Would B2B Exchanges Have Antitrust Issues?

Tair-Rong Sheu*

Ling Tung College

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Abstract

The exponential growth of B2Bs has attracted a significant portion of attention. Because the scale and scope of B2Bs may generate efficiencies, many industrial players have announced or established their own B2B exchanges. However, those B2B exchanges may also raise a variety of anticompetitive concerns. This paper tries to understand B2B marketplaces from a contingent point of view, exploring complexities of industrial purchasing, describing B2B exchange models and the evolution of B2B exchanges, matching B2B exchange models with market structures, and discussing antitrust concerns based on previous analyses.

The findings indicate that the specific nature of industrial purchasing makes it difficult build B2B sites, creating high entry barriers and switching costs. Also, three factors: economies of scale, economy of networks, and technology acquisition, will drive consolidation among B2B exchanges in the next three years. So some of the B2B sites are expected to dominate markets.

Based on the characteristics of B2Bs, three antitrust concerns are discussed: joint purchasing, ownership and information sharing, and exclusive dealing and essential facility. B2B sites jointly led by several buyers may facilitate joint purchasing and run a higher risk to raise antitrust concerns. B2B sites owned by several industrial players or by an independent startup whose significant buyers or sellers serve in its board or hold significant shares of its equity stakes run a higher risk to share sensitive information and may bias information presented to their market participants. It is suggested that the structure of ownership be an indicator to problematic information sharing. Exclusionary practices are natural and inevitable due to that well-built B2Bs gain monopoly power, if any, through efficiencies, and naturally exclude new entrants by incumbent investment on technology and relationship. The Agencies will have to scrutinize the exclusionary practices of dominant B2Bs and carefully distinguish between efficiencies and anticomptitive conduct.

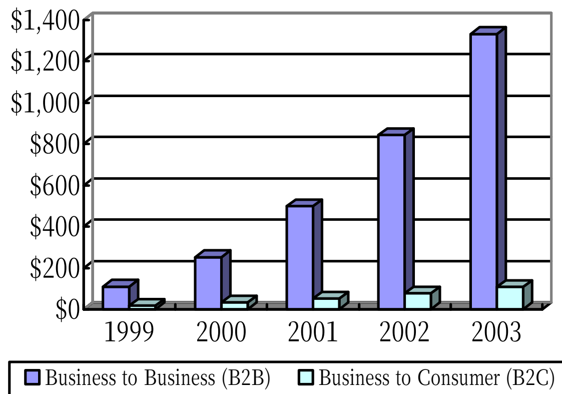
The evolution of B2B exchanges indicates that some B2B sites eventually and inherently will dominate markets and have monopoly power because of the nature of industrial purchasing, network effects, and economies of scale. One way to keep B2B marketplaces competitive is to increase the degree of internetworking of marketplaces, which can help prevent B2B sites from locking in market participants and reduce switching costs. Through internetworking mechanism, competition can be promoted so as to create a sound B2B environment.

* Author can be contacted at tsheu@mail.ltc.edu.tw. The previous version of this paper has been presented in 2002 Annual Conference of the Austrian Economic Association.

I. Introduction

The first wave of E-commerce web sites is mainly Business-to-Consumer ("B2C") sites, such as Yahoo, AOL, eBay, etc, providing goods and services to consumers. These sites, by using the Internet, have demonstrated a new way to change our life in many aspects, including better innovation, less search costs, etc. However, several studies (e.g., Forrester Research) reveal that Business-to Business electronic commerce ("B2B"[1]) accounts for the lion share of online commerce. Figure 1 shows that the B2B Internet commerce is expected to grow from $109 billion in 1999 to $1.3 trillion in 2003, at the annual rate of 86.8%.

Figure 1: U.S. Internet Commerce Forecast 1999-2003 (in Billion Dollars)



Source: Forrester Research[2]

It is believed[3] that B2B can create great values for both buyers and sellers. The buyers may reduce procurement process costs, inventory costs, and rogue purchases, and have more choice and better pricing. The sellers may reduce costs associated with sales and

[1] The term, "B2B", stands for Business-to-Business electronic commerce in this paper; Business-to-Business stands for its verbal meaning.

[2] Cited in First Union Securities, Inc. (1999), B2B Software and Services at 5

[3] Merrill Lynch (2000), The B2B Market Maker Book at 23

the process costs of order management, reach new customers, and generate new revenues. An online market maker[4] states that "[t]he most compelling reason to join a B2B marketplace is the ability to sell products and services through a highly efficient, cost effective channel." Most businesses on its survey said that "[t]he ability to interact with new customers in areas well beyond their normal trade zone is very appealing." Because of those potential benefits gained from B2B, we can see many B2B sites are announced or already established. Some report[5] estimates that there are 2,000 B2B sites in 2000 and will be 5,000 by the end of 2002.

Among those B2B web sites, some are independent startups, some are established by individual manufacturers or suppliers, and some are formed by industry consortium. Since many industrial big players, after the first wave of independent startups, are interested in establishing their own B2B web sites, government agencies start paying attention to B2B commerce.[6] "[G]iven the importance of this new business development, the Federal Trade Commission ("FTC") drew upon its unique missions to study competition and work with the business community and others to detect new trends and hosted a B2B public workshop"[7] in June 2000. In October 2000, the FTC issued a staff report, "Entering the 21st Century: Competition Policy in the World of B2B Electronic Marketplaces"[8] ("B2B

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[4] Dale Boeth (2000), An Analysis of the future of B2B E-Commerce

[5] Morgan Stanley Dean Witter (2000), The B2B Internet Report at 17

[6] For example, Covisint, a consortium-based online trading exchange jointly established by the three leading American automotive manufacturers: General Motors, Ford, and DaimlerChrysler, is a first case investigated by FTC.

[7] "Competition Policy in the World of B2B Electronic Marketplaces," the workshop included 65 panelists and had an attendance of over 600 people. Participants include entrepreneurs, economists, and legal scholars.

[8] Available online at www.ftc.gov/os/2000/10/b2breport.pdf

Report" in the following), including a description of various facets of B2B marketplaces and the efficiencies they may provide, and outlining a framework for understanding how to answer traditional antitrust questions in the context of new B2B technology. However, part of this report, citing from various statements and comments, and quoting from workshop panelists, reflects inconsistent viewpoints and is lack of complete and systematic analysis. For example, in this B2B report, some panelists stated that the entry barriers into the marketplaces are low while others stated high.[9] The discrepancy mainly comes from the ignorance of contingent factors, e.g. industry characteristics, business evolution, and market structures. This paper tries to understand B2B marketplaces from a contingent point of view, exploring complexities of industrial purchasing, describing B2B exchange models and the evolution of B2B exchanges, and matching B2B exchange models with market structures. Based on those analyses, this paper will discuss whether B2B exchanges would have antitrust concerns and the aspects to which the government agencies should pay attention.

II. Complexities of Industrial Purchasing

The first wave of web sites was B2C because B2C extends the scope of catalog shopping that has existed and well developed for a long time. Compared with B2C, B2B was developed later due to that the nature of B2B market is complex and industrial transaction is hard to be integrated into a web site. But the potential business volume of B2B still draws many people's efforts to establishing B2B web sites. In the past decade, Electronic Data Interchanges ("EDI"), by automating Business-to-Business transactions,

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[9] "Entering the 21st Century: Competition Policy in the World of B2B Electronic Marketplaces", Part 1 at 19-20

has been proved to increase efficiency, and reduce errors and costs. Based on the EDI experience, it is believed that B2B, by using the Internet, an infrastructure that is cheaper and more public than EDI, has more possibilities to reform business processes so as to increase efficiency and reduce costs. Although B2B seems promising, the following complexities[10] of industrial purchasing need to be overcome so as to create a successful B2B site:

(1) Professional purchasing discipline: Companies employ professional purchasing persons who often have substantial experiences on product categories. They often specialize by product. They also purchase products from various sources and make sure that they got the best products, on time, at the best prices. They need to analyze, compare, negotiate, and monitor purchasing results. Thus, a web site simply applying consumer-like marketing techniques and functionality doesn't fulfill the need of the professional purchasing persons;

(2) Derived demand and group decision-making: Industrial purchasing persons buy what and when they are required to buy. Often a purchase decision, especially for large purchase, involves with a lot of persons from R&D, manufacturers, and quality assurance. Group decision making typically means that the time of making purchasing decisions usually differs from the time of transaction. The industrial purchasing behavior contrasts with consumer purchasing behavior, where people search on the Web, find the product, and make purchasing decision on their own and transact immediately;

(3) Legacy systems: Industrial buyers issue purchase orders ("PO") through ERP/MRP[11]

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[10] *See* Sam Kinney (2000), An Overview of B2B and Purchasing Technology at p4 for more details.

[11] ERP: Enterprise Resource Planning; MRP: Materials Requirements Planning

systems. It won't work if web sites require industrial buyers to fill in order screens without taking into account the industrial buyers' legacy systems and their purchasing processes;

(4) Custom products: Industrial products are often custom-made rather than standard products. Instead of being listed in categories, these products are made under the agreement of both buyers and sellers. It is difficult for industrial buyers to purchase custom products from categories listed on the Web;

(5) Complex contracting format: Because manufacturers need to make sure that raw materials will be delivered on time and the quality is as specified, they usually sign with suppliers contracts that specify pricing, terms, incentives, and penalties. The need of signing contracts reduces the possibility that industrial buyers or sellers can unilaterally conduct commerce on web sites;

(6) Trade credit: Industrial products are often purchased on trade credit, which is an extended form of relationships between buyers and sellers. Web-based purchasing is difficult to develop complex and negotiated relationships that form the basis of transactions on trade credit.

The complexities stated above reveal the fundamental difficulties of establishing a B2B site, creating a high entry barrier. Once the B2B sites are built up with many functions facilitating industrial purchasing, they will enjoy first mover advantage and new B2B entrants will have difficulties to compete with. So some of the incumbent B2B sites are expected to dominate markets.

III. Taxonomy of B2B Exchange models[12]

After B2B exchanges evolve over time, many different forms of exchanges co-exist in the market. Broadly classified, there are three exchange forms: Distributors/Market Makers, Supplier-Managed, and Buyer-Managed. Discussing the taxonomy of B2B exchange models helps understand the nature of B2B markets.

1. Distributors/Market Makers

Distributors/Market Makers are independent exchanges not established by buyers or suppliers. This type of exchanges usually creates a market where buyers and sellers are invited to participate and transact, and bid-ask is usually used to decide prices. These exchanges match orders and make revenue from transaction fees. This model flourished in the beginning of online B2B commerce because it was considered a right model for all markets due to its "fairness." It also conceptually appeals because of their similarity to better known capital markets like the New York Stock Exchange.[13] However, industrial markets are different from capital markets in the following aspects:[14]

(1) Custom products: when a buyer is looking for a custom product, the many-to-many marketplace won't work since it is one-buyer-dealing-with-many-sellers;

(2) Little tolerance for speculators: in industrial markets for custom products, there is little tolerance for speculators who might be a buyer at one price and a seller at a different price in order to make profits from the price difference. Thus, the liquidity of trading can be limited;

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[12] Morgan Stanley Dean Witter (2000), The B2B Internet Report at 39

[13] Sam Kinney (2000), An Overview of B2B and Purchasing Technology at 23

[14] *Id.* for more details

(3) Difficulty creating derivatives: much of the liquidity in financial markets results from the market's ability to create derivative securities while industrial markets don't support. Thus liquidity is limited;

(4) Unique contract terms: unique terms can't be easily accommodated in a many-to-many market format. Differences in terms can introduce significant transaction costs, limiting the ability of the market to declare one uniform clearing price;

(5) Counter party preference: Industrial buyers and sellers need to develop trustworthy relationships and trader anonymity is not likely to be tolerated as it is in financial markets;

(6) High transaction costs for transportation and logistics: Industrial trade typically requires physical delivery of a product from one place to another, often at great cost and with risk of damage, spoilage, or obsolescence. These transaction costs imply that clearing prices, even in equilibrium, can differ for different trading partner pairs. These apparent price differences limit the liquidity that can be achieved in an exchange environment;

(7) Trade-specific risks: in industrial markets with unique products, long lead times, and high transaction cost, it can be difficult to obtain replacement product to prevent a failed trade;

(8) Lack of information transparency: in industrial markets, trading information is not transparent. Buyers conduct commerce in private relationships where they can do their own due diligence. True neutral trading marketplaces can't exist without an infrastructure to guarantee information transparency.

2. Seller-Managed

Sellers establish B2B exchanges, trying to achieve lower prices or larger volumes. A typical seller-managed site has one or few seller s and many buyers. While the Seller-Managed exchange site looks like a retail catalog, there are several limitations:[15]

(1) Custom products: catalog can't assist a buyer in a need of a custom product;

(2) ERP integration: when the Seller-Managed site doesn't integrate with a buyer's underlying systems, the site is limited;

(3) Complex contracting and trade credit: business purchases heavily rely on a significant relationship between buyer and seller. These relationships, including the trade credit, are proved hard to build over the Web;

(4) Information asymmetry: the selection of suppliers relies on the past performance of suppliers. The Seller-Managed site usually only publishes the best, which prevents buyers from trusting the information provided by the site and defers the decision to purchases or even deters.

However, the Seller-Managed exchange may encounter less difficulty in a market where suppliers are concentrated and buyers are fragmented. Also, the Seller-Managed site may work better in the following situations[16]:

(1) Small and medium sized purchasers: for small and medium sized purchasers, their purchasing persons may not be specialized by product category and may find beneficial the information offered in a Seller-Managed site;

(2) Infrequent purchases: for infrequent purchasing items, information search is an

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[15] *See* Sam Kinney (2000), An Overview of B2B and Purchasing Technology at 21 for more details

[16] *See* Sam Kinney (2000), An Overview of B2B and Purchasing Technology at 22 for more details

important part. The category information in a Seller-Managed site is very helpful;

(3) Small dollar purchase categories: for products that cost trivial, buyers often choose convenient solutions and thus tend to accept suppliers' solution.

3. Buyer-Managed:

Buyers establish B2B exchanges, most of them private and usually in conjunction with technology partners. By setting the exchanges, buyers can manage procurement process more efficiently, reduce more administrative costs, and ensure more uniform pricing. Buyers host and manage contents. Some exchanges are public and meant to attract other buyers in the same industry. Buyers request suppliers to transact in those exchanges. This type of exchanges is easier to set up since buyers often have the power in the buyer-seller relationship. A typical buyer-managed site has one or few buyers and many sellers. The Buyer-Managed exchange is preferred[17] when buyers have the power in industrial markets where buyers of custom products set specifications, control timing, and negotiate price and terms. The Buyer-Managed exchange is adapted to the complexities of industrial purchasing and can integrate with internal systems, accommodate the purchase of custom products, and permit global sourcing and the use of trade credit. Those characteristics make the Buyer-Managed exchange have a higher chance to prevail in a market where buyers are concentrated.

IV. Evolution of B2B exchanges[18]

Business-to-Business exchanges have existed for a long time but the electronic-form

[17] *Id.* at 26

[18] *See* Morgan C. Harting (2000), Business Exchanges, KPMG at 7 for more details.

of exchanges started since Electronic Data Interchanges ("EDI") was developed. Then in late 90s, the Internet became available and was considered an inexpensive and public tool to conduct B2B exchanges. Nowadays, we see that different B2B models come to markets and fit into different market structures. In the first wave, many B2B web sites were first set up by independent startups and then industrial players decided to establish their own B2B sites. The following will discuss the evolution of B2B exchanges in detail.

1. Electronic Data Interchanges

Prior to Business-to-Business transaction through the Internet, EDI was developed more than a decade ago to automate business-to-business transactions. EDI provides predefined formats including purchase orders, invoices, shipping notice, etc, and these documents are exchanged through a private dialup network, Value Added Network ("VAN"). Since EDI is run over a proprietary network, its reliability, security, and performance are important reasons to make enterprises adopt EDI. By employing EDI, companies increase transaction efficiency and reduce errors caused by traditional paper-based handling process. According to the Commerce Department, EDI supported some $3 trillion in economic activity across more than 250,000 companies in the U.S. in 2000. However, although EDI has these benefits, the cost of implementing it is high and only large companies can afford it. Thus the adoption rate is low. It is believed[19] that as businesses continue to get more comfortable about the security, reliability, and performance of the Internet, the use of EDI over expensive, proprietary VANs will give way to Internet-facilitated transactions.

[19] Merrill Lynch (2000), The B2B Market Maker Book at 17

2. The First Wave: Internet-based B2B marketplaces

EDI demonstrated that, by connecting buyers and sellers over networks and automating transactions, greater efficiency and cost-savings could be achieved. The Internet, a more inexpensive and public network, provides an unprecedented opportunity for both large firms and small firms to create efficiency by electronically connecting to each other. Because the barrier to establish basic B2B marketplaces is not high and the potential to reduce costs seems huge, almost every industry has ongoing B2B projects. Among them, "[t]hose with more frequently traded, standardized products, and more technologically advanced legacy procurement systems have been the first to become operational. These industries include chemical, energy, metals, telecom bandwidth, and electronic components."[20] In the first wave of B2B, most marketplaces are built by independent exchanges, such as B2Bs Vertical Net, FreeMarkets, Chemdex, etc. One important function provided by these B2B marketplaces is to allow buyers to compare prices from sellers and help buyers reduce product costs immediately. These marketplaces may also provide auctions to help buyers reduce costs. Cost-savings on procurement process systems are very minimal since traditional procurement systems and processes are not substantially changed.

3. The Second Wave: Buyers and sellers take a stake in independents

Most of the B2B marketplaces in the first wave were established by independent startups. Since neutrality and fairness are important for independent marketplaces to attract buyers and sellers, those B2B exchanges deliberately excluded industrial players to own equity. However, those industrial players bring liquidity to the marketplaces. If

independent B2B marketplaces can't create value or provide incentives to those industrial players, those players may leave for other marketplaces or establish their own marketplaces. Therefore, "[m]nay marketplaces originally established independently began offering equity stakes to significant buyers or sellers as incentives for participation and in order to align their interests with the marketplaces' success."[21]

4. The Third Wave: Buyers and sellers create their own market places

Big industrial players contribute significant portion of liquidity to independent marketplaces, so they soon or later discovered that they could establish their own marketplaces without being charged service fees and revealing trade secrets. They could also better maintain relationships with buyers or sellers. Procurement process system can also be integrated into B2B exchanges and therefore greater cost-saving on procurement can be achieved. One famous example is that the top 3 auto manufacturers, GM, Ford, and DaimlerChrysler, announced to form a B2B marketplace, Covisint. Although industry-led exchanges seem to have great potential to achieve better efficiency and reduce more costs, "[i]t is important to note, however, that none of the announced industry-led exchanges are up and running at full capacity and functionality yet. All of them will face challenging systems development, integration, and governance issues before they become fully operational."[22]

Figure 2 shows that some of the companies that adopted EDI now establish their own B2B exchanges and some of the independent startups gave stake equity to significant

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[20] Morgan C. Harting (2000), Business Exchanges, KPMG at 8
[21] Morgan C. Harting (2000), Business Exchanges, KPMG at 9

[22] Morgan C. Harting (2000), Business Exchanges, KPMG at 11

buyers and sellers.

Figure 2: The Evolution of B2B Exchanges

EDI				
	Distributors/Market Makers		Seller-Managed	Buyer-Managed
	Independ.	Stake		
The First Wave*				
The Second Wave**				
The Third Wave***				

*: Internet-based B2B marketplaces

**: Buyers and sellers take a stake in independents

***: Buyers and sellers create their own marketplaces

5. The Future of B2B

The change of the Internet is too fast to predict. Some report[23] states that "[t]he next stages of the development of online B2B marketplaces will include rapid growth in transaction volume, consolidation of existing and announced exchanges, increased trading functionality, greater integration with legacy systems, and the internetworking of exchanges." This report[24] also predicts that three factors will drive consolidation among B2B exchanges in the next three years: economies of scale, economy of networks, and technology acquisition. "[E]conomies of scale will induce exchanges to spread their high capital and operating costs across as many transactions as possible. The economy of networks, in which the addition of each incremental participant creates value for all existing participants, will also propel mergers. Taken together, economies of scale and economies of networks suggest that where two exchanges trading the same product exist, consolidating them would reduce overall costs and create more value for participants."[25]

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[23] *Id.* at 13

[24] Morgan C. Harting (2000), Business Exchanges, KPMG at 14

[25] *Id.*

The need to improve technological capabilities will also drive consolidation among B2B exchanges since none of the players can possess all technologies or software, or even patents, to develop a B2B with sound functionalities. Thus, mergers and acquisitions will expedite to acquire technologies and help develop a B2B with complete functions. We expect to see more dominant marketplaces in their respective categories and more antitrust concerns may come along as well.

V. Contingent factors on B2B exchanges models

As stated above, many B2B sites have been established or announced and thus the number of B2B sites is skyrocketing.[26] A report[27] warns its readers that "we are optimistic about B2B business opportunities, but investors must be selective: Many B2B companies and business ideas may not succeed." It is expected to see some dominant B2B exchanges in the coming future. The following will discuss market structures under which B2B exchanges will become dominant and characteristics of these B2B exchanges will also be addressed.

Market Structure

The structure of a market determines which B2B exchange model has a better chance to succeed. If we divide B2B participants into four groups: Buyer, Supplier, Marketplace Owners, and Technology Provider, Figure 3 shows that the Buyer group, the Supplier group, and the Marketplace owner would be the largest net beneficiary in their respective

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[26] As of 2000, Morgan Stanley Dean Witter (2000) estimated that there were 2,000 B2B sites and will be 5,000 by the end of 2002.

[27] Morgan Stanley Dean Witter (2000), The B2B Internet Report at cover page

industry types disregarding the types of B2B models.

Figure 3: Percentage of Value Retained from B2B E-Commerce

Industry Type	Sample Industries	% of Economy	Buyer	Supplier	Marketplace Owner	Technology Provider
High Buyer Concentration	Automotive Manufacturing	35	70	10	10	10
High Supplier Concentration	Plastics Steel	15	20	60	15	5
Fragmented Buyers and Suppliers	Healthcare Life Science Agricultures	50	25	25	35	15

Source: Morgan Stanley Dean Witter Internet Research[28]

Most of the first wave B2B sites were built by independent startups and provided a marketplace for both buyers and sellers to conduct transactions. Since these B2B sites realized the importance of liquid brought by industrial players, they began offering equity stakes to significant buyers or sellers as incentives to keep them from leaving for other marketplaces. However, once industrial players decide to bypass these independent B2B sites and establish their own sites, many independent B2B sites that heavily rely on these large industrial players will encounter serious difficulty, i.e., losing liquidity.[29] Thus, the market to which independent startups tend to succeed is where many buyers and many sellers exist. These independent startups establish an online marketplace to aggregate

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[28] Morgan Stanley Dean Witter (2000), The B2B Internet Report at 9

[29] Morgan C. Harting (2000) Business Exchanges, KPMG at 10 provided a good example to explain the importance of large industrial players to independent startups: " General Motors tiptoed into the world of B2B exchanges in 1998 by running some of its purchasing through independent horizontal exchange FreeMarkets. For FreeMarkets, the GM volume was a tremendous boost, and it represented 19% of the B2B's revenue in 1998 and 15% in 1999. The participation of GM, together with United Technologies, which also accounted for a a major share of FreeMarkets' trading volume, helped drive the independent exchange's market capitalization to a high $10 billion on January 3, 2000. When General Motors announced that it would abandon FreeMarkets and run its procurement through its own proprietary trading platform, FreeMarkets' share lost 55% over a two-week period. Its shares are now trading at 8-% below its early January high. General Motors, with its $80 billion in annual procurement, realized that the value it brought to FreeMarkets far outweighed the value FreeMarkets brought to GM by aggregating suppliers."

buyers and sellers. In this type of market structure, network effects[30] create substantial advantage for large incumbent B2B sites and increase switching costs of the market participants since switching to another smaller markets will make them lose advantage gained from the incumbent bigger market. New entrants may find it easy to establish an online marketplace but will have difficulties to gain liquidity. This entry would not be likely and sufficient.[31]

In a market where industrial players are concentrated, industry-led B2B sites have more advantage given that the industrial players have relationships with incumbent vendors and thus can build up liquidity easily. The industry-led B2B site can be established by one big player or jointly by several big players (industrial consortium). If B2B sites are led by individual buyers, vendors (sellers) will have to participate in each online marketplace given that industrial purchasing is often custom products and internetworking of marketplaces is not available at this time. If B2B sites are jointly led by several buyers, vendors can gain efficiency by attending one market but may lose bargaining power since buyers may gain monopsony power by joint purchasing.

If B2B sites are led by individual sellers, whether vendors (buyers) would purchase from more than one market depends on the uniqueness of products and the importance of products to vendors. The more unique the product is, the less bargaining power the vendors have. The more important the product is, the more places the vendors would visit and compare. If B2B sites are jointly led by several sellers, vendors can benefit from comparing products and price across different sellers in one marketplace but may be disadvantaged when sellers exchange sensitive information and result in collusion on prices.

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[30] The value of the network to its users increases as more users join in.
[31] 1992 Merger Guidelines, 3.3 and 3.4.

The strength of industry-led B2B sites come from their relationships with many incumbent vendors. For those industrial players who have used EDI to automate their businesses, they enjoy more advantage to establish and strengthen their B2B sites by moving their EDI relationships onto the Internet and integrating the B2B sites into their procurement systems. Because industrial relationships play a key role in industrial purchasing, new entrants who are not industrial players would find it difficult to build up relationships with those vendors who have conducted businesses with industrial players for years.

Figure 4 summarizes the market structures and characteristics of three types of B2B exchanges. We expect to see that when B2Bs are mature, both entry barriers and switching costs will become high. New entrants would be disadvantaged and incumbent B2Bs would have monopoly power.

Figure 4: The Market Structures and Characteristics of Three B2B Exchanges.

	Distributors/Market Makers	Seller-Managed	Buyer-Managed
Market Structure	Many buyers and many sellers	Sellers are concentrated or the seller's product is unique	Buyers are concentrated
Network Effects	High	NA	NA
Entry Barrier	Low/High*	High	High
Switching Cost	Low/High*	High	High

*In the beginning of B2B development, both entry barriers and switching costs are low. When the B2B marketplaces are affected by network effects, the entry barriers and switching costs become high.

VI. Antitrust Analysis and Concerns:

Based on the previous analyses, it is predicted to see some particular types of B2B exchanges that may have monopoly power and raise antitrust concerns. The following will first define the relevant market in B2B exchanges and then discuss possible antitrust

concerns.

1. Market Definitions

To define the relevant market is the first step in most antitrust cases. Although B2Bs marketplaces are new, Business-to-Business transactions through the marketplaces are not. Thus, the market definition of B2B is still amenable to the 1992 Merger Guidelines. Since industry-led marketplaces and independent startups are different in a way that industry players employ B2B as part of their procurement processes and independent startups create B2B marketplaces for buyers and sellers, the criteria to define the markets of these two are different.

1.1 Industry-led B2Bs

Although B2Bs are developed lately, the concept of B2Bs is not new. Prior to B2Bs, EDI was developed to automate business-to-business transactions. Since the implement cost of EDI is high, only large companies can afford it. For companies, reducing the costs of Business-to-Business exchanges is always an important goal and an ongoing process. The Internet provides an unprecedented opportunity to establish B2B exchanges that help firms increase efficiencies and reduce costs. For those who have employed EDI, they may move their incumbent exchanges onto the Internet (B2Bs). Thus, the definition of their online markets should be the same as their offline ones. For those who didn’t use EDI and just start establishing their B2Bs, the question to the market definition is “whether substitute markets exist,” meaning that a product sold or purchased through this industry-led B2B marketplace can be acquired through other marketplaces, either online or

offline. The market of the product should include all the marketplaces that sell or buy this product. However, if an online marketplace carries a group of products and effectively differentiates itself from other marketplaces that also carry similar products, then this online marketplace may have monopoly power, a situation similar to the case: *Federal Trade Commission v. Staples Inc. 970 F. Supp.1066*, where the Court found that Office Depot and Staples have monopoly power in the office supplies market although Wal-Mart and other stores also carry office supplies.

1.2 Independent Startups B2Bs

In the first wave of B2B, most marketplaces are built up by independent startups that play as a third party and aggregate buyers and sellers to exchange in their marketplaces. Before these B2B marketplaces, it was less efficient for buyers and sellers to find each other and thus the searching costs were high. The administrative costs were also high since most transactions were done through mail, telephone, fax, etc. B2B marketplaces create a new channel for buyers and sellers to exchange, improving their transaction efficiencies by aggregating them and providing price determination mechanisms, such as auction, catalog. Because network effects have a significant impact on these exchanges, it is likely that only few efficient marketplaces exist in each product category and maybe only one market survives eventually. Although buyers and sellers can still go back to traditional way, they will lose efficiency gained from B2B marketplaces. Thus for those B2Bs that have aggregated many buyers and sellers and become leaders, they are expected to dominate markets and have monopoly power under a condition that internetworking of B2B exchanges are not available. Since only one or few online B2Bs that provide similar services would survive, the market definition of these independent startup B2Bs that create

a unique online exchange venue tend to be the market they serve. Figure 5 summarizes the market definitions of B2Bs.

Figure 5: The Market Definitions of B2Bs

	Industry-led B2Bs		Independent Startups B2Bs	
Situations	Companies used EDI.	Companies didn't use EDI.	Substitute markets exist	High network effects
B2B Market Definition	The same as their offline market definition.	Should include all the marketplaces that sell or buy the product.	Should include substitute markets.	The market that the B2B site serves.

2. Possible Antitrust Concerns

To date, although the size of B2B marketplaces is relatively small, the government agencies, e.g., the FTC, have paid attention to them[32] mainly because B2B has great potential to grow and many large industrial players have announced or established B2B marketplaces. What antitrust concerns could be raised by B2Bs? The B2B Report has addressed several antitrust concerns.[33] However, some viewpoints in that report don't take into account contingent factors, e.g., the types of B2Bs. The following will discuss anticompetitive issues and then discuss contingent factors that affect the judgment of antitrust concerns.

2.1 Joint Purchasing

[32] For example, the B2B site, Covisint, formed by the top 3 auto manufacturers, has been investigated by the FTC.

[33] The B2B Report discusses information sharing, monopsony, and exclusion.

The Competitor Collaboration Guidelines recognize that joint purchasing "may enable participants to centralize ordering, to combine warehousing or distribution functions more efficiently, or to achieve other efficiencies."[34] However, the guidelines also recognize that joint purchasing "can create or increase market power (which in the case of buyers, is called "monopsony power") or facilitate its exercise by increasing the ability or incentive to drive the price of the purchased product, and thereby depress output, below what likely would prevail in the absence of the relevant agreement."[35] How to judge whether a joint purchasing may arise antitrust concerns? The FTC and DOJ suggest a rule that "the Agencies do not challenge a competitor collaboration when the market shares of the collaboration and its participants collectively account for no more than twenty percent of each relevant market in which competition may be affected."[36] Specifically, when joint purchasing arrangements are made, the Agencies suggest that these arrangement may be in a safe harbor where (1) they account for less than thirty-five percent of the total purchases in the relevant market, and (2) the cost of the purchased products accounts for less than twenty percent of the total revenues from all products or services sold by each competing participant in the joint purchasing arrangement.[37] B2B makes joint purchasing easier than before because buyers can electronically communicate and share information. But the degree of joint purchasing may differ in the types of B2Bs. The following discusses the possibility of joint purchasing in the three types of B2Bs:

1. Distributors/Market Makers

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[34] *See* 2000 FTC & DOJ "Antitrust Guidelines for Collaborations Among Competitors," at 14

[35] *Id.* at 14

[36] *Id.* 26

[37] 1996 FTC & DOC "Statements of Antitrust Enforcement Policy in Health Care" Statement 7.

This type of B2Bs usually is an independent online market where buyers and sellers are invited to exchange. Because each participant acts independently in exchange, joint purchasing is less likely to take place and thus causes less concerns.

2. Seller-Managed

Sellers jointly establish B2B exchanges, trying to achieve lower prices or larger volumes. Usually these B2Bs deal with independent buyers and thus joint purchasing is less likely to happen.

3. Buyer-Managed

Among different types of B2Bs, the one formed by several buyers, e.g., Covisint, may facilitate joint purchasing. Through B2Bs, buyers can aggregate orders so as to get a better price from suppliers, whose price cut results from less transaction costs. In this case, joint purchasing helps increase efficiency of transactions. However, joint purchasing may run a higher risk to raise antitrust concerns under certain circumstances. For example, buyers may aggregate orders to gain monopsony power and improperly employ this power to drive down suppliers' prices. Since joint purchasing through this type of B2Bs doesn't create a new situation, it should be amenable to the Competitor Collaboration Guidelines. The challenge here is to ensure that the percentage of the amount of joint purchasing through B2B doesn't go over the legal maximum, and identify whether joint purchasing facilitates efficiency improvement or jeopardizes fair competition.

2.2 Ownership and Information Sharing

The nature of B2B is to aggregate buyers and sellers to transact in one site where information related to pricing and sales is usually available to everyone. Some of the information may be sensitive and can be used to facilitate collusion. Information sharing is

not per se illegal. The Competitor Collaboration Guidelines recognize that “the sharing of information among competitors may be procompetitive and is often reasonably necessary to achieve the procompetitive benefits of certain collaborations.”[38] However, when the sharing of information is related to price, output, costs, strategic planning, current operating and future business plans, it is likely to raise antitrust concerns.[39] Technically, firewalls, password, encryption, as necessary, can be used to prevent B2B participants from exchanging sensitive information. But the information present to B2B participants may be still biased as what we saw in *United States v. Airline Tariff Publishing Co., 1994-2*. If a B2B site is owned by an individual industrial player and the function of this B2B site is to facilitate procurement process, the risk of using sensitive information to conduct collusion is lower. If a B2B site is owned by several industrial players or by a startup whose board members are significant buyers or sellers, the sharing of information is suspicious and the information presented to its market participants may be biased. Thus the structure of ownership can be an indicator to problematic information sharing.

2.3 Exclusive Dealing & Essential Facility

Exclusive dealing is not per se illegal but governed by the rule of reason. For business purposes, a B2B exchange might restrict its members to transact in other exchanges or exclude other competitors to participate in its site. The B2B Report has recognized this issue and listed several key questions:[40]

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[38] *See* 2000 FTC & DOJ “Antitrust Guidelines for Collaborations Among Competitors,” at 15

[39] *Id.*

[40] “Entering the 21st Century: Competition Policy in the World of B2B Electronic Marketplaces”, Part 3 at 20-22

(1) Is the online B2B the only way the product – or adequate substitutes for it – can be bought or sold at comparable prices?

(2) Will effects on rival's costs be deterred or counteracted by entry of alternative marketplaces or by counter-strategies that rivals might pursue?

(3) If the B2B were in fact the only way the product or adequate substitutes could be bought or sold at comparable prices, would denial or limitation of access give the B2B's participants the power to raise or maintain the price of the products they sell above what otherwise likely would prevail?

(4) What are the efficiencies of exclusion? How might exclusion enhance competition?

In the B2B Report, "B2B electronic marketplaces refers to transactions that occur online through the support of the Internet. B2B electronic marketplaces, therefore, are a distinct system of suppliers, distributors, commerce service providers, infrastructure providers and customers that use the Internet for communications and transactions."[41] The definition of B2B electronic marketplaces here fits into that of marketplaces established by independent startups in the first wave of B2B. Thus the key questions raised in the B2B Report are suitable for those independent startups. However, B2Bs should have a broader definition. In the third wave of B2Bs, industrial players establish their own B2B sites and some of the B2Bs are designed to take the place of EDI or integrated into procurement processes. Not only industrial players but also their vendors need to invest in software and infrastructure so as to automate their procurement, logistic systems, etc. Once they have invested in and built up intra-org. and inter-org. business transaction systems, they can

[41] *Id.* Part 1 at 1-2

achieve great efficiencies and reduce costs. Those who are not part of the B2Bs may be naturally excluded and disadvantaged because this type of B2Bs inherently establishes technology and relationship barriers to them and thus they can't enjoy great efficiencies and cost-savings. Essential facility[42] claim may not be convincing here due to that this type of B2Bs gains monopoly power, if any, through efficiencies, and also the entry barriers built up by technology and relationship are not willful.[43] It is expected to see that large industrial players broaden and deepen the functions of their B2Bs so as to secure their leading positions. Under these circumstances, exclusionary practices are natural and inevitable. The government agencies will have to scrutinize the exclusionary practices of these industry-led B2Bs and carefully distinguish between efficiencies and anticomptitive conduct.

Figure 6 summarizes the types of B2Bs that may raise antitrust concerns and the antitrust indicators to which the antitrust agencies should pay attention.

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[42] The "essential facility" theory of Sherman Act violation stems from *United States v. Terminal RR Ass'n, 224 U.S*. Under U.S. case law, if a particular facility or tool is essential to compete in a market, the owner of that essential facility are obligated to make it available on a nondiscriminatory basis.

[43] In *Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S.* the Court explained that "[t]the offense of monopoly under § 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth o

Figure 6: The Types of B2Bs That May Raise Antitrust Concerns

	Joint Purchasing (JP)	Ownership and Information Sharing	Exclusive Dealing & Essential Facility
The types of B2B that may raise antitrust concerns	B2Bs formed by several buyers	B2Bs formed by several industrial players or by a startup whose board members are significant buyers or sellers	Any types of B2Bs
Antitrust indicators	(1) The amount of JP accounts for less than thirty-five percent of the total purchases in the relevant market, and (2) the cost of the purchased products accounts for less than twenty percent of the total revenues from all products or services sold by each competing participant in the JP arrangement.	The structure of the B2B ownership	The power to exclude other B2B participants

VII. Conclusion

Followed by B2C mania, the exponential growth of B2B has attracted a significant portion of attention. Many industrial players have announced or established their own B2B exchanges, e.g, Covisint formed by the top 3 auto manufacturers, GM, Ford, and DaimlerChrysler. The scale and scope of these B2B sites jointly led by big industrial players may generate significant efficiencies and have substantial cost-savings. However, B2Bs may also raise a variety of anticompetitive concerns. The FTC has tried to understand B2B practices and issued a B2B Report, including a description of various facets of B2B marketplaces and the efficiencies they may provide, and outlining a framework for understanding how to answer traditional antitrust questions in the context of

development as a consequence of a superior product, business acumen or *1354 historic accident."

new B2B technology. However, part of this report, reflects inconsistent viewpoints and is lack of complete and systematic analysis. The discrepancy mainly comes from the ignorance of contingent factors, e.g. industry characteristics, business evolution, and market structures. This paper tries to understand B2B marketplaces from a contingent point of view, exploring complexities of industrial purchasing, describing B2B exchange models and the evolution of B2B exchanges, matching B2B exchange models with market structures, and discuss antitrust concerns based on previous analyses.

The findings indicate that the specific nature of industrial purchasing makes it difficult build B2B sites, creating high entry barriers and switching costs. Once the B2B sites are built up with many functions facilitating industrial purchasing, they will enjoy first mover advantage and new B2B entrants will have difficulties to compete with. Also, three factors: economies of scale, economy of networks, and technology acquisition, will drive consolidation among B2B exchanges in the next three years. So some of the B2B sites are expected to dominate markets with which the characteristics of those B2B sites match.

Based on the characteristics of B2Bs, three antitrust concerns are discussed: joint purchasing, ownership and information sharing, and exclusive dealing and essential facility. B2B sites jointly led by several buyers may facilitate joint purchasing and run a higher risk to raise antitrust concerns. The challenge to the Agencies is to ensure that the percentage of the amount of joint purchasing through B2B doesn't go over the legal maximum. B2B sites owned by several industrial players or by an independent startup whose significant buyers or sellers serve in its board or hold significant shares of its equity stakes run a higher risk to share sensitive information and may bias information presented to their market participants. It is suggested that the structure of ownership be an indicator to problematic information sharing. Exclusionary practices are natural and inevitable due to that well-built B2Bs gain

monopoly power, if any, through efficiencies, and naturally exclude new entrants by incumbent investment on technology and relationship. Thus, essential facility claim may not be accepted by the Court. The Agencies will have to scrutinize the exclusionary practices of dominant B2Bs and carefully distinguish between efficiencies and anticomptitive conduct.

The evolution of B2B exchanges indicates that some B2B sites eventually and inherently will dominate markets and have monopoly power because of the nature of industrial purchasing, network effects, and economies of scale. Entry barriers and switching costs are expected to be high when B2B markets are mature. One way to keep B2B marketplaces competitive is to increase the degree of internetworking of marketplaces, which refers to the ability of a buyer or supplier to participate in multiple B2B marketplaces. The internetworking of marketplaces can help prevent B2B sites from locking in market participants and reduce switching costs. For new B2B entrants, they may internetwork with incumbent B2B marketplaces and gain liquidity by providing better products or services. Through internetworking mechanism, competition can be promoted so as to create a sound B2B environment.