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Business-to-Business E-Marketplaces: A Strategic Archetypes Approach

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Abstract

Electronic marketplaces (EMs) are an important empirical phenomenon, because they are theoretically linked to significant economic and business effects. Different types of EMs have been identified; further, some researchers link different EM types with different impacts. Because the effects of EMs may vary with types, classifying and identifying the characteristics of EM types are fundamental to sound research.

Some prior approaches to EM classification have been based on empirical observations, others have been theoretically motivated; each has strengths and limitations. This paper presents a third approach: surfacing strategic archetypes. The strategic archetypes approach has the empirical fidelity associated with the large numbers of attributes considered in the empirical classification approach, but the parsimony of types and the theoretical linkages associated with the theoretical classification approach. The strategic archetypes approach seeks a manageable number of EM configuration types in which the attributes are theoretically linked to each other and to hypothesized outcomes like performance and impacts. The strategic archetypes approach has the potential to inform future theoretical and empirical investigations of electronic marketplaces and to translate research findings into successful recommendations for practice.

1   INTRODUCTION

Electronic marketplaces (EMs) are an important empirical phenomenon, because they are theoretically linked to significant economic and business effects (Bakos 1997; Malone et al. 1987). Different types of EMs have been identified; for example, Wise and Morrison (2000) described several types with different functional foci. Further, some researchers link different EM types with different impacts; for example, Malone et al. (1987) posited three different interconnection effects with different outcomes, and Bakos (1997) discussed different EM ownership structures with different levels of price transparency. Because the effects of EMs may vary with EM types, classifying EMs and identifying the characteristics of EM types are fundamental to sound research on electronic marketplaces.

Some prior approaches to EM classification have been based on empirical observations, others have been theoretically motivated; each has strengths and limitations. This paper presents a third approach—surfacing strategic archetypes—that bridges the empirical and theoretical approaches, capturing their benefits and minimizing their disadvantages. The approach presented in this paper also bridges two bodies of theory: the economics literature on EMs and the business strategy literature on strategic positioning and configurations. The theoretically grounded *and* empirically rich strategic archetypes approach offers benefits in future investigations of EM performance and impacts.

2   PRIOR RESEARCH

Several analysts have attempted to classify EMs according to *empirically observed* attributes. Kaplan and Sawhney (2000), for instance, considered traded product type (direct versus indirect goods), trading activities performed (systematic versus spot sourcing; catalogs, negotiated prices, auctions), and bias (seller-biased, buyer-biased, or neutral) in their classification of EMs. Wise and Morrison (2000) focused on product attributes (complexity versus standardization of product description), product cost, and fragmentation of buyer or supplier base. Lennstrand et al. (2001) highlighted value-added contribution (competition versus cooperation; disintermediation versus facilitation of integration), trading mechanisms (catalogs, auctions, reverse auctions, exchange), sources of revenues (transaction fees, membership fees, etc.), and ownership structure.

The advantage of empirical approaches to classifying EMs is they can capture the complexity and diversity of the phenomenon through examining a large number of attributes. On the downside, empirical classification schemes lack parsimony, the number of types escalating with the number of dimensions. Further, empirical approaches lack strong classification logic, leading to conflicts when EMs are similar on one attribute but different on another or when they exhibit multiple values on a single dimension. The problems of empirical classification approaches are illustrated by Kaplan and Sawhney's attempt to differentiate EMs with catalog mechanisms from those with auction capabilities in contrast to Kambil et al.'s (1999) observation that many empirical e-marketplaces provide "all-in-one" (both catalog and auction) services. Most important, while empirical classification approaches assert that types are different in structure (i.e., attribute values), they have no implied theory of differences in outcomes.

In contrast to the multiple dimensions of empirical approaches, *theoretical classification* approaches use a few constructs to distinguish among EMs and to hypothesize associated effects. For example, Bakos (1997) focused on traded product types and EM ownership and argued that EMs trading in commodity products and owned by buyers were likely to have higher price transparency than those trading in differentiated products and owned by sellers. Choudhury et al. (1998) distinguished among EMs with different activity scopes, hypothesizing that EMs supporting the selection phase of the procurement cycle would affect prices, while those supporting only the identification phase would not. Lee and Clark (1996) differentiated EMs that supported decentralized market structures (direct interactions among buyers and sellers) from those supporting centralized market structures (broker, dealer, or auction platforms); they proposed a link between EM market structure and impacts on industry structure.

The advantages of theoretical classification approaches are parsimony of types and theoretical links between constructs and effects. The disadvantage, according to economist Alvin Roth (2002), is that they do not have clear action implications, because the correspondence between theoretical type and empirical instances is often very low. Roth strongly recommends working iteratively between simple theoretical models and empirical data. This recommendation implies the need for classification schemes that have both theoretical parsimony *and* empirical fidelity. The strategic archetypes approach described below is a way to achieve both.

3   STRATEGIC ARCHETYPES GROUNDED IN STRATEGIC POSITIONING THEORY

The concept of strategic archetype derives from the literature on strategic alignment, where fit between a firm's strategy and its environment is believed to have positive implications for firm performance (Miller 1988; Venkatraman and Prescott 1990; Zajac et al. 2000). A strategic *archetype* is a frequently occurring, named grouping of firms with similar *configurations* of multiple attributes. The strategic archetypes approach employs the *holistic* perspective on alignment recently favored in the strategy literature because the concurrent alignment of numerous attributes is believed more predictive of firm performance than bivariate alignment (fit between pairs of attributes). Firms in each archetype are believed to have the potential for good performance (although some groupings may inherently perform better than others); significant deviations from the archetype are believed to have lower performance.

When strategic archetypes are identified in a purely empirical way, for instance by the statistical technique of cluster analysis, the approach suffers from the limitations described earlier: lack of parsimony, lack of classification logic, no hypothesized links to performance or impacts. These limitations can be addressed by grounding the archetypes theoretically and organizing them around a *thematic* focus (Miller 1996).

In our work, Porter's (1985) *theory of strategic positioning* provides the theoretical grounding and thematic focus of EM archetypes. The theory of strategic positioning is an appropriate theoretical basis for classifying EMs for two reasons. First, the specific constructs of the theory subsume most of the important attributes identified in prior studies of EMs. Second, the theory does two things a good classification scheme should do: it provides a basis for parsimoniously differentiating types, and it hypothesizes a link between types and outcomes.

3.1 Constructs and Attributes

The three key concepts of strategic positioning theory are *value proposition*, *product-market focus*, and *value activities*. Value proposition is the set of benefits a firm offers its customers. Product-market focus comprises the products a firm chooses to trade in and the customer segments it targets. Value activities are the things a firm does to deliver the value proposition to the target product-market segments.

When we reviewed the attributes used in prior studies to classify EMs, we found that most of them fall neatly into these three categories. For example, the three types of electronic interconnection effects—communication, brokerage, and integration—described by Malone et al. (1987) represent benefits offered to EM customers. The brokerage *value proposition* increases market efficiency by bringing together many buyers and sellers and lowering transaction costs. Increasingly, EMs offer the integration value proposition by providing a common collaboration platform for buyer organizations and their selected suppliers (Raisch 2001).

Similarly, prior studies have addressed EMs' product-market focus. Of key concern has been the nature of the *products* traded on the EM: commodity or differentiated products (Bakos 1997; Wise and Morrison 2000), manufacturing or operating inputs (Kaplan and Sawhney 2000), and high or low cost products (Wise and Morrison 2000). Also of interest has been the *market* characteristic of buyer and/or seller fragmentation (Kaplan and Sawhney 2000; Lennstrand et al. 2001): EMs are believed more likely to succeed in fragmented markets, where the potential to reduce transaction costs is greater.

Finally, EMs differ in the extent to which they perform value activities that support buyers' and sellers' search, selection, logistics facilitation, and settlement (Bakos 1998; Choudhury et al. 1998; Lee and Clark 1996). Within the search and selection phases, EMs also differ in the amount of price and product information provided (Bakos 1991, 1997) and the pricing mechanisms supported (Kaplan and Sawhney 2000; Lennstrand et al. 2001).

Table 1 maps the constructs used in prior studies of EM classification to the three strategic positioning constructs.

Two theoretically important attributes do not map well into the Porter framework—*EM ownership* and EM support for different types of *market structure*. Ownership (by buyers, sellers, or intermediaries) is likely to bias an EM's value proposition, product-market focus, and value activities in favor of its owner's interests (Bakos 1997; Lennstrand et al. 2001). An EM's underlying market structure (centralized or decentralized) will influence the way that it performs its value activities (Lee and Clark 1996). We include both EM ownership and market structure as key attributes in our framework.

3.2 Link Between Types and Outcomes

The second reason that strategic positioning theory provides an appropriate basis for classifying EMs is that it performs well the two functions of a good classification scheme: It supports the parsimonious differentiation of types, and it posits a relationship between types and outcomes. The central idea in strategic positioning theory is that fit among value proposition, product-market focus, and value activities is required for superior performance (Porter 1996). Lack of alignment results in poor performance, and tight alignment, once achieved, is difficult for competitors to mimic. In most industries, it is possible to identify a small number of alignment types, each with the potential for high performance (although performance may vary from type to type).

Putting together the strategic archetypes approach with strategic positioning theory allows us to construct ideal types of EMs around theoretically important dimensions. For example, taking the value proposition construct and operationalizing it in terms of Malone et al.'s three interconnection effects (communication, brokerage, and integration) suggests ideal types that we might label *infomediary*, *matchmaker*, and *facilitator*. For example, EMs of the matchmaker archetype would offer a value proposition of assessing many partners and selecting a "best fit"; they would be associated with a fragmented market and the value activities of support for search, selection, and settlement activities; they would be intermediary or buyer owned and have a centralized market structure.

**Table 1. E-Market Attributes from Prior Studies Mapped to
Strategic Positioning Theory Constructs**

EM Attributes	Prior Studies	Strategic Positioning Constructs		
		Value Proposition	Product-Market	Value Activities
Communication/Brokerage/ Integration Aggregation/Integration Competition/Collaboration	Malone et al. 1987 Kambil et al. 1999 Davenport et al. 2001 Lennstrand et al. 2001	✓		
Support interaction with few or many suppliers	Choudhury 1997	✓		
Commodity/Differentiated	Bakos 1997 Wise and Morrison 2000		✓	
Manufacturing/Operating Input	Kaplan and Sahwney 2000		✓	
High/Low Cost Product	Wise and Morrisoin 2000		✓	
Buyer/seller fragmented/ consolidated	Bakos 1997 Wise and Morrison 2000		✓	
Scope of activities/functions Search, price discovery, trade settlement, identification, selection, execution Matching facilitation, institutional infrastructure	Lee and Clark, 1996 Choudhury et al. 1998 Bakos 1998			✓
Price/product information	Bakos 1997			✓
Price mechanisms Catalog/auction/bid-ask	Kaplan and Sawhney 2000 Lennstrand et al. 2001			✓

The point here is not that these are the only EM archetypes. In fact, hybrid archetypes are not only likely but also more interesting, and much work remains to identify the configuration of attributes associated with each archetype. Instead, the point is that archetypes, while manageable in number, are *ideal type* configurations of multiple, theoretically important, interrelated dimensions. Each archetype is hypothesized to have certain outcomes (e.g., level of performance or nature of impacts) relative to other archetypes. And deviations of a specific empirical EM from its closest archetype are hypothesized to reduce performance. Thus, the archetypes approach supports empirical research on EMs and offers a basis for prescription.

4 EMPIRICAL ILLUSTRATION

To illustrate the potential usefulness of the archetypes approach, we analyzed two successful EMs in the same broad industry sector: electronic components. Choosing EMs in the same sector facilitates valid comparisons, while choosing successful EMs enables exploration of links between configurations and performance.

The two EMs we analyzed are Global Sources and Converge. **Global Sources** (GS) was founded by Merle Hinrich in 1971 as Asian Sources, a trade directory publishing company based in Hong Kong. GS's niche was providing information on a multitude of small Asian suppliers to Western buyers. In the 1980s, GS began offering separate trade publications for electronics, hardware, timepieces, and fashion accessories, with electronics being a major area of business. By the early 1990s, the company had become the largest trade publisher in Asia, with 1,300 staff in 29 countries and a particularly strong presence in China. GS broadened its product offerings to include CD-ROM versions of its directories and Chinese language trade and executive magazines.

In 1995, Global Sources launched its e-marketplace, with the aim of bringing online its base of Asian suppliers and providing online access to large Western buyers. GS helps its suppliers list their products online, and its main source of revenue is fees for hosting storefronts and product listings. In 1999, GS was listed on NASDAQ; by the end of 2001, GS had products listed in seven

broad sectors (including electronics, computers, telecommunication, general merchandise, and fashion). Since its inception, the Global Sources e-marketplace has won many awards including Asiaweek's Asia Best B2B Website (2000) and Forbes' 200 Best Small Companies (2001).

Converge was founded in May 2000 by a consortium of 15 companies[1] in the electronics sector, most of which are OEM buyers of electronic components. Converge's initial stated objective was to "deliver supply chain efficiencies" and "reduce founders' annual cost of direct materials by 5 to 10 percent over the next three years."

Converge built its capabilities and offerings through a series of acquisitions and alliances. In January 2001, Converge acquired NECX, a global electronics exchange with $1 billion in annual trades, from VerticalNet. This acquisition strengthened Converge's brokerage capabilities as NECX had years of sourcing expertise and a network of suppliers and buyers from the United States, Asia, and Europe. Converge's technical infrastructure was also strengthened by a software licensing and services agreement to use VerticalNet's Solutions platform as the backbone of Converge's trading operations. In June 2001, the company announced a comprehensive end-to-end suite of supply chain and collaborative services. However, the integration solution business was subsequently left to VerticalNet to pursue. In 2001, Converge was rated the top trading exchange in the electronics industry by AMR Research.

4.1 Approach

Data for the study were obtained from company Websites, annual reports, analyst reports and press articles. The strategic positioning theory constructs of value proposition, product-market focus, and value activities and the two additional constructs of EM ownership and market structure were operationalized as shown in Table 2, drawing on both the practitioner and academic literature on EMs.

A few points bear note. While we operationalized *value proposition* in terms of the three interconnection effects posited by Malone et al. (1987), it is likely that many EMs will have a mix of these three value propositions, as suggested by Kambil et al.'s (1999) "all-in-one markets." However, it is unlikely that all three will have equal focus in any given EM, since there may be fundamental trade-offs among them (Davenport et al. 2001): The brokerage value proposition works best with many buyers and sellers, whereas the integration value proposition is better suited to the situation where there are fewer trading partners with prior established relationships.

Key attributes that characterize *product segments* are the number of industry segments (called *verticals*) in which an e-marketplace participates and the nature of the products traded: commodity, standardized, or differentiated; manufacturing or operating inputs; high or low cost (Bakos 1997; Kaplan and Sawhney 2000; Wise and Morrison 2000). The *market segments* targeted by an EM are characterized by the following attributes: size and geographic location of buyers and sellers (Porter 1985), degree of buyer and seller fragmentation (Bakos 1997; Kaplan and Sawhney 2000; Wise and Morrison 2000).

With regard to *value activities*, we synthesized prior studies (Bakos 1998; Choudhury et al. 1998; Lee and Clark 1996) and derived the broad value activity categories of search, selection, execution, and collaboration facilitation. We drew on the practice-oriented literature (Weller 2000) to identify the detailed activities within these broad categories. Some clarification is required to distinguish between the search and selection activities. Search is the identification of the set of sellers or buyers who might be a good fit with the buyer's/seller's needs. To enable search, the EM usually performs a content provision role, as well as providing for online search. Selection is the narrowing down from multiple alternatives to the best-fit offer. To enable selection, the EM needs to provide support for price discovery (e.g., via request for quote, negotiation, auction), comparison across multiple alternatives on attributes (price and product characteristics), and/or recommendation of a specific offer to buy/sell from the EM.

We analyzed the two selected electronics industry EMs according to the attributes within these three constructs as well as ownership and market structure. Table 3 summarizes the attribute profile of the two EMs.

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[1]The founder companies were AND, Agilent, Canon, Compaq, Gateway, Hitachi, HP, Maxtor, NEC, Samsung, SCI Systems, Solectron, Synnex, Tatung, and Western Digital.

Table 2. Operationalizing E-Marketplace Attributes

Construct	Key Attributes (Porter 1985)	Applied to e-Marketplaces	Operationalization in This Study
Value Proposition	• Benefits offered to customers • Uniqueness of value proposition important for a strong strategic position	• Communication, brokerage, and integration benefits (Malone et al. 1987) • Mix of all three types of benefits possible • Benefits to buyers and to sellers may differ • Uniqueness may arise from mix of types of benefits, as well as the extent of the benefits	Website statements about benefits to buyers and to sellers in three categories: 1. **Communication**—rapid transmission of and access to large amounts of information at low cost 2. **Brokerage**—access to large numbers of buyers and suppliers, consideration of many alternatives and efficient selection of best alternative. 3. **Integration**—tight coupling of buyer and supplier processes enabling lower inventory levels, greater responsiveness

Product-Market Focus	• Segmentation based on product and customer characteristics
	• Choice of being broadly targeted (many segments) or narrowly focused
	• Product characteristics include size, price features, performance, etc.
	• Customer characteristics include industry, buyer strategy, technology sophistication, size, ownership, geography, etc.
		• E-Marketplaces can be focused narrowly on few industries or broadly on multiple industries (Porter 1985)
		• Products can be commodity/ standardized, or differentiated; manufacturing or operating input; high or low cost (Bakos 1997; Kaplan and Sawhney 2000; Wise and Morrison 2000)
		• Customers include both e-marketplace buyers *and* suppliers
		• Buyers/sellers can be geographically dispersed or focused (Porter 1985)
		• Buyers/sellers can be large and few, or small and many (Wise and Morrison 2000)
			Website statements and observed capabilities for:
			1. **Product segments**—
			  • Verticals that the e-marketplace is in.
			  • Whether the products traded are commodity/standardized, (e.g., oil, agricultural products, standard electronic components, etc.) or differentiated (eg. fashion items, healthcare services, etc.)
			  • Manufacturing or operating input
			  • High cost ($'000 per unit) or low cost (few dollars or cents per unit)
			2. **Buyer and seller segments**
			  • Geographic location of buyers and sellers by region—North America, Asia, Europe, Middle East
			  • Size of buyer and seller firms (e.g., large multinational corporations, small and medium enterprises)

Value Activities	• Activities performed by the firm in order to provide value to customers • Distinctive value activities contribute to strong strategic position • Distinctiveness comes from different value activities or from doing value activities differently	• Value activities offered by e-marketplace can be broadly classified as: search, selection, execution (post-sale transaction automation and logistics), and collaboration facilitation (Bakos 1998; Choudhury et al. 1998; Lee and Clark 1996)	Observed website capabilities for: 1. **Content provision and Search**— aggregated catalogs and sellers' public storefronts, capabilities for supplier/ product search, RFP/RFQ, industry news, discussion forums 2. **Selection** — auction/reverse auction, online negotiation, online comparison of offers, EM recommendation 3. **Post-sale transaction automation**— online issuing of P.O., invoicing, payment 4. **Logistical facilitation**—warehousing, transportation, quality assurance 5. **Collaboration facilitation**—private sellers' extranets with pricing personalized to individual customers, inventory visibility, design sharing 6. **Other**—e.g., software licensing, consulting
Ownership		• Owned by buyer, supplier or intermediary (Bakos 1997; Lennstrand et al. 2001)	• **Ownership**—Buyers are OEMs and contract manufacturers; suppliers are component manufacturers; Intermediaries are traditional distributors, brokers, dealers, and new dot.com players

Market Structure		• Decentralized or centralized (Lee and Clark 1996)	• **Decentralized**—buyers and sellers contact each other directly
			• **Centralized**
			  – EM as broker/dealer: Buyers and sellers send requests to buy or sell to EM, and EM performs search and selection, and responds with offer to sell or buy
			  – EM as auction platform: EM provides processes, rules and platform for buyer and sellers to trade via auction

Figure 3. Attributes of Global Sources and Converge

Construct	Global Sources Attributes	Converge Attributes
Value Proposition	**Communication**: • "Helping to make global merchandise trade more efficient and effective through integrated cataloging, messaging" • "provider of information to electronics engineers, exporters and executives throughout the Asian region." • "allows buyers to efficiently search for goods, either by product or geographic areas" • "present suppliers' product and company information in a consistent, easily searchable manner" • Suppliers get "direct access to more than 259,000 buyers worldwide including a wide selection from the worlds largest buyers" • "Highly promoted to buyers worldwide" in "print media, on the internet and at trade shows" • "enabler of global merchandize trade"	**Communication**: • " generates and publishes a robust set of market information tools and services to help you make more informed purchasing, sourcing and selling services." **Brokerage**: • "Reach a broad supply based to uncover buying opportunities," "Reach a broad global customer base to uncover new selling opportunities" • "systematically and confidentially matches the supply and demand records of more than 6500 Converge trading partners globally" • "Site Market Analyst…sits at customer site,..proactively seeking open market opportunities" • "leverage the expertise of Converge Market Specialists" • "The overall size of the Converge auction network combined with the guaranteed prominence and credibility of each auction participants, enables auction to close at optimal market prices." • "Strategic sourcing and selling events…to enable buyer and sellers to find and award long-term contractual agreements…proven to get 15-20% reductions for manufacturers and distributors"
Product-Market Focus	**Product verticals** • 27 industry verticals in seven sectors • Standard (electronics, computers, telecommunications) and differentiated (general merchandise, fashion) products **For electronics vertical** • Manufacturing input • Low cost **Buyers and sellers** • Mostly Asian (90%) suppliers and global buyers • Smaller supplier firms, and large buyer firms.	**Product verticals** • Focused on electronics components vertical only. • Standardized products • Manufacturing input • Low cost **Buyers and sellers** • Global buyers and suppliers in the United States, Asia, and Europe • Large buyer firms, large and smaller supplier firms
Value Activities	**Content Provision and Search:** • Listing of products and suppliers • Search by product, supplier, country • New product alerts for buyers • Supplier marketing storefronts supported by Private Supplier Catalog content management tool • Daily news reports, industry news, product surveys, special reports, shipping schedules, inspection services, links to travel guide **Selection**: • Request for Information (RFI) **Post-Sale Transaction Automation**: • Private Buyer Catalog tool for large buyers to maintain personalized product and supplier information • Tools to support management of procurement document flow across departments in multiple languages and currencies **Logistical Facilitation:** None **Collaboration Support**: None **Other Activities:** • Services for suppliers to photograph products, set up catalogs, etc. • Website software • Monthly print trade magazines and CD ROMs • Trade shows	**Content Provision and Search** • Master part reference database of 7 million unique manufacturer part numbers • Pricing trends (spot market pricing), industry news, trading floor news, commodity insight reports, newsletter • View results of past auctions **Selection:** • Spot and systematic sourcing • RFQ/RFS with automated hourly matching against new inventory and demand listings • On-site market analyst using expertise to with Converge traders and market intelligence team to source or sell. • Forward and reverse auctions, either open or closed, with/without anonymity of originator • Forward to reverse auctions for long-term contracts **Post-sale Transaction Automation**: None **Logistical Facilitation**: • Escrow • Product inspection by Converge quality control • Removing buyer/seller identification from product packaging • Converge shipment tracking capabilities • Network of proven third party logistics providers **Collaboration Support:** None **Other Activities:** None

Construct	Global Sources Attributes	Converge Attributes
Ownership	**Intermediary** Publicly listed, with significant shareholding by founder, Merle Henrich	**Buyer** Owned by a consortium of 15 founding organizations, majority of whom are OEMs
Market Structure	**Decentralized** Buyers and sellers contact each other directly to discover prices, additional product information, and to negotiate terms	**Centralized** Buyers and sellers interactions are mediated by Converge

In the sections below, we explore Global Sources and Converge using three different classification approaches: empirical, theoretical, and strategic archetypes. In each instance, we employ the approach for the two key functions of classification: differentiating between the EMs and explaining their outcomes.

4.2 Empirical Classification Approach

The empirical classification approach differentiates Global Sources and Converge by comparing these two EMs on a large number of attributes, paying particular attention to those identified in prior empirical studies, such as types of goods traded, buyer and seller fragmentation, trading activities, value contribution, ownership, and bias. The problem immediately arises that the EMs are similar on some attributes (both trade in standard electronic components such as integrated circuits, memory chips, resistors, etc.; both serve global buyers; both offer buyers and sellers access to information), but different on other attributes (Converge also offers extensive support for the selection phase, whereas GS does not; GS trades in products other than electronics, whereas Converge does not; GS is owned by an intermediary and supports a decentralized market structure, whereas Converge is owned by buyers and supports a centralized market structure). Because these two EMs exhibit both similarities and dissimilarities, they could instantiate the same type or different types. Because the empirical approach does not privilege one attribute over another or posit relationships among them, this approach gives us little guidance for deciding whether these EMs are basically similar or different.

Furthermore, the empirical classification approach sheds no light on the performance outcomes of these two EMs. Both have been successful in surviving the dot.com downturn and winning many awards in the same industry. The empirical approach would look for explanations of success in idiosyncratic attributes and histories, attributing Global Sources' success to its leveraging of catalog publishing expertise and relationships with Asian suppliers and Western buyers, while attributing Converge's success to its large buyer-founders' ability to generate transaction volume quickly and its acquisition of NECX's sophisticated technological capabilities for brokerage and logistical facilitation.

In short, the pure empirical approach to classifying EMs is empirically rich, but entirely idiographic. Even if large numbers of EMs were analyzed using statistical clustering techniques, the ability to draw meaningful conclusions using this approach would be limited by the absence of theoretical foundation.

4.3 Theoretical Classification Approach

Most theoretical approaches to differentiating EMs have drawn on the economics literature. These approaches contain both a simple classification rule and a hypothesized outcome. For example, Malone et al.'s seminal application of transaction cost economics to EMs asserted that electronic interconnection effects of IT would precipitate a shift from hierarchical to market governance mechanisms. Lee and Clark elaborated Malone et al.'s hypothesis: The specific nature of the market structure (centralized through the EM versus direct interaction between buyer and seller) would determine a shift in industry structure.

Applying these concepts, we find that Global Sources's interconnection effect type is exclusively communication, supporting direct interactions (unmediated by GS) between Asian suppliers and global buyers. By contrast, Converge enables extensive brokerage effects and centralizes buyer and seller interactions. The predictions that GS would have little effect on market structure and prices and that Converge could have substantial impacts are intuitively plausible.

Another theoretical approach to differentiating EMs is Bakos's (1997) argument that product type and EM ownership would influence the degree of price transparency in the EM. Low price transparency should be associated with differentiated products and seller-owned or seller-biased EMs.

Applying these ideas, we find that Global Sources and Converge trade in similar, standard, and highly specifiable electronics components (e.g., voltage, electrical resistance, thickness, type of coating, etc.). This attribute does not differentiate them. However, they do differ in ownership and bias. The prediction that the independently owned but supplier biased Global Sources would have lower price transparency than the buyer owned Converge is easily derived, and the facts of these two cases do support the prediction. No suppliers list their prices in the Global Sources' online catalogs, and that EM offers little support for obtaining and comparing price information. Converge does provide prices for items that suppliers are offering for sale, and price information is also available in its auction process.

In short, theoretical approaches to EM classification shed light by linking EM types to hypothesized outcomes. But they do so at the expense of empirical fidelity. For example, they ignore the interesting and potentially relevant facts that Converge pursued an integration value proposition before shifting to brokerage and that Global Sources trades in seven broad industry sectors, not just electronics components. Furthermore, by focusing on only one or two simple (often dichotomous) EM attributes, they run the risk that they cannot be applied empirically. For example, some all-in-one marketplaces (Kambil et al. 1999) support both brokerage and integration despite the speculation that these activities may be incompatible (Davenport et al. 2001). How should these EMs be classified for purposes of testing predictions about EM impacts? Are they more like brokerage EMs, more like integration EMs, or in a class by themselves? And, what impacts can be hypothesized? The pure theoretical approach loses power in the face of messy empirical reality.

4.4 Strategic Archetypes Classification Approach

As economist Roth (2002) recommended, a useful third approach is to work back and forth between theory and data. The strategic archetypes approach to EM classification has the empirical fidelity associated with the large numbers of attributes considered in the empirical classification approach, but the parsimony of types and the theoretical linkages associated with the theoretical classification approach. The strategic archetypes approach seeks a manageable number of EM configuration types in which the attributes are theoretically linked to each other (e.g., strategic fit) and to hypothesized outcomes like performance (e.g., success or profitability) and impacts (e.g., price transparency, price pressure, or change in industry structure).

Applying the strategic archetypes approach, it is clear that Global Sources and Converge have very different EM configurations, each with a high degree of strategic fit. The hypothesis that their success in surviving the dot.com shakeouts is due in part to within-type strategic alignment is intuitively appealing. So is the notion that they may be specific instances of two general EM archetypes. Below we briefly describe the alignment among the attributes comprising the GS and Converge configurations.

4.4.1 Global Sources' Configuration

In Global Sources, the value proposition, product-market focus, value activities, ownership, and market structure are all closely linked in easily understandable ways. The GS value proposition is predominantly one of *communication*. It emphasizes the benefit of presenting "suppliers' product and company *information* in a consistent and easily searchable manner" (Global Source 2001). The target market is large global buyers (manufacturing and retail) and smaller Asian suppliers. The company's product scope is broad, covering verticals in seven sectors, primarily electronics and general merchandise; the products are standardized and low cost. GS's major value activities are *content provision and simple search capabilities* aimed at identifying potential suppliers of particular products. Global Sources is independently owned, but somewhat seller-biased. Its primary source of revenue is supplier "showroom" hosting fees. The company excels in helping its many small suppliers get their product information online and in providing attractive standardized presentation formats (but not standardized product descriptions). The company has several hundred sales representatives who visit suppliers and, with the aid of digital cameras and standard templates on laptops, help suppliers create and upload product and company information.

Global Sources makes some claims to brokerage benefits in that it offers "direct access to 337,380 buyers worldwide, including a wide selection of the world's largest buyers" (Global Source 2002). However, it does not help buyers evaluate suppliers or products or select the best match with their needs. Product searches do not return price information. To obtain price information, buyers must e-mail requests for information to the suppliers. Suppliers' responses come via phone, fax, e-mail and snail mail, not directly through GS, and the buyer has to manage and compare the information from these multiple sources without help from GS capabilities. Thus, GS's claim to brokerage benefits is hard to credit. Instead, GS embodies a decentralized market structure, operating like an online trade fair at which prospective buyers and sellers can meet each other, but the company leaves it up to its customers to conduct their own transactions. The company's online operations are more consistent with a communications than with a brokerage value proposition, and they are highly congruent with its ongoing print catalog publishing activities.

All-in-all, Global Sources' configuration can be likened to a seller-biased *infomediary* archetype, where the value proposition is more efficient communication of information among fragmented buyers and sellers of low cost standardized products, the value activities are content provision/management and simple search capabilities, and the market structure is decentralized. The company's supplier hosting activities, revenue model, and absence of price information are consistent with a slight bias toward sellers.

4.4.2   Converge's Configuration

Like Global Sources, Converge's value proposition, product-market focus, value activities, ownership, and market structure are all highly congruent, but they are substantively very different from those of GS. Converge clearly promotes a value proposition of brokerage—the matching of supply and demand in a single vertical segment (electronics components), where the products traded are relatively standardized, purchased for manufacturing input, and low cost. Converge targets medium to large global buyers and sellers and supports them with activities designed to support product search, selection, and purchase. Converge search capabilities provide a listing of components that meet the search criteria. Unlike GS, price information is sometimes provided, product information is very brief, and supplier information is often not provided for reasons of anonymity.

Converge provides extensive support for the product selection phase. For example, if the buyer's online search is unsatisfactory, the buyer can submit a request for quotation. The Converge system performs an hourly matching with sellers' requests to sell, and Converge's sourcing specialists will also contact their suppliers and submit an online quote to the buyers. Buyers can submit counteroffers, triggering dynamic negotiations. Converge also organizes auctions (forward or reverse, open or closed, with or without anonymity of originator). Finally, Converge provides logistics services: The company has its own warehouses, where it conducts quality inspections, removes supplier identification on products sold, and tracks shipment status. Unlike Global Sources, Converge serves as a true intermediary in the purchase and sale of goods: it centralizes market relationships that may have previously been decentralized. Owned by a consortium of buyers, Converge is biased toward their interests, and provides much greater price transparency than does GS. Interestingly, Converge abandoned its earlier value proposition of post-sale transaction coordination and other types of business integration to concentrate on issues of higher priority to its buyer owners: increased price transparency, reduced product prices, and the reduction of risk associated with excess inventory.

All in all, Converge's configuration is consistent with that of a buyer-biased *matchmaker* archetype, where the value proposition is efficient and effective matching of buyer and seller offers, the value activities are focused on selection, market structure is centralized, and the owner is a buyers' consortium. The level of sourcing expertise required to add value in the product selection process suggests that the matchmaker archetype is likely confined to single industry verticals, where fragmentation exists on the supply side, the demand side, or both.

This brief illustration shows the power of the strategic archetypes classification approach to reduce rich empirical details into a manageable set of simple, but not simplistic, theoretically and empirically grounded types. Both successful in the same industry space, Converge and Global Sources achieve their success in very different ways. Each, however, exhibits considerable internal coherence among a range of theoretically relevant attributes. The hypothesis that deviations from EM archetypes like infomediary and matchmaker might be associated with lower levels of success is appealing.

5   IMPLICATIONS FOR RESEARCH AND PRACTICE

Strategic archetypes have considerable potential to inform future investigations of electronic marketplaces. Theoretically, a more complete set of archetypes grounded in both theory and data may stimulate more extensive and systematic theory building about EM performance and impacts. The value of such theory building is likely to be greatest in the case of hybrids, where impacts may stem from interactions that are more than the sum of the parts.

Empirically, the ability to conduct valid tests of propositions about EM performance and impacts depends on good classification of specific EMs. Assume, for the moment, that the population of EMs contains many, like Global Sources, of an infomediary archetype, with minimal price transparency. The failure to differentiate EMs with and without price transparency would be a major threat to the validity of an empirical study with the objective of testing the relationship between EMs and lower prices, based on the incorrect theoretical assumption that all EMs afford greater price transparency. By contrast, careful classification of EMs for such a study would reveal or reject hypothesized relationships convincingly.

The strategic archetypes approach can also help translate theoretical and empirical results into useful prescriptions for practice. In a phrase, strategic archetypes comprise a set of rules translating theoretical statements into empirical observations and vice versa.

Much work remains to flesh out the strategic archetypes approach to EM classification. There are undoubtedly different theoretical frameworks to be brought to bear and/or additional attributes to be considered. Network externalities, political economy, and asymmetry of benefits for buyers and suppliers are just a few that should be investigated. Large sample studies and use of statistical analysis techniques to surface or confirm archetypes are also logical next steps. Nevertheless, we are confident that the basic approach outlined here of identifying ideal types grounded in both theory and data and of classifying empirical EMs according to archetypes will prove a sound strategy for future research on the outcomes and impacts of electronic marketplaces.

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