



NEW ZEALAND INSTITUTE FOR THE STUDY
OF COMPETITION AND REGULATION INC.

B2Bs, Competition Law and e-New Zealand:

**An application of transaction cost theory to the new economy
in New Zealand and its implications for Competition Policy**

By
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Introduction

“New Zealand has already achieved a significant level of Internet penetration and usage, higher than that of Australia and most other OECD countries”

OECD (2001:28)

“New Zealand (not only) demonstrates significant levels of Internet connectivity, capacity, but also significant levels of utilisation of that capacity for the exchange of information”

Howell and Marriott (2001:36)

New Zealand has a solid foundation for e-commerce, and is a world-leader in Internet infrastructure. There is substantial evidence of high e-World participation – New Zealand, one of the OECD’s smallest economies currently contributes up to 9% of total world-wide e-commerce. This leadership role in the worldwide new economy implies that New Zealand will be one of the first countries in the world that could face new issues arising from the implementation of Internet technology and the evolving new economy. This dissertation examines and analyses the particular aspects of the new economy, including characteristics of rapid information transfer, low cost search and the development and exchange of information products, in order to determine whether the new economy, with a focus on Business-to-Business Internet platforms (B2Bs), poses particular issues for New Zealand competition policy.

This dissertation is divided into five main sections. Section I introduces and defines concepts relevant to the new economy, including the structural differences between the old and new economies and alternative explanations for the determinants of those structural changes. These changes are notably the result of a reduction in transaction costs, which include the costs of search, offer, negotiation, acceptance and enforcement of transacting. Transaction costs affect how and when economic agents make decisions:

the optimal level of decision making is achieved when transaction costs are minimised. Hence, transaction cost theory is used to explain the structural changes in the economy.

Transaction cost theory is incorporated into decision making through contracts that bind parties to ex ante conditions of a transaction. Contracts are a tool that can reduce transaction costs: to do so, a contract must contain certain elements, such as offer, negotiation, acceptance, formation of contract, legal capacity to enforce and the transaction must be legal. Contracts are especially useful in restraining transaction costs where economic agents are limited by imperfect/incomplete information (such as asymmetric information); agents are risk averse; agents act strategically in the market; there are high sunk costs (asset-specific investment) involved in the decision making process; quality and standardisation needs to be guaranteed.

New markets, as well as the emergence of market makers (third party market specialists) and Internet platforms, and changing investment and supply-chain management patterns are a result of the change in transaction costs. These changes raise questions about the appropriateness of competition policy for the new economy, considering that current competition policy was designed during an era when the new economy did not exist.

B2B Internet platforms are of particular interest in this instance for two reasons, and are the focus of Section II. Firstly, the potential growth of B2Bs outstrips that of Business-to-Consumer (B2C) platforms by a factor of 8 to 14. Secondly, B2B Internet platforms can be examined as an exchange mechanism, or dynamic perspective, as well as from a static or infrastructural perspective. B2Bs are a natural development in the business arena as a result of transaction cost efficiency. The areas where B2Bs enhance efficiency are explored from several different angles.

In order to determine the implications of B2Bs on the competitive process, the market characteristics of such platforms are examined. The potential detrimental consequences, including abuse of market power (e.g. exclusion), (tacit) collusion and other types of anticompetitive behaviour are analysed, and well as the potentially positive welfare

enhancing effects on competition. Naturally, empirical evidence is introduced to support and confirm the arguments.

In Section III, the new economy and its importance for New Zealand's economy is studied. In particular, there have been recent movements concerning B2Bs in New Zealand's largest export sector – the dairy and agricultural sectors, that shed light on merger and practice regulation on B2Bs under New Zealand competition policy. However, there is still room for other policy ideas that have not yet come to light under New Zealand competition policy, regarding B2Bs and (tacit) collusion.

In Section IV, the legal framework of competition policy in New Zealand is presented and compared to existing competition policy in the EU and USA. Competition policy revolves around three main pillars: competition restricting agreements, abuse of dominant position and practice/acquisition regulation. Examples of recent B2B cases in the EU and USA are analysed for instances where New Zealand is yet to face such issues, with a focus on the MyAircraft.com and Covisint B2B competition policy cases. As a result, the adequacy of current policies are questioned in light of the Harvard and Chicago Schools of Thought and current trends in regulation.

In Section V, a set of generic and New Zealand specific recommendations are presented that could aid in efficient application of competition policy in the new economy.

Section I: The New Economy

Since the digitalisation of information, the world has faced an information revolution. This revolution has changed society from an industrial into an information society. Traditional old economy ‘bricks and mortar’ industries produce predominantly physical, tangible goods, while the new economy is dominated by the production of intangible goods facilitated by the existence of digitalised information goods and the Internet. For the purpose of this dissertation the *differing types of goods* is most important. Besides that there of course other *differences related to market structure*. For example, industries in the new economy demonstrate rapid exit and entry and production is usually at single plant level and both supply and demand economies of scale are achievable. The old economy, on the other hand, usually requires large capital investments, which indicate medium to slow exit and entry, modest rates of innovation and production normally takes place at multiplant/firm level. Economies of scale are usually only possible on the supply side, with the exception of monopsonies.¹ Moreover, the Internet has led to decreasing transaction costs, which are altering the structure of the economy. This dissertation examines the characteristics of rapid information transfer, low cost search, and the development and exchange of information products in order to determine whether the new economy poses particular issues for New Zealand competition policy. The focus is on Business-to-Business Internet platforms (B2Bs) and a comparison between US, EU and NZ competition policy is made.

1. The Structure of the New “Network” Economy

Three interrelated industries make up the new economy². While this definition is not exhaustive, it gives the general scope of the concept. The first layer is computer software manufacturing, while the second layer forms around Internet business, ranging from Internet Service Providers (ISPs) to content and access providers. The final layer of the new economy consists of communications networks, from equipment design to final

¹ This aspect is developed in further detail in section 2.

² Posner (2000). The layers do not have to be separate, some overlap is possible.

services provision, which aids and supports the first two layers. This structural view of the new economy is often referred to as the ‘Hierarchical View’.³ These layers are created around groups of networks and, hence, the new economy is often called the “network economy”.

Networks are certainly not specific to the new economy; there are significant networks in the old economy (such as road, rail, utility and telephony networks). Adam Smith’s recognition of the determination of prices, given quantity, in a marketplace implicitly involves the idea of a virtual network consisting of the interactions between agents⁴. Virtual networks in the old economy exist, for example, via distribution networks for services. In the past, consumers would often buy a common market car (e.g. Ford) because they knew that the dealership would also provide service and repairs on their vehicles when the car required servicing. In comparison, more exclusive cars, such as Mercedes, did not have similar dealerships that provided such services. While this did not prevent a consumer from purchasing a Mercedes over a Ford, a Ford car would have an additional option value attached to it, making it more valuable to the consumer. (i.e. the option value as the value of the availability of services). Consequently, as more people purchased Fords, the distribution network would grow according to the theory attached to consumption demands (network effects). This is arguably no different to any other network, be it in the old or new economy.

While the conceptualisation of networks (and their role in the economy) is nothing new, the new economy forms the foundations for a digital information infrastructure and it is this infrastructure that in particular exhibits compounding positive network effects. These embody the feature that the value of the information network increases as the number of users increases. Nevertheless, it is not the actual network that is valuable to its users, but the services (e.g. access to information) that are embedded in the network.⁵ There is a large debate concerning the existence of network effects as externalities, which Economides (1996) defines as: “A positive consumption externality (or network externality) signifies the fact that the value of a unit of the good increases with the

³ Choi and Whinston (2000) Ch1.

⁴ Smith, A. (1776) see Evans (2001):5 for brief discussion.

⁵ Posner (2000).

number of units sold.”. Liebowitz and Margolis (1998) argue that network externalities do not exist because the externality is either pecuniary (and hence there is no welfare loss) or the externality is internalised by the owner or user (which vetoes the externality’s effect). As a result, network effects are not as startling as some authors, such as Economides, would suggest. However, Arthur (2000) advocates that Liebowitz and Margolis attempt to redefine ‘network externality’ in such a way, that under such a definition it is guaranteed that it cannot exist.⁶

The value of a network can also increase indirectly as the number of complementary goods available increases. Evans and Schmalensee (2001) refer to this as a “system(s) effect”. Other economists, for example Economides, refer to this effect as an *indirect* positive network externality. The differences in definition are more than simple semantics. Liebowitz and Margolis (1998) argue that indirect network externalities are either pecuniary in nature (and hence there is no need for intervention as there are no inefficiencies in the market) or the result of upstream market failures. Either way, the authors suggest any *prima facie* labelling of an effect as an indirect network externality should be approached with caution because wrongly labelling the effect could lead to inappropriate policy responses which could have (unwanted) detrimental effects on social welfare.

Positive network effects, also known as consumption externalities,⁷ drive demand through positive feedback effects where the value of a product increases for various reasons as additional consumers start consuming those goods or complementary goods. Consequently, both demand and supply side scale economies are possible, whereas in traditional markets there are usually only supply side economies of scale.⁸ It is however important to note that this differentiation is dependant upon the set of assumptions used in the definition of economies of scale. According to the Shaked-Sutton concept (1988), demand (or consumption) externalities can occur in any market, although their model suggests that this is more likely to happen in a market where entry is blockaded. The

⁶ See The New Palgrave Dictionary of Economics and the Law (1998: 671-679) for extensive coverage on this debate. In this paper I will simply refer to the effects associated with networks as ‘network effects’ to avoid confrontation on the matter.

⁷ Choi and Whinston (2000) pp24-26.

concept explains how a natural monopoly can arise due to market pulls from the demand side. Normally mainstream economic theories analyse demand as the magnitude of quantity demanded at different relative prices and price levels. The Shaked-Sutton concept, however, defines demand as a function of quality versus cost trade-offs. Higher income groups demand higher quality goods and the theory predicts that as the size of the economy increases, the industry will become more concentrated and due to “demand-pull”, i.e. that technical change and innovation is caused by a potential increase in market (demand) size so that higher quality products will be produced. Because firms face fixed costs, entry is blockaded only to a point. Hence, there is always the threat of entry or competition from fringe firms, which spurs high quality products to be low priced (closer to competitive outcomes rather than monopolistic ones). This concept could be used for a range of both old and new economy networks including old economy virtual and distributional networks. Hence, consumption externalities need not necessarily be linked solely to the new economy. It could be applied to any market where consumers value quality, and firms face considerable fixed/sunk investments.⁹

2. Transaction Costs

The new technology that has evolved around the Internet has slashed transaction costs. Transaction¹⁰ costs here are taken to include all costs incurred in the process of transacting, i.e. all ex ante and ex post costs of a transaction. Ex ante transaction costs consist of: search costs, or finding the right exchange partner¹¹; communication costs, i.e. specifying characteristics and products to be traded¹²; and negotiation costs¹³. Ex post transaction costs arise when the deal has been agreed upon, but has not yet been fully

⁸ With the important exception in the case of a monopsony.

⁹ For a graphical representation of this concept, see Waterson (1987).

¹⁰ Transactions occur when: “a good or service is transferred from a provider to a user across a technologically separable interface.” Rand (2000) p3.

¹¹ For example, Stigler (1961) identifies the cost of obtaining information as a source of coordination (communication) cost.

¹² Alchian and Demsetz (1972) demonstrate how coordination costs arise from the costs of coordinating inputs in production. Barzel (1982) states that coordination costs also arise when there are problems in measuring the value of the transaction.

¹³ Milgrom and Roberts (1990) recognize that bargaining has certain costs associated with it. This can be viewed as an extension of the concept of TCE. Agents are able to coordinate themselves so that demand and supply equate, as well as be able to overcome problems associated with the strategic behaviour of agents arising from asymmetric information.

completed,¹⁴ although it may also include costs of enforcing the contract which are anticipated ex ante but only realised ex post. These costs consist of payment costs and monitoring costs in order to ensure the acquired goods or services meet the negotiated level. Williamson (1975,1985) identifies two elements of transaction costs which occur both ex ante and ex post: Firstly, there are motivation costs, associated with the opportunistic behaviour of agents such as principal-agent problems. Secondly, agents are limited by bounded rationality which leads to asymmetries of information both before and after a transaction has occurred. Bounded rationality occurs where rational economic agents are limited by incomplete and/or imperfect information. The role of transactions is an important determinant in economic decision making.¹⁵ – according to the transaction cost economic theory, the optimal market and/or firm structure is reached when transaction costs are minimised.¹⁶

¹⁴ See for example <http://www.businessmedia.org> for further detail.

¹⁵ For example, this argument also explains why some firms vertically integrate instead of outsourcing. The decision to outsource the production of a good or service is directly related to comparison of transaction costs of producing the same good or service inside or outside of the firm. The transaction costs of producing the good or service 'in-house' will include the management of that process, and monitoring all inputs in its production. On the other hand, the transaction costs that arise from outsourcing include: search, negotiation, benchmarking and performance measuring and contractual enforcement costs. If outsourcing is associated with high transaction costs, then the firm will vertically integrate so as to minimise its transaction costs. However, if transaction costs are low, it can be more efficient to outsource. For example, if in house production accrues more transaction costs, the firm will decrease the scope of its production and outsource the production of that good or service. Transaction costs, therefore, are a decisive factor that affects how firms coordinate their activities as well as playing an important role in the determining the scope of the firm

¹⁶ The Economist (2000a).

Transaction costs decrease consumer and producer welfare, thereby reducing efficiency, and reflect uncertain control of resources:

“[C]ompetition for scarce resources must be resolved [...] through private control and exchange in markets, direct allocation by the state or communal ownership, or through races and physical struggles. Within these broad categories we find elaborate mosaics of rights, duties, enforcement mechanisms and procedures for dispute resolution. Transaction costs arise because control systems and enforcement are costly.”¹⁷

2.1 Contracts

Economic agents act to minimise transaction costs. In reality, transaction costs are kept in check by using contracts in agreements: “Contracts typically contain a balance of incentive payments and provisions for monitoring that minimise transaction costs [...] Contracts reduce transaction costs by legally binding the parties to ex ante conditions”.¹⁸

The six basic elements all contracts must contain are:

- i) An offer to do something within a certain time frame;
- ii) The consideration and negotiation of the terms, both legal and otherwise, of the promise;
- iii) Acceptance of the offer;
- iv) Formation of the contract that meets the legal requirements for enforceable contracts¹⁹;
- v) The parties must have the legal capacity to bind that contract to each other;
- vi) The contract must be enforceable, and elements i) to v) must not violate legal statutes.²⁰

If one or more of these elements is not fulfilled, the contract may be void. This occurs when the contract requires illegal behaviour or the parties do not have the competency to perform the contract. Even if this is not the case, a contract may still be unenforceable due to legal burdens or obstacles which outweigh the benefits of ratifying the contract. A

¹⁷ Palgrave (1998) vol 2.

¹⁸ Evans and Quigley (2000) p 81.

¹⁹ Many contracts involving the sale of goods over a certain value (e.g. realty, automobiles) require formal *written* contracts.

contract may not be entered into if it does not prospectively improve the welfare of the relevant parties: this can occur for a variety of reasons.

2.1.1 Rational Decision Making & the State of the World

Agents always face a certain degree of uncertainty: they must make rational decisions under incomplete and/or imperfect information. Usually, economic agents are risk averse and prefer certainty of outcomes where attainable. Such agents prefer the same level of consumption regardless of the future state of the world,²¹ even if they have to pay a premium to achieve it. Contracts can ensure that, if the future outcome is unfavourable, the agent can still enjoy a satisfactory level of consumption and ensure enforceable ex post outcomes by sharing risk. They compensate agents' risk taking both implicitly and explicitly,²² as they stipulate legally binding property rights, allocation of responsibilities, and the actions necessary to reach those outcomes.²³

2.1.2 Opportunistic Behaviour

Contracts counter opportunistic behaviour by restricting the undesirable actions of agents. They are designed to contain “a balance of incentive payments and provisions for monitoring (that minimise transaction costs)”.²⁴

*“The fundamental function of contract law [...] is to deter people from behaving opportunistically toward their contracting parties, in order to encourage the optimal timing of economic activity and [...] alleviate costly self-protective measures”*²⁵

Without restrictions self-interested agents can act more strategically, for example by supplying too little or faulty information²⁶. In addition, principal-agent problems can arise. Expected welfare for one party is higher when acting strategically than complying

²⁰ www.asu.edu/counsel/brief/contractbasics.html

²¹ In good times, the agent could expect to gain welfare, whereas in bad times s/he might lose welfare.

²² Nicholson (1992) p.256-261.

²³ Evans and Quigley (2000) p81. *Contracts reduce transaction costs by legally binding the parties to ex ante conditions.*

²⁴ Evans and Quigley (2000) p81.

²⁵ Posner (1992) p91.

²⁶ Morris (2001).

with the arrangement. However, the second party may likely suffer as a result.²⁷ Because this is anticipated, contract design and negotiation reflects it, although it is costly to enforce. Legally enforceable contracts can force agents to act appropriately, thus limiting opportunistic behaviour. Agents agree to a contract to insure themselves against opportunistic behaviour so that agreed-upon ex ante conditions are fulfilled.

2.1.3 Investment/Acquisition of Information

Contracts are never complete and thus the ex-ante acquisition of information in contracting never goes to the point that there is no information uncertainty. For each party there will be an optimal level of information to acquire. Information is an experience good - without consuming the information, one cannot ascertain its utility.²⁸ This creates uncertainty, as people cannot discern the true value of the information before it is consumed.²⁹ Information providers and consumers have different knowledge sets about the value of the information, resulting in asymmetries of knowledge bases.³⁰ Contracts insure against potentially undesirable outcomes that stem from asymmetric information. However, contracts bring in new problems, including those of moral hazard and adverse selection. If individuals know that they are somewhat insulated from certain risks/outcomes, the incentive structure is altered. Moral hazard often arises in the case of insurance. Individuals may no longer be as careful if they know they are insured and the probability that a loss will occur increases.

Transaction costs are present in any situation involving asymmetric information and should not be any different for information asymmetries in the Internet. Indeed, Garicano and Kaplan (2001) do not find any significant empirical data to substantiate whether adverse selection resulting from asymmetric information is more prominent in Internet transactions than in other transactions. However, the Internet facilitates search and the acquisition of information, which leads to competition in information provision, possibly reducing asymmetric information in some contexts.

²⁷ If the second party were also to act strategically, it may be that the welfare enhancing agreement would not take place at all, due to backwards induction.

²⁸ Evans (2001) p3.

²⁹ Herings and Schinkel (2001) p7.

³⁰ Evans (2001).

Information, or lack thereof, affects the certainty under which decisions are made. The more informed a decision-maker is, the more uncertainty is reduced. It follows that the more relevant information economic agents have *a priori*, the better decision outcomes will be, by allowing individuals to accurately account for risks. Agents may face different costs and benefits of acquiring information. As these differ, different individuals will attain different levels of information. The optimal level of information, for a contract, will vary between individuals; with each agent engaging in information search only as long as the benefits of having the information outweighs the search costs.³¹ However, because information is generally non-rivalrous and non-excludable in consumption, problems arise when trying to define and allocate property rights. Nonetheless, contracts must still be credible and enforceable if efficient levels of investment, consumption and trade of information are to occur.³²

2.1.4 Asset-Specificity³³

Transaction costs also arise in markets where sunk-cost asset-specific³⁴ investments are considerable.³⁵ There are several key areas where asset specific investment arises, including: *site specificity*, *physical asset specificity*, *human capital specificity*, *dedicated specificity* (“capacity created to serve a large customer so that it would be difficult to find other customers”) and *brand name capital*.³⁶ In such markets, firms end up dealing with suppliers that have a competitive advantage.³⁷ Suppliers will act opportunistically and if there are no alternative suppliers in prospect, they may extract welfare from downstream markets either by raising prices or restricting output.³⁸ Posner (1992) identifies that this situation calls for more ‘contract-specific investment’ by the buyer, which can be

³¹ Evans (2001) p4.

³² *Ibid.*

³³ Carlton and Perloff (1994) define asset-specificity to be: “A specialized or custom product with little use in applications other than the one for which it was designed”, p919.

³⁴ Pint and Baldwin (1997). Pp6-7. “Some goods and services can be produced more efficiently if one of the parties invests in transaction-specific assets that cannot easily be put to other uses if the buyer/seller relationship breaks down.”

³⁵ Evans and Quigley (2000) p4.

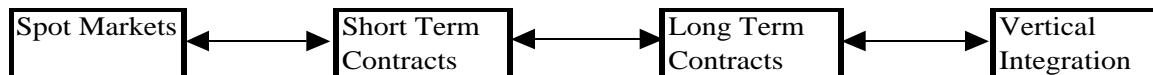
³⁶ RAND (2001), emphasis added.

³⁷ Martin (1988) p 233. The vice-versa for downstream markets can also result in the same outcome.

³⁸ Riordan, M.H. and Williamson, O.E. (1985). pp365-378. And Williamson, O.E. (1986). pp.149-174.

achieved either through integration³⁹ or enforceable contracts. Highly specific assets can be used as a motive for vertical integration, in order to avoid increasing transaction costs between up and downstream markets. This will only be a profitable alternative if the up- and downstream inputs are to some extent substitutable.⁴⁰ If that alternative is not profitable, then the anticipation of this situation also generates transaction costs because the decision to invest is fraught with ex post opportunistic behaviour that ex ante contracts may seek to ameliorate. Indeed, long-term contracts are often used in order to limit such opportunistic behaviour,⁴¹ and the ability to contract is most important in this instance.⁴²

Figure 1: Scope of Contracts



2.1.5 *Quality and Standardisation in Transactions*

In a market for homogeneous goods or services, an agent is indifferent about purchasing from any supplier in the market. Competition between the suppliers will ensure a certain level of quality is met. There will be no need for buyers and sellers to engage in contracting, as opportunistic behaviour is already constrained by the market and transactions will be efficiently carried out under standard transaction contracts. However, the more differences there are in quality or the characteristics of a good or service, the less standardised transactions are, and the higher transaction costs are. Contracts are used, therefore, in areas where differential characteristics of a good or service are important. As a result of applying contracts, ex ante conditions on ex post quality facilitate the standardisation of behaviour, and the production of those goods.

³⁹ See footnote 14.

⁴⁰ Carlton and Perloff (1994). Pp511-520. In other words, when: “combined profit of buying and selling firms [...] is variable in proportions in production”.

⁴¹ Carlton and Perloff (1994).

⁴² Evans and Quigley (2000b) p4. “Although contracts reduce transaction costs in many contexts, it is for specific assets that the enforceability of all contractual provisions is most important”

2.1.6 Legal Aspect

Contracts are only enforceable when they do not breach competition law.⁴³ They are the intrinsic drivers of lower transaction costs and, hence, improve efficiency. Nothing about this fact has changed since the information revolution. The economy - old or new - still requires credible and enforceable contracts. However, new economy characteristics have implications for contracts and, hence, industrial organisation, which are discussed in section II.

2.2 Empirical Evidence and Efficiency

Ideally, market forces lead to allocative efficiency, where all the possible gains from exchange are exhausted.⁴⁴ This is possible when markets are perfectly competitive and the following assumptions hold: existence of a standardised product; suppliers are price-takers, not price makers; mobility of factors in the long run; and perfect information on both sides the demand and supply sides of the market.⁴⁵ These assumptions presume that there are no transaction costs. If any one of these assumptions does not hold, as is always the case in reality, a failure of the idealised unattainable market occurs and some allocative inefficiency will arise relative to the unattainable first-best solution. When this happens firms and/or agents will face transaction costs.

Williamson (1975,1985) developed the Transaction Cost Economics theory (TCE)⁴⁶ that: “[The] optimal organization form is found by comparing the efficiencies of [...] distinct transactional modes”⁴⁷, and also acknowledges that total costs can be divided into production and transaction costs.⁴⁸ Any reduction in total costs leads us closer to a perfectly competitive market, which, in turn, increases social welfare. The focus of TCE is on sources of market inefficiencies which are correlated with transaction costs, and in

⁴³ For example under the Commerce Act 1986, §27¶4. Competition policy is the topic of section IV.

⁴⁴ Frank (1998) Pp341-379.

⁴⁵ *Ibid*, pp337-341.

⁴⁶ Williamson (1975,1985). The assumptions made by the author are twofold: Firstly, agents act opportunistically and secondly, agents will face bounded rationality.

⁴⁷ Whinston (2001).

⁴⁸ Williamson (1975,1985). Production costs are the costs of transforming inputs into outputs, or direct production expenses.

turn affect decisions in the market. These are intrinsic causes so that they are always present, for example in cases of asymmetric information, moral hazard, and uncertainty etc. Transaction costs affect every decision by economic agents.

Empirical evidence suggests that transaction costs are an increasingly important factor in the economy: Wallis and North (1986, p121) argue that in 1930 transaction costs accounted for 46.3% of US GDP. By 1970 this figure had risen to 54.7%.⁴⁹ More recent studies confirm Wallis and North's findings. In-Ung (2001) found a similar pattern in the total transaction sector in (South) Korea, where the transaction sector grew from 32.9% of GNP in 1973 to 42.9% in 1994.⁵⁰ Polski (2001) reports that total transaction costs in the U.S. commercial banking sector rose from 69% of total income in 1934 to 77% in 1998 and finds an interesting dynamic effect between transaction costs and institutions: "During a recent period of intense economic and institutional change in the industry, transaction costs moved out of equilibrium, increasing to 90% of total income, and then returned to equilibrium as the intensity of the change diminished." This demonstrates that as we move away from equilibrium, transaction costs increase (as we become more inefficient), and decreases again as we move back into equilibrium, just as the TCE predicts. The methodology for these results is acceptable, as reliable data for the U.S. financial sector was available for all the years (except during World War II). While this raises the idea that there is an important relationship between institutions and technological change, there are some theoretical questions that remain unanswered⁵¹ - because these findings also reflect the proposition that as more specialisation occurs in the economy, transaction costs rise as division of labour increases.

2.3 Transaction Costs and the Information Economy

The information revolution has shifted the focus of production from tangible outputs to intangible information goods. This has several impacts on the way we can conduct transactions. Moreover, the extent and cost of transactions has been transformed which in turn affects the size and scope of firms in the economy.

⁴⁹ Engelbrecht (1997) reports that these estimates form a lower bound for the transaction sector. See p280.

⁵⁰ These values should be viewed as suggestive evidence only, as the research methodology was unavailable in English.

The Internet consists of a growing shift to markets matching demand and supply in real time. This new infrastructure has allowed a base for the exchange of such digital information products reducing inefficiencies in each step of the supply chain. Certainly other privately owned technologies can also provide similar functions to those available through the Internet. Automatic teller machines (ATMs) and Electronic Data Interchanges (EDIs) are two types of privately owned network systems that can and have provided digital information long before the onset of the Internet.⁵² However, it is the infrastructure of the Internet that sets it apart from its privately owned competitors. Not only does the Internet provide uniformity and connectivity, but it also grants open access through the use of open source protocol, for example the TCP/IP protocol⁵³. Such an open source network has no barriers to interoperability that privately owned networks might erect. Hence, information can flow relatively freely.

The changing structures of the new economy are encroaching on several important forms of transaction costs, moulding the size and scope of new economy firms. Arrow (1962) identified that the production of information, for example a computer software programme, generally requires high fixed costs, such as investment in intellectual property (IP), which are usually sunk once the initial investment is made. Once the good or service has been produced, it can, however, be reproduced at low variable costs. In fact, the variable cost maybe close to zero. Hence, average costs generally fall over increased output.⁵⁴

Again, it is important to note that these findings are dependant upon the assumptions made during the analysis. Liebowitz and Margolis (1998) suggest that this assumption is not always fitting.: “Decreasing cost industries have not been treated as symmetric with increasing cost industries[...] If there are no input price effects and no real technical effects of industry expansion, the increased expenditure for inframarginal goods is just a

⁵¹ See Engelbrecht (1997) for an overview of those points.

⁵² Choi and Whinston (2000) p19.

⁵³ TCP/IP is a set of protocols developed to allow cooperating computers to share resources across a network and can connect a number different networks designed by different vendors into a network of networks (the "Internet"). For more information see: <http://www.yale.edu/pclt/COMM/TCPIP.HTM>

transfer [...] Downward sloping supply is not the result of low-cost units being held off the market until prices fall, and being supplied only to “take advantage of low price [...] So it is most often argued that downward sloping supply must be a consequence of some real externality or economy of scale, *rather* than a bidding down of producers’ rents that would be the exact analogue of the external diseconomies case”

However, the new economy certainly does lower transaction costs. For example a recent study by Lucking-Reiley and Spulber (2001) found that a financial transaction is \$1.25 at the teller, but only \$0.01 for an online transaction.⁵⁵ Interestingly, although the cost of such transactions is decreasing, the total transaction sector as a percentage of total income is increasing. This likely reflects the growing division and specialisation of labour in the economy, but may also represent institutional and structural changes in the economy. A plausible explanation, in light of Polski’s (2001) findings, is that the transition to a more efficient transaction technology, such as the Internet, causes transaction costs to rise as we move out of the old equilibrium toward the new equilibrium. In this respect it would be interesting to monitor future values of the transaction sector, as well as to examine the true efficiency gains permeating the economy due to the Internet and its associated lower transaction costs.

All else equal, these findings imply that the Internet provides a more efficient transaction cost technology. Changes to transaction costs relates to structural changes in firms and markets. Indeed, the information revolution is responsible for a range of structural changes to the economy that we see today.

3. Structural Changes in the Economy

Bailey and Lawrence (2001) present solid arguments to show that the emergence of the new economy has indeed led to *structural* changes in the economy.⁵⁶ There are several

⁵⁴ Liebowitz and Margolis (1998) p6. Further discussion of the debate can be found in The New Palgrave Dictionary of Economics and Law vol. I.

⁵⁵ See Lehman Brothers in Lucking-Reiley and Spulber (2001). See also Section 3.3.

⁵⁶ Bailey and Lawrence (2001).

benefits that the new economy delivers to businesses, governments⁵⁷ and consumers. First of all, the digitalisation of information has changed cost structures, which has implications on the structural organisations of firms and markets. As a result of those changes, new products and markets have emerged; while at the same time, some old markets have been replaced or complemented by new online markets.⁵⁸ Moreover, the evolution of Business-to-Business (B2B) and Business-to-Consumer (B2C) platforms has reformed the structure of businesses in today's world as a method of capturing and employing efficiency gains created by lower transaction costs. These platforms are Internet-based software systems which allow agents to acquire or sell goods and services online, creating a virtual network of services for both buyers and sellers.

3.1 Cost Structure Differentials

Switching to a digitalised process lowers several types of costs. For example, the Internet lowers transaction costs as transactions use less paper.⁵⁹ By digitalising information, transactions can be automated and tracked. This reduces the number of people involved in the procurement chain, and increases speed and consistency of transactions. Search costs are also reduced as price and quality information can be readily compared online.⁶⁰ It means that small and medium enterprises, that would otherwise not be able to compete directly with larger companies, can compete on a more level playing field with bigger firms. In addition, advertising costs drop and it is easier to advertise the availability of stock, including excess stock, that would otherwise have wasted in inventory warehouses. There are two intrinsic cost savings here: Cheaper advertising and reduced inventory costs. The Internet opens the door for Just-In-Time supply chain management by allowing for fluid management of procurement and output production in such a manner so as to minimise inventory costs, while lowering search costs. In fact since 1988, the

⁵⁷ Examples of the benefits that states and citizens can derive from e-Government can be found under: <http://www.cbi.cgey.com/journal/issue2/features/govern/> . While this paper does not focus on issues of e-Government, information directly relating to New Zealand's e-Government programme is available online under: <http://www.govt.nz/egovt/>

⁵⁸ Herings and Schinkel (2001).

⁵⁹ Harbour (2001) section V.

volatility of many OECD countries' GDP has fallen, perhaps reflecting this change in inventory management.

3.2 The Emergence of New Markets

The new economy has also led to the development of new markets. Internet-based business are increasingly augmenting value-added, by incorporating: "Cheaper technological solutions to interconnection between networks, and the potential for competition in the provision in core facilities within networks, in the provision of new products and in the ability to create markets where none existed before."⁶¹ Garicano and Kaplan (2001) present empirical evidence that Internet marketplaces are positioned at a significantly substantial cost-advantage over physical markets. Due to lower transactions costs, spot market participants have the opportunity to reorientate their behaviour and reserves toward furthering other gains from the market.⁶²

3.3 Intermediaries and Market Makers

Commodities can be traded via dealer-markets (with middlemen as dealers or brokers) or via market-makers (specialists). Historically, middlemen were assumed to be "the exclusive avenue of exchange".⁶³ Sarkar et al. (1995) outline four possible supply chain changes resulting from the change to a new economy. First, there could be a reinforcement of existing producer-to-consumer links. Second, producers could use networks to sell directly to consumers, bypassing intermediaries. Third, there could be a reinforcement of existing intermediary structures. Finally, there could be an emergence of a 'network-based intermediary', or 'cybermediary'.⁶⁴ The authors conclude that there will be a combination of the third and fourth possibilities, i.e. traditional intermediaries will continue to exist, but along side cybermediaries.⁶⁵

⁶⁰ There are several methods available to reduce search costs such including "Shop bots"("Internet-based shopping agents") or manual search engines. See for example Bradford Delong and Froomkin (2000).

⁶¹ Evans (2001). pp6-12. For example the emergence of a spot market for electricity in New Zealand only exists because of advanced information technology.

⁶² Garicano and Kaplan (2001) pp.9-11.

⁶³ Rust and Hall (2001) pp3-7, 45-46.

⁶⁴ Sarkar et al (1995) p12.

Benjamin and Wigand (1995) find that supply chain management would be most effective with either direct selling from producer-to-consumer or through a third party market-maker (specialist), and conclude that in either case, both sides of the market will be better off as compared to the alternative possibilities. However, certain markets may be better off with a market maker that can provide efficient matching of service and good bundling. The authors find that the retail price for high quality shirts could be reduced by up to 62% by eliminating wholesalers. However, there would still be questions of how demand driven markets, a common feature in network industries, can allow for this given that consumers will decide which is the most efficient bundle of services. It could be that intermediaries provide service bundling through information creation and dissemination as well as the creation of product awareness. Sarkar et al (1995) also discuss how intermediaries can balance the interests of both side of the market, which could play an important stabilisation role in ‘tippy’ markets.

Rust and Hall (2001) model the introduction of a market maker⁶⁶ into a dealer market. If the market maker has lower variable transaction costs than the highest cost of its broker competitors, then the market maker will be economically efficient and profitable.⁶⁷ Less efficient brokers and wholesalers will be driven from the market. Hence, there is a place for wholesalers, but their role is changing. Rust and Hall (2001) show that such a market maker *unambiguously* implies positive welfare effects⁶⁸ as well as structural changes to the supply chain. However, Evans (2001) points out that, for such Internet market-makers to be more efficient, they must still abide by the rules of exchange.⁶⁹ Contracts will form to ameliorate costs of transacting by specifying ex ante conditions on the exchange of goods and payment between parties. Although market makers can provide efficient outcomes, the core concept does not change the fact that any agreement to transact must be met with enforceable and binding conditions.

⁶⁵ *Ibid.*, pp1-12.

⁶⁶ Rust and Hall (2001) define a market maker as “an exchange that posts publicly observable bid and ask prices”. Market makers are information gatekeepers, and do not allow for negotiation to take place on the website.

⁶⁷ Rust and Hall (2001), Evans (2001).

⁶⁸ This point is discussed in further detail in section II: Benefits of B2Bs.

⁶⁹ Evans (2001): “If B2Bs are to be successful, they must provide a better service than those of brokers or dealers. The elements of contracting must still be fulfilled.”

3.4 Structural Supply Chain Differences

The emergence and existence of B2Bs and B2Cs can be viewed as a result of lower transaction costs, network effects and the characteristics of information goods. Internet platforms are software systems that create a special virtual network aggregating and/or connecting buyers and sellers in a market. The creation of such a transaction platform allows for congruency and fulfilment of contract arguments. New products may be prone to tipping in favour of one standard because of the existence of network externalities.⁷⁰ Hence, investments in the new economy are risky. Risk affects investment decisions and, therefore also, market performance.

A portfolio approach is one method of minimising those risks, for example via a joint venture.⁷¹ Joint ventures can reduce the risks each firm faces in so much that processes may be standardised, and system effects can be internalised. Furthermore, joint ventures reduce the discrepancies arising due to asymmetric information in the industry. Thus, once standards are set, outsourcing may become an economically viable alternative for firms. All types of transaction costs are reduced, thereby benefiting both supply and demand sides of the market. The portfolio approach to risk minimisation may also contribute to an economically efficient outcome for consumers.⁷² Due to the lower costs of using the networks of digital information on the Internet, the number of transactions should likely to increase. Moreover, due to lower menu and search (transaction) costs consumers should expect lower prices and price convergence among virtually homogeneous products.

In the following section potential benefits, deviations from predictions and potential risks of B2Bs and B2Cs are discussed. In addition, the development of B2Bs in particular is related to B2B exchanges as a good, as well as a process, in economic evolution and demonstrates why these changes are important for trade.

⁷⁰ See for a graphical example Evans and Schmalensee (2001) pp60-66. See also Evans et al. (1999) which illustrates how different software packages have risen and fallen as leaders in PC software markets.

⁷¹ See Carlton and Frankel (1995) and Macmillan (1997) in Evans (2001) p8. See also Clarke (2001) p8.

⁷² Evans (2001) p17.

Section II: *B2Bs*

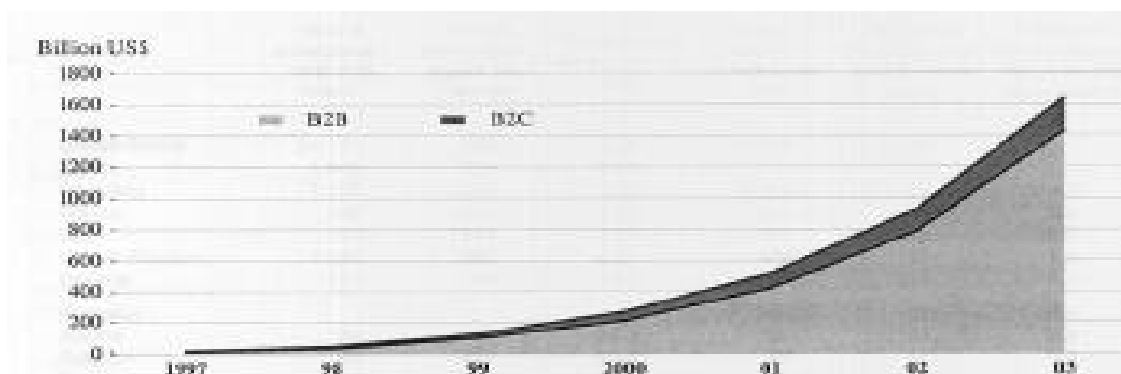
4. B2B Platforms

Business-to-Business (B2B) and Business-to-Consumer (B2C) platforms have emerged in the Internet. This section focuses on B2Bs which are “(Internet based) software systems that allow buyers and sellers to carry out sales and procurement activities over the Internet”.⁷³ B2Bs can be examined from two perspectives: first of all from a process, or dynamic *exchange* perspective; secondly from a static perspective, by looking at the type of good or *infrastructure* such a platform is, or can provide.⁷⁴ It is important to look at the potential costs and benefits associated with Internet platforms in light of empirical evidence.

4.1 *The Evolution of B2B Platforms*

Existing traditional commercial patterns shows that business-to-business outweigh business-to-consumer transactions by a factor of 8 to 10.⁷⁵ Gartner Consulting predicts the same pattern will emerge with B2B online transactions,⁷⁶ as a result of expanding Internet usage.

Figure 2: OECD Projections for B2B and B2C e-Commerce Growth



Source: OECD (2000)

⁷³ DeSanitgo (2000).

⁷⁴ Harbour (2000) identifies these aspects as the two core components of Internet platforms.

⁷⁵ In some countries this ratio may even be higher. For example up to 14 times higher in UK (OECD (2001)).

⁷⁶ <http://faculty.ed.umuc.edu/~meinkej/inss6690/busby/busby.htm>

From 1965 to 1975, firms began automating functions such as payrolls and routine transactions.⁷⁷ Boddy et al. (1998) finds that the main reason for this was to exploit large efficiency gains by reducing search, negotiation and administration costs.⁷⁸ These transactions were carried out by software packages such as Material Requirements Planning (MRP). The idea was to exploit efficiencies at an intrafirm level. In the 1980's these automated functions were extended to other central business functions which were supported by Value Added Networks (VANs).⁷⁹ VANs are privately owned and facilitate both intra and interfirm information exchange by using Electronic Data Interchanges (EDIs). Traditionally EDI was the method of information transfer between different companies' computers, increasing the speed of information and communication exchange via Local Area Networks (LANs)⁸⁰ for intrafirm and Wide Area Networks (WANs)⁸¹ for interfirm communication. Within EDIs, the format of the transactions is agreed upon, and standardised, by the companies entering the information exchange process. Participation in the exchange can be monitored and controlled by the participating companies due to the fact that EDIs are privately owned. The members are also able to choose the level of participation. In other words, they can decide what information is disseminated and when. This is important where the security of the information is concerned. While there certainly are network effects at work in EDIs⁸², for example see Sturrock (1994)⁸³, because of the private ownership of VANs, interfirm connectivity requires considerable asset-specific investments. This results in sunk investment and considerable switching costs – costs which do not arise in the Internet.

⁷⁷ Bodammer (2001) pp9-12.

⁷⁸ Boddy et al. (1998) p.656.

⁷⁹ Choi et al. (1997) p.5.

⁸⁰ LANs are physically connected via cables. Choi et al. (1997) p 5.

⁸¹ WANs can use either physical or virtual networks for connectivity. For example telephone lines or satellite links. See Bodammer (2001) for a more detailed explanation.

⁸² Harbour (2001) on the other hand suggests that B2Bs will develop as a natural step in the evolution of market structure in the search for efficiency gains by exploiting *network effects*.

⁸³ Sturrock (1994). "Texas Instruments (TI) found very limited pay back from its EDI program initially, but the return on investment (ROI) took off as TI's processes began to work together. TI's large-scale integration included procurement, marketing, telecommunications, accounts payable and receivable, quality, treasury, benefits, payroll, and management information systems. Bringing all these functions together brought TI a considerable ROI."

The year 1995 is identified as the ‘birth year of the B2B’. In the recent expansionary phase, there has been an excess supply of platforms as investors scramble to secure a profitable position in new markets. However, in the long-term there will be a shake out and quite a number of B2Bs will fold. This implies that we are likely to observe cooperation between and consolidation of B2Bs over the long run,⁸⁴ in common with the history of most innovatory markets, and indeed with most business start-ups.

Busby (2000) argues that online B2B exchanges develop through three stages of development as a result of changes and improvements in *transaction efficiency*. The first stage revolves around a small number of buyers and sellers.⁸⁵ Because the number of participants in such a new market is small, those participants must rely on other sources, such as traditional markets, to complement their online operations. The second stage is reached as the number of market participants increases. This stage is characterised by ‘information discovery’ processes.⁸⁶ Transaction costs decrease as more participants join the network, and the network is standardised. Once the market has reached a critical mass, the exchange becomes a ‘primary market’.⁸⁷

The final stage occurs when participants have absolutely no need to search elsewhere for the same goods and services provided by the exchange. Transactions become fully automated and, hence, transaction costs are reduced dramatically. If the marketplace is exclusive, revenue-increasing mechanisms can be implemented (or improved upon).

Approximately half of all EDI transactions are predicted to become Internet based in the near future. The Boston Consulting Group predicts B2B revenues to reach more than US\$2 Billion by 2003. They also predict that up to \$800 million will be from firms that have evolved from implementing EDI systems. Unfortunately the results until now have

⁸⁴ The Economist (2000a).

⁸⁵ Busby (2000) p4.

⁸⁶ *Ibid.* p5. Information discovery: “including price, product , inventory and value [...] which reduces search costs”.

⁸⁷ *Ibid.*

not been so reassuring: Only 10% of EDI transactions were truly Internet based in the year 2000.⁸⁸

4.2 B2Bs and Efficiency

B2Bs have evolved to capture gains in transactional efficiency. The infrastructure of the Internet enables traditionally high-cost methods of transaction to be replaced by more efficient, low-cost transaction technologies. The OECD (2000) identifies the evolving state of the Internet as a dynamic process moving towards a more efficient market: As a result, firm/market structures mutate in accordance with the transaction cost theory. At the same time markets become more transparent due to the timeliness of Internet transactions and increased availability of information, further lowering transaction costs. There are gains from interconnectivity, which the Internet provides as an open source, reducing entry and exit barriers.

Evans and Schmalensee (2001) view this process as a step toward dynamically competitive markets. Indeed, the authors state that: “Statically competitive markets cannot persist in many new economy industries. Instead new Internet business models will facilitate dynamic competitive process.”⁸⁹ The evolving dynamic structure of the new economy is already implementing more efficient transaction modes, resulting in up to a 12.5% decrease in total costs for firms and a rise in long run output.⁹⁰ These effects are pro-competitive and should result in lower consumer prices and increases in both consumer and producer welfare.⁹¹

B2Bs can also enhance economic efficiency by aggregating supply/demand and/or matching supply/demand.⁹² This ability to gather information at low cost, while making it available to large numbers of buyers and sellers, leads to efficiency gains. With all of these positive aspects, it is important to keep in mind that of the approximately one

⁸⁸ The Economist (2000a).

⁸⁹ Evans and Schmalensee (2001) pp2-4.

⁹⁰ Goldman and Sachs forecast, reported in Die Zeit (2000).

⁹¹ This point is dealt with in more detail in section 7.

⁹² The Economist (2000b).

thousand B2Bs launched recently, only 100 are actually completing transactions.⁹³ Some B2Bs had been overvalued, and in the recent stock exchange consolidation, many B2Bs folded. For example, Chemdex was a “spectacular B2B burnout, whose share price plunged from \$239 in February 2000 to 37 cents in April 2001”.⁹⁴ The Economist (2001b) argues that “[t]he fervour of the market created a false safety net”⁹⁵ and suggests that there is an obvious flaw in the approach that most B2Bs had taken - many of the platforms only provided software packages, but only those firms that provide operational advantages, financial stability and reliability will reap benefits from operating a B2B in the long run.⁹⁶

4.3 Areas for Efficiency Gains

4.3.1 Horizontal/Vertical Ownership (manufacturing/operational)

Vertical B2Bs are a consolidation of up and downstream firms. This gives the B2B operators control over operational management. Gans and King (2001) conclude that this type of organisation: “generates additional value (added) for these players by aggregating demand and supply”.⁹⁷ On the other hand, horizontal B2Bs include value-added services, such as logistics or aggregated markets.⁹⁸ Furthermore, third party horizontal B2B operators, or ‘market makers’, can increase efficiency by reducing price diversity. Even if the market maker is a monopolist, both consumer and producer surpluses, as well as trading volumes, will increase.⁹⁹

Moreover, the authors determine that while the formation of vertically integrated B2B platforms in fragmented markets would most likely benefit from potential efficiency gains, reality has shown that most vertically integrated B2Bs are emerging in already

⁹³ International Data Corp., The Economist (2001a).

⁹⁴ The Economist (2001b). Chemdex was later known as ‘Ventro’.

⁹⁵ *Ibid.*

⁹⁶ RAND (2001) p3. Only financial markets come close to perfect competition in the real world, but often have market imperfections resulting from restricted access and/or insider information.

⁹⁷ Gans and King (2001) p6.

⁹⁸ *Ibid.*, *cit.* p 20 ¶¶5-6.

⁹⁹ Rust and Hall (2001) pp43-47. This point is dealt with in more detail in section 6.

concentrated markets.¹⁰⁰ They conclude that even though fragmented markets have more to gain from the establishment of a B2B platform, they also have to overcome collective action problems in coordinating such a platform¹⁰¹ and providing contractual elements such as prudential security etc.

4.3.2 Product Use

B2Bs can also form in product use and supply chain purposes,¹⁰² for example, managing input/output decisions. This can be related to the existence of vertical and horizontal B2Bs.¹⁰³ Vertical B2Bs are typically found in the manufacturing sector. (see Gans and King (2001); Harbour (2001)). Here, buyers and suppliers of inputs and outputs can meet more easily and perform transactions. Horizontal B2Bs tend to form around operational inputs which are generally horizontal industries that are not specific to any one particular sector.¹⁰⁴ Instead they act to support the functions and operations of different sectors simultaneously (e.g. online banking and finance).¹⁰⁵

4.3.3 Procurement

B2B exchanges are often established for procurement of inputs more cost-effectively for the firms involved in the exchange or industry. There is a distinction based on the time-scale of the purchasing agreements.

Long-term purchasing agreements are similar to traditional contracts. Gans and King (2001) suggest that only brokerage B2B models are suitable for such long-term contracts,¹⁰⁶ as such contracts require a negotiated contract and a close relationship with each party which is typically associated with dealer/broker markets. The value-added of such a B2B platform, compared to a 'bricks and mortar' dealer market, arises through the aggregation of supply and demand.

¹⁰⁰ Gans and King (2001) p7.

¹⁰¹ *Ibid.*

¹⁰² *Ibid.*

¹⁰³ Trepp (2000).

¹⁰⁴ Gans and King (2001) pp4-5.

¹⁰⁵ Harbour (2001:3) refers to purpose of horizontal B2Bs as MROs, or "maintenance, repair or operations".

On the other hand, the authors find that exchanges are most suitable for spot markets, which are involved in the procurement of goods at the lowest possible cost to fulfil immediate need. B2B exchanges aggregate supply and demand *and* match agents. Efficiency is improved through efficient matching and also smoothes out market volatility that can occur in spot markets. Volatility arises when there is infrequent interaction in the market so that reputation does not mean as much compared to longer-term relationships between sellers and buyers.¹⁰⁷ Thus, credible and enforceable contracts are also very important for spot markets

B2B auctions are suitable for both long-term contract and spot markets. In the latter, auctions are a mechanism that aggregates the market and reaches efficient matching, clearing volatile markets. Over time, however, B2B auctions reveal information about the individual and aggregated preferences of both sides of the market and thereby assist clearing the market. Hence, auctions also provide the opportunity for efficiency gains in long-term contract markets.

4.3.4 B2Bs and Efficiency: A User-Centric Approach

Trepp (2000) examines concentration versus fragmentation of the market and discusses the role of buyer, supplier and broker-centric models of B2B platforms.¹⁰⁸ *Buyer-centric*, or procurement, exchanges tend to form if the supply side of the market is highly fragmented. This usually occurs when the upstream supplier markets are in several different sectors. The B2B buyer-centric exchange allows for lower search costs on the demand side of the market and more efficient matching between both sides of the market. *Supplier-centric* exchanges usually form when downstream markets are fragmented and the product is somewhat standardised. Trepp gives the example of <http://www.Metalsite.com>, which “consolidates fragmented smaller companies into larger [...] players”.¹⁰⁹ The author identifies *broker-centric* exchanges as the result of

¹⁰⁶ Gans and King (2001) pp4-5.

¹⁰⁷ Of course, this does not always have to be the case: spot markets may be characterised by one shot *or* sequential games.

¹⁰⁸ Trepp (2000) pp.20-25.

¹⁰⁹ *Ibid.*, p21.

consolidation by traditional old-economy companies which lowers transaction costs that in turn allows those firms to enjoy efficiency gains by joining a B2B platform.

4.4 Internet Transactions and Contracting Theory

Most difficulties relating to Internet transactions lie in the element of contract enforcement:

“The Internet subverts traditional legal rules and concepts applied in national courts. Legal factors [...] are thorny issues when it comes down to the application and enforcement of national laws in a formal court system. [...] The effect is the total dissolution of geographical boundaries, national borders and communication barriers. [...] In cyberspace legitimate government regulation will be virtually impossible, as will be the task of determining which set of rules will apply [...] because the Internet does not map neatly into the jurisdiction of any existing sovereign entity”¹¹⁰

This creates uncertainty for other elements of contracts, especially the formation of a legally binding document. Consequently, opportunistic behaviour may not be efficiently contained and the contract is not credible to potential parties.

Many B2Bs ignored the fundamentals of the rules of exchange: contracts must still be reliable and enforceable. B2Bs must provide a more cost effective service than traditional markets, if they are to be successful. Several elements of contracts are affected by B2Bs. They improve efficiency of the contract elements of: offer, negotiation and acceptance. However, some contracts require ratification by signatures, especially for large purchases.¹¹¹ Electronic signatures provide the recipient of online information proof of originality of that information. In order to ensure the reliability of such signatures, regulatory agencies have adopted legal frameworks covering: legal recognition of electronic signatures as valid as a written signature, liability and international mutual recognition of certificates etc.¹¹² One issue that remains concerns B2Bs operating in an

¹¹⁰ Pistorius and Hurter (2001).

¹¹¹ http://europa.eu.int/comm/internal_market/en/media/sign/99-915.htm

¹¹² On electronic signatures and legal frameworks: For information relating to New Zealand: Law Commission part III (2000), pp.61-62. for information relating to the EU framework: http://europa.eu.int/comm/internal_market/en/media/sign/99-915.htm For information about the U.S.

international context, creating difficulties in determining the legality of contract matter, as well as complications in enforcement of contracts, if the company exists in international cyberspace. Nevertheless, B2Bs will require some form of tangible, specific-assets parallel to their Internet intangibles, e.g. employees with specific knowledge, or B2B specific technology, which could be related to a geographic jurisdiction.

5. B2B Platforms and Transaction Costs

B2B platforms are more than a portal for advertising; they facilitate trade within and/or between industries according to a set of 'rules of exchange'.¹¹³ In the case of B2Bs, Lucking-Reiley and Spulber (2001:55-68) identify three forms of platforms: Auctions, which set up a mechanism for price negotiations between buyers and sellers; Brokers, which aggregate buyers and sellers in a single place and single format; and exchanges which provide trading rules, price transparency and centralized market clearing. A similar approach is described by The Frontier Economics Group (2000) in their report for the UK Office of Fair Trading: B2Bs form different structures depending on the type of interaction in the market, the type of pricing system and the complexity of the product.¹¹⁴ These aspects are directly related to transaction costs, with the interaction in the market and the complexity of the good or service are associated with search and communication (transaction) costs, while the type of pricing system is related to negotiation (transaction) costs.

5.1 Types of B2Bs

5.1.1 Auctions

B2B auction platforms can take on many different forms. However, the use of auctions in the Internet generally takes on one to two forms: either one-to-many interaction or many-to-one interaction.¹¹⁵ In one-to-many auctions, products sold are usually difficult to value,

'Electronic Signatures in Global and National Commerce Act (ESIGN)': <http://www.ntia.doc.gov/ntiahome/ntiageneral/esign/105b/esign7.pdf>

¹¹³ Gans and King (2001).

¹¹⁴ Frontier Economics (2000) p25.

¹¹⁵ A single seller does not necessarily imply only one business; it could be a wholesaler or broker aggregating supply available from multiple producers.

such as perishable goods, because of the volatility stemming from supply or demand shocks in such markets (see section 4.3.4.). The flip side of the argument is that many-to-one interactions generate demand for a reverse auction B2B platform. This structure generally forms around a variety of suppliers to give buyers a “one-stop shop for their procurement needs”¹¹⁶. This benefits both sellers and buyers by reducing search and communication costs as well as supporting the availability of new markets. In both cases, negotiation costs are also lowered, as the participants in the auction are all adhering to the same rules of exchange, i.e. contracts, and there is price transparency, which increases the credibility of those agents.

Auctions are a mechanism that reveal information about supply and demand valuations. As the number of auctions increases, more information is revealed. The aggregation of that information is possible over the Internet, and there is an increase in the prospective gains for auctions. This creates a positive feedback effect: due to the nature of auctions as a mechanism for revealing information in a market that increases prospective gains, the number of Internet auctions should increase over time.

5.1.2 Catalogues

B2Bs that simply match sellers and buyers use catalogues list posted prices and are suitable where individual negotiations cost more than the benefits generated by dynamic pricing. Although this type of platform no longer allows for dynamic efficiency effects, it still reduces menu costs for producers and search costs for users.

5.1.3 Exchanges

Such B2B platforms generally form when the products display low complexity in their characteristics, for example stocks, energy and broadband, e.g. BandX. B2B exchanges are characterised by many-to-many interactions. In other words, the exchange will revolve around many agents from both supply and demand sides of the market. By consolidating all the market functions into one platform, all types of transaction costs are reduced, benefiting both the user and the provider.

¹¹⁶ *Ibid., cit.*

5.1.4 *e-Hubs*

As with many other aspects of the new economy, many B2Bs fall into the grey area between the definitions. It is quite possible for a B2B to fulfil more than one of the above categories. In that case, the B2B is often referred to as a B2B ‘trading hub’¹¹⁷. The structure of a B2B can also blend in with the concept of B2Bs aiding information exchange as a market mechanism and the process for equilibrium. Regardless of the form of B2B, efficiency gains from lower transaction costs can be exploited.

Table 1: A Summary of B2B Types

	Type Interaction	Pricing	Advantage	Product complexity
Auction	One-to-many	Dynamic	Seller	High
Catalogue	Many-to-one	Static	Seller	Medium
Reverse Auction	Many-to-one	Dynamic	Buyer	High
Exchange	Many-to-many	Dynamic	Both	Low

Source: Frontier Economics (2000):25

6. B2B Market Characteristics

6.1 *Potential Costs*

B2Bs have the benefit of bringing a large number of buyers and sellers to one market. Often these platforms require some cooperation and standardisation between competitors in order to achieve the efficiency gains. However, such coordination may influence competition by developing and exploiting a dominant B2B platform position. There are three main risks that may arise as a result. These risks revolve around questions of: access; the creation of monopoly or monopsony power; collusion, tacit or otherwise.¹¹⁸ These aspects are not new competition issues – they potentially arise in oligopoly markets, depending on the circumstances of the markets.

¹¹⁷ Sculley and Woods (2001) p39.

¹¹⁸ Gans and King (2001) pp8-28.

6.1.1 Access and Exclusion

Exclusion involves keeping competitors out of the market, or out of the B2B. This may occur in cases where a B2B erects entry barriers. When that particular B2B is the core market facilitator, problems arise. The B2B could raise its competitors' costs so high that entry is blockaded,¹¹⁹ or reduce competition by driving competitors from the market as a result of predation by the incumbent. Thereafter the incumbent could act as a monopolist in the market and reduce social welfare. This raises questions about the ownership and access rights to a B2B. For example, some B2Bs are only accessible if the agent is a member of that B2B. While there are legitimate reasons for implementing membership rules, such as for the protection and security of information, membership rules raise questions concerning collusion to exercise market power or to exclude/foreclose competitors from the market.

6.1.2 Collusion

Collusion occurs when firms coordinate their activities to exercise market power.¹²⁰ In B2Bs, this could occur as a form of unilateral action by the B2B itself, or through the use of a B2B by a participant to collude and act accordingly. This may be facilitated through several options, ranging from explicit, written agreements to tacit coordinated actions.¹²¹ Carlton and Perloff (1994) identify three main factors that may facilitate collusion or the formation of a cartel:

- i) The cartel must be able to raise the price in the market. This is possible when there are no close substitutes and the cartel controls a large percentage of market share and is profitable when the demand for the good or service is relatively inelastic, i.e. for necessity goods.¹²²

¹¹⁹ Harbour (2001) p10.

¹²⁰ *Ibid.*,p10.

¹²¹ Carlton and Perloff (1994) pp416-423.

¹²² At the limit there would be a vertical demand curve and any increase in price would not decrease the quantity demanded. On the other hand, there are restraints to raising the price if demand is relatively elastic. Carlton and Perloff (1994) pp.180-184.

- ii) There must be a “low expectation of severe punishment”, and the net expected payoff for joining the cartel must be positive. The issue of providing a credible threat of punishment is “particularly important in industries where technology is rapidly advancing”; because there is a higher risk that an incumbent could be toppled by a swift new entrant or fringe firm.¹²³
- iii) If the benefits of additional profits are greater than the organisational costs of creating and facilitating coordination among the members a cartel is more likely to form¹²⁴

In relation to B2Bs, low organisational and transaction costs (factor iii) make room for large efficiency gains. However, the decreasing cost structure could also facilitate dominance. Furthermore, because the Internet is relatively new, regulatory reprise may be low.¹²⁵

Opportunities for B2Bs to extract a higher profit from the market would have to result from specific B2B characteristics. In light of the first factor identified by Carlton and Perloff, B2Bs may have the opportunity to raise prices depending on the industry¹²⁶, especially when the market is already concentrated, and fewer firms are involved in the collusion¹²⁷, when the good is relatively homogeneous¹²⁸ and/or when a trade organisation exists¹²⁹.

6.1.3 Development or Abuse of Market Power

Any B2B that is characterised by one or more of the factors mentioned by Carlton and Perloff (1994) could be at risk of cartelisation or tacit collusion to gain monopoly power,

¹²³ Carlton and Perloff (1994) p 184. Wickelgren (2001:23).

¹²⁴ E.g. anonymous meetings in chat rooms.

¹²⁵ Sawhney (2000) This point is raised in section IV.

¹²⁶ Bodammer (2001) p18.

¹²⁷ Carlton and Perloff (1994) support this with evidence by Fraas and Greer (1977) on pages 186-187: “the average number of firms involved in each case was 16.7, whereas the median was 8 and the mode was 4”. While there were a few cartels with a high number of members (which skew the data set to the right), cartels (albeit those that get caught) usually have only a few number of members.

¹²⁸ This is because lower complexity and fewer differences between firms keeps the transaction costs from forming a cartel low.

¹²⁹ For example, Carlton and Perloff report: “Posner (1970) found that 43.6% of all antitrust cases involved trade associations”. Carlton and Perloff (1994) p.189.

or seller market power.¹³⁰ While it is not illegal to be a monopolist, or to seek additional profits by for example reducing output, it is not allowed to abuse that position in order to keep entrants out of the market. On the other hand, if a B2B has monopsony power (buyer market power) the platform could act strategically to increase its profits by demanding less than the competitive outcome.¹³¹

Gans and King (2001) identify two instances when a B2B platform could abuse market power. Firstly this may occur if one side of the market is highly concentrated. The second instance may happen if the good or service is rather homogeneous and is associated with low negotiation costs.¹³² These instances are not specific to B2Bs. However, the issue specific to B2Bs is distinguishing efficient joint purchasing from the improper exercise of monopsony power (or selling power in the case of a monopoly): price posting on the Internet facilitates lower search costs by users, but when price information is available from every supplier, then procurement decisions may reveal cost structures and hence profit maximising strategies to other buyers, potentially aiding tacitly collusive behaviour. Because of the speed of the Internet, proving tacit collusion is difficult. Instead, factors that enable such behaviour should raise concern with regulatory agencies: Where sensitive information is revealed through the B2B, monopsony (or monopoly) power may emerge, especially when the market is concentrated. Security measures, such as firewalls, and anonymity of agents in the B2B market may affect this risk. Moreover, the issue for B2Bs concerns unilateral monopolisation, which could blockade the market in an anticompetitive manner by playing on the inability of competitors to reproduce reputation such as cognitive quality characteristics attached to the goods and services traded via the B2B.

6.1.4 Evidence of Anticompetitive Behaviour:

Given that transaction costs are generally lower in the new economy compared to the old economy, and that Internet platforms should assist the dynamics of competitive markets, one might expect prices to fall, because B2Bs reduce costs. There is, however, some

¹³⁰ Gans and King (2001) Pp. 17-21.

¹³¹ This occurs when the marginal benefit from purchasing one more unit is less than the inframarginal cost of bidding up the price if one more unit is demanded.

empirical evidence that price levels and (less so) the price spread among outlets have increased. If we assume that price levels should converge to lower levels, we would be suspicious if prices are increasing or diverging. However, such price diversity can be explained by the structural changes in the economy and strategies involved in competition.

The Internet produces benefits, but comes with the potential costs arising from collusion, tacit or otherwise. Naturally, collusion is per se illegal if it restricts competition and abuse of a dominant position is generally illegal.¹³³ The legal aspects of the argument are dealt with in section IV. For the time being, the question that arises is whether or not the evidence of price diversity in the Internet necessarily signifies (tacit) collusion.¹³⁴

6.1.5 Evidence of Price Signalling

Varian (2001) presents information that there is an issue at hand: new economy firms may use price signalling in order to artificially inflate profits. Christie and Schultz (1994,1995) present confounding evidence that manipulated price signalling was occurring on the NASDAQ stock market. The authors found that for seventy of the hundred most traded stocks, prices were not usually traded when the stocks were quoted at odd eighths of a dollar. As a result, prices were quoted in quarters. This opened the door for tacit collusion: If traders could purchase and sell stocks at a slightly higher price, e.g. $\frac{1}{4}$ of a dollar, instead of the competitive price, e.g. $\frac{5}{8}$ th of a dollar, then a rent can be extracted from the market. This creates a ‘gentlemen’s club’ effect among the brokers, those who traded regardless of the price differentiation were mobbed by fellow ‘gentlemen traders’ and excluded from other trading opportunities. In this situation, traders found it was more lucrative to act anticompetitively, but the higher prices kept the public from trading those stocks at an efficient level. Based on extensive evidence,

¹³² Gans and King (2001) p.14.

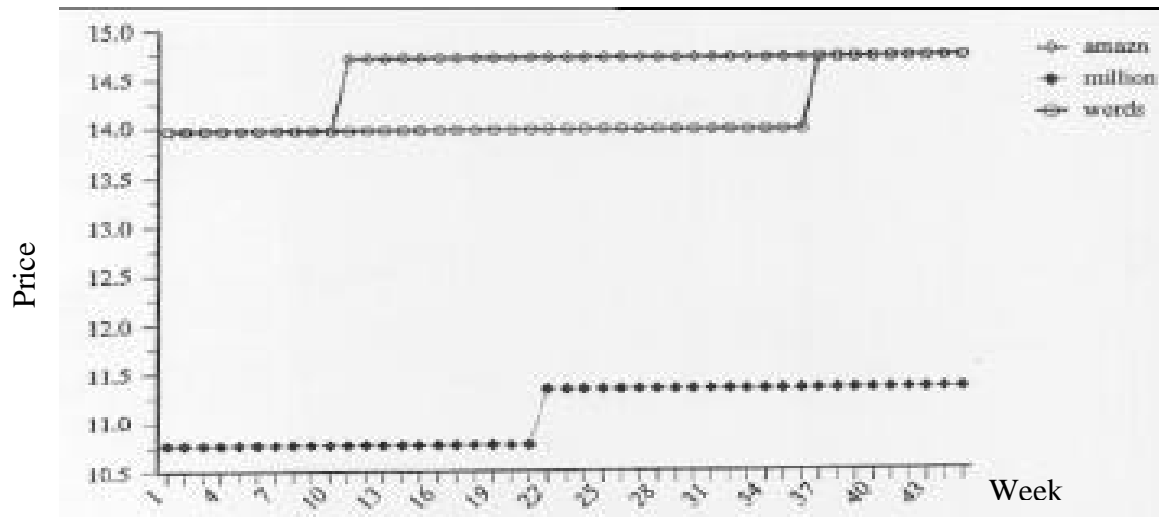
¹³³ However, there are some legal forms of competition restricting agreements, e.g. if there are benefits accruing to that action that outweigh any negative aspects. This is, for example, the case for patents.

¹³⁴ Martin (1988) pp.44-60 and 139-141.

NASDAQ paid out US\$1.01 billion in 1999 in order to have charges dropped that there was price fixing occurring on the exchange.¹³⁵

Non conclusive data on price signalling in the Internet is presented by Dillard (1999). The author finds evidence of price increases in the online book B2C market. Figure 3 demonstrates the upward trend in prices for a bestseller. Certainly this trend could be explained on grounds of a network effect increasing demand and the option value of the particular book that Dillard tracked.¹³⁶

Figure 3: Tacit Collusion in the Internet?



Source: Dillard in Varian (2001): Amazon.com, Wordsworth.com, BooksAMillion.com.¹³⁷

Further, evidence of tacit collusion was found in the analysis of the price changes of a bestseller sold both by Amazon.com and Barnesandnoble.com (BN).¹³⁸ In Figure 4, Amazon.com has a higher price, which BN later matches. After the match, Amazon.com

¹³⁵ Christie and Schultz (1995) and Varian (2001). NASDAQ is reportedly also investing US\$100 million on increased surveillance, and paying US\$26.3 million in fines to securities firms that had been overcharged.

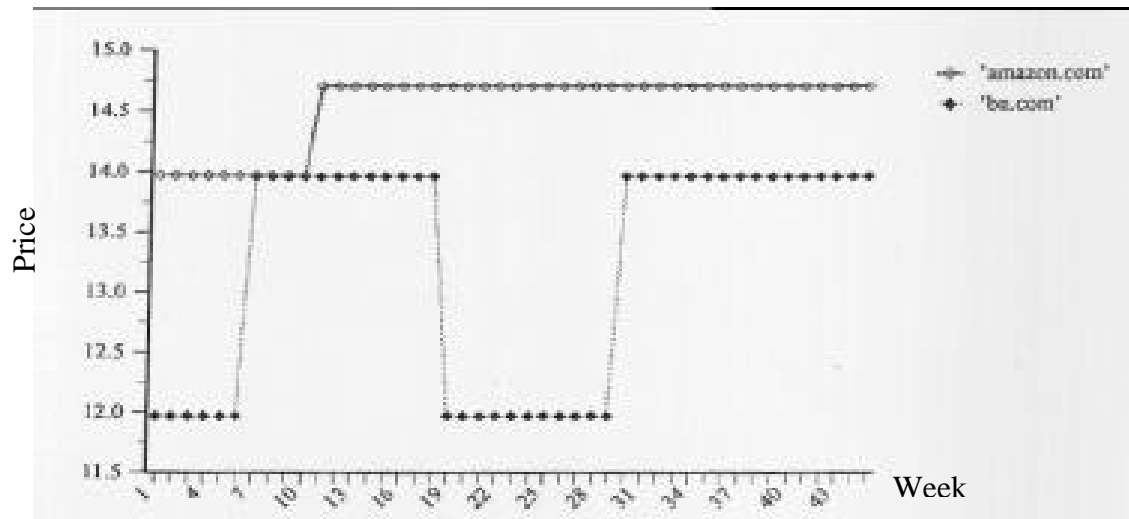
¹³⁶ Network Effects and option values: An increase in demand occurs when people tell their friends how great the good is. These people tell more people, demand increases while at the same time the option value (the potential to talk about it, or the capacity to read and understand the full context of sequels etc.) increases: people can now participate in sharing their opinion of the book as well as deriving utility from reading the bestseller. Lower initial prices represent investment in getting a foothold in the market. Dillard's findings may well not hold for other books, or markets.

¹³⁷ In Varian (2001). Reprinted with permission of the authors and publisher. Copyright © 2001, MIT Press.

¹³⁸ Dillard (1999) in Varian (2001).

increases its prices above BN's. BN then cuts its price back to the original level, but Amazon does not follow. Then BN increases its price to the original raised price.

Figure 4: Price Signalling in the Internet?



Source: Dillard in Varian (2001): Amazon.com, BarnesAndNoble.com¹³⁹

6.2 Potential Benefits

While there is some concrete evidence of anticompetitive behaviour, and examples of suggestive evidence, it may well be that superficial evidence of anticompetitive behaviour is unfounded and the companies act independently of each other. Such price changes could easily reflect price competition as a strategic method for gaining short-term volume gains and price signalling need not be a device for coordinated actions. In any case, the potential benefits of any behaviour in the market may indeed outweigh any possible costs. The main benefits arise from the reduction of transaction costs, and the associated efficiency gains as mentioned in previous sections. It is important to realise that these changes imply welfare gains.

¹³⁹ In Varian (2001). Reprinted with permission of the authors and publisher. Copyright © 2001, MIT Press.

6.2.1 Welfare Gains

The manner in which trade is conducted is directly related to transaction costs. In traditional markets, a dealer or broker is present to help facilitate transactions. In the new economy, there has been an increased interest in the role of market makers. Rust and Hall (2001) identify that market makers (such as B2Bs) not only provide transaction cost advantages over traditional transaction modes, but also increase consumer welfare. The authors argue that if a market maker has lower variable costs in transactions compared to the variable cost of transactions of the least efficient broker or dealer, then market makers are more efficient, can generate higher trading volumes and reduce price dispersion.¹⁴⁰ This forces less efficient brokers from the market. If the market maker is the most efficient transaction mode, then it will become a monopolist. Generally, however, some brokers will remain in the market and the market maker will be a dominant firm facing a competitive fringe of brokers.¹⁴¹ Due to relatively easy entry and exit into the market, and the fact that a market maker is a third party operator, the market maker's position will be contestable and, hence, the market maker will be restrained from charging anything above the perfectly competitive outcome. Rust and Hall conclude that these changes to market structure create *unambiguously* positive welfare effect: both consumer and producer surplus increase. Brown-Hruska and Ellig (2000) report empirical evidence to support that B2Bs enhance welfare. The authors find that NASDAQ, as a market maker, is capable of providing at least 2.5 cents per share traded savings over the costs for investors using brokers.¹⁴²

6.2.2 Evidence of Price Dispersion and Non-Collusive Conduct

In old economy markets, there is often price dispersion that cannot be explained by related factors. Rust and Hall (2001) argue that the 'law of one price' is often not achieved, even in markets for homogenous goods and that often this is due to high search costs.¹⁴³ The authors further suggest that a platform, such as a B2B platform, could

¹⁴⁰ Rust and Hall (2001).

¹⁴¹ *Ibid.*, See also Martin (1988) pp61-96. The market maker will become the dominant firm because of its (technologically significant) reduced costs as compared to the costs faced by brokers.

¹⁴² Battalio et. al (1998). Most savings accruing to small orders.

¹⁴³ Rust and Hall (2001) p6. Indeed, the law of one price fails even in malls, see Asplund and Friberg (2001).

reduce the unexplained price variances. Baye and Morgen (2001) model such a market, but find that “price dispersion persists even though in equilibrium all consumers purchase from a firm offering the lowest price”.¹⁴⁴ This would occur under the realistic assumption that the market structure supports a discrete and finite number of suppliers.¹⁴⁵ Bhattacharya and Vogt (2001) present a plausible alternative explanation that the law of one price fails - quality attributes and experience that consumers associate with a particular good or method of procurement¹⁴⁶ differentiate B2B services.

Brynjolfsson and Smith (1999) examine Stigler’s hypothesis¹⁴⁷, that advertising reduces prices and price dispersion by improving price information, which they confirm. They find prices in book and CD markets were lower online than off. Clay et al. (2001) support this finding, and note that large online book and CD stores command up to a 7% discount off the list price.¹⁴⁸ Their time series analysis of several types of books available online reveals that “although average prices are rising in the Internet, and price dispersion remains, the prices for books are lower than the recommended retail prices”. This result is not inconsistent with Dillard (Figure 3), but demonstrates that prices are still lower online, even though prices are rising. (See Figure 5). Although there has been a jump in the number of online book and CD stores¹⁴⁹, the author attributes price increases to product differentiation, through prices, variety available and quality of the goods and services.¹⁵⁰ Of course, these price increases likely also mirror a method of financing these new quality and variety attributes, thereby generating enough cash-flow to ensure the long-term financial security and survival of the firm.

¹⁴⁴ Rust and Hall (2001) p34. Here the authors conclude that the results of the Baye and Morgan model are a result of the assumption that consumers form a continuous aggregate demand, but there is only a limited number of producers. On page 46, Rust and Hall also conclude that this may be the result of insufficient arbitrage, for example some search engines may fail to find the most appropriate information and hence the consumer must begin a costly search for the right information about the market.

¹⁴⁵ *Ibid.*, p34-46.

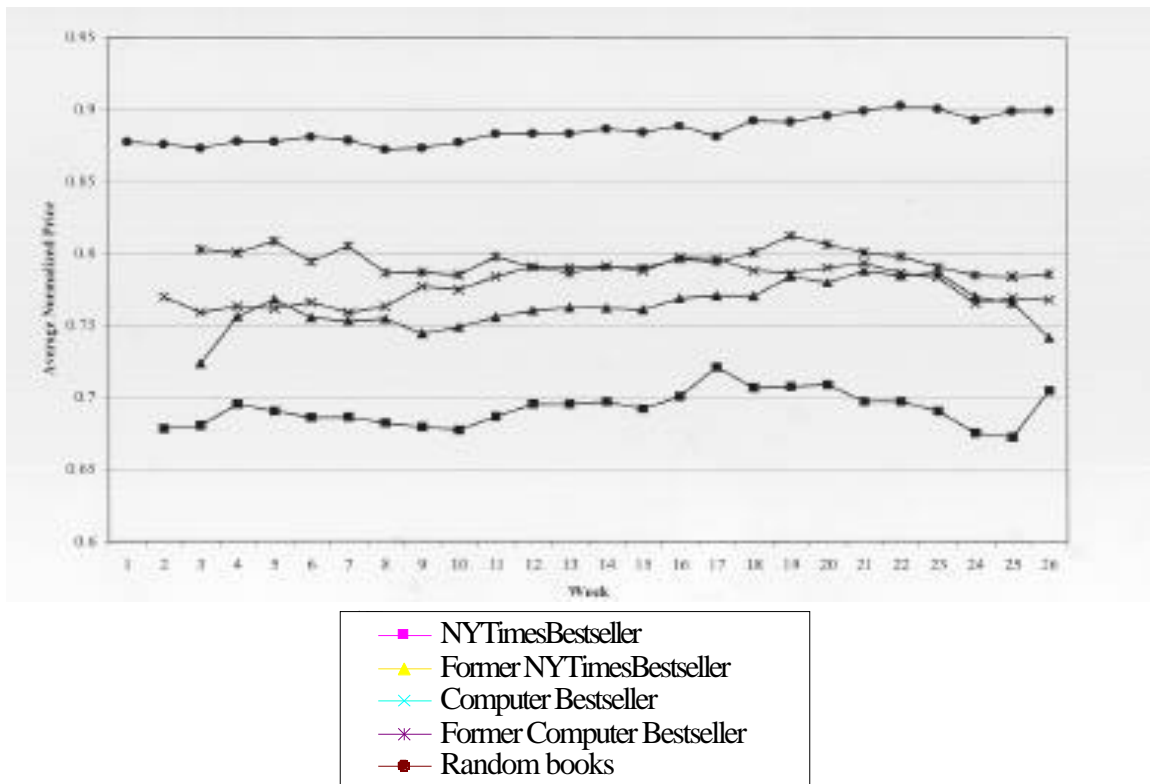
¹⁴⁶ The authors describe the pharmaceutical drug market for branded incumbent versus non-branded new entrant drugs. However, this is relatable to the B2B and market for B2Bs: accumulated experience with a branded, or well known, B2B (e.g. Amazon.com) will have different quality attributes associated with it, e.g. reputation, security of personal information etc, compared to newcomers.

¹⁴⁷ Stigler (1961).

¹⁴⁸ Clay et al. (2001) p6.

¹⁴⁹ *Ibid.*, The authors report that the penetration of online bookstores was 5.4% in 1999, up from 1.9% in 1998.

¹⁵⁰ *Ibid.*, p4.

Figure 5: Rising Prices – But Still Cheaper than Recommended Prices¹⁵¹

Source: Clay et al (2001).¹⁵² Normalised price is: retail price divided by the publishers recommended price.

Based on the Baye and Morgan findings, Varian (2001) and Herings and Schinkel (2001) suggest that websites that act as a price comparison website (shop-bot) may find it attractive to register some price dispersion in their reports for the price of a homogenous good. This is because such sites: “can only exist by the grace of price dispersion [...] since that provides the rights to their existence and their profit opportunity”.¹⁵³ Another explanation by Goolsbee (2000) suggests that higher prices and price dispersion may stem from variations in local sales taxes. However, Sarkar et al. (1995) note that buyers may willingly pay a higher price for a good if the bundled services provided by the seller are beneficial to the consumer,¹⁵⁴ e.g. secure purchasing and loyalty/patronage

¹⁵¹ From top to bottom: Random Books, Former Computer Bestsellers, Computer Bestsellers, Former New York Times Bestsellers, New York Bestsellers. Increases in the price of Random Books signals that, on average, the price of books online are rising. Current Bestsellers are still significantly cheaper prices online.

¹⁵² Reproduced with authors’ permission. Copyright © 2001. All rights reserved by Clay et al. (2001)

¹⁵³ Herings and Schinkel (2001) p15. This is demonstrated by Baye and Morgan (2001).

¹⁵⁴ Sarkar et al (1995) p6.

programmes.¹⁵⁵ Hence, price differentials often reflect heterogeneity in products with similar physical attributes. Pricing strategies are also affected by reduced search costs for locating a particular item, as well as finding that item at a bargain price.¹⁵⁶

6.2.3 Rising Prices and Competitive Behaviour

There is also empirical evidence of higher price levels online than offline. Garicano and Kaplan (2001) report that in 1995, a price differential of between 10.4% and 24.7% existed for cars auctioned online compared to prices for similar cars at a traditional auction.¹⁵⁷ Although this discrepancy had decreased by 1999 to a price differential between 1.9% and 10.5%, the prices were still significantly higher than cars auctioned in the traditional manner.¹⁵⁸ Garicano and Kaplan offer two explanations for the price increases. Firstly, this can be linked to Akerlof's Lemons Model. As the car auctioneer studied guaranteed the reported quality of all cars sold on the Internet, the possibility of buyers purchasing a 'lemon' was reduced. This reduction in the risk of buying a lemon increases the price.¹⁵⁹ The second reason is that the real price is affected by search costs: The purchaser no longer needs to travel to the auction, or otherwise bear the possibility of coming back empty handed. Buyers may therefore be indirectly compensated for the price increase enough so that s/he is at least as well off paying a higher price over the Internet. Moreover, there is most likely a trade-off between freight and warehouse costs.

A similar effect is found in the pharmaceutical drug market, which can be extrapolated to other markets characterised by dynamic competition. Bhattacharya and Vogt (2001) examine how the price of a branded drug often *rises* after the patent expire because consumers often associate higher quality and reliability to branded pharmaceuticals that they have experience with, allowing the drug company to extract a premium for that

¹⁵⁵ Evans (2001) p18.

¹⁵⁶ *Ibid.*

¹⁵⁷ Garicano and Kaplan (2001), pp9-13. Here the same company administrates the auctions, both on and offline. Interval reported for a 95% confidence interval. All statistics reported in the Garicano and Kaplan findings are significant to an error level of 5%.

¹⁵⁸ *Ibid.*

¹⁵⁹ The buyer will be willing to pay up to the average expected value of the car. Expected value (E(V)) is a function of the probability of obtaining the car (car i) with the desired features plus the probability of purchasing a 'lemon', or car that does not live up to expectations (car j). Then: $E(V) = \text{Price } (P) = \sum P_i \cdot E(V_i)$

product. The authors find that the direction of such price changes depends on how the consumer views the substitutability of the old and new versions of the good and conclude that: “If products are moderately differentiated, then the [...] prices might rise even if the new and old firms do not collude.”¹⁶⁰

Versioning can lead to product and price differentiation. Varian (2000) finds this is an obvious explanation for price diversion in the Internet: Different people value the same good, e.g. information, differently. The Internet can be used as a tool for value-based pricing. An old-economy example of value pricing is the use of road tolls on congested streets at peak times. People, who derive more utility from using the road than the cost of the toll, continue to use that route. Others, who have different value preferences, will find the cost of the toll too high in comparison to the benefits of that route. Those people will stay away from that road at peak times. As a result, the private cost that each individual faces (the toll, or the additional stress of the alternative route) is brought into line with the social costs of each additional individual using the road (pollution, congestion, etc.). Marginal costs and benefits will equate and there will be efficient usage of the road.¹⁶¹ Another method of value-based pricing is temporal discrimination (see Adar and Tubermann (1999) in Varian). The Internet could be used to monitor individual users’ surfing patterns. This information could be used to ‘dynamically configure sites and version information services’. This could also augment social welfare given that versioning can reach Pareto improvements.

More generally, different values will lead to different prices for different consumers for the a now heterogeneous good. These price differentials can reflect allocative efficiency.¹⁶² Varian (2000) describes how versioning information goods is one way of

+ $P_j * E(V_j)$. As the probability of a buying a lemon decreases the expected value of the car will increase. When P_j is zero, the expected value will equal the true value of a good car.

¹⁶⁰ Bhattacharya and Vogt (2001) *cit* at p3.

¹⁶¹ There are several applications for value pricing, most of which revolve around internalising an externality. For example visit the University of Minnesota’s website for further information about value-pricing and its involvement in inter/national highway tolling projects: <http://www.hhh.umn.edu/centers/slp/conpric/index.htm>

¹⁶² Varian (2000).

servicing the market with a value-based price strategy, and shows that versioning can lead to a Pareto improvement over non-value-based pricing strategies.¹⁶³

Finally, price changes may be the result of the interaction effects between old and new economy markets. The data collected to date captures online trading effects on offline trading, and vice versa. A comparison of the two does not get at the fluidity of the total affect of online trading, or the new economy, nor does it account for cyclical patterns or growth dynamics of online platforms. Isolating these variable effects to control for the differences between the old and new economy would be an incredible task, given that old-economy markets increasingly embody new economy technology, across all sectors of the economy. Interpretations of price movements of online goods and services must take into account that there is interaction between old and new markets and market mechanisms. Most importantly, these findings challenge any prima facie evidence of anticompetitive behaviour in the Internet.

6.2.4 Welfare Enhancing Collusion

In order to counter claims that B2Bs are a potential mechanism for collusive behaviour, it is important to realise that even if this is the case, collusion per se is not necessarily a threat to consumer welfare. In cases, such as joint ventures, collusion enhances consumer welfare. This holds true where the potential costs of collusion, e.g. higher prices or less variety, are outweighed by the benefits of increased quality and standardisation of the goods or services. Belleflamme and Bloch (2001) find that if firms face asymmetric information then certain collusive agreements, such as market sharing, may be efficient and socially acceptable.¹⁶⁴

6.2.5 Remaining Issues

The question then boils down to: what is the likelihood that B2Bs users will use this opportunity to act collusively in a manner that decreases consumer welfare? If the business environment is conducive to (tacit) collusive behaviour, uncertainty due to incomplete or imperfect information makes it a challenge to support, under the

¹⁶³ Varian (2000) pp190-202.

¹⁶⁴ This is the case if such competition restricting agreements correct 'excessive entry' into the market.

assumptions that B2B users enable firewalls to protect sensitive information and anonymity of agents. Theoretically, even if two parties wish to exchange sensitive information, they will never actually collude based on the information they receive, because of the risk that not all information has been correctly or timely transferred¹⁶⁵. Rose's (1999) findings also question the plausibility of collusion, going one step further than Morris's work to show that "the information seeker can never be certain whether the information received from the supplier/third agent, is complete or *whether it is true or not.*"¹⁶⁶ The utilisation of faulty communication could lead to the firm being foreclosed as the result of strategic behaviour by the information's supplier.¹⁶⁷ These instances could lead to an increased search for information by the firms involved, however competition will only suffer as a result if uncertainty is also reduced.¹⁶⁸ Evans (2001) argues that even though B2B platforms increase the rate of information flow, the dynamic uncertainties are increasing; hence there is no particular characteristic that such an environment necessarily increases the risk of collusive behaviour *vis-à-vis* traditional markets.¹⁶⁹

The factors that help facilitate cartelisation listed in section 6.1 are specific to property networks, not about B2Bs using the Internet and some special networks. If problems were to arise, there is always the threat of potential entry by third party (independent) B2B operators. If an incumbent B2B were to blockade entry by raising entry costs of potential competitors, or squeezing current competitors out of the market, there exists the possibility that blockaded users or competitors swap back to the traditional offline dealer/broker markets (although this would be dependant on the circumstances of the market). It would of course be somewhat difficult to blockade entry because software is reproducible and, therefore, so are B2Bs. Software systems are easily reproducible at low cost because they are information goods. This may be restrained by contract, but modifications of the software may get around this. Software producers do not actually

¹⁶⁵ Morris (2001).

¹⁶⁶ Rose (1999) p19.

¹⁶⁷ Because contracts that breach public policy (as in the case of competition restricting agreements or tacit collusion) are void, opportunistic behaviour in this circumstance cannot be restrained. (see p.11)

¹⁶⁸ Evans (2001) p 15-16.

¹⁶⁹ *Ibid.*

own the service network provided by the B2B and in addition to the relatively low levels of specific assets associated with B2Bs, the reproducibility of the software involved, and the availability of alternative fast and secure mechanisms (such as the telephone and non-web based EDI networks), there is no real access problem and competition for the provision of services via a B2B most likely exists. Nevertheless, because B2B usage is a experience good, the incumbent could attempt to lock customers into its service through loyalty programmes and other quality attributes.¹⁷⁰

6.3 Implications for Competition Policy

B2B can be susceptible to outright or tacit collusion with anticompetitive motives. However, the formation of an oligopolistic B2B is not particularly different from any other traditional oligopoly market. Access to the B2B network could be a problem because anticompetitive behaviour in some circumstances, e.g. exclusion and foreclosure could arise through membership rules. Importantly, an agent cannot simply plug itself into a B2B network. Both sides of the B2B market must make a certain degree of asset-specific investment. This could include investment decisions concerning EDI application and implementation, or investment in compatibility of software and security of firm information, and the extent of web-based versus alternative methods for information exchange. As noted in section 2, the ability to contract is most important in this instance: Membership rules may reduce risk and opportunistic behaviour to ensure the stability of the B2B. As long as the membership contracts fulfil each of the elements of contracting, no problem should arise.

In light of superficial evidence of anticompetitive behaviour by a B2B, it is important not to jump to a conclusion. There are several equally plausible explanations, in addition to empirical evidence, that show that such prima facie evidence does not necessarily prove anticompetitive behaviour or intent. The very nature and structure of a B2B requires open access. Competition for ownership exists and will generally provide discipline on B2B

¹⁷⁰ A counter argument here from the Chicago School of Thought would add that this is not necessarily a barrier to entry, if the incumbent had to meet the costs of reputation building. On the other hand, the Harvard School of Thought counters this by adding that reputation building can be detrimental to consumer welfare if users become locked-in.

performance, although it will not affect competition issues. As long as there are certain security measures, the likelihood of anticompetitive behaviour is low. These measures must include:

- Protection of sensitive information, through firewalls and tracking systems to follow information flows and content.
- The anonymity of users' B2B usage.
- Third party operation of the B2B software.

Moreover, provided that there is sufficient competition in the market, there should not be inefficient behaviour and the circumstances of the market, e.g. stability of demand and supply, repetition of transactions and number of transactions that affect multilateral actions. Hence, no general statement about the anticompetitive effects of B2Bs can be made.

Section III: New Zealand & the New Economy

7. New Zealand Export Markets

New Zealand is a very small open economy.¹⁷¹ However, New Zealand already has favourable conditions and foundations for e-business over the Internet. The OECD reports that: “New Zealand has already achieved a significant level of Internet penetration and usage, higher than that of Australia and most other OECD countries.”¹⁷² TradeNZ¹⁷³ reports that traffic on the Internet is doubling every one hundred days, with the number of online transactions doubling annually. New Zealand has world leading levels of Internet infrastructure and uptake.¹⁷⁴

*“New Zealand [...] demonstrates significant levels of Internet connectivity capacity, but also significant levels of utilisation of that capacity for the exchange of information. Prices are internationally competitive[.]”*¹⁷⁵

While the US leads in the number of websites per country, Howell and Marriott (2001) report that New Zealand is ranked above Australia. New Zealand is ranked as fifth in the world for the number of secure servers per 100,000 inhabitants, likely reflecting the fact that New Zealand businesses are using foreign secure servers for their electronic transactions. “New Zealand records 11.4 sites per 1000 to Australia’s 7.5 per 1000 in 2000. New Zealand’s growth rate in this statistic also outstrips Australia’s (223% as opposed to 155.8%).”

In a response based survey, Clark et al (2001) find low rates of B2B (19.6%) and B2C (19.2%) participation in New Zealand. However, a recent Deloitte e-Business survey¹⁷⁶

¹⁷¹ Foreign trade accounts for up to 53% of GDP. <http://www.economist.com/countries/NewZealand/profile.cfm?folder=Profile-Economic%20Structure> In the May 2001 report by the Economist Intelligence Unit, foreign trade is: “Merchandise exports plus imports.”

¹⁷² OECD (2001) p28.

¹⁷³ TradeNZ is a government agency that: “facilitates trade, international investments and exchange of knowledge into New Zealand and out into the world.” www.tradenz.govt.nz

¹⁷⁴ Howell and Marriott (2001) pp.36-39.

¹⁷⁵ *Ibid.*, cit. p47.

¹⁷⁶ Deloitte e-Business Survey (2001). Survey: questions are raised that they survey was response based, and not random sampling creating a response bias. This could explain the discrepancy between TradeNZ

reported that 51.2% of businesses invested more than NZ\$50,000 in e-Business implementation, with 73.1% going to website creation and development, 31.5% to EDI, and 27.5% to online purchasing. Of those surveyed companies, 59% stated they had links to an e-hub. Moreover, Gartner Group estimates predict that New Zealand contributes up to 9% of worldwide e-Commerce by 2004, where New Zealand is expected to contribute US\$21 billion to the total of US\$7.29 trillion worldwide e-commerce.¹⁷⁷

Even though New Zealand is a small economy, it does have sufficient foundations for e-commerce (see Howell and Marriott (2000,2001) “The State of e-New Zealand”, <http://www.iscr.org.nz>). The emergence of new structures, such as B2Bs¹⁷⁸, may have consequences for the operation and design of competition and contract law.

and Deloitte’s findings. The data also contains large companies, whereas TradeNZ’s data only considers SMEs.

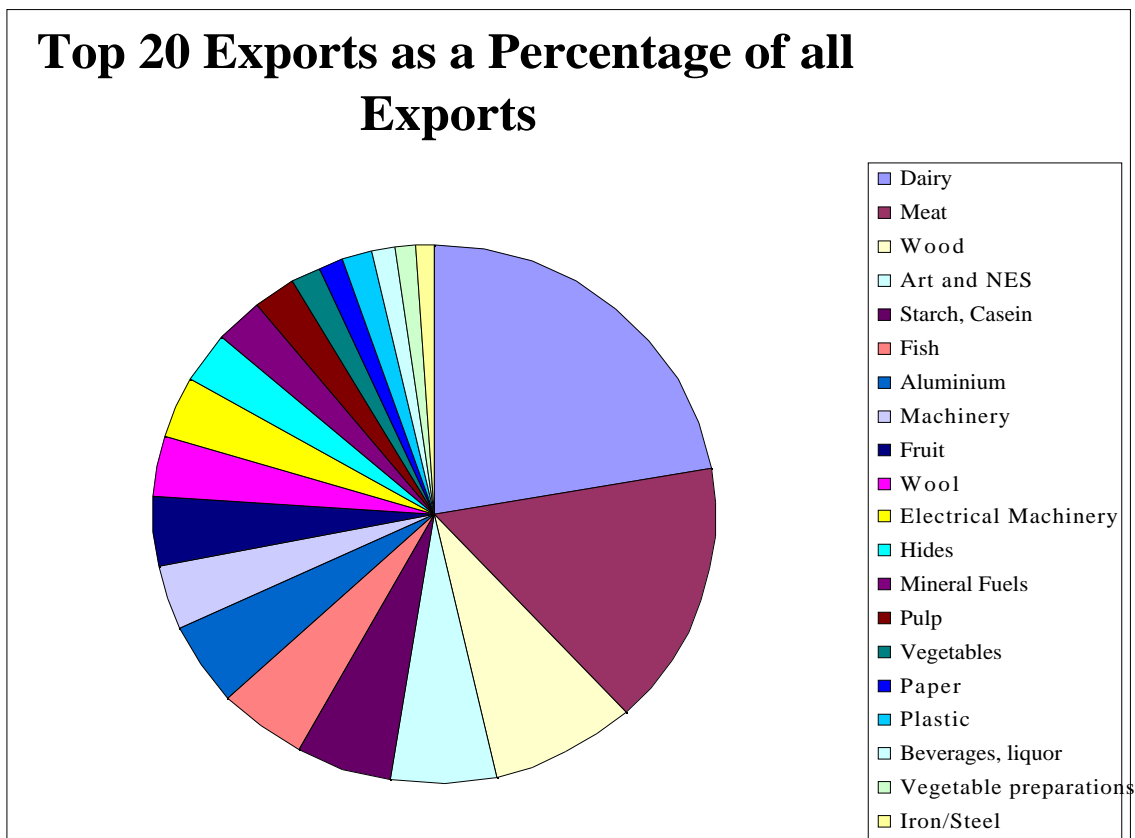
¹⁷⁷ Clark et al. (2001).

¹⁷⁸ Other recent Australasian B2B additions include: <http://Zuij.com> (airline B2B ticketing for agencies) and <http://www.freightways.com>. Both of these B2Bs existed (and continue to exist) as ‘bricks and mortar’ companies. Zuij.com was previously known as Travel Exchange Asia. It uses technology from Travelocity.com and 11 partner airlines (Air New Zealand, Qantas and Ansett of Australia, Cathay Pacific of Hong Kong, China Airlines, EVA Air, Garuda Indonesia, Malaysia Airlines, Royal Brunei Airlines, SilkAir and Singapore Airlines.) Freightways aims to provide ‘reliable, secure, efficient and economic services to the business community with the following well recognised brand names listed below. The B2B is also linked to the Australian AusDoc Group Limited (online B2B), <http://www.ausdoc.com.au>: NZ Couriers, DXMail, Document Destruction Service, Posthaste Couriers, Sub60, Castles Parcels, Fetch, Stocklink Ltd. All of those brands have their own B2B web service.

8. Recent Developments: B2Bs in New Zealand

The agricultural sector contributes more than 35% of New Zealand’s exports. Around 19% of all exports are dairy products.¹⁷⁹

Figure 6: New Zealand Exports



Source: TradeNZ; Statistics New Zealand

Fonterra Cooperative Group, which is the ninth largest dairy company in the world, accounts for around 7% of New Zealand’s GDP and exports to over 120 countries worldwide.¹⁸⁰ It formed in 2001 as a result of the merging of other dairy co-operatives (see figures 7 and 8). Fonterra is the largest company within New Zealand with 20 000 employees and has two main subsidiaries: New Zealand Milk and NZMP. New Zealand Milk provides an informational website (<http://NewZealandMilk.com>) aimed at the ‘global (dairy) consumer market’. NZMP facilitates a ‘cow-to-consumer’ supply chain -

¹⁷⁹ <http://www.mfa.govt.nz>

¹⁸⁰ <http://fonterra.com>

it collects, processes and produces milk products. NZMP estimate that the consolidation of the supply chain will result in 25-35 cent gains per kilogram of milk solids.¹⁸¹ Milk products produced by NZMP include major brands such as Anchor, Mainland and Tararua. NZMP operates an information website (<http://www.nzmp.com>) for its customers on the assortment of products available for purchase.

Figure 7: Organisation of Dairy Market prior to June 2001.

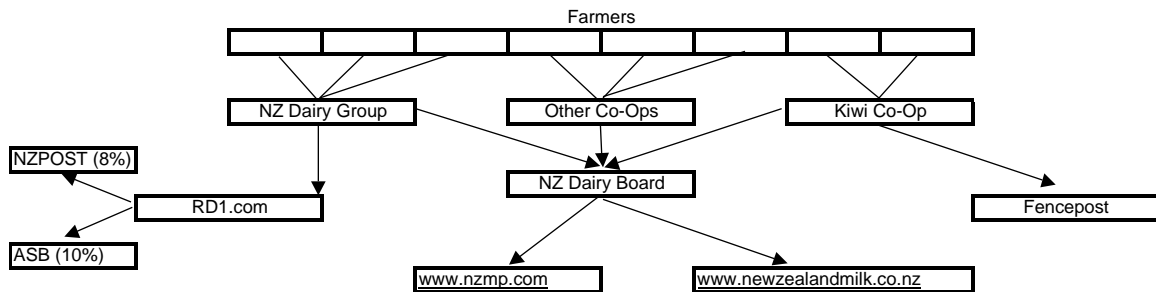
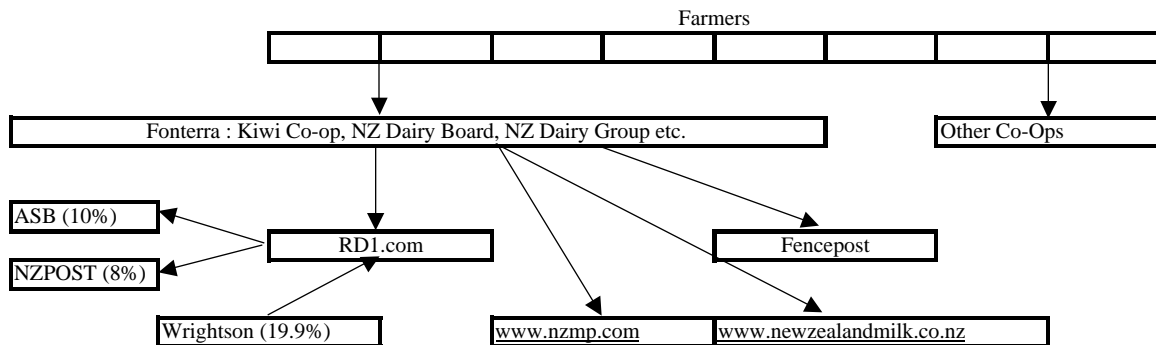


Figure 8: Organisation of Dairy Market after June 2001 Co-Op Merger



Fonterra is also the majority shareholder¹⁸² in the B2B platforms: <http://www.RD1.com>¹⁸³, and <http://www.fencepost.com>, which both operate a ‘rural retail and information service’. The B2Bs consist of physical stores, a contact centre, sales representatives, and web store and information service. In 2001, RD1.com acquired a 19.9% stake in Wrightson Limited.¹⁸⁴ Wrightson is New Zealand’s largest agri-business with over 73 000 customers throughout the country and produces online services

¹⁸¹ *Ibid.*

¹⁸² The minority shareholders being the ASB Bank and NZ Post.

¹⁸³ <http://www.RD1.com> was previously owned by NZ Dairy Group, <http://www.fencepost.com> previously belonged to Kiwi Co-operative, both of which now belong to Fonterra.

(<http://www.wrightsons.co.nz>) including: rural supplies, research, rural real estate, consultancy, insurance and management services. At the time, New Zealand merger regulation, under the Commerce Act (1986), only challenged acquisitions: “[In relation to the acquisition or disposition of any shares in a company]¹⁸⁵ in which the transferee is already beneficially entitled [...] (to) carry the right to exercise or control the exercise of 20 percent or more of the voting power at any general meeting of the transferor company”.¹⁸⁶ While the RD1.com (Fonterra)/Wrightsons acquisition of shares was below the legal threshold¹⁸⁷, albeit by 0.1%, it would be interesting to analyse whether this acquisition is of optimal size vis-à-vis social gains/losses.¹⁸⁸ It raises questions concerning the merger thresholds and their effects on the optimal size of the network, or platform. Generally, the equilibrium size of a network will be less than the socially optimum result, as the result of network effects.¹⁸⁹ Thum (1993) suggests that those externalities can be internalised by competition among various contracts (i.e. short and long term contracts). Issues arise in the extrapolation of Thum’s arguments to networks, such as B2Bs, if merger thresholds restrict efficiency improving contracts: optimal network size will never be reached, as the sixth element of contracts could never be met - i.e. the contract would violate public policy and is, therefore, unenforceable. Competition regulation could damage social welfare instead of enhancing it. Indeed, at the time, New Zealand competition law had an efficiency argument override to allow for these situations. In 2001, the Commerce Act was amended, removing previous threshold merger limits and the concept of dominance was replaced by a test as to what extent

¹⁸⁴ RD1.com acquired the stock by purchasing GPG, which sold a majority of its stake in Wrightson.

¹⁸⁵ Commerce Act (1986) §47(1a) deals with acquisition of shares. §47 also deals with proposals for the acquisition or disposition of the whole (1b) capital, (1c) assets, (1d) voting rights of the business. §47(2) deals with variations of merger acquisitions. The Commerce Act was amended on May 26 2001, and repealed sections 48-50 of the 1986 Act. Section 47 was modified by replacing the concept of dominance with a general competition test, prohibiting mergers and business acquisitions that would have the effect of substantially lessening competition. <http://www.executive.govt.nz/minister/mallard/commerce/bill.htm>. The thresholds from the 1986 Act are repealed. However, the Fonterra merger began prior to the 2001 Amendment, hence the older regulations apply. The RD1.com/Wrightson acquisition was initiated prior to the changes in the Act, but eventuated after it.

¹⁸⁶ Commerce Act (1986) §47(1a). See also footnote 176.

¹⁸⁷ RD1.com may have only had the opportunity to purchase 19.9%.

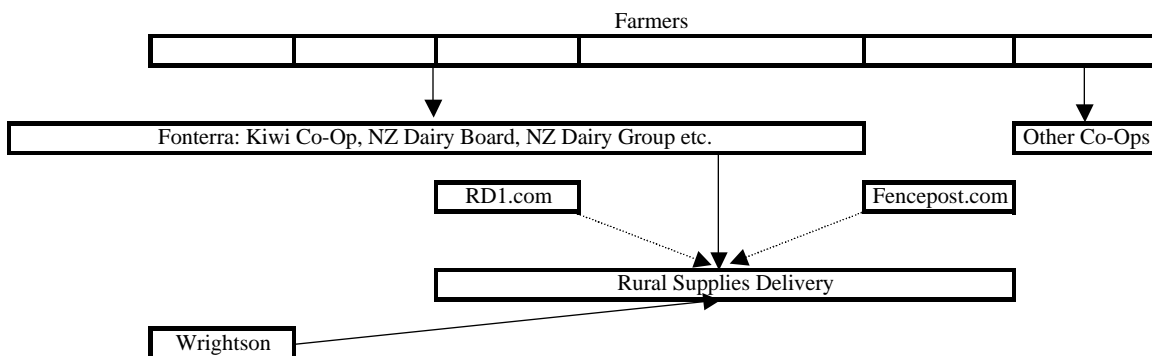
¹⁸⁸ At the time only 19.9% of shares were available for sale.

¹⁸⁹ For example, see Liebowitz (1995) “if the network of telephone users were not owned, it would likely be smaller than optimal since no agent would capture the benefits that an additional member of the network would impose on other members. Where networks are owned, this effect is internalised and under certain conditions the profit maximizing network size will also be socially optimal.”

business acquisitions lessen competition.¹⁹⁰ Its allows welfare enhancing contracts to be enforceable, regardless of the size of the parties concerned, as long as competition is not significantly reduced.

The consolidation to a single dairy co-operative left Fonterra in control of two rural B2B exchanges, which essentially facilitate the same functions. In December 2001, there was further B2B consolidation in the dairy B2Bs: RD1.com and Fencepost announced they would merge into one consolidated farming B2B portal and Fonterra bought back ASB and NZ Post's stake in RD1.com to allow a smooth transition to a single B2B. (see figure 9). Consolidation is a natural step in network markets: Boston Consulting Group forecasts consolidation of B2Bs in Australia and New Zealand, predicting that only half the number of the B2Bs in 2000 will still be operating in 2002.¹⁹¹

Figure 9: Merger RD1.com and Fencepost after 6 December 2001



8.1 Remaining Issues

In addition merger and practice regulation, the possibility of (tacit) collusion via a B2B, albeit only under certain circumstances, could pose issues for New Zealand competition regulation. This is a plausible scenario where a B2B allows for the exchange of sensitive information, such as pricing and procurement of inputs, or at least access to sensitive information, e.g. when firewalls are not properly implemented. It also includes situations

¹⁹⁰ Section IV deals with competition issues in more detail.

¹⁹¹ <http://www.noie.gov.au/publications/NOIE/B2B/issues.htm>

where the anonymity of B2B users' actions is in doubt, and where ownership and access rights belong to parent companies in already concentrated markets.

Although no case for such a situation has yet been made in New Zealand, the possibility of (tacit) collusion in B2B markets calls for consideration of future measures that could be made if such a case arises. If the above criteria for a environment conducive to (tacit) collusion are fulfilled, then the Commerce Commission should be on alert for any evidence of (tacit) collusion. The trade-off that superficial evidence of collusive behaviour may turn out to reflect competitive actions in the market makes it difficult to prove that intervention is absolutely necessary. Instead, the Commission should follow up movements in B2B markets and police platforms that cast a shadow of doubt over the security of sensitive data and the anonymity of agents' actions. In the following section, the competition policy measures for addressing issues of (tacit) collusion, exclusion and anticompetitive behaviour are addressed.

Section IV: Legal Framework

9. Competition Policy and Antitrust

The economic goals of competition policy are to promote and protect the competitive process.¹⁹² Martin (1988) identifies three goals of antitrust. The first is economic, based on the idea that maximum economic efficiency could be reached by competition. This is reached by either maximising consumer surplus (the minimisation of profit plus deadweight loss) or the maximisation of producer and consumer surplus. Although the main aim of antitrust is to ensure efficiency, competition policy also serves political goals and is based on historical effects. In the USA, antitrust was inaugurated in a response to the dispersion of power, and a way of upholding the American dream as ‘the land of opportunities’. In the EU, competition policy was introduced after the Second World War, which could be seen as a result of the desire to ensure that power was dispersed throughout the system. The third goal revolves around social morality: competition was seen as a mechanism that provided a “fundamental stimulus to national morale.”

When markets are competitive, allocative efficiency is reached and gains from trade are exhausted, maximising social welfare. However, the nature of competition must vary according to market characteristics such as the presence of major sunk investments. There are three main pillars to competition policy jurisprudence: restriction of competition, abuse of dominant position, and practice and merger regulation.

9.1 Determining the Relevant Market

In order to determine the relevant market a product market as well as a relevant geographical boundary is set. The relevant product market usually strings together several information sources including information on: demand conditions and constraints, consumer preferences and stability of usage patterns, price levels and elasticity.

¹⁹² Martin (1988: 44-60) *Op. cit. Hofstadter, pp.60.*

Generally this also involves investigation of the substitutability of the product in question including past evidence of substitution and switching costs.

The relevant geographic market is defined by investigating several variables including: consumer demand in different regions, inter-market price differentials, supply-side substitution, entry barriers and present/potential competition in the market. Furthermore, the EU has the further goal market of integration which must also be accounted for in any competition policy analysis of the relevant market.

While it is easier to gather and collate information availability and substitutability of products online, defining relevant geographical markets online may be somewhat more difficult due to issues concerning cyber versus real geographic territories. In order to weigh up a B2B's positive and detrimental effects on competition under a case-by-case method, the relevant geographic market should include investigation of interaction between traditional markets and the online B2B, as well as other B2Bs.

10. USA, EU & NZ: Competition Policy

The following tables make a brief comparison of each of the three pillars of competition policy.

10.1 Competition Restricting Agreements

The core theme is essentially the same for each country: competition-restricting agreements are illegal, however, exceptions are made for restricting agreements that enhance social welfare.¹⁹³ For example, in the case of joint ventures and patents.

¹⁹³ Under New Zealand law, collective conduct that substantially lessens competition can be authorized if there is a resulting net public benefit. *Cit.* http://www.med.govt.nz/bus/f/bus_pol/thresholds

Table 2: Regulation of Competition Restricting Agreements

	USA	EU	NZ
Law	Sherman Act (1890) §1: Collusion Sherman Act (1890) §2: Monopolisation	Treaty of Amsterdam (1998) Art 81 Amendment Regulation 2790/99 (1999)	Commerce Act (CA) (1986) Amendment
Section	§1 Contracts and trusts etc., which restrict trade or commerce, are illegal	Competition restricting agreements that affect trade between Member States are prohibited.	§27 Contracts, arrangements or understanding substantially lessening competition are prohibited
	Certain restraints per se illegal (price fixing), other restraints fall under rule of reason under which pro- and anticompetitive effects of the activity are weighed up against each other.	Vertical agreements are be exempt in most circumstances	§28 Covenants substantially lessening competition are prohibited (e.g. tying, exclusive contracts)
	§2 Monopolisation, attempts to monopolise any part of trade/commerce is a felony	Block exemptions available where production/distribution efficiency (e.g. R&D) benefits consumers	§29 Contracts, arrangements, understandings containing exclusionary provisions
	Exemptions for non-profit organisations, labour organisations and export cartels	Sector specific exemptions available for book publishing, agriculture, fisheries, transport, insurance etc	Collusive conduct that lessens competition may be authorised if there is a resulting net public benefit.

Source: US Department of Justice, US Federal Trade Commission; European Commission: DGIV; New Zealand Ministry of Economic Development, New Zealand Commerce Commission.

Competition-restricting agreements can arise in two areas of B2Bs.¹⁹⁴ Firstly, such agreements could be made during the formation of the B2B concerning its operations. Secondly, there may be issues surrounding membership agreements or enforced participation and the B2B could be used as a mechanism for collusion. Any of the standard economy problems, such as explicit collusion, e.g. any form of standardising agreement that facilitates market price fixing, trading terms, are prohibited. However, if there is prima facie evidence of (tacit) collusion, it might be nearly impossible to distinguish from non-cooperative competition.

10.2 Abuse of Dominant Position

Competition law, with regard to the abuse of a dominant position, is essentially the same in each of the three jurisdictions. A firm may acquire its superior position in a market by superior performance. However, such unilateral dominance can also arise through anticompetitive behaviour such as:¹⁹⁵ refusal to provide access/or unreasonable entry requirements, discrimination of access benefits across users, imposition of additional investment costs, restriction of IP rights, etc. Unilateral action to abuse a dominant position will be limited, because B2B software designers can easily reproduce the

¹⁹⁴ ACCC (2001).

¹⁹⁵ ACCC (2001) p11.

necessary software. However, reputation and types of goods and services provided by an incumbent B2B could, in some cases, limit the reproducibility of a B2B.¹⁹⁶

Table 3: Regulation of Abuse of Dominant Position

	USA	EU	NZ
Law	Clayton Act (1914) §§2a,3 FTC Act (1914)	Treaty of Amsterdam (1998) Art 82	CA (1986)
Section	§2a Clayton Act: Prohibits price discrimination where the effect would be to lessen competition or create a monopoly.	Any abuse by one or more undertakings within the common market or in a substantial part of it shall be prohibited as incompatible with the common market in so far as it may affect trade between member States	§36 Use of a dominant position in a market to (a) restrict entry, (b) deter competition, (c) to foreclose is illegal
	§3 Clayton Act: Prohibits exclusivity dealings such as tying, exclusive dealing contracts		§§37-41 the following are prohibited: resale price maintenance, recommended prices (exempt if no obligation involved), withholding or preventing supply of goods
	§5a of FTC Act: Unfair methods of trade etc illegal. Also violates Sherman Act §1		Exemptions: §43 (1) Order in Council under any Act, (2) authorisation of Minister to the Crown. §44 including (a) partnerships, (e) necessity for quality standards, (g) export cartels, §45 patents, copyright etc.
	§13c Clayton Act: Exemption of non-profit institutions from price discrimination provisions.		
	§17 Clayton Act: Antitrust laws not applicable to labor organizations.	No exemptions at EU level	
§2 Webb-Pomerene Act (1918): Exemption for export Cartels			

Source: US Department of Justice, US Federal Trade Commission; European Commission: DGIV; New Zealand Ministry of Economic Development, New Zealand Commerce Commission.

In some instances, abuse of a dominant position can be related to the concept of essential facilities. An essential facility is: “A facility of infrastructure without access to which competitors cannot provide services”¹⁹⁷ Cases that fall under the heading ‘essential facility’ typically occur when the incumbent operates in both up and downstream markets, whereas the competitor only wishes to enter the downstream market. Both the European Commission¹⁹⁸ and the FTC¹⁹⁹ can force an incumbent to share its facilities with its competitors. In New Zealand there is no official essential facilities doctrine, however the concept has been applied in case law. The doctrine was first considered for application in the *ARA v Mutual Rental Cars* (Auckland Airport) Ltd in 1987. The Court decided that, indeed, this was a suitable application for the doctrine. In 1990, the Court hesitated to use the doctrine in the *Union Shipping NZ Ltd v Port Nelson Ltd*. Although New Zealand Courts recognise the ‘valuable insights’ that the doctrine provides, it does not wish to fully adopt the doctrine, because it is specifically designed to reflect ‘US

¹⁹⁶ Again here, the Chicago and Harvard Schools of Thought are at odds. Chicago economists would say that this does not constitute barriers to entry, as the incumbent has earned its status fairly through funding it quality advancements. Harvard economists would argue that this constitutes a foundation for a lock-in effect amongst users, potentially limiting consumer welfare over the long-term.

¹⁹⁷ Ridyard (1995), p2.

¹⁹⁸ Under Article 82 of the Treaty of Amsterdam (1998).

¹⁹⁹ Under the Sherman Act (1890).

social, commercial and constitutional setting (for protecting smaller businesses)' because it is based on the Sherman Act (1890). The New Zealand Courts justify this decision due to the fact that the doctrine has not been tested before the US Supreme Court. More recently, the doctrine was applied in Commerce Commission decision no. 369: Transpower New Zealand Ltd. (1999). The Commission authorised restrictive trade practices between Transpower Ltd and the users of the national high voltage electricity transmission grid because of the national electricity grid is recognised as an essential facility.

The intrinsic problem with the application of the essential facilities doctrine is as follows: Firm A is a potential competitor, and Firm B is the owner of the facility. Firm A will complain to the regulatory agency if it believes that Firm B has abused its position by denying access to competitors. However, Firm B is likely to argue that its current production, up and downstream combined, creates economies of scope and scale, and that production is more efficient. Herein lies the conflict: If Firm A is granted access to the facility, Firm B likely loses its return on investment. If Firm B is not made to share its facilities, then consumers could lose out, as the variety of products will not increase. This dilemma increases uncertainty in such markets and, hence, firms may be wary of, or refuse to, invest in such markets for fear of having to eventually share the fruits of their labour with new comers that did not face the upfront investment costs. Hence, awarding access to new competitors should only occur in exceptional circumstances.²⁰⁰

There are two preconditions for a B2B to fulfil to be an essential facility. Firstly, the B2B would require special hardware that demonstrates such high economies of scale that it would not make sense to reproduce it. There is, to some extent, competition in computer hardware markets. Spillover effects resulting from network clustering (e.g. Silicon Valley) standardise hardware specifications.²⁰¹ While specific hardware may be expensive, the cost is likely to be much smaller than traditional essential facility specific-assets. Even if B2B hardware is sufficiently asset-specific, and economies of scale exist,

²⁰⁰ For discussion see Korah (1999).

it will not constitute an essential facility if it is substitutable with ‘bricks and mortar’ logistic systems.

The second precondition for a B2B to be an essential facility is that the necessary software system for the B2B is not reproducible (or too costly to reproduce), or substitutable for another software system. If this is the case, it may be argued that software could be designed to exclude some agents from trading on a B2B. Of course, the open nature of the Internet and B2Bs demands open access. However, even if some agents were denied access to a certain B2B, substitute B2B software is easily derived from modifications of original software. B2B software does not contain many asset-specific elements and software remains easily duplicable due to its characteristics²⁰². Furthermore, because the software producer does not own the B2B network, no real access problem should arise. The preconditions of the essential facilities doctrine are unlikely to arise in B2B markets.

10.3 Practice Regulation and Merger Control

In each of the jurisdictions, anticompetitive mergers are not allowed if they substantially lessen competition.²⁰³ In 2001, the New Zealand Commerce Act was amended to remove the concept of dominance which was replaced by a test to see whether merger would substantially reduce competition. Merger regulation continues to recognise that big is not always bad.²⁰⁴ It will become an important tool as the new economy grows.²⁰⁵ It is interesting to note that the HHI indices for New Zealand markets are typically larger than 1000, which reflects the small size of New Zealand industries and firms.

²⁰¹ I.e. there is clustering in network goods and services goods. E.g. PC specifications come standardised into clusters of RAM, ROM, CD drive speed, etc, regardless of the hardware involved.

²⁰² High sunk-cost investment, low variable costs: Once the software is produced it can be reproduced at very low cost. See section 2.

²⁰³ Within the EU, there is the added criterion that the (EU level) merger does not impose any limitations on EU integration.

²⁰⁴ This was the case under the Commerce Act (1986) under the clearance process.

²⁰⁵ See Section III.

Table 4: Merger Regulation

	USA	EU	NZ
Law	Clayton Act (1914) §7 Amendment Celler-Kaufner Act (1950)	Regulation 4064/89 (1989) Amendment Regulation 1310/97 (1997)	CA (1986) Amendment (12/2001)
Section	<p>§7 Aims at preventing anticompetitive mergers</p> <p>1992 Merger Guidelines: no concerns for competition if Herfindahl-Hirshman Index (HHI, which is the sum of market share of each firm squared) is less than 1000</p> <p>Hart-Scott-Rodino Act (1976): Pre merger notification gives the enforcement agencies time to examine the competitive consequences of the proposed mergers</p>	<p>Mergers are subject to this regulation if world wide turnover is greater than 5 billion Euro; or if community-wide turnover is more than 250 million Euro</p> <p>Exemption if more than 2/3 of community-wide turnover occurs in one State.</p>	<p>§47(1a) involves a transferee that has a beneficial interest and can control more than 20% market share, whole (1b) capital, (1c) assets, (1d) voting rights of the business. (2) deals with variations of merger acquisitions. Generally here the cut off levels for acceptable mergers are 50% of capital, assets or voting rights</p> <p>2001: Concept of dominance replaced with competition test, thresholds removed</p>

Source: US Department of Justice, US Federal Trade Commission; European Commission: DGIV; New Zealand Ministry of Economic Development, New Zealand Commerce Commission.

10.4 Enforcement

A case for special treatment of B2Bs has not been made. In the formation stage of a B2B, platforms can be treated as the same as a merger or joint venture,²⁰⁶ handled case by case.

Relevant factors for investigation include:

- Degree of organisation for the industry specific goods and services procurement: i.e. potential (monopsony/monopoly) market power.
- Transmission of information (e.g. pricing strategies, strategic plans). This is a double edged sword: the Internet facilitates lower transaction costs by making exchange easier, but also means that sensitive information can be transmitted more easily.
- Large market shares of: B2B owners/parent companies, one or both sides of the B2B market.
- Membership and admission rules, as well as other participatory restrictions that would likely restrict competition.

²⁰⁶ Wyss (2001).

Table 5: Comparison of Enforcement Mechanisms

	USA	EU	NZ
Law	Department of Justice (DOJ)	European Commission	Commerce Commission Governor General/Minister of the Crown
Section	Individuals and firms may lodge suits. FTC may lodge suit/investigation	Any member State has the right to bring a suit against presumed violations of Articles 81 or 82.	Commerce Commission has the right to (dis)approve a merger; and restricted trade practices
	Treble damages may be awarded	Private litigation impossible	Governor-general may impose price restriction when competition restricted
	Fines of up to \$1 million for corporations and \$100 000 for individuals (with up to 3 years imprisonment)	Decisions by Court of First Instances and European Court of Justice	Fines: NZ\$10 million or 3 times value of expected commercial gain or up to 10% turnover. Maximum fine for individuals is NZ\$500000. Up to 5 year ban on offending management. Exemplary damages
	DOJ awarded right to constrain business		

Source: US Department of Justice, US Federal Trade Commission; European Commission: DGIV; New Zealand Ministry of Economic Development, New Zealand Commerce Commission.

11. Antitrust and B2Bs: Recent Cases

New Zealand is yet to face a B2B competition policy case. In light of this fact, it is best that New Zealand look to other countries that have dealt with some of the implications to competition policy with respect to the emergence of B2B platforms. The European Commission (EC) and the Federal Trade Commission (FTC) have, in recent years, dealt with a handful substantial antitrust cases involving B2Bs.

11.1 MyAircraft.com

The joint venture equity partners of MyAircraft.com²⁰⁷, which is noted as the first B2B to come under EC merger regulation, was notified under the EEA Agreement 4064/89 (Merger Procedure). The EC decided that although the merger did fall within the scope of merger regulation,²⁰⁸ the creation of MyAircraft.com did not “raise serious doubts as to its compatibility with the common market and with the EEA agreement [...] (because of the) number of ancillary restraints that are necessary to ensure [...] the joint venture is established on a solid based.”²⁰⁹ Three restraints were fulfilled in the creation of MyAircraft.com:

- i) Full function of joint venture to be autonomous from parent companies
- ii) Joint control by equity partners

²⁰⁷ Honeywell, United Tech Corp. and i2 Tech. Inc.

²⁰⁸ Regulation EEC no 4064/89 Merger Procedure: Article 5.(1) e.g. worldwide turnover of more than 5 billion euro and community-wide turnover of more that 250 million Euro but do not achieve more than two thirds in one state.

²⁰⁹ Case COMP/M.1969 (04/08/00).

- iii) Worldwide and EU turnover thresholds satisfied.

The EC acknowledged potential social welfare benefits, including: reduced cycle times, improved transaction flows and management of parts inventory. The partners designed MyAircraft.com to be an open source website with “aerospace products and services available to *all* industry participants; *independent* and *portal of choice*”²¹⁰. On the 4th of August 2000, the EC cleared the merger and acknowledged that:

*“[Such] a joint venture network may overcome significant transaction costs involved in entering into vertical contracts with its new members and also enable firms to share the risks of new entry into a network market.”*²¹¹

The Commission’s clearance demonstrated that although B2Bs are relatively new phenomena, their effects can be treated in the same manner as other business forms. The decision was levied on the following points:

- i) Easier to find and use more information, and procurement is more efficient.
- ii) Acknowledge that B2B has competitors both on and offline; sufficient competition since MyAircraft was announced, other aerospace B2Bs emerged.
- iii) Not all supply management services provided by B2B.
- iv) Upstream market shares not considered to be significant.

11.1.1 Lessons

The EC stressed that the expected benefits of the B2B platform would likely outweigh possible costs. This implies that B2B cases should not be treated suspiciously per se, but when questions arise they should be dealt case-by-case. This would be the case when evidence exists that the potential costs dominate the benefits such as when revenue is greater than the threshold, supply chain management services are provided by the B2B, no current/potential competitors exist, and open access is questionable.

²¹⁰ *Ibid.*, Emphasis added.

²¹¹ Hogan (2001) p6.

11.2 Covisint

Covisint is a B2B formed by automobile giants: General Motors Corp., Ford Motor Co., DaimlerCrysler AG, Renault SA, and Nissan Motor Co. Ltd.²¹² and are joined by two information tech firms: Commerce One Inc. and Oracle Corporation. Historically the firms have implemented independent EDI systems, which are still in use but are now interfaced between companies. The firms involved claimed that this is a natural evolution as the demand for innovative new products increases, and is a preferable option as it still allows the firms to retain security and internal system operability.

The FTC closed its review of the case under the Hart-Scott-Rodino Act, which stipulates that there be a mandatory waiting period for mergers under section 7 of the Clayton Act (preventing anticompetitive mergers). The EC, on the other hand, reviewed Covisint under Article 81 (restricting agreements and monopolisation, not under merger regulation as was the case in the U.S.A.).²¹³ While the EC originally had concerns about the market power of the parent companies, it appears that the case does not fall under jurisdiction of Article 81.²¹⁴ Covisint “does not allow joint purchasing between car manufacturers or for automotive specific products confirming that the firms joint [combined] purchasing extends beyond the safe harbour.”

Again the Commission acknowledged that potential efficiency gains likely outweigh negative effects. The decision focused on the ability for competitors to enter the market and the extent to which potential costs (e.g. from exclusion, foreclosure, and bundling of purchases/sales) outweigh the positive effects of the creation of Covisint. The Commission cleared the case as rival automobile B2B platforms existed, and the procurement through Covisint did not involve market sensitive products (such as car parts).

²¹² These firms account for one half of total worldwide auto production.

²¹³ FTC Press Release (2000a).

²¹⁴ Corwell (2001) p4.

11.2.1 Lessons

Covisint is a marketplace set up by parent companies, which was examined under merger regulation in the U.S.A. but under competition restriction agreements in the EU. This case demonstrates that whether analysed under either regulation, efficiency arguments take precedence in the decision-making process.²¹⁵ If the B2B in question faces competition, and the purpose of that B2B is to provide functions for non-industry specific tasks (such as procurement of office supplies), then the B2B need not be examined.

12. Regulatory Cycles

As new technologies evolve there is a time lag between the emergence of the new network and the response by competition agencies. There is the added difficulty of analysing whether or not a network has gained market power according to the rules of the game. Indeed, only a handful of Internet companies (e.g. Microsoft) and B2Bs have been dealt with under competition regulation thus far. Sawhney (2001) suggests that the Internet, as a network of networks, will face the same historical pattern of regulation that other networks have in the past. Generally, overregulation follows the first stage of ‘anarchy’. As the dynamics and structural changes created by the new network become apparent, “a wave of regulation ensues, and agencies are created to monitor the industries”²¹⁶. The final stage in the regulatory cycle is sanity, where agencies realise that overregulation is excessive and acts as an impediment on competition rather than enhancing it. This stage is characterised by deregulation, which is what we have witnessed in certain telecommunications markets throughout the world.

However, the Internet is intrinsically different to other historical networks, because of intangible Internet goods/inputs²¹⁷. Due to intangible assets and low capital outlay, if overregulation were to occur, many Internet businesses could simply relocate offshore. As a result, B2Bs that cannot migrate would be affected more heavily by competition regulation, potentially destabilising the new economy. However, regulatory agencies could recognise this fact in earlier stages to avoid overregulation.

²¹⁵ According to merger regulation, this must be within a 5 year time frame.

²¹⁶ Sawhney (2001).

²¹⁷ *Ibid.*

Furthermore, the time lag between the changing landscape of the economy and competition regulatory investigations could create inefficiencies in itself: The reviews may be too slow. Agencies would require knowledge-intensive technical expertise,²¹⁸ which requires upfront investment that may never be truly up-to-date.

It appears that both the FTC and the European Commission have acknowledged the fragility and dynamic structure of the Internet. These agencies have also worked together on several B2B cases, including MyAircraft.com and Covisint, demonstrating that, thus far, a stage of overregulation has not materialised – encouraging stability in the e-World.

12.1 Are Current Policies Adequate and Appropriate?

The new economy has not changed the way we think about industrial organisation, although transaction costs and products have changed. Intangible information goods and services create the need to further our understanding of competition regulation and its application to new market structures. Although no firm conclusions can be made about this area, the principles of competition policy have not changed:²¹⁹ The notion that competitive markets will lead to the maximum level of welfare, and that economic efficiency remains the criterion for departures. Essentially there are two arguments: For and against a changes to competition policy to reflect the economic developments stemming from the new economy.

12.1.1 Intervention versus Laissez Faire

New economy markets are tippy. Interventionists believe once a market has tipped in favour of one firm, that firm could erect barriers to entry eliminating future threat of entry, leading to irreversible ‘lock-in’. In such an event, the firm can increase prices, because no real alternative is available consumers will be forced to pay higher prices, reducing social welfare. By intervening in the market, the possibility of abuse of dominant position is removed. Application of this concept, which founds itself on the

²¹⁸ FTC Press Release (2001a).

²¹⁹ Klein J (2000) identifies that “Antitrust enforcement remains remarkably constant in its application of core principles that have proven effective in protecting and preserving competitive markets.”

Harvard School of Thought, could lead to overregulation and harm investment rates in dynamic e-world markets, if it is applied to all B2Bs.²²⁰

A laissez faire, or Chicago School of Thought, approach instead cautions any attempt to intervene in a market. This approach recognises that collusion and other previously thought anticompetitive measures need not be detrimental to social welfare. Given the dynamics of the new economy, even if there is anticompetitive behaviour it is likely to be short lived.²²¹ Importantly, it internalises the fact that the new economy changes in a fluid and high-speed manner, implying that tipped markets may not be a safe harbour for incumbents and there is competition from old and new markets as well as expanded geographic markets. Laissez faire also implicitly recognises that the temporal restrictions on competition regulation would generate inefficiencies when over applied to new economy firms that operate in real time.

Thus far there has been no evidence that intervention is necessary – given that certain criteria for the B2B are met. These include security of sensitive information, anonymity of agents and an analysis of ownership and access rights. A heavy-handed approach where these criteria result in competitive behaviour would have a detrimental effect on the investment of new ideas.

12.1.2 Recognition of Competition Regulation Limitations

The fact that not all B2Bs raise suspicion of violating competition policy, and that there will always be a lag between litigation and changes in the new economy; agencies should focus on identifying key problem areas. These include issues surrounding collusion, exclusion and emerging markets.²²² Pitofsky²²³ identifies that the: “challenge is that old-

²²⁰ Bain (1956) finds a positive effect of market concentration on profitability and large firms in markets with large entry barriers have higher profits.

²²¹ Stigler (1964) finds, for example, that after taking intertemporal choices of firms into account, competition-restricting agreements are likely to be unstable. Stigler does predict that market concentration increases, the more likely collusion, - tacit or otherwise – exists. According to the Chicago School of Thought: given that markets in the new economy are tippy, and entry and exit barriers are low, markets will be contestable making it more difficult to sustain collusive agreements (or understandings). This is especially relevant when members of the agreement (or understanding) cannot detect the difference between fluctuations in market demand/supply and a cheating member.

²²² Harbour (2001).

economy regulatory bureaucracy is unable to deal with the fast paced highly technological developments in this new era”, but finds that more intervention could lead to less efficient outcomes, and cases must be deal with the following:

- New economy markets are fragile, and are subject to dynamic competition. Hence it is important to determine the extent of fragility.
- Recognition that some collusion may increase social welfare, for example through standard setting and rapid innovation.
- Increased intervention could lead to the prosecution of innocent firms. It could also raise the probability of third party abuse, i.e. rivals confronting (innocent) competitors with competition litigation to raise their costs.²²⁴

It is likely to be detrimental to start changing competition policy without first allowing agencies to investigate the impact of new economy firms on dynamic competition within the context of existing statutes. Recent modifications to New Zealand’s Commerce Act (2001), allow for more leeway and discretion during this phase. In the following section, a list of pragmatic and New Zealand specific recommendations are made in light of potential problem areas arising in competition policy application with respect to new economy cases.

²²³ FTC Press Release (2001a).

²²⁴ Hahn (2000).

Section V: *Implications & Recommendations*

14. General Recommendations

The foremost important recommendation is that competition regulatory bodies must recognise that there are temporal limitations on competition policy. This has always been the case, but the difference is even more dramatic in the new economy. Dynamic analysis is more complicated than a static approach, but such a method must be applied in the new economy if welfare is to be enhanced by its application.

Issues that arise should be dealt with case-by-case. There is no need to treat every B2B with suspicion. While little is known about the true magnitude of dynamic effects of the new economy, there is also little data on the impact of regulation interventions in the new economy. In order to reduce the potential inefficiencies of competition regulation²²⁵, agencies should act circumspectly and await the evolution of evidence. There is a general consensus toward a case-by-case approach. This reflects that the benefits to welfare that result from the lower transaction costs facilitated through the Internet can outweigh detrimental effects, depending upon the circumstances.

In certain cases, B2Bs may become a mechanism for anticompetitive behaviour. This could be possible where there is transmission of sensitive data, the anonymity of users is in doubt and the B2B is not owned and operated by an independent third party. Where the opposite is true, there is no need for direct intervention. Competition agencies would need to follow up and track the B2B with regard to their application of these criteria.

If evidence comes to light that there could be anticompetitive behaviour in a B2B market it is important to keep in mind that superficial evidence is not sufficient in order to declare a need for intervention – prima facie evidence of anticompetitive behaviour may, in end effect, turn out to be the result of competitive forces in the market. There is a need

²²⁵ E.g. Overregulation, strategic use of competition regulation to raise the costs of competitors, etc.

for a conscientious, methodological approach because false interpretations of such evidence would most certainly decrease social welfare, thus defeating the purpose of competition policy.

15. NZ Specific Recommendations

New Zealand has the foundations in place to facilitate e-commerce, and world leading levels of Internet uptake. The Commerce Commission treats B2Bs as any other commercial entity. The Commission could issue a framework which considers the above generic recommendations – as the EC and FTC have done²²⁶ – to provide the public and B2Bs operating in New Zealand with a guideline to acceptable behaviour.

The Commission should continue to acknowledge the efficiency grounds for mergers including contracts seeking to optimise the size (and thus social welfare) from the network. In general the Commission does not regulate, with the exception of telephony markets, elect lines companies and the dairy market. Development in other jurisdictions should be reviewed as to the suitability in New Zealand, bearing in mind that New Zealand is typically a very different economy.

As cyberspace defies national boundaries, potential problems with jurisdiction and contract enforcement will undoubtedly arise. This could spur an increase in fraudulent behaviour, which stunts the growth of Internet business,²²⁷ because agents will be wary of using it as a transaction mechanism. Accordingly, particular problems are likely to occur under the Consumer Guarantees Act (1993).²²⁸ For example, where offshore Internet firms will accept an order, taking payment without intending to supply as ordered or enforcing warranties/guarantees associated with Internet transactions with non-traceable firms. Reciprocal arrangements for information transfer between competition regulatory agencies would aid international co-operation between agencies. These problems can

²²⁶ There is already work done for the Australian Economy, by Gans and King (2001) for the ACCC. To the extent that there are benefits to common competition law, Australian law changes should be evaluated.

²²⁷ FTC (2001b): The US has already begun investigation of this issue.

²²⁸ Applies to “goods and services that are: of a kind normally bought for personal, domestic or household use; and purchased in trade”.

only be solved through international cooperation of competition regulatory bodies – a move to match legal jurisdiction with cyber-territory.

Summary

New Zealand has a solid foundation for e-commerce, and is a world-leader in Internet infrastructure. There is substantial evidence of high e-World participation – New Zealand, one of the OECD’s smallest economies currently contributes up to 9% of total world-wide e-commerce. This leadership role in the worldwide new economy implies that New Zealand will be one of the first countries in the world that could face new issues arising from the implementation of Internet technology and the evolving new economy. This dissertation examines and analyses the particular aspects of the new economy, including characteristics of rapid information transfer, low cost search and the development and exchange of information products, in order to determine whether the new economy, with a focus on Business-to-Business Internet platforms (B2Bs), poses particular issues for New Zealand competition policy.

Section I: The New Economy

Firstly, an introduction to the new economy and associated core concepts, including a brief definition and analysis of the structure of the new economy, which consists of the intricate layers of networks of three interrelated industries: computer software manufacturing, internet businesses and communications networks. Hence the new economy is often called the network economy. Of course, networks are not specific to the new economy, however this new digitalised infrastructure exhibits compounding positive network effects and externalities.

Recently emerging technologies in the new economy, such as the internet, have cut transactions costs. These costs include both ex ante and ex post costs of transacting, i.e. search, negotiation, enforcement, payment and monitoring costs. Two elements of transaction costs theory affect economic agents' decision both ex ante and ex post: motivation costs, i.e. opportunistic behaviour, where agents act strategically by cheating on promises or principal-agent problems arise. Secondly, while it is assumed that agents act rationally, they are often limited by imperfect or incomplete information. In this sense transaction costs arise because agents are limited by their knowledge set. An analysis of transaction costs is important because these costs determine the optimal organisation of

firms as well as the optimal actions of individual economic agents in the market. When transaction costs are reduced, economic agents will reorient themselves to capture and employ efficiency gains: Once transaction costs are minimised the optimal organisation of the market is reached and social welfare is maximised.

Transaction costs economic theory demonstrates why economic agents make certain choices. In reality, transaction costs are kept in check by contracts, because contracts legally bind economic agents to ex ante conditions. This is a favourable choice for agents - they ensure satisfactory and enforceable ex post outcomes, while allowing for quality and standardisation in transitions. Moreover, due to imperfect and/or incomplete information, contracts are never complete and therefore there will always be some level of uncertainty. Contracts insure against potentially undesirable outcomes resulting from asymmetric information. Different agents will require different levels of information and hence the optimal level of information varies from agent to agent, with each agent only engaging in information search as long as the benefits of obtaining the information outweigh the transaction costs that occur to obtain it.

Contracts only reduce transaction costs if they are enforceable. In order for this to occur, several elements must comprise the contract, including: offer, negotiation, acceptance, formation of contract, legal capacity to enforce and actions must be within legal statutes. If any of the elements are missing, the contract will be void. For example where illegal behaviour is required by one of the parties, or the contract is unenforceable due to the heavy legal burdens. Contract-specific investment often occurs in markets where investments are sunk and asset-specific, because transaction costs are considerable in these situations. An example of this is where an upstream essential facility can extract welfare from downstream markets, due to its competitive advantage in asset-specific investment. Downstream firms can counter this by either vertically integrating upstream, or by entering long-term contracts in order to limit such opportunistic behaviour.

From a theoretical viewpoint, market forces lead to allocative efficiency, where all possible gains from trade are exhausted. However, in reality this is only possible under

the implausible assumption of the absence of transaction costs. Economic agents make decisions by comparing different transaction modes and choosing the mode with the lowest transaction costs. Any decision that leads to a reduction in transaction costs leads us closer to a perfectly competitive market, thus increasing social welfare.

In the new economy, there is a shift toward the production of intangible outputs and information goods. This in turn impacts the way we conduct transactions. The Internet allows for real time matching of demand supply, it reduces the number of links in the supply chain. Due to the fact that it is an open source network, there is also open access. Moreover, cost structures in production have emerged where generally average costs fall over increased output occur more commonly in the new economy compared to the old economy. Most importantly, the Internet has proven to be a more efficient transaction mode, e.g. a commercial transaction at the teller costs US\$1.25, but only US\$0.01 online.

As a result of decreasing transaction costs, structural changes in the economy have emerged. This includes cost structure differentials, such as automated supply chains, which reduce search costs and increased speed and efficiency. Small and medium sized enterprises have the same opportunities available to them to compete against large firms. The Internet also opens the door for the implementation of Just-In-Time inventory management and production. Another structural change is the emergence of new markets, cyber intermediaries and market makers, all of which increase the welfare of the consumer. Finally, there have been structural changes in the supply chain, with the evolution of online platforms such as Business-to-Business (B2B) and Business-to-Consumer platforms which allow for online transacting.

Section II: B2Bs

Section II deals with Business-to-Business (B2Bs) and Business-to-Consumer (B2C) Internet platforms, which are Internet based software systems that allow buyers and sellers to carry out sales and procurement decisions over the Internet. The focus of this dissertation is on B2B platforms because the potential growth of such platforms is estimated to outstrip that of B2Cs by a factor of eight to fourteen times. B2Bs are of

particular interest because they can be examined from both a (dynamic) exchange perspective, as well as a (static) infrastructure perspective.

B2Bs have evolved as the result of historical trends. Between 1965-1975, firms began exploiting efficiency gains by automating in-house functions such as payrolls. By the 1980's, automated functions were extended to both intra- and inter-firm transactions, through privately owned networks (VANS), facilitated through Electronic Data Interchange (EDI). These systems were, and still are, valued because members can choose what information is disseminated. This is important where the security of the information is concerned. However, EDIs and VANS require sunk investments (i.e. asset-specific investment) which incur considerable switching costs. These costs do not arise, to the same extent, in the Internet, due to its open source structure. B2Bs are, therefore, the next step towards transaction efficiency. Indeed, Goldman and Sachs predict a decrease in total costs by 12.5% and a rise in long-run output as a result of the transition to Internet B2Bs: Both aspects benefit the consumer and the producer.

B2Bs also enhance efficiency by aggregating demand and supply, and/or matching it, through low cost information gathering and application. Specific areas for efficiency gains include: aggregation of demand and supply in vertical B2Bs, to give control over operational management; horizontal B2Bs increase value-added by aggregating markets and services such as logistics. Generally, fragmented markets benefit more than concentrated markets, but have the additional hurdle of collective action problems and providing contractual elements, such as prudential security. Other areas include product specific B2Bs and procurement platforms. Different forms of B2Bs are required in different markets. Brokerage B2Bs are suitable for long-term agreements, providing value-added through the aggregation of demand and supply. B2B exchanges are most suitable for spot markets, where the goods traded are largely homogenous. Exchanges aggregate demand and supply, and match agents, smoothing out market volatility. B2B auction platforms are valuable in spot markets, because they clear volatile markets by aggregating demand and supply. They are, however, also useful in long-term contract

markets because over time auctions reveal information about individual and aggregate preferences of both sides of the market.

These recent developments in transactional efficiency may also raise questions about the implications for competition policy. Certain issues could arise where national jurisdiction does not match that of cyberspace, creating uncertainty in contract elements. While B2Bs increase contract efficiency in the elements of offer, negotiation and acceptance, problems regarding legal recognition and jurisdiction could increase inefficiency.

B2Bs demonstrate market characteristics that are comparable to traditional oligopoly markets. The potential costs of such platforms include loss of consumer welfare through collusion, exclusion, and/or developments/abuse of market power. Collusion, tacit or otherwise, depends on market specific characteristics, rather than whether a B2B is present in the market or not. B2Bs, however, have low organisation and transaction costs, which lead to a decreasing cost structure, which could support collusive behaviour if regulatory reprise is low. Nevertheless, thus far no such instance has been identified in the economy. Exclusion is possible where a current B2B is the core market facilitator and there is the possibility for that B2B to raise entry costs for potential competitors. This raises questions about the ownership and access rights to a B2B and the legitimacy of membership rules. The development or abuse of monopoly/monopsony power is possible if a B2B is characterised by oligopolistic market characteristics, e.g. if the market is concentrated or the good traded is relatively homogeneous. Of course, it is not illegal to have market power, as long as it does not abuse its position to keep entrants out of the market. The issue specific to B2Bs is associated with the difficulties of distinguishing efficient joint purchasing from improper exercise of monopoly/monopsony power. Where sensitive information is, or could be, transmitted, anticompetitive behaviour may emerge: Therefore it is important that security measures, such as firewalls and the anonymity of agents be core requisites for a competitive B2B structure. There is empirical evidence of anticompetitive behaviour in B2B and B2C markets, including price signalling and tacit collusion in the B2C book market as well as evidence of price fixing on the NASDAQ stock exchange.

There are, however, competitive explanations available for instances where prices are increasing or price dispersion is increasing in the Internet, including examples where price dispersion can still exist in equilibrium. In addition, quality attributes differentiate a type of good, leading to increased heterogeneity in the market; affecting prices in a similar manner as in the pharmaceutical market. Versioning is another method of creating heterogeneity. Moreover, there are important interaction effects between the old and new economy which need to be taken into account. Hence, no general statement can be made about the potential anticompetitive behaviour of B2Bs, and it is clear that superficial evidence of anti-competitive behaviour may, in reality, prove to be unfounded.

Section III: New Zealand & the New Economy

New Zealand has favourable foundations for e-business, through significant levels of Internet penetration and usage, higher than that of Australia and most other OECD countries. Recent surveys find that 51.2% of business have invested more than NZ\$50,000 into e-Business implementation.

New Zealand's largest export sector is agriculture. Around 19% of all exports are dairy products. Fonterra Co-Operative is New Zealand's largest company, and is the ninth largest dairy company in the world. Fonterra owns two B2B platforms: RD1.com and Fencepost.com, which provide rural retail and information services for farmers. In 1999, RD1.com acquired a 19.9% stake in Wrightson, New Zealand's largest agri-business. In December 1991, RD1.com and Fencepost consolidated to a since B2B: Rural Supplies Delivery. A brief analysis of merger control *vis-à-vis* B2Bs in New Zealand is made.

Although no case for such a situation has yet been made in New Zealand, the possibility of (tacit) collusion in B2B markets calls for consideration of future measures that could be made if such a case arises and the Commerce Commission should be on alert for any evidence of (tacit) collusion. The trade-off that superficial evidence of collusive behaviour may turn out to reflect competitive actions in the market makes it difficult to prove that intervention is absolutely necessary. Instead, the Commission should follow up movements in B2B markets and police platforms that cast a shadow of doubt over the security of sensitive data and the anonymity of agents.

Section IV: Legal Framework

The economic goals of competition policy are to promote and protect the competitive process, thus maximising consumer welfare. The three main pillars of competition policy concern anticompetitive agreements, abuse of dominant position and practice/merger regulation. In each instance, a relevant economic market must be determined.

Competition restricting agreements can arise in two areas of B2Bs: questions arise where membership agreements as well as where the B2B could be used as a mechanism for collusion. Abuse of dominant position may arise in a unilateral sense, i.e. a B2B refuses access to users or discriminates amongst users. These are possible through the imposition of additional investment costs or restriction of IP rights. Although B2Bs are to some extent reproducible, because they are software based products. However, reputation and asset-specific investments could, in some cases, limit the reproducibility of a B2B, making it somewhat easier for an incumbent to blockade the market.

In the regulation of mergers and acquisitions, it is interesting to note that HHI indices for New Zealand markets typically higher than 1000, which reflects the small size of New Zealand industries. Under the New Zealand Commerce Act (2001), this is taken into account, mergers are tested to see whether competition would be substantially by the merger rather than by applying threshold limited across the board.

Thus far, there has been no substantial evidence that B2Bs deserve special treatment. The formation stage of a B2B can be treated as the same as a merger or joint venture - and be handled case by case. Relevant warning factors include: concentrated markets, transmission of sensitive information, participatory restrictions.

Section IV: Recommendations

General Recommendations :

- Recognise of temporal limitations on competition policy:
 - Dynamic analysis is more complicated than a static approach, but such a method must be applied in the new economy if welfare is to be enhanced.
- Cases should be dealt with under case by case.

- There is no need to treat every B2B with suspicion. While little is known about the true magnitude of dynamic effects of the new economy, there is also little data on the impact of regulation interventions in the new economy. This reflects that the benefits to welfare that result from the lower transaction costs facilitated through the Internet can outweigh detrimental effects, depending upon the case.
- In certain cases, B2Bs may become a mechanism for anticompetitive behaviour. This could be possible where there is:
 - transmission of sensitive data,
 - the anonymity of users is in doubt
 - the B2B is not owned and operated by an independent third party.

Where the opposite is true, there is no need for direct intervention. Competition agencies would need to follow up and track the B2B with regard to their application of these criteria.

- In light of prima facie evidence of anticompetitive behaviour in a B2B market:
 - It is important to keep in mind that superficial evidence is not sufficient in order to declare a need for intervention – this dissertation demonstrates how superficial evidence of anticompetitive behaviour may, in end effect, turn out to be the result of competitive forces in the market.

New Zealand Specific Recommendations:

- The Commerce Commission should treat B2Bs as any other commercial entity.
 - The Commission could issue a framework which considers the above generic recommendations – as the EC and FTC have done– to provide the public and B2Bs operating in New Zealand with a guideline to acceptable behaviour.
 - There is already work done for the Australian Economy, by Gans and King (2001) for the ACCC. To the extent that there are benefits to common competition law, Australian law changes should be evaluated.

- The Commission should continue to acknowledge the efficiency grounds for mergers including contracts seeking to optimise the size (and thus social welfare) from the network.
- Development in other jurisdictions should be reviewed as to the suitability in New Zealand, bearing in mind that New Zealand is typically a very different economy.
- As cyberspace defies national boundaries, potential problems with jurisdiction and contract enforcement will undoubtedly arise:
 - This could spur an increase in fraudulent behaviour, which stunts the growth of Internet business.
 - Particular problems are likely to occur under the Consumer Guarantees Act (1993), where offshore Internet firms will accept an order, taking payment without intending to supply as ordered or enforcing warranties/guarantees associated with Internet transactions with non-traceable firms.
- Reciprocal arrangements for information transfer between competition regulatory agencies would aid international co-operation between agencies.
 - These problems can only be solved through international cooperation of competition regulatory bodies – a move to match legal jurisdiction with cyber-territory.

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