 1: Estimated trade losses due to piracy, US-based copyright industries ($US million)

	1995	1996	1997	1998
Motion pictures	1,813.3	1,735.0	1,786.0	1,779.5
Records and music	1,087.1	1,112.3	1,317.3	1,792.5
Business applications*	4,131.1	3,905.9	4,824.0	4,693.9
Entertainment software	2,880.6	3,171.5	3,249.2	3,429.0
Books	678.0	695.2	665.3	685.9
Total losses	10,590.1	10,619.9	11,841.8	12,380.8

* 1998 preliminary, subject to review of data.

Source: International Intellectual Property Alliance (IIPA)

Producers of digital material will have trouble charging anything at all for copies of their works, because competitors can always offer substitutes for less.

Furthermore, piracy is vastly easier and more effective in the digital environment. Table 1 shows it to be a growing problem, at least in the United States to which the table relates.[13] In other words, even as digital technology drives up the potential value of copyright, that same technology threatens to make it next to worthless. This paradox has engendered two reactions. One is to advocate eliminating copyright altogether under the catchphrase, "information wants to be free". The other is to strengthen the hand of copyright owners through legislative amendment.

The Internet is only the latest indication of a nexus between illicit use and ease of reproduction. Academic economist Michael O'Hare says in a paper dated 1985, "Whether a copyright is useful depends in part on the technology associated with a particular medium. Four costs associated with the technology are relevant: the fixed cost of copying, the fixed cost of copying a particular work, the variable cost of the first copy, and the variable cost of the second and subsequent copies."[14]

Fixed costs for the first copy are high when the equipment is expensive, such as book printers. They were also high for second and subsequent copies of books until the invention of offset printing eliminated the need to set the type from scratch, which reduced costs sufficiently for pirate publishers to enter the scene.

High fixed costs of producing the first copy coupled with low costs of reproduction and a significant market for copies increase the value of copyright to its owners. It was considered high for novels, offset-printed non-fiction, but not in O'Hare's opinion for journal articles, where he considered the market for copies to

be low.[15] This may have changed with the increasing use of student course packs. On the "casual reprinting of articles and chapters for all students in a class", O'Hara observes: "While my colleagues seem to make single copies of articles for their own use as much as ever, informal observation suggests that unauthorised multiple copying has greatly declined recently and seeking permission from copyright holders to reproduce articles has much increased. Copyright seems to be an effective instrument in the case of multiple copying while it has not deterred single-copy pirates."[16]

Both types of activities are covered in existing copyright legislation, through the provision of licensing agreements and the fair dealing provisions that legalise the alleged "pirates".[17] O'Hare indeed acknowledges this in his very next paragraph: "The difference has two sources. First, mass copying makes the ratio of copiers (commercial copy centres and institutions' central copy facilities) to copies low enough that enforcement actions are a real threat. Probably more important is an intuitive understanding on the part of publishers and pirates that single-copy piracy provides real benefits to scholars while mass reprinting does some real economic injury to copyright owners." Since 1985, however, there has been a strong increase in single copying as photocopiers have improved in speed and quality. This now poses a threat to the market for books and journals.

The paper predates the digital revolution, or at least the time when it started to impinge heavily on copyright issues. At the time the home tape recorder was cited as an example of affordable mass-produced sophisticated copying equipment, though photocopiers were penetrating the office market. Today the personal computer is far more ubiquitous than either, and is costing less and less to acquire and use. O'Hare's only allusion to computers was to express pessimism "about the likelihood that copyright for computer software publishers will suppress copying except by competing publishers."[18]

Nowadays, the digital agenda is dominated by material which has been either digitised, or published on and passing through the Internet.[19] However, the argument that digital material defies copyright control continues, or continued into the mid-1990s at least. The ORR submission, for instance, notes on page 34: "While property rights used to deal with tangible property, digital technologies are inherently intangible because:

- while the physical incarnation of a digital bit may be in tangible form at some instant, it is inherently volatile and elusive; and

- the problem is compounded because in a digital realm there is no such thing as an "original" because all "copies" are identical to the originals.

"The idea of mass digital transmission makes it near impossible to find the control locus for the purposes of auditing, and so makes the concept of copyright in the digital domain close to redundant."[20]

The part of the ORR submission containing these comments refers specifically to multimedia, arguing against its introduction as a separate copyright category over and above its component inputs of text, sound recordings and pictures. Advocates of making multimedia a separate subject of copyright argue that the whole is greater than its inputs so the economic value has increased. The ORR submission states (p 33):

"In economic terms, copyright exists to provide the incentive to create works when the lack of a proprietary interest would otherwise lead to an undersupply of those works. However, in the case of multimedia there is no evidence that the lack of specific multimedia protection is causing an undersupply of multimedia material; far from it, multimedia is booming."

This value judgment — backed up with a statement that the evidence is "anecdotal, but clear" — does not sit well with the claim that rigorous economic analysis has been applied. It is irrelevant what is the market growth at any given time, and there is no evidence that the alleged boom is in fact profitable. In any case, the matter has been resolved with the proposed new right of communication to the public, which again shows how rapidly perceptions have changed in a very short time.

The statement in the ORR submission brings to mind another passage (p 15) dealing with "factors other than commercial". Some intellectual works may continue to be produced even if no copyright exists. "This may simply be for the love of writing or, as with many academics, a copyright producer's remuneration comes from writing in a public forum. Alternatively, government subsidies may allow authors to recoup their costs." Again, it is not the business of a paper basing its arguments on rigorous comparative-static economic analysis to use such arguments against copyright.

Alternative means of protection: The ORR submission (pp 43-50) raises the question whether there is a need to rely on copyright when other means can achieve the same outcomes. For example, contractual arrangements are used for new intellectual works that fall outside the *Act*, such as multimedia in their holistic, unitary sense. Intellectual property tie-ins oblige the user to buy printed books or user support to have the intellectual property supplied. Technical solutions have also been referred to as an alternative to copyright. They include:

- controlling access through encryption (which according to the submission may serve as a useful device for collecting returns for authors, essentially what copyright does),

- controlling use through limitations on the number of copies that can be made from a digital tape, or similar, and

- monitoring use, for instance through reporting back from individual computers via the Microsoft Network an automatic listing of Microsoft

> and competing software. One of the latest devices to have such a capability is the Pentium III chip.[21]

Some of these alleged alternatives to copyright would seem to imply rather draconian measures by powerful players. Indeed, the ORR submission itself dismissed technical alternatives that might eventually provide makers with market power exceeding that provided by copyright, on the grounds that these solutions could result in less dissemination of work, with consumption costs exceeding production gains and a consequent loss in total community welfare. (p 50)

Another monitoring device mentioned in the ORR submission is the Intellectual Property Licensing Agency, hailed as the Internet equivalent of traditional copyright collection agencies. IPLA — no longer to be found on the Internet — licensed all types of intellectual property capable of being delivered electronically, written matter, illustrations, databases, games, voice and musical recordings. "These approaches may run counter to many preconceived ideas about the protection of digital material because, rather than reducing the returns to copyright producers, a technical system that monitors information usage could actually increase the flow of royalties to smaller participants." (p 49)

Such societies may have the additional merit of providing greater privacy by removing the need to rely solely on technical solutions, which may increase the danger of invasions of privacy on the Internet. As we have seen, more and more new electronic products appear to have identification devices enabling the producer to monitor the full content of individual personal computers.

3 Limitations of the microeconomic approach

It is reasonable to start with the basic proposition that the level of copyright should be geared to the market failure associated with illicit copying activity up to the level where total community welfare is maximised.

It can, however, be strongly argued on the basis of empirical data that the analysis should be broadened. The microeconomic analytic model ignores some important macroeconomic and long-term connotations. The first concerns the growth of relevant copyright-related industries in Australia (Table 2).[22]

While copyright-related industries as a group have grown at a faster rate than the total Australian economy, some individual copyright-related industries have not kept pace. These include the publishing industry but not the creative arts industry consisting of authors and visual artists. That group increased its share of total output from less than 0.03% of the total Australian workforce in the seventies to

Table 2: Estimated value of copyright-related activities, Australia 1975-94
$million at 1996-97 prices

Year ended June	Creative arts (own account)	Publishing activities	Other arts related activities	Estimated computer software	Total copyright industries	Compare total GDP (1)	Ratios to total GDP: Creative arts	Publishing	Computer software	Total copyright
1975	80	1,494	4,879	158	6,612	258,521	0.03%	0.58%	0.06%	2.56%
1979	110	1,781	5,580	291	7,762	297,920	0.04%	0.60%	0.10%	2.61%
1980	96	1,804	5,757	339	7,996	305,063	0.03%	0.59%	0.11%	2.62%
1981	145	1,820	6,765	395	9,126	313,747	0.05%	0.58%	0.13%	2.91%
1982	203	2,126	7,821	460	10,611	323,957	0.06%	0.66%	0.14%	3.28%
1983	215	2,114	7,750	536	10,615	316,880	0.07%	0.67%	0.17%	3.35%
1984	211	2,103	8,579	625	11,518	334,168	0.06%	0.63%	0.19%	3.45%
1987	298	2,670	8,856	988	12,812	374,309	0.08%	0.71%	0.26%	3.42%
1990	385	2,802	9,709	1,563	14,459	436,417	0.09%	0.64%	0.36%	3.31%
1993	479	3,137	10,727	2,471	16,813	452,307	0.11%	0.69%	0.55%	3.72%
1994	467	3,112	10,889	2,878	17,346	470,931	0.10%	0.66%	0.61%	3.68%
Trend	10.6%	4.2%	4.4%	16.5%	5.3%	3.2%	per annum			

Notes: Input-output statistics used except for computer software, which is not an identified input-output 'commodity'. Computer software was estimated from other data in H H Guldberg, *Copyright - An Economic Perspective* (1994), where growth was found to be 16.5% pa for 1985-86 to 1992-93. This is assumed to apply through the entire period from 1974-75 to 1993-94. Computer software assumed to be 14.7% of total in 1992-93 as in 1994 report. Arts-related activities computed for H H Guldberg, *The Arts Economy 1968-1998* (Australia Council, forthcoming).
(1) Total GDP is about 52% of the sum of all input-output 'commodities', which increased by 3.1% pa over the same period. It is more meaningful to use GDP (value added). This exaggerates the proportion of copyright industries to the extent there are internal input-output flows within the copyright sector. *Copyright - An Economic Perspective* estimated 2.9% for 1992-93. (Using the sum of all input-output commodities reduces the proportion to 1.9%).
Source: Australian Bureau of Statistics, 'commodity' supply of selected input-output commodity items (except software).

0.1% or more in 1993 and 1994, tiny proportions but growing at over three times the rate of the total gross product.

The main reason for continued growth in copyright-related industries relative to the total economy is the digital revolution, here measured as “computer software” based on industry data. The estimate in Table 2 suggests that this indicator comprised up to 0.06% of the economy in 1974-75 and up to 0.6% by 1993-94 (before the Internet began to add its powerful impact).

The United States economy has experienced similar strong growth in “core” copyright industries, which correspond to the industries shown in Table 2 for Australia and contributed an estimated 3.74% to the US economy (GDP). Between 1977 and 1994, they increased by 5.8% per annum compared with 2.3% for the remainder of the economy (between 1987 and 1994, by 4.6% compared with 2.3% per annum). A subsequent report found that the core copyright industries accounted for 3.65% of US GDP in 1996, suggesting a slowdown from 1994.[24]

As noted below Table 2, the contribution of copyright industries to the Australian economy at around the same time was somewhere between 3.7% (ratio to GDP) and 1.9% (ratio to total copyright "commodities"). The 1994 report for the Australian Copyright Council found 2.9% based on a fuller analysis than was possible for this paper. A new review would probably identify additional core copyright industries which defied measurement in the 1994 study. With the Internet providing a new powerful influence, the copyright-related sector has almost certainly increased further since 1994.

Another indication of the growing importance of copyright-related industries is the comparison with main sectors of the economy. For this purpose we have extrapolated the contribution of these industries to 1997-98, the latest full year for which national industry data are available (Table 3). It is assumed that copyright industries accounted for 2.9% of GDP in 1992-93 in accordance with the industry study in 1994, and that they increased by 5.3% per annum, which is a conservative estimate in view of the development of the Internet.

The period covered is the nineties, for which a new time series exists of industry statistics. During this period GDP increased along an annual trend of 3.4%, and five industry sectors performed better than average. The copyright-related industries increased at an estimated 4.9% per annum, beaten only by the communication services sector, itself a product of the information economy.

The remaining columns of Table 3 relate the copyright-related industries to the main industry sectors. They remain slightly larger than the fast-growing communications sector, and have surpassed the rural sector. This of course does not tell the full story, and in particular understates the importance of agriculture and livestock for the balance of payments.

As far as copyright-related items such as books and other print material, recording tapes and other media, paintings and sculptures, and musical instruments and accessories are concerned, the balance of trade remains heavily against Australia (Table 4).

Nevertheless, the relationship between these exports and imports has been changing with exports growing at twice the rate of imports over the past 12 years or so. Print materials and recording media are increasingly the main items on both sides of the ledger.

Overseas transactions of royalties and licence fees also favour imports. In 1996-97, debits (imports) totalled $1,369 million and credits (exports) $346 million.[25] However, between 1991-92 and 1996-97, credits increased in real terms at an annual rate of 7.5% and debits by a more modest 4.0% (using the same export and import price indices as for Table 4).

There seems to be a long process in progress towards greater equality on the balance of payments for service payments as well as merchandise associated with copyright-related activities. On the credit side, the largest item in 1996-97 was

Table 3: Comparison of copyright industries and main industry sectors
Constant 1996-97 prices

Sector	Annual change 1989-90 to 1997-98	Gross value added 1997-98 ($ billion)	Proportion of total Australian GDP
Communication services	9.6%	15.7	2.8%
Copyright-related industries (1)	**4.9%**	**17.3**	**3.1%**
Property and business services	4.6%	59.6	10.7%
Mining	4.6%	23.7	4.3%
Wholesale and retail trade	3.6%	60.7	10.9%
Transport and storage	3.5%	33.5	6.0%
Gross domestic product	**3.4%**	**555.4**	**100.0%**
Cultural and recreational services	3.3%	9.9	1.8%
Finance and insurance	3.3%	32.3	5.8%
Personal and other services	3.0%	12.1	2.2%
Accommodation, cafes and restaurants	2.9%	11.3	2.0%
Health and community services	2.8%	31.5	5.7%
Construction	2.7%	29.9	5.4%
Government administration and defence	2.6%	22.8	4.1%
Education	2.3%	23.4	4.2%
Electricity, gas and water supply	2.1%	14.3	2.6%
Manufacturing	1.6%	66.0	11.9%
Agriculture, forestry and fishing	1.4%	16.6	3.0%

(1) Extrapolated to 1997-98 at 5.3% pa after reducing total to 1992-93 share of GDP according to H H Guldberg, *Copyright - An Economic Perspective (1994).*

Note: GDP made up of sum of industries shown ($463.4 billion), ownership of dwellings and net indirect taxes.

Source: ABS, *Australian National Accounts: National Income, Expenditure and Product (5206.0),* September Quarter 1998. Chain volume measures (base year 1996-97). Chain volume measures show trend GDP at constant prices

computer software ($167 million) followed by industrial processes ($62 million) and music ($40 million).

The main import items in the same year were industrial processes ($477 million), franchise and similar rights ($301 million), computer software ($256 million), and music ($203 million).

Employment statistics: According to the 1996 Census, 7,300 people worked on their own account in the creative arts industry; 2,000 were visual artists and 1,100

Table 4: Imports and exports of copyright-related items

Year ended June	Total print material	Visual arts items	Musical instru-ments	Recording tapes and other media	Total 'copyright items'
		Imports ($million at 1996-97 prices)			
1986	715.1	62.1	86.7	322.8	1186.6
1987	656.0	77.9	87.8	352.1	1173.9
1988	680.7	83.1	79.8	370.3	1213.9
1989	762.2	225.2	98.6	443.4	1529.4
1990	810.6	91.1	98.3	534.4	1534.4
1991	806.7	52.5	86.8	551.5	1497.5
1992	848.1	53.4	86.1	630.0	1617.6
1993	817.6	34.3	75.8	691.9	1619.6
1994	854.5	24.6	75.0	818.8	1773.0
1995	882.9	37.1	83.4	848.7	1852.1
1996	855.4	44.4	83.9	761.2	1744.9
1997	855.9	59.2	86.6	753.5	1755.2
1998	880.4	62.6	88.8	817.6	1849.3
Annual trend	2.3%	-6.5%	-0.5%	8.8%	4.0%
		Exports ($million at 1996-97 prices)			
1986	105.2	16.9	5.8	24.2	152.2
1987	114.1	19.1	7.1	56.8	196.9
1988	121.0	19.1	3.5	103.5	247.0
1989	124.3	32.8	2.7	70.1	230.0
1990	122.1	125.8	2.5	91.0	341.4
1991	152.5	41.2	2.7	94.8	291.2
1992	189.3	54.8	2.6	149.3	396.0
1993	227.3	34.8	3.9	161.1	427.2
1994	249.6	24.2	3.9	144.3	422.0
1995	274.0	32.0	4.7	120.1	430.8
1996	273.9	35.2	5.4	131.2	445.6
1997	293.5	28.9	5.5	99.5	427.4
1998	297.4	31.9	9.1	144.3	482.6
Annual trend	10.1%	2.6%	3.3%	9.6%	8.7%

authors. The latter figure represents 36% of all people whose main occupation was author; another 33% worked in other cultural industries (mainly publishing, followed by film, radio and television), and 31% in non-cultural industries.

The growth in the arts-related industries is part of a general expansion in the number of arts professionals and the cultural sector of the Australian economy stretching back over the past thirty years. This expansion coincides with a general perception that cultural industries have had a positive impact on other sectors of the economy and thus on economic growth. This is supported by the general arts-related policies pursued at Federal, State and local government level, and by the statistical data.[26]

This evidence does not fit into comparative-static microeconomic analysis, which ignores long-term structural change.

An ABS survey of broad participation in the arts in 1997 showed that 120,500 people wrote on a paid-only basis, another 93,100 were paid for some but not all their work, and 329,200 wrote without being paid directly. In total, 542,800, or 3.8% of the adult population, nominated writing as an activity.[27] Even the paid-only writers greatly exceed the Census totals of 3,180 authors and 14,350 journalists. This suggests that over 100,000 Australians write part-time for payment

only, while over four times that number get paid for some, or none, of their work as writers.

The survey also indicates that about 162,000 persons worked more than half-time for payment in 1997 in all cultural industries, equivalent to 18.5% of all workers receiving some payment for their work in these industries. This is close to the number of full-time cultural workers defined in the 1996 Census (156,700), which provides mutual support for both these sources.[28]

While the number of professional authors grew at an annual rate of 4.7% between 1986 and 1996, their average incomes fell by an annual rate of 1%, or a total of 10% over the ten years. Table 5 compares these findings with total arts professionals as defined in the Census, showing an annual growth in numbers of 4.4% and a 0.6% annual decline in average income. The growth in numbers of both groups greatly exceeded the growth in the total workforce (1.4% pa). However, the 0.4% annual decline in the average income of the total workforce was exceeded in the arts professional group, especially by authors.

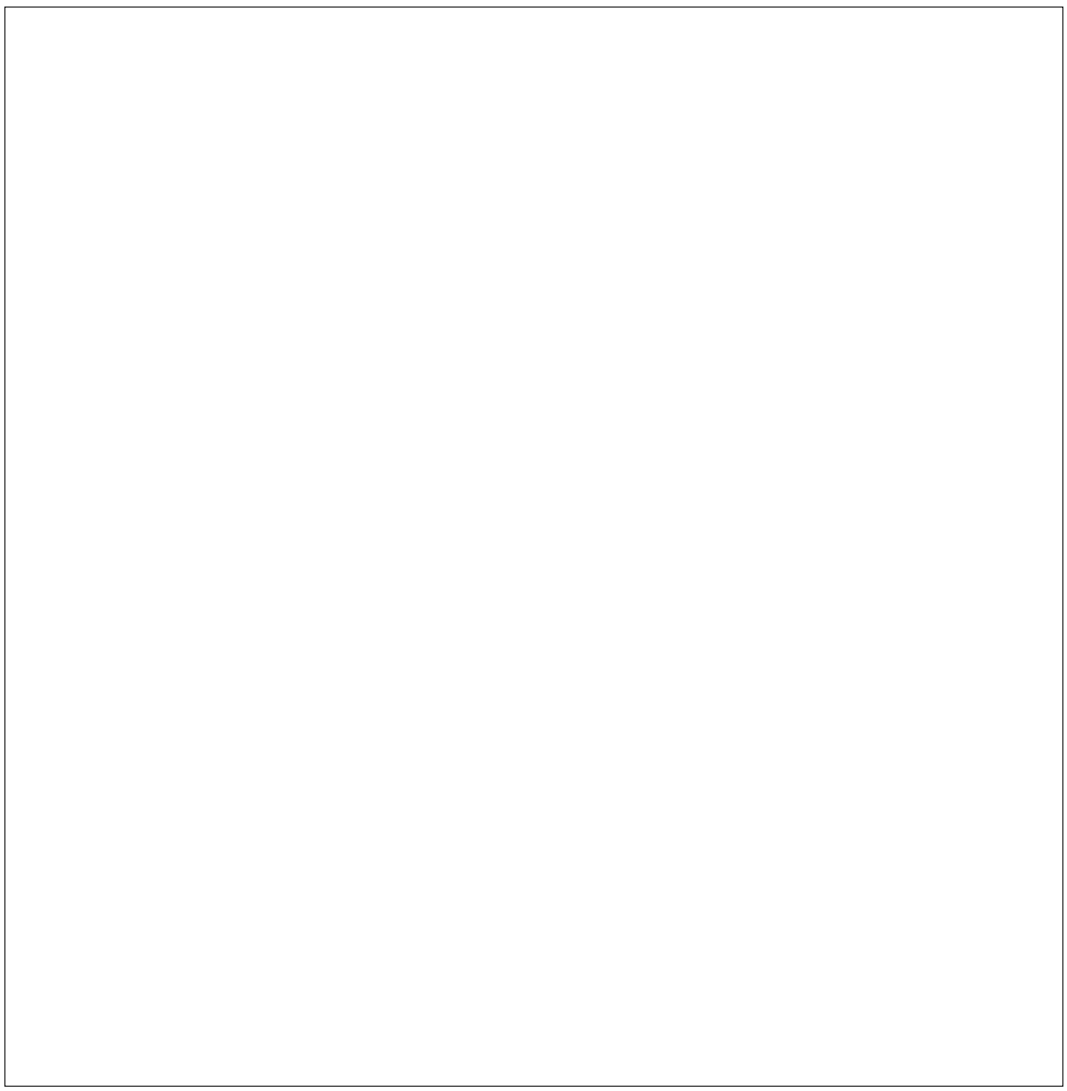
What caused this relatively large decline in average incomes (which persisted through the period with the same percentage fall recorded for 1986-91 and 1991-96)? It may be surmised that there was an oversupply of authors, with a large part of the population striving to write as suggested by the 1997 survey. In a large and heterogeneous group, this is hard to prove or disprove.

It is possible, however, that the decline in real incomes is caused by changes in the power relationships faced by authors. The trend towards globalisation has intensified in the past decade in areas such as publishing and digital technology. In this situation, the least powerful groups are the local creators and producers of copyright material. The failure of the Australian publishing industry to grow faster than the total economy since 1982, while the arts sector has generally done much better, suggests that globalisation trends may have influenced international market share to Australia's detriment.

Market failure in the sense of failure to deliver an economically optimal return to Australian copyright owners is therefore not just due to "free-riding" but also to the relationship between copyright owner groups, notably global versus local interests. Australian competition policy, of which copyright policy is part, has an important role in securing a "level playing field" for local industry, including the opportunity to increase Australian income from copyright.

4 Economic role of reproduction rights organisations (RROs)

As in the case of copyright itself, microeconomic analysis tends to focus on the potential abuse by collecting societies because of their apparent capacity for monopolistic abuse. Chart 2, which was derived from a paper by Jeremy Thorpe, is no exception.[29] Referring to the note below the graph for detail, it first shows how copyright without enforcement disadvantages total welfare by discouraging production of creative works. In the intermediate situation copyright combined with a collecting society helps optimise total consumer and producer welfare by giving creators and makers the incentive to produce. In the final case the collective indulges in monopolistic behaviour which limits supply and increases the price of copyright works to a level where they are no longer wanted or afforded by some consumers. Hence, total welfare is reduced because some consumers miss out because of the monopoly.



If a newly formed society restricts membership to founding members, output will tend to be restricted to maximise the surplus for members. They may even increase this surplus by admitting new "second-class" members who are not paid an equal share of the surplus.[30] However, such behaviour is proscribed for RROs by the government regulations that authorise a collective to administer a particular right, and by the collecting societies' Articles. Government regulations address issues such as the need for open membership and distribution of licence fees among members, as well as level of fees and representation of non-members. CAL actively encourages non-members identified as copyright owners to join.

The reason for forming copyright collecting societies to license the copying of published works is that they provide an efficient way for large-volume copiers such as educational institutions, libraries, government departments and businesses to legitimise their copying activities, and to remunerate copyright owners for the copying of their works.

Through the copyright collecting society, transaction costs are reduced dramatically, because it can negotiate, monitor and enforce the rights on behalf of numbers of individual authors with each bearing only a fraction of the cost.[31] Property rights confer ownership and establish the right of owners to exclude others from using the good or service, whether that be land or written works — however, there must also be a low-cost mechanism by which these property rights can be enforced.[32] In this situation, collecting societies arguably increase welfare by allowing members to appropriate at least some of the benefits that intellectual works generate in particular markets, thereby strengthening the link between the social gain from creative work and private gains accruing to creators.[33]

This assumes (refer Chart 2) that the copyright collecting society does not raise royalties to unfair levels or adopt other practices of exclusion to reduce the dissemination of works. Quite apart from the increasing scrutiny by the regulatory authority in accordance with government competition policy, the collecting society is not the only stakeholder with market power. For example, Copyright Agency Limited is a non-exclusive agent for its members, and therefore cannot act as a monopoly.

In the field of statutory licences, negotiations take place between the collecting agency and associations of educational and other institutions. "To the extent a group of licensees can credibly threaten to withhold its entire patronage, a collective may be forced to set fees ... that leave a portion of the surplus to licensees. Such a scenario is not unrealistic, as group bargaining is a key aspect of the administration of copyrights."[34] Furthermore, the Copyright Tribunal is the final arbiter that sets the statutory licence rates, which gives other stakeholders an input into the process.

While the CAL data in Table 6 indicate that distributions of copyright fees to authors and publishers have increased quite strongly among reproduction rights organisations, the level remains fairly modest even in the top 12 countries ranked by *per capita* distribution (Table 7). Norway and Denmark lead the three other Nordic countries, which suggests that there is considerable expansion potential for other countries at similar development stages. A preliminary reading shows that private enterprises and government make up much of this potential.[35]

Table 6: Declared distribution to CAL members

Distribution year	$ thousand Current prices	$ thousand 1996-97 prices	Increase at 1996-97 prices
1989	1,077	1,300	
1990	3,000	3,421	163%
1991	4,000	4,401	29%
1992	6,000	6,459	47%
1993	9,734	10,344	60%
1994	10,509	11,038	7%
1995	9,476	9,860	-11%
1996	12,435	12,599	28%
1997	15,672	15,672	24%
1998	16,919	16,685	6%

Source: CAL (CPI deflator from ABS)

It might be argued that the different levels of market penetration - and the fact that many countries have no RROs at all - indicate that the services of these collecting societies are not strictly necessary. However, demand for their services has grown strongly in the face of considerable resistance from some categories of users, as witnessed by the 14 years it took for CAL to establish the first round of licensing agreements in Australia. There appears to have been less resistance to the concept in Norway, where Kopinor was founded and licensing began in the same year, 1980. In Denmark, there was a ten-year delay from foundation (1980) to start of licensing (1990), but since then growth has been extremely rapid.

The relatively modest size of individual RROs suggests that countervailing power provides an additional guarantee, in addition to the agreement with the government regulator, that any temptation to wield monopoly power will be curtailed.[36] We have already noted that alleged resistance from copyright users can delay the start of formal licensing agreements by several years after the RRO has been formed. In any case, the stage is set for a negotiating process that minimises transaction costs, and coincides with the theoretical maximisation of community welfare.

Copyright owners may, however, be handicapped if the relative market power of the negotiating parties advantages the users rather than the collecting society. Legislation such as the digital agenda draft Bill attempts, or should attempt, to redress such lack of balance.

Apart from minimising transaction costs, there is another reason why collecting societies are instrumental in increasing total welfare. Monopolies cause a

Table 7: Top 12 countries with copyright collecting agencies affiliated with IFRRO, 1996

Country	Society/Societies	Total		Per head of population	
		Collected	Distributed	Collected	Distributed
		$A 000	$A 000	$A	$A
Norway	Kopinor	23,696	18,611	5.45	4.28
Denmark	Copy-Dan	19,442	19,519	3.73	3.75
Sweden	BONUS	10,378	8,748	1.17	0.99
Iceland	Fjolis	299	225	1.12	0.84
Finland	Kopiosto	5,483	4,176	1.08	0.82
Australia	CAL	11,348	12,435	0.62	0.68
Switzerland	Pro Litteris	6,384	4,107	0.90	0.58
Canada	Cancopy; Copibec	14,104	16,580	0.49	0.58
Germany	VG Wort; Bild Kunst	50,617	41,162	0.61	0.49
United Kingdom	CLA	29,774	28,084	0.51	0.48
Netherlands	Stichting Reprorecht	6,972	5,435	0.45	0.35
United States	CCC	63,046	47,268	0.24	0.18

Note: Values given in DM and converted to $A from CAL data in original table.
Source: IFFRO web site, February 1999

reduction of quantity because they charge the same price to all consumers, which is the price that maximises profits with a given cost structure. But if a monopolist can discriminate between different markets, total output is increased and extra social surplus generated.[37]

There are a large number of markets available for separate negotiation by an RRO, even within a particular institution such as a university.[38] Some are willing to pay larger amounts than others, based on the detailed terms of a particular agreement and the value the particular market puts on the service. “In direct negotiations, suppliers and users have an incentive to avoid the restriction of supply that normally accompanies a monopoly.”[39]

One final important argument in favour of collecting societies is advanced in relation to university copying by Vince FitzGerald and Jeremy Thorpe.[40] The first-copy cost is to produce the basic information product — manuscript plus editorial work to prepare it for publication on paper and/or digitally. Second-stage costs are for duplication and dissemination. The two cost elements are unrelated, as production costs don’t depend on how many copies are produced.

The authors show that price must be set above marginal cost for a publication to be viable. This means excluding some potential purchasers. “The necessity to exclude such purchasers in order to cover total costs constitutes a fundamental efficiency problem for all private markets for information.” (p 15)

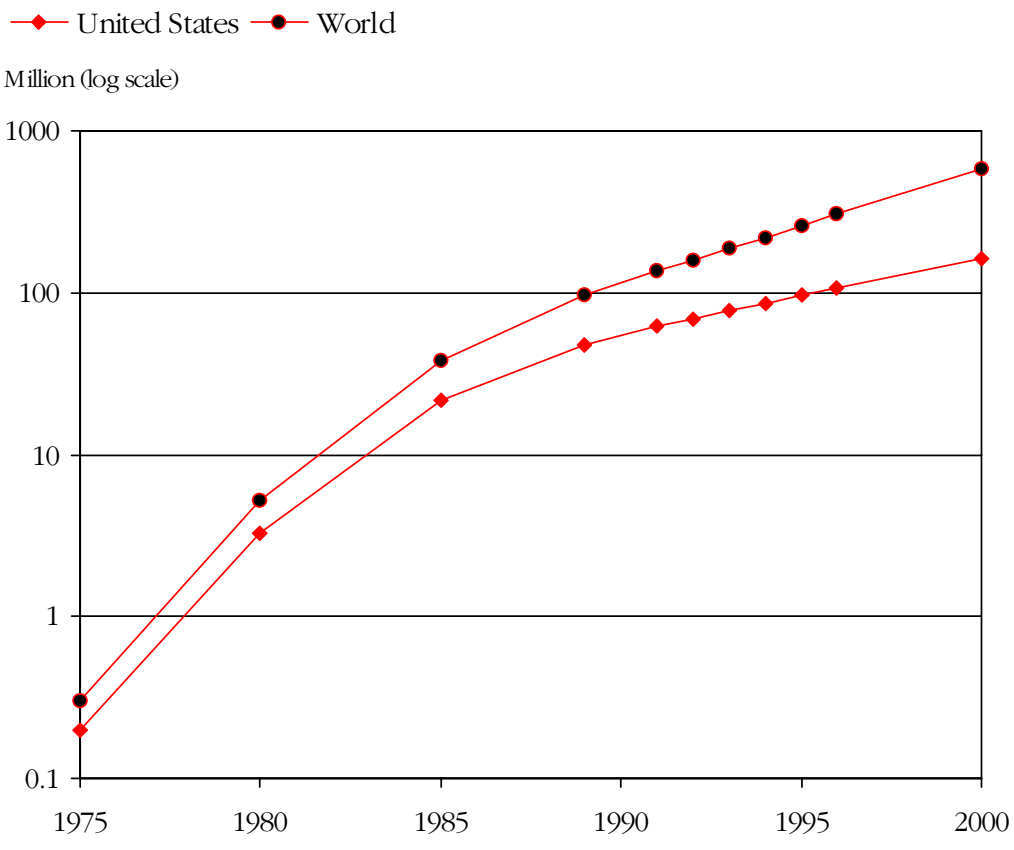
Without copyright, publishers would have to charge a high price, at which a small number of copies would be sold (assuming they were able to publish at all). With

a collecting society in place that achieves substantially full enforcement, willingness to pay translates into enforceable demand. Therefore publishers can charge a lower price and recover costs from a broader section of the community. So consumption is increased.

As a result, the activity of the collective on behalf of creators and publishers contributes to the total cost of the publication, thus turning a situation of under-compensation around in which the return to the copyright owners makes only a partial contribution to the first-copy price.

FitzGerald and Thorpe maintain that there is little likelihood of the converse situation occurring where licence fees provide an above-normal return for copies made by universities. If it persisted, this situation would result in over-compensation and reduced consumption and community welfare. But it would be quickly taken care of in a competitive market, as other publishers with similar cost structures lower their price to capture market share.

Chart 3: Number of computers in use



Source: Computer Industry Almanac Inc.

In an epilogue, the authors suggest some possibilities for conducting empirical analysis to calculate an efficient remuneration rate, for example comparing rates of return of the academic publishing industry with other Australian industries and with overseas academic publishers. Presumably such research could be extended to other licence areas. In a situation where empirical research is scarce, this would of course be a welcome development. It might help test the assumption that negotiations between equally powerful parties lead to reasonable approximations of welfare maximisation.

5 The digital agenda, growth and competitiveness

This paper has endeavoured to present a range of arguments not just in the theoretical terms favoured in economic submissions concerning copyright, but as far as possible based on empirical evidence. Some statistical evidence of the dramatic growth of the digital revolution is presented on the following pages, starting with the number of computers in use (Chart 3 and Table 8). The compound annual growth in the number of computers in use through the present decade (1989-2000) remains as high as 11.8% in the United States and 17.6% worldwide. Most of this growth has already been realised. Much more will follow in the decade to come.

Table 8: Worldwide number of computers in use

	United States		Worldwide	
	Million units	Per 1,000 persons	Million units	Per 1,000 persons
1975	0.2	0.9	0.3	0.07
1980	3.3	14	5.2	1.2
1985	22	90	38	7.8
1989	48	192	97	18.5
1991	62	245	137	25.3
1992	68	267	159	29.1
1993	77	297	187	33.7
1994	86	329	219	38.8
1995	96	365	257	44.9
1997*	117	433	338	57.0
2000*	160	580	557	93.0
* Forecast in 1996				
Actual and new forecast for 2000**				
1995	97	367	259	45.2
1996	108		305	
2000	164	595	579	96.7
** Assuming the population projection didn't change.				
Source: Computer Industry Almanac Inc.				

Table 9: Weekly Internet users, top countries (million persons), 1997 to forecast 2000

Country	End of year 1997	1998	2000	Annual change 1997-98	1998-2000	Total change 1997-2000
United States	54.7	76.5	132.3	40%	32%	142%
Japan	8.0	9.8	21.9	22%	50%	175%
United Kingdom	5.8	8.1	17.0	39%	45%	192%
Germany	4.1	7.1	22.9	76%	79%	463%
Canada	4.3	6.5	11.6	50%	34%	168%
Australia	3.3	4.4	8.0	30%	35%	139%
France	1.2	2.8	12.6	137%	113%	972%
Sweden	1.3	2.6	3.7	97%	20%	182%
Italy	0.8	2.1	10.6	154%	123%	1160%
Spain	0.9	2.0	4.4	115%	49%	378%
Netherlands	1.4	2.0	5.4	41%	66%	290%
Taiwan		1.7				
China		1.6	3.8		55%	
Finland	1.3	1.6		26%		
Norway	1.0	1.3		33%		
Brazil	0.9		5.2			
Russia			5.0			
South Korea			3.2			
Switzerland	0.8					
Top 15 (in a given year)	89.7	129.9	267.6			
Top countries throughout	85.8	123.8	250.4	44%	42%	192%
Europe	22.0	36.0	102.0	64%	68%	364%
Worldwide	100.0	147.8	327.0	48%	49%	227%

Source: Computer Industry Almanac Inc. Table excludes occasional Internet users

The Internet has provided the main impetus for the continued growth in the number of computers. It is confidently predicted that there will be 327 million regular users by the end of 2000, up 227% in three years (Table 9). Australia was a relatively early adopter and was still the sixth-largest user at the end of 1998, but may be expected to lose this position as Europe in particular catches up. France, Italy and Germany are predicted to show spectacular growth, further stimulated as these countries finally accept the reality of electronic commerce.

It is interesting that 11 of the 15 top countries with the highest use of the Internet per head of population (Table 10) are also among the top 12 most intensive users of copyright collecting societies (Table 7). This includes the five Nordic countries, Australia and the United States. This correlation supports the claim that collecting societies have an important role in the digital agenda. It is an advantage that they are already relatively strong in the main countries with which Australia already have mutual agreements.

Table 10: Internet users per 1,000 persons, 1997

1	Finland	244.5	11	Switzerland	107.1
2	Norway	231.1	12	United Kingdom	99.5
3	Iceland	227.3	13	Netherlands	88.9
4	United States	203.4	14	Hong Kong	64.9
5	Australia	178.0	15	Japan	63.1
6	New Zealand	155.9			
7	Canada	148.9	Top 15 countries		148.5
8	Sweden	147.3			
9	Singapore	141.2	Europe		44.1
10	Denmark	125.6	Worldwide		16.9

Source: Computer Industry Almanac Inc.

Table 11: Average World Wide Web usage, US Internet users

	Oct-98	Nov-98	Dec-98	Jan-99	Average
Page views per month	1,106	1,134	1,110	959	1,077
Time spent per month	17:52:30	18:36:00	17:34:00	16:04:48	17:31:49
Number of sessions per month	30	31	30	27	30
Pages visited per session	36	36	37	36	36
Time spent per session	0:35:45	0:36:00	0:35:08	0:35:44	0:35:39
Duration of page view	0:01:00	0:01:00	0:00:57	0:01:00	0:00:59
Banners viewed per month	429.40	425.60	414.72	329.15	399.72
Banners clicked per month	3.31	3.78	3.88	2.52	3.37

Note: Statistics are based on measurement of WWW activity by a representative sample of more than 3,500 Internet users aged 18 and over who access the Web from home.
Source of monthly data: Net Ratings Inc, published by internet.com (www.cyberatlas.com)

The magnitude of the Internet phenomenon is perhaps best illustrated by the implications of an American survey of monthly user activity (Table 11). The average regular visitor to the World Wide Web sees about 1,000 pages per month. Given that there is likely to be 327 million regular users next year, the implication is that about 327 billion pages will be accessed every month of 2000, or close to 4 *trillion* in the year as a whole.

In Australia, an ABS survey in July 1997 showed that 21% of Australian businesses had access to the Internet and 5% had a web site (Table 12). The proportions were naturally highest for large businesses. Email and information gathering were the most important uses (20% and 18% of all businesses, respectively). These

proportions have undoubtedly grown significantly since mid-1997, with information gathering the most likely activity to have copyright implications.

Among households, 25% of Australians aged 18 and over accessed the Internet according to a survey in early 1998 (Table 13). Close to 10% did so at home, almost 11% at work, and smaller proportions in neighbours or friends' houses, in libraries or at educational institutions.

Even more important are the children and young people under 18. Chart 4 shows that 10-17-year-olds were the most frequent users of home computers *and* in

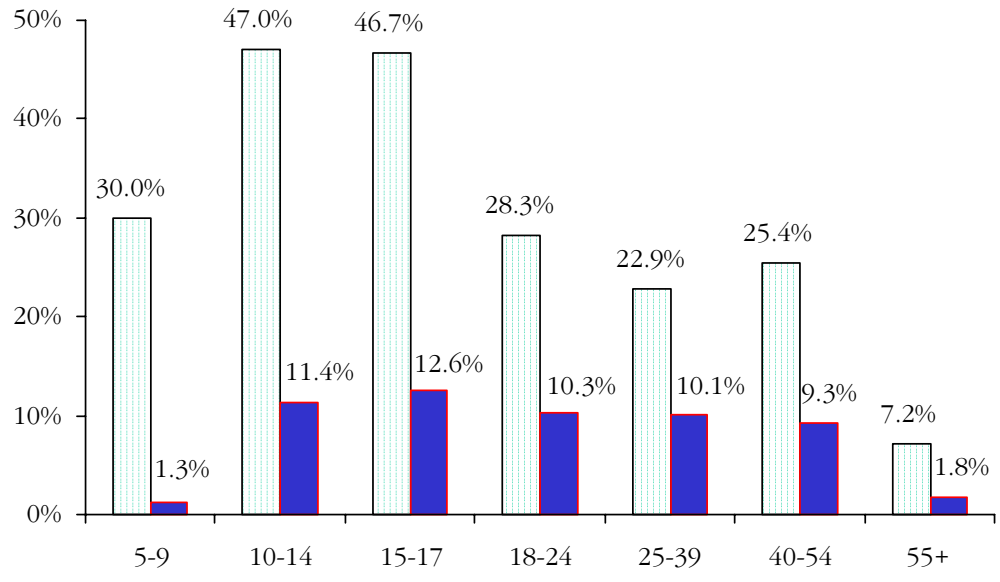
Table 13: Adults (18+) accessing a computer or the Internet, Australia, 1998

	Home	Work	Neighbour or friend's house	Public library	TAFE/ tertiary institution	Other	**Any site**
Accessing a computer							
Households (000)	4,618	4,339	1,068	1,387	1,348	1,288	**7,630**
Proportion	34.4%	32.3%	8.0%	10.3%	10.1%	9.6%	**56.9%**
Accessing the Internet							
Households (000)	1,292	1,427	848	330	644	425	**3,348**
Proportion	9.6%	10.6%	6.3%	2.5%	4.8%	3.2%	**25.0%**
Internet/computer access	28.0%	32.9%	79.4%	23.8%	47.8%	33.0%	**43.9%**

Period covers 12 months leading up to the surveys of February and May 1998
Because access can be from more than one site, the sums of the estimates for site categories exceed the estimates for 'any site'.

Source: ABS, *Household Use of Information Technology, Australia* (8146.0)

Chart 4: Use of home computers, 1998



Source: ABS, *Household Use of Information Technology* (8146.0) and ABS web site

accessing the Internet from home. While the age groups up to the mid-50s are reasonably frequent users, the high computer literacy among children guarantees that digital usage will continue to grow strongly for many years.

Quarterly Internet statistics[41] show that 1,272,000 households (18.6%) had access to the Internet at home in November 1998. This represents growth of 49% in the nine months since February 1998. About 3.2 million adults (31%) had accessed the Internet from any site other than work in the 12 months to November 1998, and of these 53% did so at least once a week.

In contrast to the climate of opinion some years ago, which tended to dismiss the possible monitoring of digital copying for copyright owners as too difficult, the pendulum has swung the other way, as demonstrated by the draft *Copyright Amendment (Digital Agenda) Bill 1999*. This is partly associated with the meteoric rise in Internet usage, and partly with the increasingly sophisticated monitoring devices that can be applied. There is an underlying fear that if it proves impossible to collect copyright in this dominant medium, the clamour to see all copyright abandoned will strengthen. Both the potential for control in a brave new world of innovation and the chaos that might emerge in a world without copyright have been vividly described by Charles C Mann.[42]

In 1987, the European Commission put forward a proposal to the European Parliament and Council[43] to counter the threat primarily through a harmonised legal framework on copyright and related rights, which through increased legal certainty it expects to foster substantial investment in creativity and innovation. It anticipates this to lead in turn to growth and increased competitiveness of European industry in the areas of content provision and information technology, and more generally across a wide range of industrial and cultural sectors. (p 32)

One of the most striking features of the EU proposal is its impact assessment, which explicitly lists the benefits from harmonisation of copyright law: growth, competitiveness and employment opportunities centred on the technology sector but spreading across the economy. It concludes (p 64): "In view of the wide variety of ways of creating and marketing intellectual property, this proposal will serve companies of any size. However, the barriers to entry for these markets are low and the chances for small and medium-sized enterprises to be highly competitive, alone or in joint forces, are very high. It should be stressed that SMEs already have a considerable presence in the multimedia market (on-line and off-line) across Europe today."

It is to be hoped that the Australian Government is taking a similarly enlightened attitude in relation to the future role of copyright industries, and that the amended *Act* will reflect this. It is logical to extend the activities of collecting societies as an efficient means of distributing collected fees to copyright owners, as this appears the most efficient means of overcoming the difficulties of identifying the perpetrators of illicit copying of digital material.

Appendix: Two case studies supplied by CAL

Publisher's case study

LBC Information Services is a specialist legal publisher and distributor of legal texts, with a total of 1720 works for which CAL is the copyright agent. Of these works, 508 are published by LBC and 1212 are other publishers' imprints.

As well as publishing books, LBC is also known for its niche publishing activities, producing such titles as Sydney Law Review, Commonwealth Law Reports, *and the* Australian Law Journal. *The company reports that its main source of copyright licence fees is law reports and journals.*

Philippa Seagrave, LBC's General Manager, Publishing Support, says last year LBC received $166,000 in copyright licence fees (before distribution of their respective portions of the fees to eligible authors and illustrators etc.) Since CAL first made a distribution, in 1989, LBC has received $1,234,743 (before distribution).

Philippa says copyright management is significant to LBC's business "in two senses. As a revenue stream its returns are a small, but reliable, amount from the use of the material."

"The second and possibly more important [aspect of copyright management] is the control of unfettered copying and protection of that intellectual property. This is vital to the publishing industry."

Concerned about the future, Philippa believes online copying will have a very significant impact on LBC's business.

"The rights to much of the material that is published by our organisation has to be acquired at some expense from Government agencies (most of whom are under pressure from the user pays and self funding principles of government)," she says.

"By providing this material at nil cost to agencies and then funding their operations it is becoming more difficult to maintain a viable business in primary materials."

"These free-to-air providers are then allowing nil cost downloads of materials. Some of this material is almost certainly in breach of our organisation's copyright."

Eventually, she believes LBC will have to change its business model to cope with the new digital environment. "We will have to provide material through the same low cost options and attempt to price it to encourage legitimate dissemination to each user's desktop, rather than the current dissemination outside licensed use," she says.

Author's case study

Jill Bruce writes books for children, and has appointed CAL as her copyright agent for all the works in which she holds copyright – 11 books. Her published titles include: Flags and Emblems of Australia, Prime Ministers of Australia, *and* Australian Seashore. *While she does not earn much from copyright licence fees, Jill says CAL's contribution to her livelihood is "small but welcome".*

Her primary source of income is her teacher's salary, which is also supplemented by some income-producing investments. In all, she calculates about 20% of her income comes from book sales and 1% from copying fees, which are largely generated from copying in primary schools.

Last year Jill received $300 in licence payments, bringing the total to about $1500 since she first began receiving distributions from CAL in 1995.

Jill says she would continue to write if she didn't receive copying fees, but adds: "In Australian publishing returns through royalties can be very small, which sometimes makes writing uneconomic."

Endnotes

1 Australian Government, *Exposure Draft and Commentary, Copyright Amendment (Digital Agenda) Bill 1999*, 27 February 1999.

2 Treasury, "The Economic Role of Copyright", *Economic Roundup* Autumn 1996: 55-75.

3 Vince FitzGerald and Jeremy Thorpe, *Copying by Universities: An Initial Analysis*, The Allen Consulting Group, June 1998: 14-18.

4 Office of Regulation Review, *An Economic Analysis of Copyright Reform: A Submission to the Copyright Law Review Committee's Review of the Copyright Act (Cth) 1968*. Commonwealth of Australia 1995.

5 Treasury, *op. cit*.

6 Protecting the *expression* of an idea (as in a book or painting) puts copyright into direct contrast with the other main intellectual property right, patents. Patents protect the *idea* rather than the object or the expression. David D Friedman discusses this in his forthcoming book, *Why is Law? An Economist's View of the Elephant*, Chapter 11: "Clouds and Barbed Wire: The Economics of Intellectual Property" (http://www.best.com/~ddfr/). One consequence is the greater ease with which copyright can be (a) secured and (b) enforced, because the expression is usually in the form of a well-defined material object (although copyrightable derivations may come into existence such as translations or electronic copies).

7 Treasury, *op. cit*., p 56; ORR, *op. cit*., p 1.

8 ORR, *op. cit*., p 9.

9 Treasury, *op. cit*., p 62.

10 These practices are also specifically targeted by the draft Bill.

11 "Lawless", *The Economist* 1 July 1995 (quoted by ORR, *op. cit*., p 2).

12 Charles C Mann, "Who Will Own Your Next Good Idea?", *The Atlantic Monthly*, September 1998; 57-82 (Internet version). Other quotations in the next paragraph are from the same source.

13 The International Intellectual Property Alliance (IIPA) is an association of United States copyright industries which performs a watchdog role throughout the world and recommends special surveillance of practices in countries it finds in breach of international agreements. In 1997, for example, it included 55 countries on its "Special 301 filing" (IIPA, "Copyright Piracy in 55 Countries Causes $10.8 billion in Trade Losses in 1997", Press release 23 February 1998).

In its own description, "IIPA is a coalition of associations representing US copyright-based industries in bilateral and multilateral efforts to open up foreign markets closed by piracy and other market access barriers. IIPA's seven member associations are the Association of American Publishers (AAP), AFMA (a trade association of independent motion picture and television distribution and production companies), the Business Software Alliance (BSA), the Interactive Digital Software Association (IDSA), the Motion Picture Association of America (MPAA), the National Music Publishers' Association (NMPA) and the Recording Industry Association of America (RIAA)." Arguably, the organisation exerts considerable international market power with such a membership, including Australia as demonstrated by the following paragraph.

IIPA collects the data through agencies in each country. Although Australia had "enjoyed some of the lowest piracy rates of any country the past several years", IIPA added it to its "Priority Watch List" for 1998 and recommended an "out-of-cycle review" for two reasons. The first was the Australian Government's proposed amendments to the law to eliminate the importation right, "one of the essential exclusive rights of copyright owners, which if enacted, would seriously threaten these low piracy rates."

"Second, an increasingly unreasonable evidentiary burden is being imposed on copyright owners for establishing copyright ownership in Australia. This high evidentiary burden on the copyright owner threatens to undermine enforcement of the law. The government of Australia must amend its copyright law to include presumptions of copyright ownership in Australia and reverse the existing high burdens for effective enforcement." (IIPA *1998 Special 301 Submission*, p 97)

14 Michael O'Hare, "Copyright: When is Monopoly Efficient?" *Journal of Policy Analysis and Management*, Spring 1985: 411-412.

15 *Ibid*., p 414.

16 *Ibid*., p 416.

17 Both are now to be extended to digital copying (*Commentary* to draft *Copyright Amendment (Digital Agenda) Bill 1999*, p 11 on fair dealing and pp 16-17 on educational statutory licences).

18 O'Hare, *op. cit*., p 417.

19 The draft *Copyright Amendment (Digital Agenda) Bill 1999* gives improved protection to computer software. As part of the Government's overall commitment to facilitate the growth of the information economy, it is committed to the improved protection of computer software. The amendments proposed in the draft Bill are designed to fine-tune the existing protection of computer software (*Commentary* to exposure draft 1999: 31).

20 ORR, *op. cit*., p 35.

21 Grant Butler and John Davidson, "Spying as Easy as 1, 2, III", *Australian Financial Review* 27 February 1999: 19. The new chip-specific ID code of Intel's new Pentium III has raised privacy concerns, one comment being, "If we're not careful, the Internet could become the biggest surveillance network ever." Intel management has attempted to hose down any concern, but it may well be asked why the ID code is incorporated in the first place.

22 The input-output data in H H Guldberg, *Copyright — An Economic Perspective*, Australian Copyright Council 1994, were recently updated for arts-related industries in the same author's forthcoming publication for the Australia Council, *The Arts Economy 1968-1998*. Another result of that investigation was Table 5, dealing with the fall in real income of authors. The publication will contain full arts-related input-output and 1996 Census data in support of Tables 2 and 5.

23 "The 'core' copyright industries encompass those industries that create copyright works as their primary product. These industries include the motion picture industry (television, theatrical, and home video), the music and recording industry (music publishing, records, tapes and CDs), the book, journal and newspaper publishing industry, the computer software industry (including data processing, business applications and interactive entertainment software on all platforms), legitimate theater, advertising, and the radio, television and cable broadcasting industries." (Stephen E Siwek and Gale Mosteller, Executive Summary, *Copyright Industries in*

the US Economy: The 1996 Report, www.iipa.com, 1997). As in the Australian estimates, manufacturing of hardware such as computers and musical instruments is excluded together with distribution and trade.

24 IIPA, *Copyright Industries in the US Economy* (reported in *Copyright World* 18, 1998).

25 ABS, *Balance of Payments and International Investment Position* (5363.0), 1996-97.

26 Chapter 1 of H H Guldberg, *The Arts Economy 1968-1998.*

27 Australian Bureau of Statistics, *Work in Selected Culture/Leisure Activities, March 1997* (6281.0).

28 Guldberg, *op. cit.*, end of Chapter 2.

29 Jeremy Thorpe, 'Bringing the Regulation of Collection Societies into the Mainstream', ANU, Canberra 1998.

30 Stanley N Besen, Shiela N Kirby and Steven C Salop, "An Economic Analysis of Copyright Collectives", *Virginia Law Review* 1992: 396-399.

31 Almost forty years ago, Ronald Coase, winner of the 1991 Nobel Prize in Economics, wrote a paper entitled "The Problem of Social Cost" (*Journal of Law and Economics*, 1960:1-44). It demonstrates that government action through regulation or taxation of nuisances such as a polluting factory may not be required, because the interested parties themselves will often be able to negotiate economically efficient solutions. This insight is applicable across a broad range of negotiating situations — including copyright-related ones. The so-called Coase Theorem says that an economically efficient outcome will always be reached, provided the transaction costs are zero.

Of course, transaction costs — the time and effort required to carry out a transaction — are not zero in the real world, and they can be high if many people or organisations are involved in a complex deal and some people hold out for a free ride since they will still participate in the public good resulting from the deal. High transaction costs cause outcomes to be less than economically efficient; indeed, they can block the working of markets that would otherwise be efficient.

The corollary is that reducing transaction costs to a minimum will provide as close as we can get to an economically efficient solution. The Coase model therefore offers a theoretical model for reaching the best possible situation for all interested parties, provided transaction costs can be substantially reduced.

32 Philip L Williams, "APRA's Authorisation Application to the Act — Witness Statement", The Australian Competition Tribunal September 1998: 12.

33 Abraham Hollander, "Market Structure and Performance in Intellectual Property: The Case of Copyright Collectives", *International Journal of Industrial Organisation* 1984: 201.

34 Stanley N Besen, Sheila N Kirby and Steven C Salop, "An Economic Analysis of Copyright Collectives", *Virginia Law Review* 1992: 402-403.

35 Care must be taken to identify the different legal bases for collecting societies. However, the descriptions on the IFRRO web site suggest similarities as well as differences. Comparing the Norwegian, Danish and Australian RROs, rightsholders are authors and publishers, where authors generally include journalists, photographers, illustrators, composers and translators. All have wide-ranging agreements with educational institutions.

In addition, Norwegian users include national and local government authorities, political parties and other organisations, private and public enterprises. Kopinor in 1996 had licensing agreements with 14,500 corporations, enterprises and organisations with 470,000 employees. At the request of Norwegian rightholders,

Kopinor was licensing on a pilot basis certain digital uses of protected works, particularly in libraries and internally in institutions and businesses.

The Danish agency, Copy-Dan, had agreements with 2,000 state institutions and 850 individual agreements with municipalities, private enterprises and other institutions. Just over 90% of collections were for educational copying. All activities were reprographic.

In Australia, CAL in 1996 had agreements with 150 private companies, 50 associations, 25 media monitors and press clipping agencies, 25 disabled, 1,700 churches and 15 library and document delivery services. CAL had developed two digital copying services including the New Media Licence Scheme and the Copyright Clearance Scheme for one-off copying including digital. In addition, some universities had sent remuneration notices for digital copying under the statutory scheme, which CAL had accepted.

36 Like high transaction costs, monopolistic behaviour also distorts the negotiations between parties. If one party is relatively weak, it will be unable to resist the other party increasing its profits by restricting supplies, given that the initial allocation of legal entitlements requires conditions of perfect competition to be fully efficient. If the parties are reasonably balanced, the outcome according to the Coase Theorem is more likely to approximate maximum welfare.

37 Williams, *op.cit.*, p 27.

38 This is discussed in detail by Vince FitzGerald and Jeremy Thorpe. They conclude (*op. cit.*, p 9): "Taking all these factors into account, we suggest that there are a number of markets for the supply of academic publications in Australia. These markets appear to be best considered as delineated by areas of academic teaching and research. Each of these markets includes the supply of new original publications, legitimate copies of various types made by universities and students, and second-hand originals."

39 Williams, *op.cit.*, p 28.

40 FitzGerald and Thorpe, *op.cit.*, pp 14-18.

41 ABS, *Use of Internet by Householders, Australia, November 1998* (8147.0).

42 Mann, *op. cit.* His reference to a world without copyright is Paris, where the revolutionary government ended the privilege system for booksellers that substituted for copyright, in 1789. "Liberation from copyright turned every bookseller into a pirate. Incredibly, identical versions of the same journal came out — the same headlines and articles printed by different publishers." "Confronted by the reality that lifting all restrictions on literary property had triggered a cultural race for the bottom, [Marquis de Condorcet who was originally in favour of abolition] early in 1790 proposed giving authors power over their own work lasting ten years after their deaths. The proposal — the basis for France's first modern copyright law — passed in 1793, by which time Condorcet had been purged by the Revolution."

"Condorcet's about-face on the value of unfettered speech suggests that Americans should be careful about allowing the laws of intellectual property to weaken and fail ...".

43 Commission of the European Communities, "Proposal for a European Parliament and Council Directive on the Harmonization of Certain Aspects of Copyright and Related Rights in the Information Society", Brussels 10 December 1997 (97/0359 (COD)). The proposal was current at the time of writing, and is subject to change through countervailing power activity (such as lobbying) as it progresses towards legislative enactment.

Â© 2018 Deloitte Access Economics. Copyright in the digital age. Executive summary. Digital technologies are not only changing the way society communicates but also the way we search for and use information. Digital technologies are increasingly being drawn upon for ideas generation, innovation and dissemination. The digital economy represents a big opportunity for New Zealand.Â A range of non-expressive uses of copyright material, which involve copying as an intermediate step in the production of a non-infringing end product, are expected to grow strongly in the digital age and would be better supported under fair use (or a more flexible approach to fair dealing exception), including The economic justification for copyrightâ€”and for most other forms of intellectual propertyâ€”thus lies in ensuring that creators have appropriate incentives to engage in creative activities by granting them a bundle of exclusive rights to use their works. Although copyrighted works can be commercial failures, this proprietary approach affords copyright owners the opportunity to charge a price above the cost of the mediumâ€”e.g., film, recording, screen, network, or printed pageâ€”on which the copyrighted work is distributed.Â For those readers less familiar with the origins and evolution of copyright protection, an appendix to this report summarizes this history and compares copyright and patent law. 2. Consume and Share: Making Copyright Fit for the Digital Agenda. Marco Ricolfi. p. 49-60. Texte Notes Auteur. Texte intÃ©gral. 1 See European Commission, A Digital Agenda for Europe, Communication from the Commission to the Eur (...) 2 In sketching out the broader picture, I draw on the final section of my paper â€Copyright Policies (...) 1As it often happens, the title of my chapter has an ambiguous ring to it.Â Are we supposed to deal with a broad new vision of the role of copyright intended to foster the generation and dissemination of creativity in the new digital environment? 1 And are we talking about EU Directives or the Berne Conventionâ€”about the short term or medium term? Well, perhaps the two dimensions, different as they are, may go hand in hand. Digital Economy Policy Agenda and Activities 2016. Free and Open Internet Trust. Cross-border data initiative â€“ Launch â€œdigital attachÃ©sâ€ and cross-border flows projects.Â Copyright â€“ Publish NTIA/PTO white paper on copyright in the digital age. Access and Skills. Broadband access and spectrum â€“ Promote work of the Broadband Opportunity Council, BroadbandUSA, and the Presidentâ€™s 500MHz spectrum initiatives. Skill-building for the digital economy â€“ Support skill-building initiatives like the National Initiative for Cyber Education (NICE). Innovation and Emerging. Technologies. Patent reform â€“ Support patent litigation reform, other efforts to improve patent quality. Review and Research Agenda. Will Sutherland and Mohammad Hossein Jarrahi. University of North Carolina at Chapel Hill, 200 Manning Hall, Chapel Hill, NC 27599.Â digital platforms. Abstract. Over the last few years, the sharing economy has been changing the way that people share and. conduct transactions in digital spaces. This research phenomenon has drawn scholars from a.Â Prior agendas have focused on the economic or social aspects of the SE (Cheng. 2016; Oh and Moon 2016), but there has been no purposeful development of a shared. understanding of the technological elements of the SE, and how it supports the SEâ€™s observed.