

Introduction to the Special Issue: Electronic Commerce and Market Transformation

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The interorganizational systems prominently discussed in the 1980s under the banner of “strategic information systems” often used proprietary protocols to lock in customers by creating switching costs. Many of these original systems have evolved into nonproprietary architectures that enable multiple sellers and buyers to transact on a common platform. For instance, American Airline’s SABRE system, once a source of monopolistic rents for the provider, is now an independent profit center that facilitates an unbiased electronic market [1].

The rationale behind these consistent patterns can be found in the increased industry competition, reduced technology costs, and greater interconnectivity of technology that result from open architectures. If we complement these trends with the recent explosion of the almost ubiquitous infrastructures of the Internet, it is possible to argue for distributed market structures, less intermediation, and consequently more effective markets.

While hard evidence of a definitive trend toward markets is limited at best, some longitudinal observations indicate the survival of monopolistic positions despite a significant infusion of information technology [2, 3]. However, no study has had the luxury of observing patterns of evolution on the Internet, a technology that involves a quantum leap in reach, openness, and impact [5, 7]. The gestation period for the evolution of pure market structures is unknown, whereas the arguments for these structures remain strong and reasonable.

This Special Issue examines the transformation of market structures through electronic commerce technologies. Each in its own way, the papers in the issue challenge the proposition that open architectures will necessarily (and seamlessly) lead to market

governance, as opposed to hierarchies, where free information flow would cause all advantages to accrue to the buyer.

Below, we briefly discuss the classical arguments for market governance and for hierarchical governance, followed by the arguments that epitomize the papers represented in this issue.

Market Governance

Market forms of governance are often said to be the best outcome for buyers because consumer surplus, which is the difference between the competitive price and the price a consumer would be willing to pay, accrues to the buyer through competition. The extent to which this occurs is representative of market effectiveness.

Arguments for market effectiveness can be found in transaction cost economics. For instance, if information technology (IT) reduces the costs to buyers involved in marketplace transactions, namely, searching for suppliers, information seeking, and negotiating contracts, then it becomes difficult for suppliers to generate monopolistic rents based on these costs. Also, information reduces uncertainty regarding the value of complex products, thereby reducing the ability of suppliers to capitalize on information asymmetry and so generate higher rents. Similarly, information products can easily be customized at minimal costs, resulting in better value for the consumer and more effective markets. Finally, disintermediation (elimination of middlemen) is often cited as a direct benefit to consumers because a profit-taking entity is removed from the value chain.

It is a well-known principle of economic theory that in a competitive market with efficient, free, and complete flow of information, sellers receive no return beyond a fair return on the capital resources employed [6]. Opportunistic behavior is reduced because buyer and seller each understands the value of the product as perceived by the other. In summary, conventional wisdom and economic theory suggest that the use of IT reduces market imperfections, facilitates more outsourcing (market governance), and allows more players to compete in cyberspace, all contributing to more effective markets.

Hierarchical Governance

While the proprietary architectures described above may have necessitated hierarchical governance and switching costs, they are more difficult to sustain in today's era of ubiquitous and open networks. Some firms, however, have established tight integration with value chain participants in order to establish long-term partnerships (e.g., with a reliable supplier) and to reduce operational, product, and transactional uncertainty. Such relationships create value for participants and usually lead to relationship-specific investments. While it is very difficult to gauge the competitive return on such investments, it is generally assumed that they generate a fair market return over the long run.

Inhibition of Pure Structures

The analysis of the forms of governance described above implies that E-commerce initiatives are transforming markets into static structures corresponding to conventional markets or hierarchies. It also implies that these forms offer credible benefits to the buyer in the form of more integrated markets, seamless connections, free flow of information, lower switching costs, disintermediation, and, ultimately, better price or performance tradeoffs.

The papers in this issue collectively challenge these implications. While they are disparate in form and content, they are subsumed under the general theme that market transformation through open architectures will not follow an imminent trend (as suggested by Malone et al. [4]) but, instead, can be characterized by flexibility, risk, and contingencies. The six papers in this issue are presented in Figure 1 from left to right. They capture the following five tenets:

1. There is opportunity for flexible governance.
2. Let's not pronounce the death of the intermediary.
3. Free flow of information does not mean that all information will freely flow.
4. More effective markets could work for the supplier too.
5. The right connections may not be that easy.

There Is Opportunity for Flexible Governance

The first two papers describe two new forms of an electronic marketplace. Kambil, Nunes, and Wilson use the term “all-in-one market” to describe the combination of multiple trading mechanisms on a common platform. This market form challenges the static view of governance and represents opportunities to adapt exchange governance depending on supplier and buyer needs. Doing so allows the benefits of both integration (hierarchical governance) and brokerage (market governance) in the short run, without sacrificing efficiency, due to well-defined trading processes on a common platform. Watson and McKeown describe a similar phenomenon, focusing on the case of Manheim Auctions, the world’s largest automobile auction company. By conducting dealer auctions and allowing dealers to purchase through a sales system, Manheim provides the flexibility of different forms of governance. Both papers describe how such systems are creating inherent advantages and lowering the risk for all the players involved.

Let’s Not Pronounce the Death of the Intermediary

Disintermediation has been described as the removal of intermediaries because of the ease with which they can be bypassed on electronic platforms. The outcomes, it is argued, will make marketing channels more efficient, ultimately benefiting the consumer. Three papers address this issue, all suggesting that the disintermediation hypothesis may need reevaluation. Jin and Robey describe “cybermediation,” or electronic intermediaries, which is becoming prominent in today’s E-commerce environment. By examining institutional theory, social exchange theory, social network theory, and theories of organizational knowledge, the paper explains the presence of cybermediaries. Using multiple theoretical perspectives, it adds richness to the conventional thinking espoused by transaction cost economics.

Kambil, Nunes, and Wilson also discuss the new and evolving role of intermediaries in all-in-one markets. They describe market-maker roles that create value by increasing transaction variety, efficiency, and access, and by establishing trust between buyers and sellers. Watson and McKeown describe Manheim as a flexible intermediary that may sustain its position because of its ability to handle complex information and physical flows that cannot easily be replicated.

Collectively the above papers make it necessary to rethink the new and evolving roles of intermediaries in E-commerce.

More Effective Markets Could Work for the Supplier Too

It would be erroneous to presume that open architectures facilitate lower costs of search, product comparison, and transactions for the buyer—the advantages of which inevitably go to the buyer. Two papers address this myth with a few caveats. The first, by Gallagher and Wang, examines the role of network externalities in E-commerce. These externalities suggest that suppliers can capitalize on a large customer base, particularly for IT products that become more valuable to consumers as the base expands. The prevalence of free software distribution on the Web epitomizes the need for the software distributor to build and capitalize on the externalities. The paper uses time-series data to determine the impact of network externalities on prices in the Web-server markets. The authors find that externalities have an effect on price even in markets with open standards, and even after the entry of a free product provider. However, in markets where free goods dominate, positive externality was not found. The results demonstrate the importance of network externality effects, and suggest that suppliers can leverage them to the detriment of consumers.

The next paper, by Grover, Ramanlal, and Segars, describes the connection of markets through E-commerce technology, and challenges the notion that they would necessarily be integrated in a manner that benefits consumers. Information, selectively applied, can represent two sides of the same coin, meaning that it can either clarify or distort perceptions. The latter possibility is often not considered. Presenting securities markets as an analog, the authors argue that such contingencies as the comparative size of markets and the proportion of wholesalers in the market lead to market integration or fragmentation due to the profit-maximizing objective of each market. Fragmentation of markets in an era of ubiquitous open networks cannot be in the best interest of buyers.

Both papers give cause to recognize that there may be price premiums on products on the Web that are not based on free and open competition.

Free Flow of Information Does Not Mean All Information Will Freely Flow

Potential market makers are currently consolidating disparate markets of E-commerce into large “portals,” such as go.com, snap.com, family.com, and Yahoo.com. While

portals provide market participants with a consistent, secure, and reliable experience, it is unclear whether the connections among them necessarily imply that all information will flow freely. The issue is one of balance between access and control. Access is empowered by Internet service providers, Web browsers, search engines, and computers. Control, however, is achieved when suppliers accumulate profiles of customers to facilitate target marketing but, at the same time, reveal only selected information about their products so as to impede competition. Grover, Ramanlal, and Segars argue that the latter of these two factors will play a critical role in determining the balance of power between buyers and sellers, and whether government intervention is needed to ensure competitive markets. To explore how such forces may shape the structure of E-commerce markets, the authors study the mechanics of U.S. securities markets. They argue that any mechanism used to shape markets must be consistent with the objectives of the market in order to be successful. Therefore, if a market is compelled to reveal information, the usefulness of the revealed information is likely to be low if revelation is not consistent with the market's objectives (e.g., the NYSE). Likewise, information transparency is likely to be high if integration is consistent with market objectives. Buyers and sellers must consider this potential dynamic when attempting to assess pricing information within and between markets.

In other words, a connection between markets is a necessary but not a sufficient condition for integrated market structures.

The Right Connections May Not Be That Easy

As described above, the Internet does not preclude the possibility of a variety of relationships between buyers and sellers. However, the establishment of these relationships is not devoid of risk, and involves far more than simple connection to an open platform. Riggins and Mukhopadhyay discuss the adoption and implementation risks facing initiators of dyadic relationships. Adoption risks occur when suppliers do not join a buyer's network due to negative externalities or to the lower economic benefit resulting from the presence of a great number of suppliers on the network. Implementation occurs when partners do not implement the system (or integrate it into their operations) in a manner that benefits the initiator. The authors discuss strategies for managing these risks, ultimately recommending the creation of a knowledge network involving a consortium of trading partners.

Initiators of linkages on the Internet must recognize that linkages are not seamless and involve adoption and implementation risks. These risks must be managed through formal planning and evaluation.

Overall, we believe that the papers in this Special Issue offer an interesting mix of views on the implications of E-commerce for market transformation. We are pleased with our modest contribution in bringing these different perspectives together within the unified theme of Figure 1. If anything, the work represented here suggests that we are in for a ride in the E-commerce arena as we search for an elusive equilibratory state of knowledge and understanding. The resulting market structures will be the ongoing outcome of a complex of myriad strategic, political, organizational, social, and economic considerations.

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