

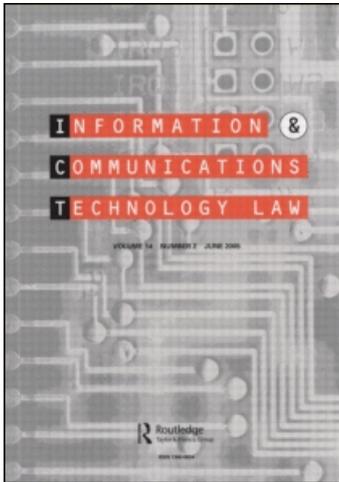
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Appropriability, communication and social welfare in a knowledge economy

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Intellectual Property Rights take on a different significance in the knowledge economy and on the internet. Their expanding role is not necessarily a beneficial development for the economy a dynamic welfare analysis indicates. The effects of IPRs is compounded by the newly emerging relations between producers and consumers in which the latter are increasingly acting as dependent co-producers.

Keywords: Intellectual Property Rights; ICT; appropriability; social welfare; knowledge economy; communication

Lawrence Lessig, in a number of provocative books (especially Lessig 1999, 2001), tells a compelling story of how the Internet is changing from a realm of virtually unbound freedom to one of numerous restrictions and limitations. Perhaps his story is as exaggerated as the one that earlier students of the Internet have told about how the Internet would change everything for everybody to the better due to the fact that all known physical and social boundaries would melt into thin air. Kelly (1998) and Cairncross (1997) are prime examples of utopians about the effects of the Internet painting glorious landscapes of times and societies to come. In this article, I side with Lessig. From the perspective of an economist, I will argue that the Internet is not and will never be the 'perfect' market the textbooks of economics discuss. Some have talked about the impact of information and communication technology (ICT) on the economy as if by necessity a perfect market where firms only reap a marginal profit and consumers' welfare is maximised will emerge. Taking this view implies an unrealistically deterministic perspective on the impact of technology on society and the economy. In the field of technology studies it is convincingly made clear that technological determinism is not a fruitful or realistic way to understand the interrelations of technology, economy and society (cf Poel et al. 2002).

If anything, while the Internet offers great opportunities for individual consumers, firms may well benefit from the opportunities offered even more. This economic argument is a deduction from the very same premises on the characteristics of information goods and information markets that enthusiasts point to as well. I develop a dynamic perspective of welfare economics, a field that usually takes a static view that may not be as appropriate for a knowledge economy, to evaluate recent developments in intellectual property rights

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(IRPs)—particularly, patent law and practice. Subsequently, I argue which party in transactions is most likely to benefit from the economic circumstances created by the Internet. These issues would lead one to agree with Lessig that developments might favour firms rather than consumers, and perhaps be slightly more pessimistic than him. First, however, some preliminary observations about the newly developing economic reality and the role of information in it are introduced.

Knowledge and information in the economy

Lessig is mostly concerned about the changing role of IPRs on the Internet. IPRs provide the legal basis that allow parties to assert knowledge and information as their property, and even to acknowledge intangibilities as assets that are circumscribed enough to take on into the balance sheet. There is a combined pressure from firms, as well as from regulators, to be allowed to capitalise knowledge (Lev 2001). As the value for firms supposedly includes the value of the firm on the stock exchange, allowing for intangible assets to be included in the balance sheet would reduce the difference between the market value of a firm and its book value, which has puzzled and worried economists for a long time. This difference, known as ‘Tobin’s Q’, used in many cases as an indicator of the likelihood of a recession drawing nearer (e.g., Smithers & Wright 2000), would then be less worrying than it might seem. Knowing which part of Tobin’s Q is due to intangible assets would allow one to better determine the extent to which the economy changes towards a knowledge economy. What some see as the prime assets of firms (Grant, 1996) should be made visible, preferably in quantitative terms. It is due to IPRs that this is possible.

Intangible assets include goodwill—the catchall term of the additional sum paid by a firm taking over another firm for its tangible assets. Much of it is intangible assets such as patents, copyrights, trade names, a network of clients and so on. Some of these items are protected under IPR, others possibly under contract law or labour law.¹ Regulations have recently come into effect requiring firms to capitalise their internally developed intangibles. The International Accounting Standards Board (IASB) has issued a directive, adopted as of 2005 by the European Union (EU), indicating when and how firms may do so. Valuation is one reason why capitalising intangibles was not allowed previously. IAS 38 prefers the so-called ‘historic cost method’, but explicitly allows for intangibles to be included at their ‘fair value’.² If an active market is available for an intangible asset, indicating alternative use for it, its value can be established relatively easily. When a firm then values the asset each year, it may capitalise.³ Some categories of intangibles cannot be capitalised because the value they represent to the firm in terms of producing goods (in the future) for which there is a market is impossible or difficult to determine. Fundamental research, internally generated goodwill, trade names and acquired research and development (R&D) thus cannot be capitalised.

The Internet has created the possibility to value intangibles to a much larger extent than previously. Websites such as <http://www.ibm.com/ibm/licensing/> are in fact markets for patents. Information goods, which are by themselves public goods since they are non-rivalrous in use and non-exclusive when seeking a payment in a market, can in many cases only be commercially exploited because of IPRs. Even a decision to make an information good such as software freely available (e.g., Open Source Software) relies on IPRs to prevent some parties from appropriating it.

Firms are of course concerned about the information that their value on the stock exchange conveys. Steadily growing listings provide means to attract additional capital at attractive conditions, or means to use for acquisitions. Stock options for personnel also work better when listings rise. Intangibles on which a firm has a legitimate claim also present the firm with strategic opportunities (Granstrand 1998). Patents may be used to maneuver the firm possessing them into a position where it needs to be included into an alliance of firms developing a new good or technology (cf Shapiro & Varian 1999) as increasingly development of new goods or technologies is undertaken in alliances. Being indispensable for an alliance could mean that a firm might not otherwise have to commit resources to obtain a share of the benefits. Alternatively, intellectual property might be a direct source for revenues. As such, it can be both a source of additional cash flow, as well as a buffer in slack times. For the music industry, copyrights have functioned in this way. Competition in this industry is increasingly based on the control over copyrights (e.g., Huygens et al. 2001). Possessing 80% of the rights on music generally played in the world today has allowed the majors in this business to be very profitable (Vogel 1998).

A strong IPR system thus allows parties to appropriate the benefits of innovation. The establishment of copyright is explicitly justified in the literature on law and economics with a reference to the incentive it offers to creative individuals (cf Landes & Posner 1989). This utilitarian basis for IPR in general is one that is both strongly expounded as well as little researched empirically (Dolfisma 2006). For copyrights, in the music industry, it seems more likely to be a safeguard of investment of the record company than an incentive for creative musicians (Towse 1999; Dolfisma 2000). For patents, in a range of industries, it may be questioned whether patent law has the effects for which it was designed; influential empirical research questions it (Levin et al. 1987). Students of innovation would not be surprised that the 'appropriability regime' is not limited to IPR, and that, alternatively, IPRs alone do not offer the 'strong' appropriability regime that some believe it does or should (cf Teece 1986). In addition to IPRs, distribution, superior knowledge of the production processes (tacit or explicit), recognised brand name and the like may also be means of appropriation.

IPR has thus increasingly been in the spotlight in recent years. Enthusiasts of the Internet have sometimes argued for its obsolescence. Business pundits have argued that they should be strengthened in order to ensure that some form of appropriation is possible for new information goods the Internet needs. Without an incentive, no new information goods would become available. This has been the basis for arguing that the scope and duration of IPRs should be increased. According to Nobel Laureate Joseph Stiglitz (1999), however, transferring IPRs as they are now to the Internet entails a *de facto* increase in excludability. Based on an understanding of the characteristics of information goods and the markets on which they are traded, Stiglitz argues that, in view of the general interest, we would need to reconsider the purposes, role and effects of IPRs. Even without the developments of IPR and copyrights in particular that unequivocally point to an expansion of its scope and duration which Lessig and others point to, there is cause for concern about its doings on the Internet. The next section presents a framework to assess these developments.

Welfare economics: from static to dynamic

Economists use a theoretical perspective known as 'welfare economics' to evaluate proposals for changes to any given situation (see Samuelson 1971 [1955]; Nicholson 1985;

Scherer & Ross 1990). The premises employed in this field should be clear in order to understand what recommendations to which it leads. Individuals are thought to be perfectly rational, concerned with maximising their own utility function (well-being), perfectly knowledgeable about relevant circumstances now and in the future, and they are sovereign. Individuals enter perfect markets to acquire goods and services they need. On perfect markets, an infinite number of producers and consumers meet to exchange identical goods—product differentiation by firms to distinguish themselves from others is ruled out. Hence, no single party can affect market outcomes. In such markets, equilibrium conditions prevail, prices are equal to marginal costs since producers will only stop producing when the extra effort equals the extra gains, and so unwarranted or higher-than-normal profits are absent. The general interest is an aggregation of all individual welfare functions, while welfare comparisons among agents are impossible because they are merely subjective. All economists in this line of thinking are willing to allow is that agents themselves are only able to transitively *order* goods in terms of the utility gained from consuming them such that there is no internal inconsistency.

Exceptions for ‘market imperfections’ and ‘natural monopolies’ are provided for within the theory, but the argument of ‘merit goods’ (goods which are good in themselves, such as art, education, and the like) sometimes brought to the fore by some, sits uneasily within this framework. Important outcome of this line of reasoning is the so-called ‘Pareto’s criterion’: a suggested change in the allocation of resources is an improvement only when no party is made worse off and at least one party is better off. In actual fact, it is a rather conservative measure (Dolfsma & Dannreuther 2003), but in any event is one that warns against overly enthusiastic social engineering by governments, for instance (McCloskey 1996). If some are made worse off, the obvious solution would be for those who gain to compensate those who lose out. While such compensation might be difficult to set up, it might break a deadlock.

This is the dominant perspective in economics where evaluations are required. One could doubt if this player (such as a government) has all the relevant knowledge and is able to process it to set up such a compensation scheme. Indeed, many of the assumptions used in welfare economics for a perfect market to exist will never be met in reality. A devastating conclusion has then been drawn, known as the ‘problem of second best’. Even if only one condition for the existence of a perfect market has not been met, there is no telling what is to be done for a Pareto improvement to be reached.

The static view prohibits neoclassical economics to understand knowledge, learning and changes of a qualitative nature generally (Dolfsma 2001). In contrast to the neoclassical, static perspective on the economy and the role of knowledge in it, knowledge and information are essentially social (Brown & Duguid 2000). The idea behind a dynamic welfare economics that I would like to suggest here is that innovation, the creation of new knowledge, stems from communication (Burt 2004). I assume that, within certain bounds, more communication gives rise to creation of more and more diverse knowledge. The bounds I mention are quite difficult to establish, but certainly do not seem near at the moment. I just want to indicate that I do not want to rule out the possibility of decreasing or even negative returns to scale in communication. The focus on knowledge as an important economic factor in determining growth is certainly in line with what the so-called ‘New Growth Theory’ is arguing (Romer 1987).

Following Dudley (1999), I would like to suggest that there are three aspects to communication: storage (s), decoding (d) and transmission (tr) (see Table 1). For different reasons, each of these may be more or less difficult. In economics’ terms, one might say

Table 1. Communication and communication costs.

	Costs		
	Transmission (tr)	Storage (s)	Decoding (d)
Centralized (a)	Low	High	High
Decentralized (b)	Low	Low	High
Distributed (c)	Low	Low	Low

that storage costs, decoding costs and transmission costs may vary. For any given population level, n_t , in any period, t , total ‘output’ for society can be formalised using a simple Cobb-Douglas production function as follows:

$$q_t = \left(\frac{n_t}{s_t}\right)^\alpha \left(\frac{1}{tr_t}\right)^\beta \left(\frac{n_t - 1}{d_t}\right)^\gamma \quad (1)$$

If all three costs of communication are high, there will be none. If costs decrease, communication of three kinds may follow. If transmission costs are low, but storage and decoding high, communication will be centralized. When storage costs drop, communication one will observe is decentralised. If subsequently decoding costs decrease, a distributed form of communication will emerge.

Figure 1 visualises the three types of communication. It is clear that when all three kinds of communication costs are low, communication is maximised. Such circumstances are most favourable for the development of new knowledge; innovation in both a cultural as well as an economic sense is optimal.

In analysing the ‘economics of ideas’, Romer (1993: 65) has argued for ‘a policy of openness with few distortions’ in this respect. He would like to make sure, in the terms developed here, that communications costs are as minimal as is feasible. He argues that appropriate institutions should be created that allow for a knowledge economy to flourish. One important prerequisite is, of course, education. Developments that broaden the scope and lengthen the duration of IPR that Lessig laments rightfully might be seen increasing the costs of communication. Rent-seeking (activity with a view to change the way in which the economic pie is divided rather than increasing the pie itself) is an important explanation for the changes in IPR in general, and copyrights in particular. It is the kind of activities that governments must resist (Romer, 1993: 65).

Relating the discussion about the development of IPRs to the different kinds of communications costs introduced earlier is quite straightforward. Indeed, communication costs increase in relative terms as a result of the full-scale application of IPRs to the knowledge economy, a result further shored up by the developments in the system of IPR itself. Decoding costs rise as a result of the technical measures to prevent copyrighted works from being copied, used in certain electronic equipment or outside certain geographical boundaries. One need to acquire more information carriers than one would otherwise. Using available knowledge will become more expensive when the scope and duration of IPRs expand; this basically relates to direct transmission costs (licenses), but also to costs that need to be born to find out if one tries to discover one would be violating another party’s legal rights (Lessig 2001). Storage costs rise as a consequence.

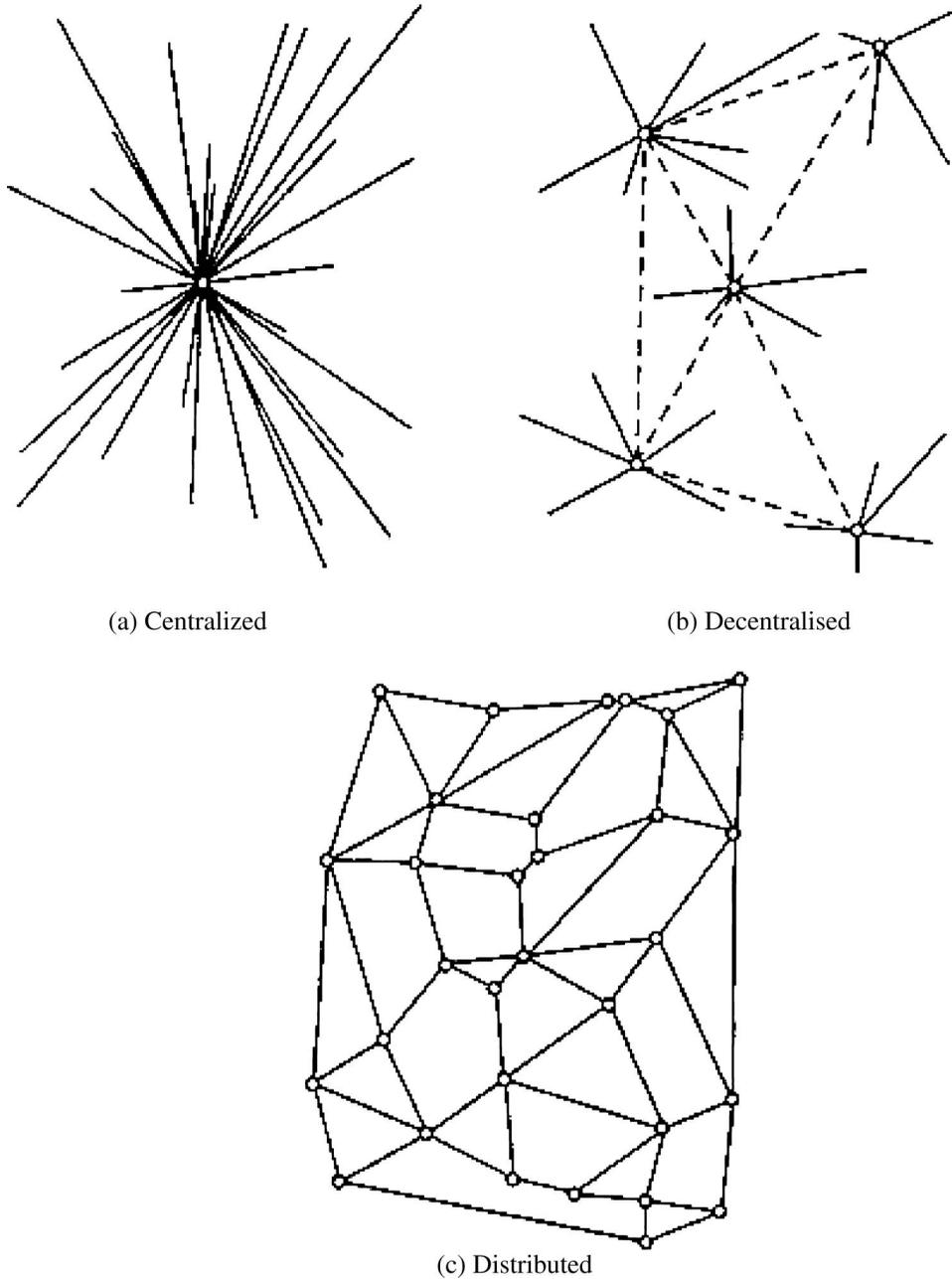


Figure 1. Types of communication visualized. *Source:* Dudley (1999).

The fact that transmission costs rise seems clear in the area of copyrights. For copyright law, two central notions come into play: publishing and copying. Transmitting knowledge, either using an existing channel or using a new way of publishing material, becomes more expensive due to the developments discussed as the right holders' position

has become stronger over the years. A rights holder can refuse to publish a work through a new means of communication. More kinds of works are protected, while the number of limitations to a legal position has been restricted, thus increasing transmission costs. Substitution of copyright law for contract law, limiting the cloud of 'fair use' and expanding normal exploitation to mean full exploitation entail that transmissions costs rise and a higher price for an information good needs to be paid would otherwise be the case. Storage and encoding costs will increase mainly due to the use of technical measures to prevent, or at least make more difficult, the consumption of an information good on particular devices by technical means.

Substitution of copyright law with contract law has the same effect. The consumer needs to acquire more than one legal copy of this information good; storage costs increase, decoding costs rise. Code may thus be used to force parties to enter into an alliance with providers of content, for instance. It also entails that fair use is impeded from the point of view of the consumer. One could, of course wonder if this strategy will not lead to an encryption technology rat race. Relying heavily on exerting property rights over knowledge has led firms to adopt strategies that may well backfire. The music industry has, for instance, sued some its own customers who have shared the music they had acquired with others over the Internet. This could alienate large groups of consumers.

In the next section I will argue that the price consumers pay for information goods might also be higher because of characteristics of markets for information goods. In such markets, price discrimination and product versioning are possible to a larger degree than in markets for physical products.

Consumers as co-producers

The Internet offers possibilities for firms to develop strategies that may be beneficial for them, but also that could possibly hurt the general interest. Lessig sees a similar danger and argues that countervailing powers need to be mobilized, and has focused mostly on the countervailing power that the government might pose in being more deliberate in redrafting IPRs. Lessig and others have observed that one reason why the general interest is not generally taken into account is the fact that it does not have a 'face' in the discussions, where parties that have a private interest do have a face. In the remainder of this article, I will argue that the general interest, most pertinently represented by consumers, is not likely to develop sufficient countervailing power by itself.

The Internet changes relations between the consumer and retailers. In electronic markets, consumers are flooded with information they need to filter and qualify. Producers, and intermediaries in particular, are in a much better position to perform these tasks and more efficient than consumers. Not only will they be able to exploit economies of scale and scope in gathering and interpreting information on the Internet, but they will be able to strike deals with upstream suppliers to consider their products and bring them to the attention of consumers. Intermediaries' positions will depend on their reputation in both the market where they buy products (information, usually) from suppliers, and where they sell to final consumers. Consumers in their turn, will appreciate the selection of information done for them by these intermediaries and will be willing to pay for these services.

The general expectations is that consumers will benefit (Kelly 1998; Malone et al. 1987, 1989), for one as a result of increased possibilities for firms to cater to the demands of ever smaller niches in the market ('the long tail'). Customisation will mean that retail businesses in electronic markets will need information about the preferences of consumers to alter

products competitively. Consumers, in turn, invest time and energy in establishing relations with certain retailers. Consumers reveal their preferences by their implicitly or explicitly stated choices, as well as clicking behaviour, and so producers are able to construct detailed consumer profiles. Consumers convey information about themselves by their behaviour as they move from website to website, and by the speed with which they make these moves. However this information is conveyed, it means much more investment in terms of time and money on the part of consumers than on the part of intermediaries. Retailers can easily and cheaply collect and process consumer-derived information using information technology to customise their products as well as their sales efforts. Since contemporary hardware and software become increasingly sophisticated, information gathering and subsequent profiling on the basis of that can be automated to a significant degree. Consumers' profiles, stored in databases to which copyright law applies, may become increasingly focused on single individuals. The possibly extensive databases that are thus constructed can be used subsequently to fine-tune marketing efforts and offer customers products that meet their preferences in better ways.

Consumers are thus increasingly involved in the production process itself—especially in the design and marketing aspects of it. Consumers will actually become co-producers as they provide direct input for the production of a good. In a way, they become a part of the hierarchy of a firm. Transaction cost theory, developed after Nobel Laureate of Economics Ronald Coase's seminal article first appeared in 1937, discusses the boundaries of the firm and transactions between independent firms: where does the market end and where does hierarchy start, and why? Oliver Williamson (1975) has stepped into Coase's footsteps. Transactions costs determine whether or not activities will be included within a firm ('hierarchy') or left to the market. It has developed concepts to analyse the relations between two parties possibly incorporated into a single firm and possibly dealing with each other in a market. Since input provided by the consumer to the producer cannot be transferred (easily) to another producer, the economic theory about transaction costs suggests that, as a result, consumers may become locked into certain relationships with producers. Their investment into the relation is idiosyncratic. Consumers may ultimately become dependent 'subcontractors' able to switch to competing vendors only at high cost. As such, they are not able to develop a countervailing power, even if organised in 'virtual communities'.

Firms may also, on the basis of such information about consumers, employ the instrument of price discrimination (Varian 1996). Price discrimination may, as Varian argues, make it possible that particular groups of consumers come into a position where they will be able to afford a specific good that was too expensive earlier. Price discrimination will only contribute to the general interest, however, if more different parties start buying the good. Given that digital products can be reproduced and transmuted easily, and do not deteriorate if used or copied (Whinston et al. 1997), customisation of them is progressing and will continue to do so in the future.

Consumers and intermediaries may both benefit from these developments in electronic markets: consumers because they can save time searching for the products they want and will even be offered items they might like but had not considered or known about until then, of a kind and quality that meets their preferences to higher degrees; and intermediaries particularly benefit, however (Dolfsma 1998) as they are crucial gatekeepers and control an important funnel of attention (cf Crane 1992). It will be difficult for upstream suppliers to go around this bottleneck and reach consumers directly or establish their own intermediary. Intermediaries that have established a

reputation have an advantage over new entrants in that they have already links with (potential) consumers.

Many scholars have argued that Internet or electronic markets will be different from the markets with which we are all very familiar. It is now established that emerging electronic markets will not resemble the perfect markets of economic theory, however. Internet markets will not have an infinite number of producers selling their wares to large numbers of consumers without being able to influence prices, profit margins will not dwindle, and intermediaries between producers and consumers will continue to exist (Dolfsma 1998). I argue that consumers become locked into positions where they find themselves more dependent on suppliers (producers, but more likely intermediaries) than the other way around, as subcontractors to these firms. At the same time, perhaps, suppliers are limited in the extent to which they can wield their market power since demand will become more volatile in electronic markets. The latter tendency is less strong than the former, as I will argue.

Countervailing powers?

Since the cost of investing in a market relation between intermediary and consumer is much higher for the latter than for the former, and it is consequently unfavourable for a consumer to switch to another intermediary; the investments of consumers can be considered as what Williamson calls 'idiosyncratic investments'. These investments are idiosyncratic because discontinuing a business relation in which investments were made and starting one with another intermediary means that the consumer has to enter into a process of providing implicit or explicit information about his or her preferences to this new partner afresh. In this conceptual framework, such investments make the party undertaking them dependent on the other party in the relation; the party is locked into a relation. This second party may then use the market power available to extract higher profits; in fact blackmailing the first party.

Before making the investment, consumers may therefore need to be persuaded of the benefits they will reap from entering into such a relationship with an intermediary. Once this relationship has started, the sunk cost involved in the investments made will prevent either party abandoning it. If one party has invested more, and more in a way that is non-recoverable and cannot be used in relations with new business partners, this party will be in an unfavourable position.

Consumers generally are aware of their investment, and if they are not yet aware they will rapidly become aware of it; their knowledge does not stop them from participating in this sort of relationship. The potential benefits, in terms of decreased search costs and increased fulfilment of their needs, may convince them that it is beneficial to initiate a relationship with a particular intermediary. Consumers may also appreciate it when they are pointed to different but related products. In addition, intermediaries in this early and immature state of many electronic markets have started to compensate (potential) customers for their personal and unique information. This compensation takes the form of rebates or samples.

Who will benefit more from future developments in Internet markets is difficult to say, however. By no means are intermediaries necessarily the parties that are likely to gain most. And even if they are to gain more than consumers, that gain may not be at the expense of Internet shoppers. Total economic activity may expand due to developments in Internet markets such that consumers, even if they have a smaller

part of the pie may have as large a quantity in absolute terms. Developments in electronic markets can increase the economic pie, as much as they can change the distribution of the pie itself.

Two countervailing forces are at play in Internet markets that set limits to the degree to which intermediaries can wield their market power. One is the fact that communities that form in the virtual world (e.g., in discussion groups) are not bound by geography. This means that the background and sources of information at the disposal of each member of the community will likely differ significantly more than in traditional, physical markets. For that reason, the likelihood that information will disperse in the network or community about alternative intermediaries to turn to, or about (alleged) abuses by the intermediary with whom community members now deals, is substantial. In network theory, this is known as the 'weak ties' argument, and for many different situations it has positive effects (see, e.g., Granovetter 1995). Especially Howard Rheingold (1994) believes that Internet communities will be an important countervailing power in the social and the economic realm. The market for music products provides examples. Discussion lists about what used to be local music bands now have a global membership (Dolfsma 1999). Bands from New Zealand, for instance, may become the focal point of discussion lists in which the members are, for a substantial part, based in the countries other than New Zealand. As a consequence, sales of recordings by these bands outside of New Zealand are quite remarkable. Are these examples the rule or the exception to it? Jones (1995, 1998) provides empirical studies of Internet communities that present a more mixed perspective. He finds that relations between parties on the Internet will largely remain as they were offline.

A second tendency that will be observed as electronic markets develop and mature is an increased volatility in demand on these markets. New products altogether, or new variants of an existing products (and each may be customised subsequently) are likely to find their way to the market. These partly may be delivered by entrants on electronic markets in an attempt to establish a foothold in a particular market, but may also be launched by incumbents as a means of constructing barriers to entry and defend their own position in a market. Such practices by incumbents are already known for certain physical markets such as cereals, soaps, washing powders and detergents (cf Scherer & Ross 1990), but will to some extent be copied by Internet markets in my view.

Whether or not incumbents will succeed in maintaining their possibly dominant positions in electronic markets depends on how responses to their behaviour is perceived and acted upon in the different Internet communities that are relevant to these firms. Internet communities have extended possibilities to express, in terms originally described by economist Albert Hirschmann (1970), their voice, while their members may not always be able to exercise the exit option because they are locked into a relation with an intermediary that they themselves have invested in heavily. How this works out in terms of the absolute and relative numbers of customers who remain loyal to an intermediary and the products it brings to a market is not clear. The effect may be that the position of a firm that mediates between producers and consumers will become less secure than it is in physical markets, but that need not necessarily result in its position inevitably deteriorating. Entertainment industries provide examples of industries where a fundamental feature of business is an equivalently high degree of demand volatility. Still these industries tend to be dominated by a few large companies (see Vogel 1998). Future developments will thus have to decide which of these tendencies will be stronger.

Relevant Internet communities consist of large numbers of consumers with diverse interests. As Mancur Olson argued persuasively in 1965, a small group of parties that has a well-defined interest often finds it easy to mobilise against such a large(r) group. In addition, as Internet communities allow for people to communicate anonymously, parties that have a specific interest may be able to introduce information in the community that represents a particular perspective. Sony Music has notoriously done so by persuading (paying) reviewers of newly released music to write favourably on its music.

Some concluding remarks

In a knowledge economy, the role of IPRs is increasing rapidly. Due to developments in that law, but also due to its application on the Internet, the effects one may expect for the economy in general are not necessarily beneficial. This becomes clear if one adopts a dynamic welfare economic perspective focusing on communication costs and their effect on economic growth. Lawrence Lessig has thus rightly lamented the role of IPRs on the Internet. Relations between producers and consumers on the Internet is changing for different reasons, too, and again not necessarily to the benefit of the latter. Using the information on consumers, producers lock these into relations with them, differentiating products to cater to demand, but discriminating prices too. Consumers become dependent co-producers. Virtual communities offer little countervailing power, however.

Acknowledgements

This article is based on presentations given at seminars in Maastricht, The Hague and Siena. I would like to thank participants for useful comments.

Notes

1. This paper is based on presentations given at seminars in Maastricht, The Hague, and Siena; I would like to thank participants for useful comments.
2. One could, e.g., argue about clauses in labour contracts that would not allow employees to use certain knowledge attained when at a firm for a future employee during a specified period of time. Human resource accounting, as the field is known where the pros (and cons) of perceiving of human beings as intangible assets to be acknowledged on the balance sheet (e.g., Flamholtz, 1999), could well be taken to argue for the re-introduction of slavery by other means.
3. IAS 39 replaces IAS 9 that was issued earlier (<http://www.iasb.org/Home.htm>).
4. Lev (2001) also indicates that investors will be provided with better information when intangibles are included in company figures published. Important drawback is the fact that the value of intangible assets generally fluctuates pro-cyclically; including them in the company accounts would strengthen economic cycles.

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