

PERSPECTIVE

Collective Consuming: Consumers as Subcontractors in Electronic Markets

Wilfred Dolfsma

QUERY SHEET

Q1: Au: 1995? See refs.

PERSPECTIVE

Collective Consuming: Consumers as Subcontractors in Electronic Markets

Wilfred Dolfsma

5 *Erasmus University, Rotterdam, The Netherlands*

10 **In this essay, contrary to popular belief, it is argued on the basis of transaction cost economics that consumers will become dependent subcontractors in electronic markets. Consumers invest time and effort building up a relationship with a producer, (r)e-tailer, or intermediary—an investment that is idiosyncratic. The intermediary only needs to invest in generic assets that enable him or her to automate the process of collecting and processing customer information needed to differentiate products and discriminate prices. As**
15 **subcontractors, consumers face high switching costs and are thus dependent on intermediaries. Virtual communities of consumers that organize countervailing power will not mitigate this tendency.**

20 **Keywords** consumers, consumers as subcontractors, electronic markets, transaction cost, transaction cost theory

25 The Internet changes the relationships between the consumer on the one hand, and producers, [r]e-tailers or intermediaries on the other hand. The general expectation is that consumers will benefit (Kelly, 1998; Malone et al., 1987, 1989; Heerings & Schinkel, 2005), primarily because of increase in product offerings and thereby greater chances of a consumer’s individual preferences being met. In other words, the Internet increases the possibilities for
30 firms to cater to the demands of ever-smaller niches in the market. Another, related expectation is that increased competition will reduce prices. However, customization

entails that firms use information about consumer preferences to alter products competitively. Correspondingly, consumers have to invest time and energy in establishing relationships with certain firms by providing them with information about their own wants; firms collect and process consumer-derived information easily and cheaply using information technology.¹ Firms use this information to employ the instruments of product differentiation and price discrimination (Varian, 1996; Reinartz, 2001). In this essay, I argue, on the basis of primarily but not solely transaction cost theory, against these intuitive and optimistic beliefs about how the Internet will benefit consumers. I argue that consumers will become locked into relationships with firms in electronic markets and ultimately become dependent subcontractors to them, able to switch to competing vendors only at relatively high cost. Firms stand to gain more than consumers do, certainly in absolute terms.

DIGITAL MARKETS

Many scholars have argued that electronic markets will be different from the markets we are all very familiar with. While this may be true, the perfect market depicted in Economics 101 textbooks will not emerge. Electronic 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). The information goods exchanged in information markets are easily and cheaply reproduced and altered, ensuring that a plethora of goods are available in the market. Few will take the trouble to collect information about these different offerings. Some may use automatic ways of gathering information about a certain type of product—that is, software agents such as bots. Many will not know what is available or have a bot to collect information or may not be able to specify in

Received 4 April 2005; accepted 6 October 2005.
W. Dolfsma is a 2005/2006 Fellow of the Netherlands Institute for Advanced Study and Visiting Research Fellow University of Aberdeen Business School. The author thanks participants in a seminar at Keele University (UK), editor Roberta Lamb, and an anonymous referee of this journal for helpful comments.
Address correspondence to Wilfred Dolfsma, Erasmus University, Rotterdam, FBK, PO Box 1738, NL-3000 DR, Rotterdam, The Netherlands. E-mail: wdolfsma@rsm.nl

sufficient detail what they want so that the search results are actually useable.

70 In addition, information goods do not deteriorate with use, so it is difficult to make a distinction between first-hand and secondhand goods. The signal that the price on a secondhand market for a particular good gives to consumers about the quality of the firsthand good is diminished greatly (Whinston et al., 1997). How then can one
75 determine the value of information goods? Information goods are typically not “search goods” but rather are so-called “experience goods”; their value can only be determined after they have been bought (Zeithaml, 1981). In some cases, they may even be “credence goods,” as their
80 value will not be clear even after the purchase but instead depends on the judgment of others, of experts. Consumers and retailers do not have the same relevant information on a good: the situation can be characterized as one of information asymmetry (Stiglitz, 2002). Retailers will need
85 to convince consumers of the value of the good by giving them some indication of what it looks like and what it can be used for. The best indication would be for users to see the information good in its entirety, but that would in many cases negate the reason for consumers to buy the good in
90 the first place. There is an information paradox related to information goods: Before you buy the good you need to see it to determine its worth to you, but once you have seen it, there is no reason for you to buy it anymore. The reason is that pure information goods are what economists
95 call public goods: Consumption by one does not exclude the consumption by others, and consumption by one does not deplete the quality of the good. Technical measures can be used to turn public goods into private goods, for instance, by technically limiting the time that the product can be used. If only a part of the good is presented to consumers for them to determine the quality of the entire good, retailers may be tempted to present the part that is particularly attractive, suggesting that it is representative of the entire good. The temptation of “adverse selection”
100 of the information to be presented is huge and therefore difficult to resist, as the trailers for new movies indicate. In the literature on information economics, this is called the “moral hazard” problem. Consumers will need others to determine the quality and value of the goods for sale in electronic markets. Parties will be trusted when they have an established reputation to maintain. New parties will be chosen only by risk-taking consumers, or for search goods, or when the good does not involve a large investment.

110 A well-known, mainstream economic theory—transaction costs theory—furtheres our understanding of how consumers and firms interact in electronic markets. Coase (1937), who wrote the seminal article in this field, asks what determines the limits of the firm—where does the market end and where does hierarchy start, and why?
120 In addition to production costs that might be higher

if all activities are undertaken within one firm, Coase and his followers point to transaction costs involved in establishing and maintaining market relations between firms. They tend to take the market as a default and also suggest that markets favor economic development and consumers are likely to benefit more than the hierarchies (firms) from unimpeded market exchange. But, ironically, as shown later, transaction costs can also weaken a consumer’s position. 125

The transaction costs argument may be summarized as follows. In market transactions, two or more parties are involved. Usually both parties have to make investments. An important issue in transaction costs theory is the extent to which one of two parties has to make *idiosyncratic* investments in order to make an exchange, investments that are only valuable in a relationship with a specific other party. To the extent that a party does make such investments, he or she is vulnerable and may be blackmailed by the other, as he or she faces high switching costs in case he or she wants to move to a competing party. This is called the “hold-up” problem. The idiosyncratic investment by one of the parties decreases the number of alternative partners he or she effectively can chose from. As all parties involved are believed to be opportunistically motivated (Williamson, e.g., 1975, talks about “self interest with guile”), the other party, sensing the opportunity that arises due to idiosyncratic investment by the first, will seize it. 130 135 140 145

CONSUMERS AS SUBCONTRACTORS

In electronic markets, consumers continuously provide information about their product preferences and their willingness to pay. Firms can and do make use of that information directly in altering the (bundle of) product(s) they offer and the price they offer it for. For instance, Amazon was awarded a patent in 2005 for building this feature into its business model.² Firms may need substantial investment to actually collect and analyze the data thus generated, but this investment is not idiosyncratic as it is irrespective of the particular customer it deals with. Instead of the trial-and-error process of taking a new product to the market and then waiting to see if there is a demand for it, firms now know (much) more about their customers. In fact, the customers are intricately involved in the production process; they become subcontractors. The investment made by the consumers is idiosyncratic: They cannot demand that their files be transferred to a competing firm if they so choose. 150 155 160 165

If consumers are viewed as subcontractors, what insight does that yield? I argue that consumers are likely to become locked into positions where they find themselves more dependent on firms (producers, but more likely intermediaries) than the other way around. At the same time, however, firms are limited in the extent to which they can wield their market power since demand will become more 170

volatile in electronic markets. The latter effect does not, as I argue, outweigh the former. If appropriate, I will refer to the market for music products, which is an exemplar for the likely development of electronic markets (cf. *The Economist*, 1997).

In emerging electronic markets, consumers are flooded with information that they need to filter and qualify. Intermediaries are in a much better position to perform these tasks than consumers themselves. Not only will they be able to exploit economies of scale and scope in gathering and interpreting information about products available on the Internet, they will also be able to strike deals with upstream suppliers to consider their products and bring them to the attention of consumers. Google's sponsored search results are a case in point. Intermediaries' position will depend on their reputation in both the market where they buy products (information, usually) from suppliers and the market where they sell to final consumers. Consumers, in turn, will appreciate the information filtering done for them by these intermediaries and will be willing to pay for these services, either directly or indirectly. Trusted intermediaries who offer such services are powerful players on the Internet.

With the use of the preferences that consumers reveal by their implicitly or explicitly stated choices, the intermediaries are able to construct detailed consumer profiles. Answers to questions and information about previous purchases, as well as clicking behavior and Internet Protocol (IP) address, are valuable resources that intermediaries can use to customize their products as well as their sales efforts. As hardware and software become increasingly sophisticated, information gathering and subsequent profiling can be automated to a significant degree. Consumers' profiles that intermediaries are able to construct become increasingly focused on single individuals. Indeed, firms' overall strategies are increasingly informed by such considerations—Amazon, MSN, and Google may be the best-known examples of this. As consumers are increasingly involved in the production process itself—especially in the design and marketing aspects of it—one may perceive of them as subcontractors to the firms.

Consumers and intermediaries may both benefit from these developments in electronic markets. Consumers benefit 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 meet their preferences to higher degrees. Intermediaries will benefit even more (Dolfsma, 1998). They are crucial gatekeepers, as they control an important filter that consumers rely on to determine the quality and value of information goods (cf. Crane, 1992). It will be difficult for upstream suppliers to go around this bottleneck and reach consumers directly or to establish their own reputed intermediary. Intermediaries that have estab-

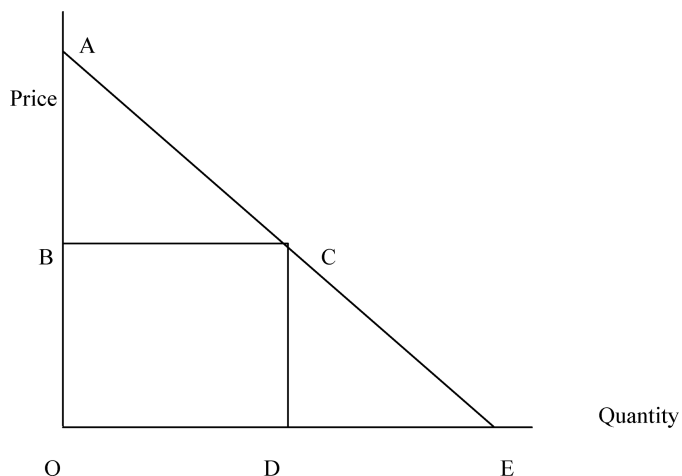


FIG. 1. Price discrimination and welfare.

lished a reputation have an advantage over new entrants in that they have already established links with (potential) consumers. Reputation is an important means by which to appropriate the benefits from a market (Dolfsma, 2005b).

The benefits accruing to firms as they use information about their customers relates to their increased ability to differentiate their products according to customers' wishes, but as well as their ability for price discrimination. In Figure 1, OB is the prevailing market price for any product Z; OD is the quantity of goods exchanged in the market given price OB. The area OBCD is the total size of the market, and includes the profits of producers. Price discrimination means that a firm is able to charge different prices to different groups (third-order price discrimination), to different individuals (second-order price discrimination), or even to a single individual at different times or for different quantities purchased (perfect or first-order price discrimination). In the case of a single price for all consumers in the market, triangle ABC is "consumer surplus": Some consumers who now buy the product would be willing to buy the good at a higher price. Triangle CDE is "deadweight loss": Some consumers would like to buy the product, but not at the prevailing price. Price discrimination means that the producer appropriates the consumer surplus and/or the deadweight loss triangles in Figure 1, depending on the kind of price discrimination employed. This may be welfare enhancing if more parties will be persuaded to buy the goods involved, such as parties that would not purchase them at price OB (Schmalensee, 1981; Varian, 1985). If existing customers buy more products than they would without price discrimination, this then entails that welfare for society as a whole has increased due to the use of price discrimination. Whether these preconditions are met in actual fact is difficult to establish, but it seems unlikely. Welfare is defined here as the consumer surplus such as triangle ABC in Figure 1 plus the

profits in the relevant market signified as a part of OBCD (Schwartz, 1990). Decreased consumer surplus may be compensated by increased profits, so that total welfare for society remains the same but its distribution changes, and vice versa (see Romer, 2002). In addition, a decrease of revenues OBCD need not signify decreased profits as profit margins might increase relative to price.

Given that digital products can easily be reproduced and transmuted, and do not deteriorate if used or copied (Whinston et al., 1997), customization of them is progressing and will continue to do so in the future. Consumers, however, need to convey information about themselves in order to secure these benefits of customization. Information may be conveyed by their behavior as they move from web site to web site, it may be revealed by the speed with which they make these moves, and it may be explicitly given by consumers to intermediaries in response to questions posed. 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. Intermediaries will do much of the information gathering and classifying by the use of special software. The possibly extensive databases, the content of which may be protected under copyright law (Maurer, Hugenholz, & Onsrud, 2001), that are thus constructed can subsequently be used to fine-tune marketing efforts and to offer customers products that will meet their preferences in better ways. The extension of copyright law to include databases also prohibits customers from taking the information about their own preferences and willingness to pay for a range of goods to other intermediaries. Copyright law gives intermediaries the right to exclude others from using the data that they have collected about their (potential) customers. Might a body such as the Federal Communications Commission (FCC) rule that retailers must allow their customers to take their profile to another party, as it ordered mobile phone operators to allow consumers to take their phone number when migrating to a different operator? There is no party that can enforce this at the moment. Even if there was movement in this direction, protests against such a proposal would be supported by firms whose interests are directly effected, while finding little resistance from others who will only be effected indirectly (cf. Olson, 1965). Furthermore, even if an exception were made for this particular case, the intermediaries cannot be easily forced to provide the data in a way that is compatible with the system of a competitor.

Intermediaries offer their customers related products in which some interest may have been expressed. Products may be offered as a bundle of goods—something that benefits suppliers as much as it may suit customers (Whinston et al., 1997). By bundling, firms such as Amazon will not only generate additional revenues much more efficiently than they would if they had not used profiles, but they

will also add data to the profiles that they already have of people by monitoring the way in which customers have reacted to the offers.

Since the relative cost of investing in a market relationship between intermediary and consumer is much higher for the latter than for the former, and it is consequently unfavorable for a consumer to switch to another intermediary, these investments of consumers can be considered to be what Williamson calls idiosyncratic investments. These investments are idiosyncratic, because discontinuing the 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. The intermediary does not need to make additional investments if and when another consumer presents him- or herself. On the other hand, information provided by a consumer who has severed the relation may still be useful for improving the firm's profiling capabilities. In the conceptual framework that Williamson develops, idiosyncratic investments such as that of consumers make the party undertaking them dependent on the other party in the relationship; the party is locked into a relationship. This second party may then use the market power available to extract higher profits from the relationship.

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 from abandoning it. If one party has invested more and more in a way that is nonrecoverable and cannot be used in relations with new business partners, this party will be in an unfavorable position. Rational consumers may be aware of this and decline to enter into such a relationship. If alternative firms that will not build and use profiles to their own advantage are unavailable, even rational customers will have to enter into such a relationship. What is more, promises by firms not to use people's information have been violated before.³

SUPPLIERS (INTERMEDIARIES) VERSUS CONSUMERS

Could consumers organize a countervailing power by forming virtual communities? Olson's (1965) logic of collective action suggests that it may be difficult for many consumers to organize in a way that will make firms adopt and stick to a policy where they would not use such information about their clients in ways that hurt them. The pace of technological development and the commercial uses made of these technologies is rapid. While this may change in the course of time (Van den Ende & Dolfsma,

2005), the overwhelming range and number of goods on offer will continue to perplex customers. This creates a situation that is in many ways uncertain—in the sense that Frank Knight (1921/1948) proposes—to customers. Most people will not know what information is available and could be of interest to them nor what firms are able to do to observe and interpret their online behavior. In such circumstances, they will not be able to make the kind of rational calculation that neoclassical economists expect them to make. Instead, they will rely on the reputation of established firms—a reason why firms may ask higher prices for their services even when customers are aware of other firms that offer the same products or services at some times much lower prices (Brynjolffson & Smith, 2000). When consumers are not rational *homo economicus* but rather creatures of habit (e.g., Dolfsma, 2002), there is an additional reason why they will simply enter into a relationship with an established, reputed firm and later find themselves in a subcontracting relationship.

Consumers generally are aware of their investment, and if they are not yet aware they will rapidly become aware of it. However, their knowledge does not stop them from participating in this sort of relationship. The potential benefits—in terms of decreased search costs and increased fulfillment of their preferences—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 the early and immature state of many electronic markets have started to compensate (potential) customers for the personal and unique information they provide by answering questionnaires. This compensation takes the form of rebates or samples. In the case of information products that exist in a physical state—such as newspapers, magazines, and books—this process seems to have developed in a way that consumers as well as firms find attractive. For myopic consumers (Kahneman & Tversky, 1981) these benefits of customized products are available immediately, while the costs will only arise in the future.

The balance of advantages and disadvantages for consumers and firms might be different in electronic markets than in bricks-and-mortar markets. Who will benefit more from future developments in Internet markets is difficult to say, but the preceding discussion does offer a suggestion. Even if, as is suggested, intermediary firms 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. Additional consumer surplus may outweigh the deadweight loss that consumers suffer. In all, the process may end up in a situation that economists call a Pareto improvement, even when further welfare improvements would be possible.⁴ In other words, intermediaries may take the bigger share of that

market, but the economic position of consumers need not deteriorate 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 electronic Internet markets that set limits on the degree to which intermediaries can wield their market power. To the extent that these countervailing forces are at work, consumers might improve their position in welfare terms. One is the fact that communities that form in the virtual world—for instance, in discussion groups—are not bound by geography. Consumers can more easily find like-minded others with whom they may organize and exchange information. Whether or not incumbent firms will succeed in maintaining and exploiting their possibly dominant positions in electronic markets depends on how responses to their behavior are perceived and acted on in the different Internet communities that are relevant to them. Internet communities may have extended possibilities to express their voice, in terms originally described by Hirschmann (1970), while their members may not always be able to exercise the exit option because they are locked into a relationship with an intermediary that they themselves have invested in heavily. The market for music products is an example. Discussion lists about what used to be local music bands may now have a global membership (Stahl, 1997; Dolfsma, 2000). Bands from New Zealand, for instance, are the focal point of discussion lists in which a substantial number of members are based in countries other than New Zealand. As a consequence, sales of recordings by these bands outside of New Zealand are quite remarkable, and the bands have also found enlarged possibilities for live performances.

The background and sources of information at the disposal of each member of an Internet community will likely differ more than in traditional, physical markets. The information that a network can draw on will tend to be more varied as a consequence (Burt, 1995), and the likelihood that information will disperse throughout the network or community about alternative intermediaries to turn to, or about (alleged) abuses by the intermediary with whom community members now deal, is substantial. In network theory, this is known as the “weak ties” argument, and for many different situations it has positive effects (Granovetter, 1996). Especially Rheingold (1994) believes that Internet communities will be an important countervailing power in the social and the economic realm. Jones (1995, 1998) provides empirical studies of Internet communities that present a more mixed perspective. Extant relationships tend to persist, or tend to be reflected in relationships on the Internet. Power is not absent from the Internet, contrary to what many had expected. Whatever effect Internet communities have on the behavior of firms depends on firms wanting to preserve their reputation. Relevant Internet communities consist of large numbers of consumers

425

430

435

440

445

450

455

460

465

Q1

470

475

with diverse interests. As Olson argued persuasively in 1965, a small group (e.g., of firms) that has a well-defined interest often finds it easy to mobilize against a large(r) and more diverse group. In addition, as Internet communities allow people to communicate anonymously, parties (firms) that have a specific interest may be able to introduce information into the community through individuals who pose as independent members. Sony Music has notoriously done so by persuading a reviewer of newly released music to write favorably about its music. Future developments will, of course, determine how these tendencies may strengthen or challenge the countervailing power of Internet communities.

A second countervailing power that may be observed as electronic markets develop and mature is an increased volatility of demand in these markets. Altogether new products, or new variants of existing products—and each may subsequently be customized—are likely to find their way to the market. These will partly be delivered by new entrants into 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 defending their own position in a market. Such practices by incumbents are already used in certain physical markets, such as those of cereals, soaps, washing powders, and detergents (cf. Scherer & Ross, 1990), and will be copied and perfected in Internet markets. The effect may be that the position of a firm 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), because large, diversified firms can take advantage of such circumstances by exploiting economies of scope and because of their deep pockets; while small, single-product firms are much more vulnerable (Dolfsma, 2005b).

How this works out in terms of the absolute and relative numbers of customers who remain loyal to an intermediary firm and the products it brings to a market is not clear. Given the exploratory nature of this contribution, I might hazard the prediction that the two countervailing powers will not be sufficient to outweigh the tendency of consumers to become subcontractors to producers by making idiosyncratic investments in their relationship, and thus becoming tied to them.

SOME CONCLUDING REMARKS

In this essay I applied transaction costs theory to understand emerging relationships between consumers and intermediaries (or suppliers, producers, [r]e-tailers) in electronic markets. These relationships will change, because

products exchanged in these markets are easy to reproduce and customize, while at the same time they do not deteriorate in quality when used or copied. Customization, however, is predicated on consumers providing intermediaries with information about their preferences. The process via which such information becomes available to producers requires more investments on the part of consumers than on the part of intermediaries—investments that are idiosyncratic for consumers. Consumers become dependent on (locked into) intermediaries due to these idiosyncratic investments, giving the latter the possibility to increase their profits. There are countervailing tendencies, however, which have to do with how communities on the Internet are organized. I have argued that these countervailing tendencies are too weak to offset the tendency of consumers to become locked-in subcontractors and dependent on the firm they buy from. Consumers will, of course, benefit from an increased choice of products, and some may benefit from the increased possibility for price discrimination, as well. Whether the development of electronic markets will improve the position of consumers in absolute terms depends on the increase in the size of the economic pie itself. It is likely, for instance, because of increases in economic productivity, that the pie will grow (much) bigger. In relative terms, however, consumers will be worse off due to consumers becoming subcontractors in electronic markets.

NOTES

1. The terms *e-tailers*, *intermediaries*, and *producers* are used interchangeably when referring to the party that relates directly to the consumer.
2. Patents for business models are not accepted outside the United States at the moment.
3. Such information has also been sold. Despite the public outcry that such action has sometimes evoked, it may not be illegal to do so. Firms in electronic markets can have their customers sign “click-wrap” contracts, which many never read, that contain clauses that allow the firm to alter its policy in relation to privacy without consent of its extant customers.
4. See Dolfsma (2005a) for a discussion of the field of welfare economics that is referred to here.

REFERENCES

Brynjolfsson, E., and Smith, M. 2000. Frictionless commerce? A comparison of Internet and conventional retailers. *Management Science* 46(4):563–585.

Burt, R. S. 1995. *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.

Coase, R. 1937. The nature of the firm. *Economica* 4:386–405.

Crane, D. 1992. *The production of culture: Media and the urban arts*. Newbury Park, CA: Sage.

- 580 Dolfsma, W. 1998. Internet: An economist's utopia? *Review of International Political Economy* 5(4):712–720.
- Dolfsma, W. 2000. How will the music industry weather the globalization storm? *First Monday* 5(5) May. <http://www.firstmonday.org> (reprinted June 2005).
- 585 Dolfsma, W. 2002. The mountain of experience: How people learn in a complex, evolving environment. *International Journal of Social Economics* 29(8):675–684.
- Dolfsma, W. 2005a. Towards a dynamic (Schumpeterian) welfare theory. *Research Policy* 34(1):69–82.
- 590 Dolfsma, W. 2005b. Some economics of Internet content. In *The economics of the digital society*, ed. L. Soete and B. ter Weel, 200–218. Cheltenham: Edward Elgar.
- The Economist*. 1997. Electronic commerce—The search for the perfect market. 10 May, 10 ff.
- 595 Granovetter, M. 1995. *Getting a job: A study of contacts and careers*. Chicago: University of Chicago Press.
- Heerings, J. J., and Schinkel, M. P. 2005. World-wide-welfare: A micro-economic analysis of “the new economy.” In *The economics of the digital society*, ed. L. Soete and B. ter Weel, 14–43. Cheltenham: Edward Elgar.
- 600 Hirschman, A. O. 1970. *Exit, voice and loyalty*. Cambridge, MA: Harvard University Press.
- Jones, S. G., ed. 1995. *Cybersociety—Computer-mediated communication and community*. Thousand Oaks, CA: Sage.
- 605 Jones, S.G., ed. 1998. *Cybersociety 2.0—Revisiting computer-mediated communication and community*. Thousand Oaks, CA: Sage.
- Kahneman D., and Tversky, A. 1981. The framing of decisions and the psychology of choice. *Science* January 30:453–458.
- Kelly, K. 1998. *New rules for the new economy*. London: Fourth Estate.
- 610 Knight, F. H. 1948. *Risk, uncertainty and profit*, Boston: Houghton Mifflin, Originally Published 1921.
- Malone, T. J., Yates, J., and Benjamin, R. 1987. Electronic markets in electronic hierarchies. *Communications of the ACM* 30(6):484–497.
- Malone, T., Yates, J., and Benjamin, R. 1989. The logic of electronic markets. *Harvard Business Review* May/June:166–170.
- 615 Maurer, S. M., Hugenholz, B., and Onsrud, H. J. 2001. Europe's database experiment. *Science* 294:789–790.
- Olson, M. 1965. *The logic of collective action*. Cambridge, MA: Harvard University Press.
- Reinartz, W. J. 2001. Customising prices in online markets. *European Business Forum* 6:35–41. 620
- Rheingold, H. 1994. *The virtual community*. London: Stecker & Warburg.
- Romer, P. 2002. When should we use intellectual property rights? *American Economic Review* 92(2):213–216.
- Scherer, F. M., and Ross, D. 1990. *Industrial market structure and economic performance*, 3rd ed. Boston: Houghton Mifflin. 625
- Schmalensee, R. 1981. Output and welfare implications of monopolistic third-degree price discrimination. *American Economic Review* 71(1):242–247.
- Schwartz, M. 1990. Third-degree price discrimination and output. *American Economic Review* 80(5):1259–1262. 630
- Stahl, G. 1997. Citing the sound: New Zealand indie rock in North America. *Perfect Beat* 3(2):60–76.
- Stiglitz, J. 2002. Information and the change in the paradigm in economics. *American Economic Review* 92(3):460–501. 635
- van den Ende, J., and Dolfsma, W. 2005. Technology-push, demand-pull and the shaping of technological paradigms—The development of computing technology. *Journal of Evolutionary Economics* 15(1):83–99.
- Varian, H. R. 1985. Price discrimination and social welfare. *American Economic Review* 75(4):870–875. 640
- Varian, H. R. 1996. Differential pricing and efficiency. *FirstMonday—Peer reviewed journal on the Internet* 1(2) August. <http://www.firstmonday.org>
- Vogel, H. L. 1998. *Entertainment industry economics*, 4th ed. 645 Cambridge: Cambridge University Press.
- Whinston, A. B., Stahl, D. O., and Choi, S.-Y. 1997. *The economics of electronic commerce*. Indianapolis, IN: Macmillan.
- Williamson, O. E. 1975. *Markets and hierarchies*. New York: Free Press. 650
- Zeithaml, V. A. 1981. How consumer evaluation processes differ between goods and services. In *Marketing of services*. ed. J. H. Donnelly and W. R. George, 186–190. Chicago: American Marketing Association.