Chapter II

Information Transparency Hypothesis: Economic Implications of Information Transparency in Electronic Markets

Kevin Zhu
University of California at Irvine, USA

Abstract

This chapter explores the private and social desirability of information transparency of a business-to-business (B2B) electronic market that provides an online platform for information transmission. The abundance of transaction data available on the Internet tends to make information more transparent in B2B electronic markets. In such a transparent environment, it becomes easier for firms to obtain information that may allow them to infer their rivals’ costs than in a traditional, opaque market. How then does this benefit firms participating in the B2B exchanges? To what extent does information transparency affect consumers and the social welfare in a broader sense? Focusing on the informational effects,
this study explores firms’ incentives to join a B2B exchange by developing a game-theoretic model under asymmetric information. We then examine its effect on expected profits, consumer surplus, and social welfare. Our results challenge the “information transparency hypothesis” (that is, open sharing of information in electronic markets is beneficial to all participating firms). In contrast to the popular belief, we show that information transparency could be a double-edged sword. Although its overall effect on social welfare is positive, its private desirability is deeply divided between producers and consumers, and even among producers themselves.

Motivation

Despite the controversies surrounding B2B online exchanges, the Internet-based electronic marketplaces are considered to have the potential to reduce transaction costs, add product and pricing transparency, generate market liquidity, and facilitate bidding by a broad spectrum of potential suppliers in a standardized platform (Mullaney, 2003). Here we define a B2B marketplace as an online platform that creates a trading community linked by the Internet and provides the mechanism for B2B interactions using industry-wide data standard and computer systems. Online B2B exchanges allegedly streamline information flow in supply chains (Lee & Whang, 2000) and make the information more widely available (Agrawal & Pak, 2002). The re-balance of information asymmetry is an important motivation for establishing B2B exchanges (Hoffman, Keedy & Roberts, 2002). Yet, given these multiple benefits, why is it that B2B exchanges have not been widely adopted? Why are suppliers still reluctant to join a high-profile exchange such as Covisint (Koch, 2002)? B2B exchanges indeed seem to improve information transparency, but is information transparency a benefit or a threat? It has been a popular belief that open sharing of information in electronic markets is beneficial to all participating firms, which we term as the “information transparency hypothesis.” One of the objectives of our chapter is to scrutinize these kinds of claims by economic analysis.

Information technology (IT) has in general improved the flow of information (Zhu, 1999). B2B electronic exchanges in particular provide an online platform through which information is gathered, compiled, displayed, and transmitted.
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