Chapter XIII

The Game of Internet B2B

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ABSTRACT

Game theory accepts the expected utility hypothesis and reduces roles to the “informed” and the “uninformed” player in order to facilitate the process of constructing mathematical models. When quality is known to the seller, but not to the buyer, private markets can be modeled as a screening game, and public exchanges as a signaling game. In a private market, the buyer moves first by revealing acceptable quality. In a public exchange, the seller moves first by publicizing product information. Adoption of the technology will ultimately depend on perception of the game and payoffs relative to risks. Price competition is a significant negative externality, and opportunistic representations a real danger. When search costs are low, scope for differentiation limited, and information about quality is incomplete or imperfect, the conditions for a lemon’s market are fulfilled. A focus on commodities, global reach, and building a positive brand image for Internet business-to-business (B2B) in general should prove effective.
INTRODUCTION

Recently, the public and private sector in ASEAN have taken the initiative in encouraging the development of Internet B2Bs. For example, the E-ASEAN framework has been set up to improve Internet penetration and develop a B2B e-commerce community for ASEAN’s small and medium enterprises (SME) (Legard, 2000). FreeMarkets and the US-ASEAN business council have also formed strategic alliances to facilitate the growth of Internet B2B in ASEAN (FreeMarkets, 2001).

Numerous electronic markets are being formed worldwide; more than 750 were in existence at the beginning of the year 2000 (Seller Beware, 2000). However, AMR Research found that not even 1% of 600 B2B portals had reached the overall feasible trading volume in the business (The Container Case, 2000), and IDC reported that of the approximately 1000 B2B public exchanges launched between early 2000 and mid-2001, only about 100 are handling any genuine transactions (“Time to rebuild,” 2001).

In this chapter, game theory and social theory inform the discussion of technology adoption decisions in general, and B2B electronic commerce in particular. Technology adoption is a risky proposition, even when it is limited to a firm’s internal processes. It demands a collective decision to exchange one set of expertise for another, which changes the social context of work. E-commerce technologies reach beyond the bounds of the firm, extending the impact of process re-engineering. Adoption will ultimately depend on perception of the risks and payoffs, which is the realm of game theory. Modeling B2B e-commerce as games of asymmetric information offers insight into these perceptions, and the strategies of the players.

Turban, Lee, King, and Chung (2000) provide a succinct taxonomy of business models for B2B electronic commerce. “Intermediary-oriented marketplace” describes a World-Wide Web (WWW) site that acts as a marketing channel for products that are of interest to businesses rather than consumers, operated by a third party that does not produce or use the products in question. The “seller-oriented marketplace” is similar, except it is focused on the products of a single vendor. The “buyer-oriented marketplace” features facilities for bidding on RFQs, and are often run over closed networks or open by invitation only (pp. 204-206).

Here, the terms “electronic market” and “Internet B2B” will be used to refer to all three of these. “Public exchange” and “portal” include both intermediary-oriented and supplier-oriented marketplaces, while “private market” refers to the buyer-oriented marketplace model. The intention is to gloss over the wide range of possible business models in favor of uncovering common motivations for participation.
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