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December 2007

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Recommended Citation

Weber, Bruce and van Heck, Eric, "Electronic Markets: Theory and Evidence from 20 Years of Research" (2007). *ICIS 2007 Proceedings*. 34.
<http://aisel.aisnet.org/icis2007/34>

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ELECTRONIC MARKETS: THEORY AND EVIDENCE FROM 20 YEARS OF RESEARCH

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Abstract

Twenty years ago the Communications of the ACM published "Electronic markets and electronic hierarchies" by Tom Malone, JoAnne Yates, and Bob Benjamin. It has become the most cited article in the Information Systems field with 424 citations in the ISI Web of Science index and 1,472 in Google Scholar. The paper articulated the electronic markets hypothesis (EMH), which predicted that IT cost-capability improvements would drive organizations away from vertically integrated structures and would lead to unbiased online markets with many suppliers. The panel will examine the contributions of the EMH to IT-focused organizational studies. Panelists will debate the EMH as a theory in relation to others for explaining electronic market phenomena. Empirical data and its fit with the EMH will also be debated. Are research developments in electronic markets consistent with the 1987 forecasts? We will conclude on the issue of how an enhanced and more powerful theory of electronic markets might be developed in the coming years.

Keywords: Electronic markets, electronic markets hypothesis, computer-based markets, vertical integration, organizational structure, transactions cost economics, hierarchies, outsourcing, make-buy decisions

Introduction

The paper “Electronic Markets and Electronic Hierarchies.” by Tom Malone, JoAnne Yates, and Bob Benjamin appeared in the Communications of the ACM in June 1987. Their seminal paper is the most cited article in the Information Systems field with 424 citations in the ISI Web of Science index and 1,472 citations according to Google Scholar.

Malone, Yates, and Benjamin drew on the institutional economics literature and transaction cost economics, which develop justifications for the existence and size of business firms. Institutional economics theory has provided testable predictions of organizational changes that would arise from technology advances. For instance, Coase (1937) posited that “*Changes like the telephone and the telegraph, which tend to reduce the cost of organizing spatially, will tend to increase the size of the firm. All changes which improve managerial technique will tend to increase the size of the firm.*” Malone et al.’s reasoning followed even more closely the notions of transaction cost economics, developed by Oliver Williamson (1975) and others. TCE justified firms’ size and use of vertical hierarchies as responses to asset specificity and the risk of opportunism in transacting with external suppliers.

In the spirit of prior work, but reaching different conclusions, Malone, Yates, and Benjamin propose that information technology, by reducing the costs of coordination, will lead to *greater use of markets and outsourcing, and a shift away from vertical hierarchies* in business organizations. In fact, smaller firms are predicted.

A key implication of their theory was that more economic activity would be coordinated across firm boundaries, and less within firms. Although a period of transition to more market-based transacting and contracting is required, the authors predicted sweeping changes in the ways organizations identify, choose, and maintain relationships with vendors and trading partners. Under conditions of high asset specificity and complex product descriptions, the paper predicts an evolutionary path towards tighter coupling between adjacent steps in the value-added chain.

The empirical evidence, however, is mixed. Some forms of electronic markets (e.g., TopCoder, eLance) and trends such as third-party business process outsourcing embody the Malone et al. predictions. However, in the past three decades, many firms have become more vertically integrated, not less. Today, many buyer-vendor relationships are tight, committed partnerships that do not resemble IT-enabled “spot markets.”

Other contradictory data points exist. Numerous thriving financial and B2C/C2C exchanges (e.g., Nasdaq and eBay) reflect the “electronic brokerage effect”, but the recent past shows a long list of B2B flameouts and failed attempts at market automation. Among the most notable are the high-profile failures of Covisint, OptiMark, and the Vidifleur Dutch flower auctions. The 1987 work also forecasts that IT will “... *drive almost all electronic markets toward being unbiased channels for products from many suppliers. (p. 492)*”. However, single supplier online marketplaces have survived, and online markets without some bias are rare.

Panel Discussion

The panelists are researchers that have published theoretical and empirical papers on electronic markets. We consistently find that IT’s most visible and significant impacts have come from computerized markets and IT-led work coordination. Yet, the panelists have contrasting views of how IT innovations have

altered markets and the use of markets, and whether IT lowers the extent of vertical integration. The panel is organized around two debates focusing on the major conjectures in Malone-Yates-Benjamin's paper.

Debate 1 – THEORY

The Electronic Markets Hypothesis (EMH) argues that by reducing the costs of coordination, information technology will lead to an overall shift toward proportionally more use of markets: "*the result of reducing coordination costs without changing anything else should be an increase in the proportion of economic activity coordinated by markets.*" (p. 489)".

In the first debate Tom Malone and Yannis Bakos will examine the theory proposed in the Electronic Markets paper. They will consider its explanatory power and assess how complete the theoretical argument is twenty years later. The audience will be invited to react and the debaters will respond.

Debate 2 - EMPIRICAL EVIDENCE

In the second debate Robert Benjamin will argue that the "more use of markets" and even more use of "virtual and integrated chains / less vertical hierarchies" is supported by the data. Rolf Wigand will provide arguments and empirical evidence against, and provide evidence of vertical integration and its continued economic rationale. The audience will be invited again to react and the debaters will respond.

FUTURE RESEARCH TOPICS

The panel will conclude by describing how an enhanced theory of electronic markets might be developed, and what empirical tests would be most valuable in the next 20 years. Panelists will identify the most promising research topics and approaches for research that will advance knowledge of electronic markets in the next 20 years. The "top three" research topics for the future will be provided by each panelists, and the audience will be polled for their reaction to the proposed topics.

References

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