INTRODUCTION

Business-to-business (B2B) electronic commerce (e-commerce) is projected to rocket from $406 billion in 2000 to $2.7 trillion by 2004. Over half of that will be conducted through electronic marketplaces (e-marketplaces), the remaining under bilateral arrangements such as Electronic Data Interchange (EDI) and procurement extranets (Forrester Research 2000). Attracted by that huge market potential, nearly 1,800 public e-marketplaces (1,501 independent and 287 industry-sponsored) have been created, most of them between mid-1998 and mid-2000 (Deloitte Research 2001). Countless private e-marketplaces have also been formed more recently. In such crowded market space, very few of them have attracted sufficient trading volume to sustain their operations, let alone make a profit. About 400 e-marketplaces have been closed down or acquired by others (mySupplyChain 2001); many more are expected to follow.

The demise of many e-marketplaces brings into question the viability of their business models. These models represent unique blends of value stream, revenue stream, and logistical stream (Mahadevan 2000). However, Porter (2001) questions their use in business analysis, arguing that generating revenue is a far cry from generating economic value. Amit and Zott (2001) thus see a need to distinguish between revenue models, focusing on specific modes of revenue generation, and business models, referring to the core logic underlying how the firm creates value; that logic is manifested through the firm’s value proposition, or a unique combination of benefits, to the target market (Rayport and Jaworski 2001). In that value creation context, this research paper presents a critical review of independent, industry-sponsored, and private e-marketplaces. It frames their value propositions along the two key dimensions – aggregation and collaboration. This approach produces a two-dimensional matrix that helps conceptually map out distinct pathways to market leadership, and reveals a ‘logical’ fit between particular pathways and specific e-marketplace models. The paper then examines the attractiveness and execution hurdles of each pathway.

ELECTRONIC MARKETPLACES DEFINED

Businesses have been conducting transactions with each other electronically for several decades in the form of EDI. The high cost and technical limitations of EDI confine its adoption to large firms and its applications to automated processing of common documents in routine

Abstract

More than 1000 B2B e-marketplaces, consisting of third-party exchanges, industry-sponsored marketplaces and private trading networks, have been formed in three successive waves. Their value propositions centre around two key dimensions: demand and/or supply aggregation to overcome market fragmentation (through search cost efficiency, price transparency and product-cost savings, market liquidity, network externalities and customer lock-in), and inter-firm collaboration for greater supply chain performance (through streamlined workflows and process-cost savings, customer lock-on, and business process integration). These two value dimensions produce a four-quadrant matrix that conceptually maps out three pathways to market leadership: liquidity early, process integration first, or liquidity and process integration simultaneously. Each of these pathways logically appeals to one of the three e-marketplace models, but is not without serious execution hurdles. The quest for leadership among e-marketplaces along these pathways, particularly their value propositions and execution hurdles, provides valuable insights into the demise of many early market entrants and the challenges facing the rest.

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business transactions (e.g., purchase order, shipment notice and commercial invoice). It requires pre-established relationships between the two trading partners. It can be described as direct (or bilateral) trade, not only for its one-to-one trading relationships, but also for its lack of market intermediation capabilities. As intermediaries, e-marketplaces handle buyer-seller matching (or market discoveries – identifying prospective trading partners, comparing offerings, and negotiating prices), facilitate transactions (e.g., logistics, settlement and trust services), and provide an institutional infrastructure (e.g., regulatory framework for contract compliance and dispute resolution) (Bakos 1998). In their ‘purest’ form, e-marketplaces should have an infinite number of participants. Like most B2B trading systems, however, they resemble online trading communities with a more limited set of buyers and sellers (Segev et al. 1999).

Markets are one of the two mechanisms for coordinating economic activities. The other mechanism is corporate hierarchies in the form of vertical integration. Malone et al. (1987) postulate that markets bring lower product cost but higher coordination cost than hierarchies, and vice versa. In a market, buyers can seek the best prices but incur extra expenses for gathering information, negotiating contracts, and guarding against ‘opportunistic’ trading partners (higher coordination cost). Coordination is information-intensive. Through applications of information technology, e-marketplaces can drastically reduce the search and transaction costs, thus offering both lower product and coordination costs; they become preferable to hierarchies. Empirical evidence lends some support for this electronic market hypothesis in a business-to-consumer (B2C) setting (Daniel and Klimis 1999), but not in a B2B setting (Hess and Kemerer 1994). Either the hypothesis needs more time to come to fruition, or it does not fully capture the phenomenon underlying B2B transactions.

An e-marketplace occupies a virtual space on an electronic network (Malone et al. 1987), an inter-organizational information system – IOS (Bakos 1991), or an Internet-based e-commerce platform (Brooks and Cantrell 2000) that intermediates between multiple sellers and buyers. The term ‘multiple’ indicates fragmentation on either the supply or demand side, or both; otherwise, the few large buyers and sellers can connect directly with each other without a need for market intermediation. Choudhury et al. (1998) characterize an e-marketplace as a multilateral IOS, to distinguish it from a bilateral IOS such as EDI. In short, an e-marketplace is a multi-party e-commerce platform intermediating between business buyers and suppliers.

PROLIFERATION OF ELECTRONIC MARKETPLACES

Chircu and Kauffman (1999) postulate that Internet (or dotcom) ventures enter the market with innovative, technology-based services as new intermediaries in the value chain (Intermediation). Their entries threaten traditional intermediaries, especially those simply processing transactions without adding other values (Disintermediation). That threat triggers brick-and-mortar (BAM) incumbents into adopting e-commerce (Reintermediation). True to this IDR framework, startup dotcoms formed the first wave of e-marketplaces. Funded by venture capital and being independent from both the buyer and seller sides, they function as third-party exchanges (3PXs) that support many-to-many trading relationships. They intend to displace traditional intermediaries by leveraging their superior search and transaction cost efficiency. Some target horizontal markets that serve many industries but specialize in a particular product or service category, typically indirect (or operating) inputs (e.g., FreeMarkets in surplus equipment), or in a customer segment (e.g., Works aggregates purchases from thousands of small- and mid-sized businesses to gain volume discounts from contracted vendors). Other 3PXs target vertical markets that specialize in direct (or manufacturing) inputs for a specific industry (e.g., ChemConnect in chemicals, and Houston Street Exchange in energy).

Initially, most BAMs were unsure whether e-commerce was anything but hype. A few, having had limited participation in 3PXs (e.g., General Motors in FreeMarkets), realized they can bring much more value (i.e., large trading volumes) to these dotcoms than the latter to them (i.e., trading exchanges). So, they have joined force with traditional rivals in their industry to form consortium-based, industry-sponsored marketplaces (ISMs) (e.g., General Motors, Ford and Daimler Chrysler as co-founders of Covisint). Other BAMs, after dismissing the prospect of e-commerce only to witness its rapid growth, quickly join these ISMs. They form the second wave of e-marketplaces. Whereas 3PXs are most attractive in fragmented markets, ISMs tend to emerge at the point of concentration in a supply chain where a few large sellers or buyers can bring substantial volume of business to an ISM (Sawhney and Acer 2000). That point varies from one industry to another – at the OEM level in the automotive industry (e.g., Covisint being founded by the American Big Three automobile producers) but the retail level in consumer packed goods (e.g., World Wide Retail Exchange by leading retail chains). The presence of such players can make an ISM appear one-sided and less attractive to other participants. Mindful of this and antitrust regulations, ISMs have tried to project a neutral market posture, with open access to other players in their industry.

Forming the third wave, right behind ISMs, are private e-marketplaces, also known as private trading networks (PTNs). A PTN is a one-to-many vertical e-marketplace that links a supplier or buyer with its own group of business partners, giving them greater control over the exchange of information and the configuration of business processes to meet specific supply chain requirements. They are designed to reintermediate existing trading arrangements by bringing already functioning business relationships
online. On the surface, a PTN resembles an EDI system or an extranet; in essence, it does not. The latter venues, despite having one-to-many network connectivity, are based on one-to-one business relationships. Designed for disseminating information and conducting one-way transactions, they lack the capability for dynamic, simultaneous interactions involving multiple parties that PTNs provide.

VALUE PROPOSITIONS

Amit and Zott (2001) identify four sets of value being created by e-business: efficiency, complementarities, lock-in and novelty. Search and transaction cost efficiency enables faster and more informed decision-making, wider product and service selection, and greater scale economies through demand and supply aggregation for small buyers and sellers. Complementarities involve bundling some goods and services together to provide more value than offering them separately. Lock-in is attributable to the high switching cost or network externalities that tie customers to particular suppliers. Novelty creates value through innovative ways for structuring transactions, connecting partners, and fostering new markets. Specifically, how do e-marketplaces create value? Bakos (1991) identifies similar values: reduced search cost, significant switching cost, network externalities, and economies of scale and scope. He regards search cost reduction as the single attribute most specific to e-marketplaces. It is the subject of analysis in many studies on e-marketplaces. Other value propositions have not received the same level of attention though they are not necessarily less significant. Overall, they fall along two dimensions: (demand and/or supply) aggregation and (inter-firm) collaboration. Aggregation overcomes market fragmentation, affording suppliers with wider market access, buyers with more choices, and both with price transparency. Collaboration enables market participants to build and deepen their business relationships for the purposes of improving individual business processes and overall supply chain performance.

Value through aggregation

Exchanges of goods and services incur many costs associated with pre-transaction discoveries (e.g., identifying prospective trading partners and gathering price information), known as search costs. In fragmented markets, the search process becomes complex and costly, leading to information asymmetry and resulting in narrower market reach for sellers, limited product choice for buyers, and sub-optimal prices for both. E-marketplaces can drastically reduce search cost, bringing together information from disparate sources (market reach) and in greater depth (information richness), thus giving sellers wider market access and buyers larger a supplier base (Evans and Wurster 1999). They can offer this value cluster through relatively simple aggregation functionalities (e.g., online directories, inventory listings and multi-vendor catalogues) that involve only static pricing (pre-determined prices via catalogues) and may not even support online transaction execution. E-marketplaces without online transactions act as lead generators that help suppliers find potential buyers by listing their inventories, and buyers identify potential suppliers by posting their requests for quotes or proposals (RFQs or RFPs); the two trading partners then complete the exchange offline.

How well an e-marketplace can deliver value through aggregation depends on its ability to build market liquidity by attracting a critical mass of buyers and sellers. Liquidity enables market participants to sell or buy the goods and services at fair market prices within a reasonably short time. The value of an e-marketplace to each user increases with the size of its user base. A liquid e-marketplace looks more attractive to prospective users whose participation will expand its already large user base and further increase its value to all users. This is known as network externalities, by which Shapiro and Varian (1999) show how market adoption and an installed user base influence which players become dominant. Kauffman and Walden (2001) distinguish between direct externalities (greater value by the virtue of network size) and indirect externalities (greater value only through other business process, e.g., price concession to network members). Network externalities also have a lock-in effect. Users need to invest in linking their internal business processes and enterprise systems to the trading platform and applications an e-marketplace supports. That investment represents a business risk because it cannot be readily carried over to another e-marketplace. As the user base grows, this risk diminishes while competing e-marketplaces look less attractive and more risky. Users become locked-in to the market leader and the de facto industry standard (Hax and Wilde III 1999). Lock-in also takes the form of high switching cost – the learning associated with doing business via a specific e-marketplace, i.e., becoming familiar with Website interface, functionalities and trading rules (Smith et al. 1999).

As a value proposition, liquidity is most attractive where market uncertainties are high such as trading in commodities with volatile prices due to unpredictable supply and demand, or in unique products (e.g., excess inventories, perishable products, and one-of-a-kind items) with no ‘standard’ prices. Dynamic trading functionalities (i.e., forward auctions, reverse auctions, and exchanges) become essential. These involve fairly sophisticated applications especially when they incorporate non-price features (e.g., quality, design specifications, and fulfilment requirements).

Value through collaboration

In its simpler form, collaboration seeks process-cost savings through automated transaction and workflow management. B2B transactions involve many repetitive tasks
(e.g., placing orders, tracking shipments and processing invoices). Automation eliminates the costly data-entry duplications, errors and delays that plague manual processing, e.g., a B2B order typically costs $107 and takes 7.3 days through manual processing, but only $30 and two days via Internet-based procurement (Stephens Inc. 1999). Moreover, an e-marketplace is not simply an online version of a traditional flea market with wide-open access. Instead, it needs to be structured such that buyers and sellers can define user profiles, access hierarchies, information filtering criteria, business rules and workflows, so as to effectively manage transactions, track their market activities, prevent unauthorized activities, and protect confidential information. Automated workflow management helps eliminate ‘maverick’ purchases, common in the decentralized purchasing environment for indirect inputs, that typically cost 18–27% above the discount prices from contract vendors (Phillips and Meeker 2000).

E-marketplace participants can benefit from value-added services, including trust (authentication of trading partners, credit ratings and quality inspection), settlement (financing, escrow and dispute resolution), and fulfillment (inventory availability, order status and delivery). These services reduce the risks of trading with unknown partners, provide one-stop convenience, and link market-facing and back-office functions for greater operating efficiency. The key challenge is to decide on which ones to bundle. Complementarities among the bundled services create what Vandermerwe (2000) characterizes as customer lock-on. By locking-on to an e-marketplace, participants select it as their main trading venue. Unlike lock-in where market participants have no other choice but the dominant industry standard, lock-on is the result of their choice being driven by superior value. It is manifested through the longevity of their participation (customer retention), as well as the depth (a larger share of their total trading volume), the breadth (revenue streams from value-added services), and the diversity (opportunities for expanding into adjacent markets) of such participation.

Businesses have been moving away from short-term, price-driven transactions toward long-term, collaborative buyer–supplier relationships that seek not only cost savings but also quality improvement and optimal supply chain performance. An e-marketplace creates greater value by enabling them to move their existing relationships online and integrate business processes across enterprises. In one survey, process efficiency and increased responsiveness rank first and second among the desired results of e-marketplace adoption, ahead of procurement cost savings (Line56 2001). Process integration goes beyond transaction automation to include collaborative planning, forecasting and replenishment (CPFR) for greater visibility into the supply chain; thus reducing forecasting errors, trimming inventories, and improving supply planning and scheduling. It also helps improve highly iterative processes such as product design and development, resulting in shorter time to market. At this level of collaboration, e-marketplaces become a platform for collaborative commerce (c-commerce). Whereas e-commerce focuses on transactions, c-commerce leverages technology ‘to enable a set of complex cross-enterprise business processes allowing entire value chains to share decision-making, workflow, capabilities, and information with each other’ (Deloitte Research 2001). It tends to be industry-specific and require deep domain expertise. It adds the most value in industries where business processes form the core competencies, buyer–supplier relationships are well established, and the supply chain is multi-tiered and complex (e.g., automotive and construction).

PATHWAYS AND HURDLES

The two value dimensions – aggregation and collaboration – form a four-quadrant grid (Figure 1). The lower left quadrant is where e-marketplaces generally get started, with relatively basic levels of aggregation and collaboration. Early entrants, most of them 3PXs, tried to capture first mover advantages. They rushed into the market with only a few basic functionalities, planning to add more later. Many adopted off-the-shelf software; few had the time and money to build unique functionalities that differentiate them from the pack. Nearly half of these e-marketplaces were built at a cost in the $1–5 million range, and another quarter or so in the $5–10 million range, only 2% invested $30 million or more to build (Halford 2000). So, nearly half of them were found incapable of online transaction execution. Among the slight majority offering online transactions, many could only handle static pricing via catalogues; relatively few offered dynamic pricing. A third more of them planned to have forward or reverse auction mechanisms available by 2001, but only an additional 6% planned to add exchange mechanism (Forrester Research 1999). That would leave two-thirds of e-marketplaces incapable of functioning as true exchanges by then. This quadrant is not where e-marketplaces want to be, or should be, in the long term. Network externalities will drive buyers and sellers toward those e-marketplaces successfully attaining liquidity and/or supply chain integration, leaving this quadrant as the Long-Term Failures.

The upper right quadrant, Market Leaders, is where e-marketplaces strive to be but few will get there. There are three possible pathways to reach that quadrant. Each appears well suited for a particular e-marketplace model. None is without hurdles. Since aggregation and collaboration can be complementary to each other, the Market Leader position appears more sustainable than those in the other quadrants. Market participants are more inclined to make the necessary investments for adapting their internal business processes and enterprise systems to the standards set by an e-marketplace (Collaboration) if they see a high level of participation (Aggregation) that can turn its standards into industry standards. Likewise,
Figure 1. Pathways to E-Marketplace Leadership

an e-marketplace is more likely to attain liquidity (Aggregation) if it enables participants to move their existing business relationships online (Collaboration), making it their primary trading venue, not just an occasionally needed purchasing channel. In light of such complementarities, the upper left and lower right quadrants, Transaction and Collaboration Facilitators, may be only transitory positions, except for those e-marketplaces serving niche markets.

Liquidity early

Having no captive users, 3PXs may find the ‘upward’ pathway appealing first attracting a critical mass of users to build an early lead in liquidity, then expanding into collaborative functionalities to cement user loyalty and sustain market leadership position. On the surface, their neutrality appears advantageous in attracting participants from both sides of the market. At a closer look, their value propositions (price transparency and product cost savings) appeal more to buyers than suppliers. The latter, being apprehensive about price competition and margin erosion, are reluctant to participate. Without sufficient supplier participation, buyers may find product cost savings less than expected; with only lackluster buyer enthusiasm, suppliers find 3PXs even less compelling. A ‘chicken-and-egg’ problem is at work. While buyers and suppliers wait for wider participation from the other side, many 3PXs languish. The median trading volume for e-marketplaces (mostly 3PXs) was only $2 million in 1999, but expected to rise to $155 million in 2001 (Forrester Research 1999). The latter figure is probably overoptimistic. Although the actual B2B e-commerce volume held up well to its earlier projection, forecasts for 2001 and after have generally been revised downward in light of a weaker economy and a more realistic view of e-commerce proliferation (Thompson 2001). Even the optimistic figure will be only a tiny fraction of the total trading volume (online and offline) in most industries, which are typically in the tens or hundreds of billions. Liquidity appears to be a long way off for many 3PXs.

Building liquidity entails not only signing up buyers and suppliers but also attracting the bulk of their trading volume. Among firms conducting purchases over the Internet, online purchases amount to less than 10% of their overall B2B volume. Low participation is due largely to the limited functionalities of 3PXs that prevent them from delivering the full benefits of aggregation, let alone collaboration, e.g., only one out of four buyers reports any savings from online procurement (NAPM 2001). Full market functionalities will have to be developed at a time when their primary revenue source transaction commissions is on a sharp decline, from 2–8% of transaction value in 1999 to 0.5–2% in 2000, and very likely to below 50 basis points in 2002. New revenue sources will be needed. Those from value-added services (e.g., credit and payment options, warranty, insurance and logistics) will account for no more than 8–10% of the total revenues of large and mid-sized e-marketplaces by 2005. The bulk of revenues, 40–50% of total, will have to come from collaborative functionalities, and the remaining from transaction commissions, and other services such as consulting, training and software licensing (Boston Consulting Group 2000). Unfortunately, these new revenue sources cannot be tapped without developing collaborative functionalities; yet, these functionalities cannot be developed without the new revenue sources.
Process integration first

For PTNs, the ‘rightward’ pathway – favouring collaboration over aggregation – looks attractive. Process integration, the core of collaboration, is a natural progression from other collaborative efforts (e.g., EDI and vendor managed inventory – VMI) that many BAM participants already have in place. It is as much about reengineering business processes and managing business relationships as it is about technology. By leveraging existing relationships and focusing on a small group of business partners in a one-to-one context (compared to some-to-many for ISMs, and many-to-many for 3PXs), this pathway keeps process integration at a more manageable scale.

The infrastructure and technology for system integration are complex, costly and still evolving. Cisco reportedly has spent $300 million to build its PTN (Spiegel 2001). Currently available collaborative functionalities involve relatively simple mechanisms for users to access real time information on orders and production schedules, to participate in project management, to configure products online and to share product design specifications. It will take two years before these and other leading-edge collaborative functionalities (e.g., multi-tiered CPFR and multi-party VMI) become widely available, up to five years to be used widely by early e-marketplace participants, and longer for smaller lower-tiered suppliers (Boston Consulting Group 2000). Until then, most PTNs will be confined to automating the procurement process, seeking savings from lowering transaction costs, consolidating purchases, and eliminating ‘maverick’ buying. Without sophisticated collaborative functionalities, a PTN will function more like an EDI system or an extranet than a true marketplace.

Liquidity and process integration simultaneously

The ‘diagonal’ pathway, in simultaneous pursuit of liquidity and process integration, appears the most logical for ISMs. With several large industry players among their founders, ISMs should find liquidity much less of a challenge. By itself, however, aggregation (i.e., price transparency and product cost savings) is not the main attraction of ISMs; neither is some basic level of collaboration (i.e., process cost savings through transaction automation). Large founding members can realize much of these savings on their own by leveraging their huge purchase volume and existing EDI systems. It is with industry-wide collaboration to integrate business processes for greater supply chain performance that ISMs can distinguish themselves from 3PXs. Being at the concentration point in the supply chain, ISMs are well placed to facilitate the development of uniform standards for transmitting data, describing products, integrating business processes, and implementing CPFR, as well as to gain wide commitments to a common IT platform.

This pathway is not without hurdles. Some of them simply reflect the infancy of e-marketplaces in general, e.g., difficulty in attracting suppliers (who are concerned about price pressure and margin erosion), premature promises of advanced functionalities, and delays in delivering e-commerce applications (which are still mostly in the design phase), and the cost and complexity of multi-party system integration. Other hurdles are more unique to ISMs. Consortia of leading industry rivals have had a chequered record of success (Sawhey and Acer 2000) attributable to their unwieldy collective decision-making and longer-than-expected rollout period, e.g., Covisint took a year to appoint its CEO. They tend to attract much higher enrolment than participation, e.g., 80% of members of electronic components ISMs have yet to conduct any transactions there (Kearney 2001); many members have apparently joined out of their desire to keep an eye on their rivals and not to be left out.

Twists, turns and diversions

Frustrated by elusive liquidity, some 3PXs have tried to attract major users with equity stakes, even at the risk of compromising their neutral market posture (e.g., SciQuest issued warrants to buyers and sellers of scientific products that made non-binding commitments to trade $5 million or more annually via this exchange), but with little success; large buyers and suppliers feel they can do better with their own PTNs or ISMs. A few 3PXs have partnered with ISMs (e.g., Novopoint in partnership with Transora in consumer packaged goods; and ChemConnect with Elemica in chemicals), making their trading exchange software applications available to the latter in return for access to these partners’ huge liquidity potential. Many have taken a more traditional approach of merging with rivals to combine their trading volumes and to build scale economics, or with BAM intermediaries to gain access to the latter’s offline customer base (e.g., acquisition of Universal Chemical Brokerage, a BAM petrochemical brokers, by ChemConnect). A few 3PXs (e.g., Ventro in the life sciences and medical equipment industries), finding market liquidity elusive, have abandoned their trading exchange operation and are now repositioning themselves as application service providers to other e-marketplace operators, including users wishing to host private e-marketplaces. Most 3PXs, including some leading ones, may find it critical to shift their focus away from simply facilitating transactions, which is becoming a commodity business, toward building niche markets (e.g., Freemarkets, the leading reverse auction operator for many industries, has turned to the harder, but more differentiating, business of contract trading – codifying all elements of a contract, from specifications of the product to performance guarantees).

ISMs and PTNs may not want to go all alone either. Linkages and partnerships with 3PXs enable ISMs to quickly expand their functionalities and to utilize these
partners for indirect material procurement, which is of little strategic importance to ISMs’ successes and can be handled by horizontal e-marketplaces. That would allow these ISMs to focus on direct materials procurement where process integration and collaborative functionalities can greatly improve supply-chain performance. Users attracted by the privacy of PTNs but concerned about the upfront investment and technical complexity of e-marketplace operation can also find 3PXs that provide private e-marketplace functionalities (e.g., NTE, a 3PX in the transportation and logistics industry, offers its customers ‘Individualized or Private Trading Networks’).

CONCLUSION

Value propositions serve as the main focus in analysing the viability of e-marketplaces. Framing these propositions in the aggregation–collaboration context offers a conceptual framework for mapping out three distinct pathways to market leadership – building liquidity early, seeking process integration first, or pursuing liquidity and process integration simultaneously. Each of these pathways logically appeals to one of the three e-marketplace models – 3PXs, PTNs and ISMs, respectively. None is without serious execution hurdles. The quest for leadership among e-marketplaces, specifically their value propositions and execution hurdles, along the three pathways provides insights into the demise of, and the challenges facing, e-marketplaces. Many early market entrants have failed because they simply focus on leveraging search and transaction cost efficiency to aggregate demand and/or supply and to automate price-driven transactions. Designed primarily to disintermediate existing trading arrangements, few of them provide collaborative functionalities to support direct-material procurement where non-price factors, long-term business relationships and process integration are paramount. Future market leaders need not to attract a critical mass of market participants for greater liquidity but also to offer collaborative functionalities as a c-commerce platform. That would allow participants to bring their existing business relationships online, not simply to use e-marketplaces as a new channel for procurement.

References


