

How technology changes the scope, strength and usefulness of copyright: Revisiting the ‘economic rationales’ underpinning copyright law in the light of the new economy¹

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ABSTRACT

The technological revolution in information and communication (ICT) technologies, including the emergence of a digital technological paradigm, has undoubtedly changed the scope, strength and usefulness of copyrights. This paper will review such changes in relation to the ‘economic rationales’ underpinning copyright law. The economic rationales which will be critically discussed in this respect include:

- Copyrights as market facilitator for commercial exploitation
- Copyrights as incentive mechanism for investment in creativity and innovation
- Copyrights as industry facilitator for sustainable development
- Copyrights to protect and reward inventors of creative expressions

The paper demonstrates how new information and communication technology both enables and constrains the scope, strength and usefulness of copyrights in the new economy. However, the enabling elements will only overpower the constraining elements if good copyright management, suitable business structures and updated appropriation models are implemented. The solution is not to be found in the policy discourse arguing for strengthening copyright law.

Keywords: Copyright scope, strength and usefulness; Economic rationales for copyright; Information and communication technologies

I: INTRODUCTION

The copyright system has been one of the most essential institutions applied in the developed world to facilitate the creation and dissemination of cultural works through business enterprises. Copyrights are important because they present the legal mechanism for protecting and appropriating rent from creative expressions and symbolic material.

The technological revolution in information and communication (ICT) technologies, including the emergence of a digital technological paradigm, has undoubtedly changed the scope, strength and usefulness of copyrights. This paper will review such changes in relation to the ‘economic rationales’ underpinning copyright law. In section II focus will be on how ‘Copyrights facilitate markets for commercial exploitation’. In section III focus will be on ‘Copyrights as incentive mechanism’. In section IV ‘Copyrights as industry facilitator for sustainable development’ will be reviewed, and section V will review how ‘Copyrights to protect and reward inventors of creative expressions’. The paper will conclude in section VI.

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The broad but detailed, approach to systematically review and critically discuss how new technology changes the scope, strength and usefulness of copyright is appropriate for several reasons. It creates a holistic picture, and it brings in perspectives which may be overlooked in the daily political discourse of the subject, which tend to focus on how the new technology obstructs the scope and strength of copyrights, and how the solution to the problem is to be found in strengthening copyright law.

Overall, this paper contributes to the discussion by demonstrating how new information and communication technology both enables and constrains the scope, strength and usefulness of copyrights in the new economy. However, the enabling elements will only overpower the constraining elements if good copyright management, suitable business structures and updated appropriation models are implemented. The solution is not strengthening copyright law, as this will not reach the root of the problem.

II. Copyrights as market facilitator for commercial exploitation

2.1 The rationales

2.1.1 The market creation rationale

Most fundamentally, copyright has provided a framework to manage the problems arising from the joint consumption and imperfect excludability of creative expressions of ideas and symbolic material. To recognise this rationale for copyright we have to address the complicated nature of creative expressions themselves. The fact that a creative expression can be consumed or enjoyed jointly, involves significant fixed costs in development, and that it can be reproduced very cheaply means that it has some of the qualities of a public good. (This characteristic is usually referred to as the ‘non-rival’ aspect of a public good). But, unlike a public good, it is possible for the creator of an expression to exclude others from using it by use of a copyright, opening the possibility for wider commercial exploitation.

Establishing property rights for creative expressions of ideas and symbolic material means a market price higher than its marginal cost of reproduction, which tends to zero, giving rise to rents.² This in turn implies an incessant drive to expand the market for ideas so as to generate greater rents. Furthermore, copyright protected creative expressions, by definition, face increasing returns to scale, which gives rise to increasing rents as markets expand. Thus, copyright provides direct economic incentives for sharing such expressions through trade.

2.1.2 Cultural spill-over and expansion rationale

It can, in theory, be argued that the economic copyright rationale for market creation also improves cultural expansion when there are externalities (e.g. cultural spill over) from trade of services and projects embodying creative expressions. However, the rationale that copyright leads to *general* cultural expansion of creative expressions is

2 L. Rivera-Batiz and P. Romer, ‘Economic Integration and Endogenous Growth’, *The Quarterly Journal of Economics* 2 (1991), 531–55.

highly controversial, as there are so many other economic and institutional factors that need to be in place. This is discussed further in section 3.2.3 below.

2.2 The impact of technology on the copyright

2.2.1 Technology changes the role of time, space and location and provides new appropriation opportunities

The economic status of a creative expression changes once it can be separated from the tangible object (for example, paper-sheet, canvas, compact disc, digital file) or person in which it is originally fixed. Technological change in printing, recording, play-back equipment, broadcasting, data-processing, the Internet, etc. has facilitated such separation. Thus, consumption of a creative expression is no longer limited by time and place.

When such separation occurs, profits emerging from reproduction become the focus of business strategies. In such cases, profit becomes much more closely tied to the organisation and management of copyrights in copyright-based markets. Furthermore, assessing this economic nature of intangibles themselves (as reviewed in above section 2.1.1), it can be claimed that creative expressions and other associated intangible assets are taking on a greater market scope in today's globalising world.

2.2.2 Technology enables piracy in volatile markets

However, technological change also inflicts the strength of the copyright in markets. The problem here concerns piracy in volatile markets

Copyright owners (rich or poor) face the problem of exploitation of their effort invested in the creative industries. If we recall from section 2.1.1, the most essential feature of the copyright rationale for market creation and market exploitation is that it is about making creative expressions with public good character scarce (or rival) and expensive. Whereas an expression (for example music or a theatre show), is provided as a service through a live performance, the problems of joint consumption and (imperfect) excludability are reasonably easy to manage. The market is restricted and because reputation is itself established through direct creative expression, the musical idea is reasonably secure.

However, it is a problem that the expression more easily acquire the properties of a non-rival public good product via the evolution of (i) new sound and picture recording and playing technologies (for example, magnetic tapes, LPs, CDs, high fidelity and stereos, video, digital audio technology), as well as (ii) new broadcasting and public performance techniques (for example, radio, television, cable, satellite, Internet). This opens up the possibility for widespread copying and imitation. The low cost of (re)producing an intangible expression means that its market can be uncertain and fragile, quickly undermined by copying. This makes any investment in activities that rely heavily on expressions and other intangible assets inherently risky.³ The threat is particularly apparent with cultural products, such as a sound recording or a film, where the investments made in establishing and promoting an artist are very specific

3 W.M. Landes and R. Posner, 'An Economic Analysis of Copyright Law', *Journal of Legal Studies* XVIII (June 1989).

and where short product cycles mean profitability relies on explosive but ephemeral market growth.

Thus, despite the effort in adjusting copyright legislation and royalty management to protect expressions on new technological carriers (paper, magnetic tapes, LPs, CDs, electronic files), there has long been a substantial leak in the copyright system, with illegal copying and this has become big business and, in some regions of the world, part of organised crime.

The piracy problem arises from the combination of high fixed costs of development compared with the very low marginal costs of making copies. It has also been argued that international copyright conventions have not been effective in reducing audio counterfeiting to comparatively low levels.⁴ By the end of the last century industry even claimed that one in three music recordings sold in the world is based on piracy.⁵ In this context economic development has been found to be the main determinant of low counterfeit levels.⁶

The size of the problem is of course debatable. Landes and Posner⁷ discuss in some detail how there are various practical obstacles to copying, even in the absence of copyright, as well as various non-legal norms against it. Also, in an interview we carried out in Dublin, December 1999, the Director of Services of the Irish Music Rights Organisation (IMRO), Eamon Shackleton, questioned whether the common great claims of global piracy are necessarily market distorting. That is, he argued, sometimes piracy might create music markets in poorer regions where most cannot afford to enter the 'legal' music market in the first place; and, secondly, in such a situation, piracy may function as a diffusion mechanism of the social or political culture with which the music is associated. Both actions may have broader, indirect implications for increased income generation within the music industry.

Nevertheless, in the world's more developed regions piracy is now mainly due to access to advanced information and communication technology of the common population. CD writers, and so on, are easy to access at almost any school, university, workplace, or home, and they are also relatively cheap to buy and form part of any standard PC or laptop today. P2P file sharing networks have also matured in most developed countries. In such situations a discussion has been raised concerning the introduction of levies on copying equipment and material as a corrective measure for dealing with the impossibility of charging for home taping and similar activities.⁸ Furthermore, court cases against music down-loaders from, and up-loaders to, the web are growing dramatically and followed by the press.

This new type of digital piracy is often argued to be direct market substitution, as it is done by those who potentially could pay for the music. Even so, studies are being done (by the OECD and more recently by Industry Canada) to estimate the extent to which the P2P file sharing also increase music interest and awareness of music which

4 A.E. Burke, 'How Effective Are International Copyright Conventions in the Music Market?', *Journal of Cultural Economics* 20 (1996), 51–66.

5 British Phonographic Industry Limited, *BPI Statistical Handbook 1998* (London: BPI, 1998).

6 A.E. Burke, 'How Effective Are International Copyright Conventions in the Music Market?', *Journal of Cultural Economics* 20 (1996), 51–66.

7 W.M. Landes and R. Posner, 'An Economic Analysis of Copyright Law', *Journal of Legal Studies* XVIII (June 1989).

8 S. Besen, S. Kirby and S. Salop, 'An Economic Analysis of Copyright Collectives', *Virginia Law Review* 78/1 (1992), 383–411.

in turn also facilitate the growth of new music markets.

Thus, although creative industries have become global, regions differ when understanding the causes, effects and impact of piracy. Therefore global regions need to be governed differently with respect to coming to terms with piracy issues.

III. Copyrights as incentive mechanism

3.1 The rationales

3.1.1 The incentive rationale

The basic proposition of many utilitarian classical economists,⁹ may be used to support the argument that, as IPRs provide ‘the prospect of reward’, this in turn encourages creative advance by providing increased incentives to invent, invest in, and develop further new creative expressions, and that without such incentives the invention inducement would be weakened. Douglass North¹⁰ also points out that sustained inventions and innovations first began after the establishment of IPRs to raise the private rate of return. However, a ‘copyright-induced incentive to invent’ rationale for the IPR system rests on two assertions:

1. Not enough inventions in creative expressions will be made without effective incentives: neither invention nor exploitation of inventions will take place unless inventors and capitalists believe they will yield profits which make it worth their while to make their efforts and risk their money; and
2. copyrights are the cheapest and most effective way for society to hold out these incentives.

However, it must be emphasized that *something so personal as a creative expressions may not really be the outcome of an incentive system* as we see how all societies have creative expressions (e.g. in music and art), even if they have very weak copyright enforcement. That is, we believe that non-commercial musical cultures flourish well without the copyright system. However, as argued by Andersen and Kozul-Wright and Kozul-Wright¹¹ in a study on the music industry, it must be recognized that *the problem of commercialising creative expressions* for industry development is entirely different. Here commercial value-added from expressions is maximised by putting together joint effort and a range of complementary assets and resources and venture capital that are not freely available, but need economic incentives.

It has also been argued on the basis of the work of the above-mentioned utilitarian economists that even if the IPR system may not always (or at all) be the most essential ingredient to make people invent and innovate, it helps when it comes to motivating the direction of such. That is, only the inventions with most commercial opportunities will be explored for profit purposes, so in that sense it promotes ‘useful inventions’

9 ... including Jeremy Bentham, Adam Smith, Jean-Baptiste Say, John Stuart Mill and John Bates Clark . Reviewed in Andersen, supra n. 4.

10 D. North, *Structure and Change in Economic History* (New York: W.W. Norton & Company, 1981).

11 Andersen, B, Kozul-Wright, Z. and Kozul-Wright, R. (2005) “The Social and Economic Effects of Copyrights in the Music Industry: A Contribution to the Convergence versus Divergence Debate”. In Macmillan, F. *New Directions in Copyright Law* (Vol. 1), Edward Elgar: Cheltenham.

(that is, those that people want). Basically, according to the utilitarian classical economists, as IPR privileges offer prizes to creative minds they arouse the mental powers and give them a direction. This commercial aspect of creativity may be able to explain why the creative industries (such as the music and art and media industry) invests more money in mainstream expressions (such as pop music) than the content valued by the minorities; see section 3.2.3 below for discussion.

3.1.2 Incentives and the emergence of innovation based market competition

In a Schumpeterian vein¹² it can also be argued that the rival aspect of copyright-protected expressions of ideas and symbolic material (by making an intangible product or service with public good character into a rival good, as explained in section 2.1.1), embodied in the production and trade of goods and services, stimulates innovation-enhanced competition by providing incentives to invest in innovating and commercializing new expressions in the hope of profiting from first mover advantage. In this context, there will be competition among many talented inventors and artists in developing and using expressions that hold desired new attributes.

It follows that, a need for copyrights can also be explained from the theory of the innovator's head-start profit.¹³ The argument is that if an inventor is really ahead of other inventions, then the time interval before catching up and imitation have happened should secure inventors' profits and rent. The essential issue is the rate by which new expressions spread (that is, the rate of imitation): the faster the speed, the more protection is needed to ensure reward, and the slower the speed, the less IPR protection is needed to ensure reward. Thus, as imitation (or copying) is very cheap and easy in many of the creative or copyright industries (e.g. music and publishing) where it is all about the 'up front' investment, copyrights protecting the market is essential to ensure reward to the creator or just to ensure the full financial covering of the investment in the creativity. Thus, an important copyright rationale here is also that it is believed to stimulate a competitive dynamic environment as well as to strengthen continuous inventors and innovators. However, the complex issue of the relationship between copyrights and competition will be discussed further in section on reward systems (see below section V).

3.2 The impact of technology on the copyright

3.2.1 New information and communication technology expand the opportunities for profit

The opportunities for profit from copyrights protecting creative expressions have increased with development of information and communication technology and globalization increasing the size of the market.

Broadcasting via aerial or digitally, interactive TV, phones, the Internet, etc. have increased the economic incentives for venture capitalists to invest in innovating in products aimed for such types of markets. Thus, publishing (music, books) rights, media rights (for TV programmes, sports-broadcasting etc.), image rights, etc. has

¹² J.A. Schumpeter, [1912], *The Theory of Economic Development*, R. Opie, trans. (Cambridge, Mass.: Harvard University Press, 1934).

¹³ Ibid.

become big business. Interactive TV programmes (e.g. Pop-idol, X-factor, Pop-star the rivals, Who wanna'be a millionaire, etc.) and interactive radio shows have also become extra ways of raising income or profit from copyrights, where the production and broadcasting rights are central.

Due to the increased user-producer interaction enabled by information technology (phone, digital TV and the Internet) inventors and investors are more able to invest in the creative expressions that the critical mass of consumers want. As mentioned in above section 3.1.1, expressions with most commercial opportunities will be explored for profit purposes, so in that sense the technological revolution facilitates a stronger promotion of the mainstream.

However, while those effects indicate a stronger effect of the copyright as a result of technological change in information and communication technology, there is another side of this technology may undermine other rationales of the copyright.

3.2.2 New information and communication technology may cause piracy and undermine incentive mechanisms

The piracy problems discussed in above section 2.2.2 and which may undermine music markets is of course also vital for the incentive argument in relation to inventing and investing in the commercial aspects of the creative industries. Obviously, the discussion will not be repeated here, but it is as relevant in relation to establishing commercial incentives.

3.2.3 Copyrights and new information and communication technology may inhibit cultural expansion

The spill-over or cultural expansion rationale put forward in above section 2.1.2, will now be revised together with the incentive rationale. As mentioned in section 2.1.2, it can, in theory, be argued that the economic copyright rationale for market creation also improves cultural expansion when there are externalities (e.g. cultural spill over) from trade of services and projects embodying creative expressions. However, due to commercial opportunities are generally explored for profit purposes (as highlighted in section 3.1.1 and 3.1.2 above), there is an incentive to promote only the mainstream. Thus, the idea that copyright leads to general cultural expansion of creative expressions is highly doubtful, as there are so many other economic incentive and institutional factors that plays a role.

As put forward by David¹⁴ (see section 4.1.2 for elaboration below), the copyright protecting access to manipulating and replicating creative expressions may not lead to expansion and progress for the simple reason that copyrights within information and knowledge spaces is inefficient as it does not allow many creators to participate in the same creative spheres, and that it is through creative efforts to replicate expressions of ideas and symbolic material within new contexts that communities build bodies of cultures.

The industry dominance of only few majors in most copyright industries (music, film,

14 P. David, 'Will Building "Good Fences" Really Make "Good Neighbors" in Science', *Report to European Commission (DG-Research)*, STRATA-ETAN workshop on IPR aspects of internal collaborations (2001).

media, etc.) can be a major problem of cultural expansion. Basically, those companies do not only control markets for products embodying creative expressions. As such expressions possess a considerable power to influence behaviour and beliefs, they also control the flow of human ideas, language or speech, and emotion. This is a huge responsibility for the giants leaders in the copyright music, media and film industries, and with their extreme promotion of the mainstream, it could be argued that they do not seem to accept this responsibility. The copyright system seems to enforce a trade-off between commoditisation for profit and cultural expansion.

It can be argued that the copyright system can stimulate cultural imperialism when there is an increased impact of *one* cultural expression across the global economy. This is related to the problem regarding how some cultures can safeguard or expand their cultural heritage of non-commercial expressions in many regions of the world. Here it does not seem like the copyright system is able to provide the answer, as it stimulates a bias towards advancing and expanding commercial mainstream music.

Furthermore, there is the problem of access when copyrights regulate creative cultural activities. For example, football is a sport which in Europe were traditionally supported by working class and those local to the clubs. However, with the cable channels buying up the media and broadcasting rights from the national or state channels (who do not operate under the same rules as the cable channels so cannot enter same 'pay-TV' deals), many of the local working class supporters do not any longer have access to see their local games unless they leave the home to watch the games in public places. This trend caused by development in telecommunications and globalization put the poor, the local and the immobile in a relatively disadvantageous situation of denied access to some of their closest and most traditional cultural sports.

IV. Copyrights as industry facilitator for sustainable development

4.1 The rationales

Copyrights are believed to protect entrepreneurial spirit in industry development. The various rationales in this respect are outlined below.

4.1.1 The production and trade privilege rationale

The argument is that efficient copyright protection allows profit-oriented firms to enter (or develop) an industry or market. This rationale for copyrights can also be compared to that of tariff protection. Just as with tariffs, a copyright protects against market entry and thereby allows a firm or an industry to cover the fixed costs of product development, production and marketing. The idea is that this production and trade privilege will allow a firm or industry to develop and mature, which, in turn, causes (or opens space for) industrial development and progress. It could be argued that copyrights in instant allow breathing room for the creator or innovator to invest in development without fear that another individual or firm will steal the creative expressions of the idea.

4.1.2 The 'more efficient use of scarce resources' argument revisited

Based upon views of the utilitarian economists, Posner¹⁵ put forward some efficiency arguments for IPRs in relation to the argument of industrial development.

In this context, the static efficiency argument for IPRs basically read that without property rights resources will over-used or exhausted as none takes the costs imposed on other into account. E.g. if no-one has the right to exclude other from using a piece of land all farmers will put their cows there to graze. At a certain stage this will impose costs on the other farmers. The more cows on the land, the more they will need to graze in order to eat the same amount of grass. This will reduce their weight in addition to exhausting the field, and this is inefficient. (Notice analogy to highway congestion). By privatising the land, in the sense that each farmer each owns a share, the land will be used more efficient, as the farmers will include the costs each additional cow will impose to the system.

Furthermore, by making the rights transferable, the farmers that can use the resources most efficient will end up using or owning most of the land, as it make sense for the less efficient farmers rent the land or sell. Hence, it should follow that with intellectual property rights, ideas and creative expressions are used or owned by the most efficient entrepreneurs.

Furthermore, an 'efficiency allocation of activity'- reviewed by Posner, reads that, if all property rights on land were abolished so that a farmer owned neither the land nor the crop, the farmer has no legal remedy against another who reaps it. Hence, in such circumstances, the society would shift to other methods of subsistence (such as hunting) as it involves less preparatory investment. In the same way, it is believed that in a world without IPRs where anyone are free to use others' ideas and creative expressions, inventive activity would be biased towards inventions that could be held secret, as well as biased towards activities that involve minimum preparatory investment.

Finally, it is believed that legal protection of property rights on ideas and creativity creates incentives to use resources more efficiently through investment in planning and development of resources. An implication, well-known among the venture capitalists in the creative industries (see section 3.1.1 above for review), is also that, in the absence of copyright protection, they are not encouraged to conduct their innovative activities of commercializing the creative expressions, as without a copyright they would not be able to recover the costs of development. That is, pricing at marginal production costs of re-production in order to compete with imitators (or the organized piracy art and music markets in many countries) means that the entrepreneur will not recover development costs or expect any profit or special rent. Thus, a sustainable creative industry would not be able to ripen.

However, the case for recognising and protecting rights in productive knowledge rests on the assumption that resources for advancing knowledge and creative expressions are scarce. However, as I debated in a previous publication¹⁶, IPRs (including copyrights on creative expressions) are not the consequence of protecting scarce

15 R. Posner, 'The Economic Theory of Property Rights: Static and Dynamic Aspects', Extracts from Property in R. Posner, ed., *Economic Analysis of Law* (Toronto: Little, Brown and Company, 1992, 4th edn), 32–9.

16 Andersen, B (2004). If 'Intellectual Property Rights' is the answer, what is the question? Revisiting the patent controversies. *Economics of Innovation and New Technology*, vol 13(5), 417-442

creative resources, as suggested by a range of ‘utilitarian’ economists’¹⁷, but they are the deliberate legal creation that produces scarcity. That is, it is about making an intangible product or service with public good character into a rival good, as was also reviewed in section 2.1.1 of this paper.

To this end, David¹⁸ argues that this privatization of creativity by use of copyrights may not lead to better use of resources or more productive output. Basically, David¹⁹ argues that the creation of scarcity by use of copyrights within information and knowledge spaces is inefficient for knowledge expansion. Information or knowledge spaces are likely to be enriched, the more creators are allowed to climb through the same knowledge spheres. Although David’s work was in relation to the rationales for database protection in research communities, it can similarly be argued how creative expressions of ideas are likely to be enriched the more inventors, artists and creators are allowed to participate in the same creative spheres. It is well-known that it is through creative efforts to replicate expressions of ideas and symbolic material within new contexts that communities build bodies of cultures.

A question that can be raised here is whether there is a trade-off between the use of copyrights to protect expressions for the development of creative industries, on the one hand, and creative or cultural expansion and progress through very little protection, on the other hand. Perhaps only little protection is needed in order to ensure free exploration in order for a rich expressive culture to thrive. This would argue for a shorter time span for the copyright.

However, the above argument that transfer of rights may lead to more efficient use of resources does make sense in relation to setting up commercial industries, including commercial creative industries based upon cultural expressions. How such transfer of ownership or use-rights is able to optimize ‘a commercial version of the cultural expression’ and the financial reward from this, was researched by Andersen and Kozul-Wright and Kozul-Wright²⁰ in relation to the case of the music industry. To provide a clear example here regarding how transfer of ownership or use-rights is able to optimize ‘a commercial version of the cultural expression’ and the financial reward from such, the findings are summarized below.

For example, although the authors of a creative musical expression (melody or lyrics) which is sufficient original for a copyright have the exclusive ownership and control over a bundle of rights²¹, the ownership or control of these rights (either separately or together) may be transferred to another party, mainly in order to get the music product to the market. For example, it is common for the author of an original musical composition or a sound recording to transfer part of the copyright ownership to a publisher or record company, a performer, and/or other entities. Ownership can be

17 ... including Jeremy Bentham, Adam Smith, Jean-Baptiste Say, John Stuart Mill and John Bates Clark

18 P. David, ‘Will Building “Good Fences” Really Make “Good Neighbors” in Science’, *Report to European Commission (DG-Research)*, STRATA-ETAN workshop on IPR aspects of internal collaborations (2001).

19 P. David, ‘Will Building “Good Fences” Really Make “Good Neighbors” in Science’, *Report to European Commission (DG-Research)*, STRATA-ETAN workshop on IPR aspects of internal collaborations (2001).

20 Andersen, B, Kozul-Wright, Z. and Kozul-Wright, R. (2005) ‘The Social and Economic Effects of Copyrights in the Music Industry: A Contribution to the Convergence versus Divergence Debate’. In Macmillan, F. *New Directions in Copyright Law* (Vol. 1), Edward Elgar: Cheltenham.

21 For example, in the music industry such a bundle include the right (1) to copy the work; (2) to issue copies of the work to the public (including to rent or lend the work to the public); (3) to perform, show or play the work in public; (4) to broadcast the work or include it in a cable programme service; (5) to make an adaptation of the work or do any of the above in relation to an adaptation.

transferred by selling and buying each right (separately or together) within the bundle of rights. Should the owner of the rights not wish to transfer the ownership, the control of each right can be transferred (either separately or together) via licensing agreements. Licensing agreements can be exclusive or non-exclusive. Consequently, as the ownership or control of the bundle of rights becomes spread between the author, the publisher and/or other entities involved in the commercialisation of the music product, one can argue that the music copyright associated with a musical expression almost always represents a complex case of different ownership and different control. Finally, a situation can also emerge in which neither ownership nor control is transferred, but instead, a share of revenue or profit from musical works is negotiated through contractual arrangements.

Similar type of practice is common in other copyright industries. There are several reasons for this transfer of ownership or control or revenue:

(i) One is to maximise rent through all best means of adding value to the creative expression. Basically, when seeking to maximise rent from a creative expression, a range of complementary assets from various part of the industry is applied in order to add value to and commercialise the creative expression. In this music industry case, this can include the writer, singer, players, performers, the producer, etc.

(ii) Another is the economics of the complementary assets (as defined in (i) above), rent seeking and risk management in volatile markets. Here, rent can be established because the combination of specialised assets within an organised institutional arrangement produces something so unique, that it could not have been produced by combining the assets via the market. Basically, the organising, institutional arrangements guarantee the most effective use of the specialised assets and, through this, the highest possible rents. As also noticed by Williamson,²² asset specificity is among the most important factors when deciding how to arrange production. However, composite quasi-rents are also vulnerable. Vulnerability on the supply side reflects the high degree of risk that accompanies any production process combining specific assets;²³ that is, the danger of the whole industries becoming hostage to each others' specialised suppliers of specialised assets, as well as the damage arising from conflicts between the different suppliers within the strategic network. However, vulnerability arises not only from supply-side problems surrounding asset specificity but also from the unpredictable role of (often short lived) fashion in shaping creative industry market tastes. Basically, quasi-rent from the demand side can especially occur from first mover advantage (see section 3.1.2 for this profit incentive), where a Schumpeterian head-start profit from a creative expression (such as music or art or design) with new fashionable attributes can be obtained before new ones in similar lines arrives. However, as fashion is a pure intangible expression and, as much competition in creative industry product production is about challenging the established fashion by the creation of a new one, the fashion life-cycle is often short lived and can change overnight, which in turn leaves music markets highly volatile, as rents and incomes related to musical ideas can and do change abruptly over time. Another reason for volatile markets is illicit copying and imitation, which can reduce the potential size of the market (see above section 2.2.2 for discussion on piracy). Basically, firms in the creative industries often survive by creating large markets for

22 O.E. Williamson, *The Economic Institutions of Capitalism* (New York: Free Press, 1985).

23 Ibid.

short product life-cycles, and on sizeable investments in specific capital goods and complementary knowledge-based specific assets. As a consequence, such high levels of vulnerability are likely to give rise to a variety of non-market, risk-adverse or risk-sharing, institutional arrangements to guarantee their economic viability and success. Thus, composite quasi-rents from organised institutional arrangements in the music industry can also be guaranteed through non-competitive or collaborate strategic networks all the way down the supply chain. Such arrangements normally lead to transfer of ownership, or control of copyright, or transfer of revenue from copyright works. Such arrangements can also help to reduce conflicts between different asset owners as they now share some of the risks arising from a volatile market.

(iii) A third is the rise of venture capital. In the patenting literature Teece²⁴ points out that if a firm can get a strong patent, it may be in a good position to bargain a joint venture or licence deal with another firm that has the production and marketing capabilities. This can also be argued to be the case with copyright industries where it is less risky to finance the implementation of a creative expression into a marketable product if the expression is covered by a copyright; so with the copyright secured, fixed costs of production are covered (potentially) and minimum entrepreneurial potential risk is guaranteed. Thus, an important incentive and function of music copyright is basically to encourage venture capitalists to invest in commercialising copyright-protected musical expressions. The function of the copyright as a stimulus to the inventor's financier plays a major role in the copyright industries.

4.2 The impact of technology on the copyright

4.2.1 Technological progress has challenged existing business models for copyright appropriation and sustainable industry development, and it has created opportunities

The way in which various information and communication technology (ICT) and software-based technologies operate (defining a new 'paradigm' of how products embodying creative expressions are developed, delivered, and used) is also central to understanding the strength of the copyright and the economic and social effects of such.

For example, we saw how the record companies experienced their heydays under the CD technological paradigm, while their market positioning have come under threat as the digital revolution takes force. Basically, technological shocks have not stopped shaping the industry. Owing to the impact of new digital technologies, especially Internet technologies that enable direct downloading of music, movies, books and journals, etc., distribution costs are expected to drop substantially, thus allowing new entrants. Similarly, technological change in digitalization has also increased the opportunities to creative authors, artists etc. to share their works and expressions with the wider community. Even if this is not for profit, it is for building reputation and recognition, - sometimes in hope to subsequently develop a career.

In that fashion, global Internet sales will threaten to change the balance of power within the creative market. E.g. in the music markets, the writers, artists and producers are now able to bypass the record companies, which in turn allow

24 D. Teece, 'Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy', *Research Policy* 15 (1986), 285–305.

consumers worldwide direct access to their favourite artists at discounted prices. Consumers are also able to bypass entirely traditional retailers, with significant implications for the cost structure and configuration of the present industry. The five major music companies are concerned about the latest developments in entertainment technologies and are already preparing themselves for the Internet's full impact. Collecting societies also have to rethink how to identify the online music users and the online music right holders, and how to collect and distribute their royalties (which also will involve an upgrading of their information and communication technology systems), as digitalisation is challenging the tracing of music flow. Digitalisation has worried royalty managers because, when information is no longer tied to a tangible good (carriers like tapes, LPs, or CDs) that are physically transferred from one person to another, it becomes difficult to control and monitor its flow. With the previous system the music is protected via the carrier – metaphorically, the bottle is protected, not the wine. On the other hand, given the poor sampling practices by the collecting societies today (see subsection 5.2.2), it might be possible to trace a larger percentage of the music flow on-line if proper technology is put in place, so the digitalisation might be a blessing for the royalty management of the industry in the long run.

4.2.2 New information and communication technology may cause piracy and undermine the development of a sustainable industry

The piracy problems discussed in above section 2.2.2 and which may undermine music markets is of course also vital for the development of a sustainable industry. Obviously, the discussion will not be repeated here. However, as suggest in the section just above, the problem may be minimized by creating new business structures more suitable for the new technological opportunities.

V. Copyrights to protect and reward inventors of creative expressions

5.1 The rationale

5.1.1 The moral rationale to protect and reward inventors

The utilitarian classical philosophers introduced ethical principles or morals into intellectual property right theory and laid the responsibilities for identifying and enforcing these in the hands of the state. In this context, it is not only society's duty to protect the inventor, but also to secure the inventor a fair share of the reward when exploiting the inventor's knowledge and creative expressions of ideas. The idea is that it would be immoral if the law let everybody freely use the work of inventors without their consent and without compensation or equivalent in return. The rationale is basically that justice requires that society compensate and reward its people for their services in proportion to what they cost and how useful they are to society. Those believing in the IPR system here consider that the most appropriate way to secure inventors is by issuing IPRs.²⁵

5.2 The impact of technology on the copyright

²⁵ The classical writings on the theories of the origin of rights and social contracts are comprehensively reviewed in Sened, Itai (1997). *The Political Institution Of Private Property*. Cambridge: Cambridge University Press; and Richard, Donald (2002). *The Ideology of Intellectual Property Rights in the International Economy*. *Review of Social Economy*, 18(4). 521-541

5.2.1 Modern technology facilitates transaction cost efficiency and increased reward

The technological revolution in information and communication technology (ICT) can enhance transaction cost efficiency of royalty management which in turn increases the rewards from copyrights which can be distributed. That is, the performance of any copyright system (for example, whether and how much income is generated from copyright) does not merely or essentially depend on the law and economics side of the copyright system. Rather, it depends on the form, function and efficiency of the copyright management and the related royalty collecting administration machinery. Thus, while the copyright regime may underpin the law, economics and organisation of the music industry, the enforcement of the system of royalty flows between copyright users and copyright holders is by no means automatic but needs to be monitored and administered through a complex machinery.

For example, the collecting societies for the music and media industry are essentially non-profit making monopolies or oligopolies controlled by their members, and whose function is:

- to license musical works of their members for specific uses (the licensing is based upon a pay-for-use principle which requires that for each and every use of each and every copyright, owners' work is identified and paid for);
- to monitor use of copyright material and collect revenue; and
- to distribute the revenue as royalties to members of the society.

Collecting societies have evolved, in large part, to reduce the transaction costs arising from the continuous and complicated task of monitoring and policing copyrights, including abroad. Royalty management is a complicated and costly process, and two of the major goals of royalty collecting societies are efficiency, in terms of cost saving in royalty management, and licensing as much as possible. The new information and communication technology (especially tracking systems) can enhance the collecting societies' capabilities in doing both tasks. Thus, royalty management means building institutional capabilities with respect to knowledge about copyright legislation, as well as the system of all music copyright holders, music delivery and music users. It also means building technological capacities and capabilities to track the flows of copyright materials and monitoring royalty payments.

5.2.2 Modern technology facilitates better representation in sampling systems and more fair reward distribution

A direct way in which the technological revolution in ICT strengthen the reward-rationale implications from copyrights is through better sampling systems by the royalty collecting societies. For example, as it is impossible to monitor *all* music played in a country in which the collecting society operates, collecting societies sample a smaller percentage of the music played and use this as a representative guide when distributing royalties. This process tends to favour mainstream music, as the collecting societies tend to focus on the more mainstream music outlets. It is not uncommon that the more low-income groups complain that the sampling practices are biased against their interests.

However, by use of more efficient ICT and by integration of efficient digital tracking systems tracking digital music broadcasted or downloaded on the Internet, a wider (and almost perfect) sample should be able to be collected in the future. This practice should result in better representation of all copyright owners and more fair distribution of rewards.

5.2.3 New information and communication technology may cause piracy and undermine the reward system

The piracy problems discussed in above section 2.2.2 and which may undermine music markets is of course also vital for the moral rights to receive reward for exploitation of ones creativity. Obviously, the discussion will not be repeated here.

5.2.4 New technology facilitates and stimulates a social origin of the creative expression undermining the reward rationale

A basic contention against IPRs in the context of moral reward rationales is that inventions in creative expressions are mostly a social creation of collective, cumulative and interrelated work to which we all contribute (e.g. Paul Simon's Graceland is heavily inspired by African music), and, therefore, no one person or firm should be able to claim the property. This argument is even more the case with the revolution in ICT, broadcasting, media and digital technologies which is creating a global cultural platform for inspiration. Furthermore, digital technologies also allow manipulation of original material (music, film, pictures, digital art, books, etc.), in order to create new original expressions. Ownership of creative expressions here might even be immoral, and actually against the principle of natural or moral rights, as the copyright system in this case may prevent inventors from using or appropriating from expressions that they have collectively been a part of creating if someone else is granted the copyright. Thus, it is proposed that the copyright system in such cases decreases the moral rights for most subscribers to the system.

Furthermore, from the 'social origin of inventions'-argument suggesting that the next original expression on the road can be hit on by a range of creators, it follows that we should not reward those 'lucky' enough to be the first to hit on the solution which is of sufficiently original character to merit copyright protection. Due to the randomness of the system it is almost impossible for the rewards go to those who deserve it. This lottery version of the reward system may in turn also have a negative impact on the copyright incentive rationale discussed in section 3.1 above. In addition, it can be argued that the IPR system on average causes more losses than profits even to creators, as creators have to pay for using the ideas they have contributed to when other people have copyrighted them. This problem of, inventors paying to use their own expressions could in principle be solved by rewarding creators with cash prizes rather than temporary exclusive property rights (Davis 2004). This reward system would however not solve the problem surrounding the social origin of inventions where everyone deserves a fair share for their effort, as it is impossible to calculate the effort-share that has been conducted on an individual basis. Basically, the copyright system can here be viewed as inflicting injury upon others as it is impossible to compensate or pay rewards in proportion to effort conducted and the service provided to society.

5.2.5 Specifying the criteria of originality for copyright protection has become more difficult because of the use of new technology

It can be argued that it is a problem that the copyright system is ‘general’ and compensates and rewards equally all original expressions of ideas and symbolic material, whether they are the result of great effort or not. Of course, in copyright law today, expressions are not copyrightable if they are not original. Yet, the troublesome question of which expressions are original enough to be granted patent protection is often faced with great challenges. At one extreme, there is nothing new under the sun. At the other extreme, every different new combination of creative expression constitutes an ‘original’. In specifying the criteria of originality sufficient for copyright protection, the designers of any copyright system must go through the difficult process of selecting a position somewhere on the spectrum marked by these extremes (Cheung 1986), and the problem-solving for this seems to become even more ambiguous within digital and micro-electronics where new combinations are produced more easily or with very little effort (Andersen 2003).

5.2.6 The reward from copyrights may not reflect the value created by the inventor but the value created by the new technology

According to the moral rationale of copyrights (reviewed in section 5.1 above), justice requires that society compensate and reward its people for their services in proportion to what they cost and how useful they are to society. However, it would not be wrong to assert that it is very unlikely that the economic or money value (reflected in the reward system) of the idea is entirely created by the inventor. Money value tends to be circumstantial and indeed also a product of the external environment (notice analogy with housing markets), and does not reflect the ‘true’ value created by the creator. Circumstantial and external elements include economic climate and investment confidence and strategic interaction in markets for expressions of ideas; e.g. through huge advertisement, TV and radio shows (e.g. Pop-idol and X-factor) creating exposure etc. The belief that society, or the market economy by its own working, ensures that the ‘reward system’ generates rewards based upon the true value of the creative expression, or solely the value created by the creator, is doubtful.

5.2.7 Asymmetric relationships in reward systems and new opportunities for the deprived created by the new digital revolution

The combination of large specific investment along with market uncertainty has meant that vertically integrated firms with a strong international presence have been a longstanding feature of the creative industries. Through various oligopolistic practices these firms are able to earn the large rents needed to maintain their leadership, and to generate the considerable financial resources, which allow them to carry the risks and costs involved in identifying and developing artistic talent and marketing a risky final product with very large sunk costs.

For example, the recent trend in the music industry to increased concentration has been accompanied by a shift of strategy in the dominant companies from discovering, promoting and recording artists towards the marketing and distribution of recorded music in multiple listening sites and lobbying for the licensing of more and more

public spaces where music is played.²⁶ In this respect, corporate strategy has become increasingly tied to accessing risk capital. The large conglomerates also seek the opportunity to tie their music products to their other entertainment products, such as TV, films and videos, generating further revenue streams. For example, over 60 per cent of music performance revenues are derived from these sources.²⁷ The various oligopolistic practices of the major record companies include strategies to: (i) maximise rent from collaborating with the musicians and artists adding value to the music product, as well as (ii) maximise rent from the music users that pay for the recorded music.

Regarding (i), it is interesting to see how location of royalties from copyrights are determined by the bargaining power and collaboration of individuals and firms, including lobbying and statutory intervention, as opposed to market forces. For example, Towse²⁸ and Kretschmer, Klimis and Wallis²⁹ have illustrated how different incentives and interests, as well as asymmetry in information and risk, evolve into skewed power structures between composers, musicians, artists, publishers and record companies when they negotiate modes of royalty-sharing or payment. Thus, whereas collaboration (networks and relationships) within the music industry help to maximise rent and reduce the uncertainty surrounding income generation in the music industry, it certainly does not reduce the variation in income determined by accumulated rent from sales and performances.³⁰ The Monopolies and Mergers Commission (MMC),³¹ which conducted one of the most detailed studies of income distribution within the music industry, using data from the Performing Right Society (PRS), showed how 80 per cent of those who own performance rights earned less than £1,000 from performance royalties for 1993 while 10 per cent of owners received 90 per cent of the total distribution.

Already, by the mid-twentieth century, Fritz Machlup and Edith Penrose³² noted that in many situations inventors find themselves in a bargaining situation where they have no option but to sell their patents (or copyrights in our case) at a price below their value. These bargaining situations often go against the moral rights to reward rationale of the IPR system. Therefore, in the words of Machlup and Penrose: If the inventors could not hope to reap the fruits of their work . . . another theory could be substituted for the weakened theory of the patent [or copyright in our case] as an incentive to invent: a theory of the patent [or copyright in our case] as an incentive to venture capital for the financing of the development and pioneer exploitation of inventions.³³ The importance of the incentive argument for the venture capitalist was also highlighted in section 3.1.1 above.

26 K. Neagus, 'Producing Pop: Culture and Conflict in the Popular Music Industry', (Aldershot, UK and Brookfield, US: Edward Elgar, 1992).

27 H. Vogel, *Entertainment Industry Economics* (Cambridge: Cambridge University Press, 1998), 41.

28 R. Towse, 'Copyright and Economic Incentives: An Application to Performers' Rights in the Music Industry', *Kyklos* 52 (1999).

29 M. Kretschmer, G.M. Klimis and R. Wallis, 'The Changing Location of Intellectual Property Rights in Music: A Study of Music Publishers, Collection Societies and Media Conglomerates', *Prometheus* 17/2 (1999).

30 Monopolies and Mergers Commission (MMC), *Performing Rights: A Report on the Supply in the UK of the Services of Administering Performing Rights and Film Synchronisation Rights* (London: HMSO, 1996), 57.

31 Ibid.

32 F. Machlup and E. Penrose, 'The Patent Controversy in the Nineteenth Century', *Journal of Economic History* 10/1 (1950), 1–29.

33 Ibid.

This suggests that copyrights are not a means to provide fair income to the artists and creators and their local cultural communities, but are for the grandness of commercial exploitation. One can, of course, question here if this is really a problem. Artists and creators have always been poor, so how can we now blame the copyright system? It would in such case, only be fair to argue that, given that the copyright system provides opportunities for maximising revenue and rent from musical expressions, then it is a problem if this revenue is not spread in such a way that all participants in the commercialisation of a creative expression is rewarded in accordance with their value-added contribution. This may not only be an ethical problem but also a problem for the long-term success of any creative industry and even cultural development and expansion. The reward system ought to feed back into the poor sub-cultures of artists and creators, and the poor regions of rich creative talent, in order for those deprived communities to invest in and develop a better position within the industry. If this does not happen, then the commercial cultural scene will lose soul and spirit, and many communities of the world will have lost one of their key opportunities in taking advantage of their traditional knowledge.

However, we also see how regions of the world (such as Brazil, India, the Caribbean and Africa) that are rich in creative talent are not able to create value and profit from this talent on a larger regional and global scale, due to industrial underdevelopment and poor or inefficient copyright enforcement systems. Basically, a sign of their underdevelopment is that there are no industrial and institutional support systems underpinning their creative culture. For example, in most developing countries, for example, collecting societies are missing or very weak.

However, although the majors and minors in the global creative industries currently tend to be companies rooted in developed countries, we suggest that developing countries are possibly better positioned to compete in such industries than in many traditional industries. This is because the basic raw material, such as talent to create expressions such as musical sounds or art, is readily available and entry costs, and at least in the case of music are not as prohibitive as in many other industries. Some countries, such as Brazil, have already established a competitive advantage in the creation of music and a generation of new musical sounds based on the fusion of their traditional music with western musical traditions.

However, looking to play by the rules of the copyright regime, or demanding a change in the rules of the copyright regime, provides some possible focus for policy-makers in developing countries concerned to build a more effective music industry and improve the trading opportunities for its music resources.

Moreover, as relative newcomers, developing countries may have the most to gain from new technologies such as the Internet. However, even if the new information and communication technology systems and digitalization provide some new opportunities for both producers and consumers in the less developed countries (or the less developed national regions or deprived groups in all societies, for that matter), they are faced with huge technological capability problems in mastering and affording the new technology. The technology divide (more popularly termed the 'digital divide') in the world is commonly recognized.

VI Conclusion

The revolution in new information and communication technology in many ways threatens the scope, strength and usefulness of copyrights. This view has also been the dominant view expressed by the press in the daily political discourse on the subject. However, as demonstrated in this paper, this is an entirely biased view, as the new technology also provides many new opportunities for financial and non-financial appropriation of creative expressions.

Table 1. The impact of technology on copyright rationales in the new economy

Broad copyright rationale <ul style="list-style-type: none"> Sub-rationales <ul style="list-style-type: none"> Implication of the technological revolution in information and communication technology 	Enable copyright scope or enforce copyright rationale	Constrain copyright scope or undermine copyright rationale
Copyrights as market facilitator for commercial exploitation <ul style="list-style-type: none"> The market creation rationale Cultural spill-over and expansion rationale <ul style="list-style-type: none"> Technology changes the role of time, space and location and provides new appropriation opportunities Technology enables piracy in volatile markets 	√	√
Copyrights as incentive mechanism <ul style="list-style-type: none"> The incentive rationale Incentives and the emergence of innovation based market competition <ul style="list-style-type: none"> New information and communication technology expand the opportunities for profit New information and communication technology may cause piracy and undermine incentive mechanisms Copyrights and new information and communication technology may inhibit cultural expansion 	√	√ √ √
Copyrights as industry facilitator for sustainable development <ul style="list-style-type: none"> The production and trade privilege rationale The ‘more efficient use of scarce resources’ argument revisited <ul style="list-style-type: none"> Technological progress has challenged existing business models for copyright appropriation and sustainable industry development, and it has created opportunities New information and communication technology may cause piracy and undermine the development of a sustainable industry 	√	√ √
Copyrights to protect and reward inventors of creative expressions <ul style="list-style-type: none"> The moral rationale to protect and reward inventors <ul style="list-style-type: none"> Modern technology facilitates transaction cost efficiency and increased reward Modern technology facilitates better representation in sampling systems and more fair reward distribution New information and communication technology may cause piracy and undermine the reward system New technology facilitates and stimulates a social origin of the creative expression undermining the reward rationale Specifying the criteria of originality for copyright protection has become more difficult because of the use of new technology The reward from copyrights may not reflect the value created by the inventor but the value created by the new technology Asymmetric relationships in reward systems and new opportunities for the deprived created by the new digital revolution 	√ √ √	√ √ √ √ √ √

Table 1 provides an overview of the discussion raised in this respect within this paper. How the new technology influences (enables or constrains) the various economic rationales for copyrights is marked for each rationale.

Also, the argument that the solution to the problem, when the new technology undermines the copyright rationales, is to strengthen copyright law is fundamentally flawed. As demonstrated in this paper, the enabling elements of copyrights will only overpower the constraining elements undermining copyrights (such as piracy) if good copyright management, suitable business structures and updated appropriation models are implemented. The solution is not to be found in policy initiatives arguing for strengthening copyright law as this does not reach the problem by its roots.

Finally, in many cases the argument should be for weaker copyrights (rather than stronger) in order to stimulate cultural expansion and account for the increased social origin of expressions entering the commercial creative industries. This should in turn also produce less inequality by rewarding the participants for their value added throughout the industry.