

Digital economics and the e-business dilemma

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The e-business environment is placing growing emphasis on the digitalization of product and service offerings, creating a set of economic conditions that differ from those characterized by physical products. Suppliers need to compete not only on overall quality but also on “information age strategies” that can prevent them from falling into a competitive trap where they cannot recover their costs. Versioning, confounding, networking, and pricing are needed to compete effectively, but these strategies often give rise to paradoxes from the buyer’s perspective. The thinking manager can use the guidelines offered here to manage their e-business offerings more effectively.

The past few years have seen a number of debates over whether e-business requires new or different thinking about business and strategy. Regardless of the various views, the reality is that contemporary information technologies (ITs) are facilitating rapid digitalization, storage, and transfer of product and service experiences. This will not abate. So a productive exercise is to examine business strategy by looking at the economic impacts of digitalization. Here we try to take a step back and reexamine the dynamics of e-business and its potential impact on the economy from fundamental and enduring economic principles.

Our aim is to provide managers of enterprises in this digital age with guidance on key factors that will have a controlling effect on the likely evolutionary path of e-business. Moreover, these controlling factors will affect the balance of power between market participants, specifically, suppliers and entrepreneurs on the one hand and consumers on the other. We conjecture that the evolutionary path and the balance of power are intimately linked and will result in a precarious economic balancing act—precarious in the sense of generating huge benefits for the economy as a whole, but with the potential to initiate large swings in the division of those benefits between buyers and suppliers. As such, managers of companies that digitalize their offerings or use today’s Internet and other networks for business have a compelling interest to comprehend the new economic reality and leverage it to their respective advantage. The failure to do so can have dramatic negative consequences for the complacent party.

Framing the problem

The pervasiveness of commerce on global, ubiquitous, and standardized networks is rapidly changing the fundamental nature of market structures and the manner in which buyers and suppliers interact. The most apparent observable effect is the reduction in coordination costs. This includes improved efficiency in the buyer’s ability to search products, compare features, negotiate prices, and conduct transactions. If we consider the economics of

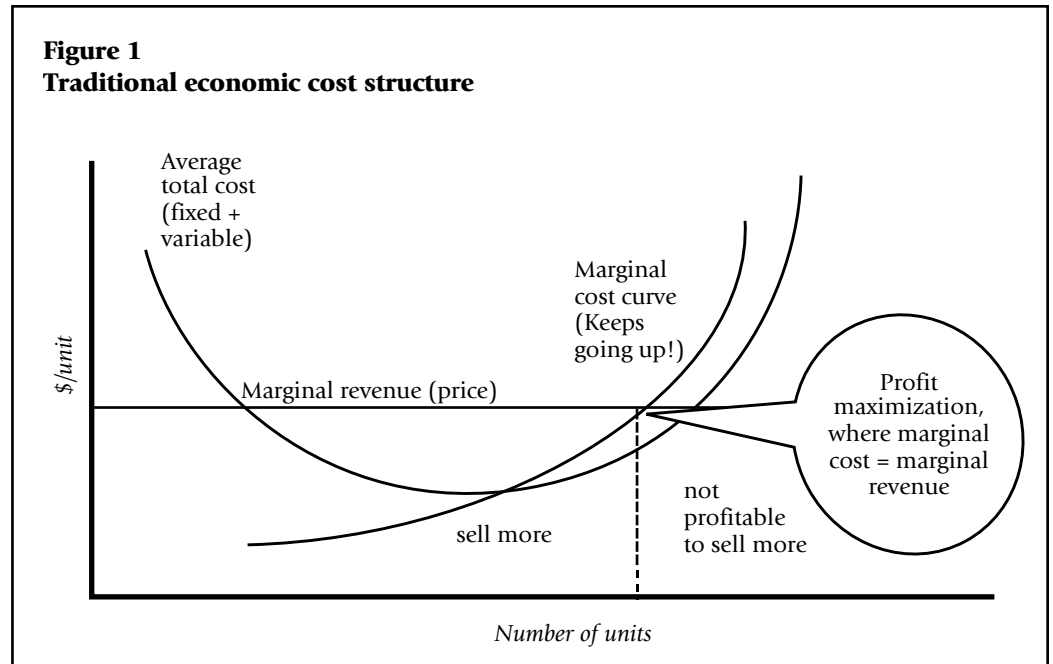
coordination costs, it can be argued that as these costs decline, the ability of buyers to shop and switch suppliers in a competitive market is enhanced. We can also argue that increased commoditization of products through the provision and processing of significant amounts of information makes it easier for buyers to compare even traditionally complex products like automobiles, computers, and medical services on the Net, thereby simplifying them and forcing comparison and competition. Thus, market effectiveness is enhanced for complex products as well.

Advances in IT that facilitate this move to more competitive markets does not bode well for suppliers. Under such an evolutionary process, it would appear that the vast majority of gains from technological advances accrue to buyers. However, by focusing on the demand side of the e-business equation alone, we fail to recognize that there are opportunities for suppliers as well. Specifically, for products and services that have an increasingly large information (digital) component, suppliers can follow strategies that build monopolistic rather than competitive relationships with buyers. Indeed, if suppliers fail to adopt such strategies, given the economics of these global, ubiquitous, and standardized networks, their businesses will almost certainly fail.

A tutorial on the economics of digital information production costs

How can suppliers compete in an environment that appears to afford buyers considerable advantage? Gaming is an integral part of the supplier's survival strategy, so we frame our arguments for these survival strategies within the context of the economics of information in a digital economy. Subtle aspects of the economics of digits can have far-reaching implications for market structures and balance of power between market entities.

Traditional economic assumptions of the theory of the firm draw a distinction between fixed costs (which are independent of the firm's output) and variable costs



(which depend on the quantity produced). Fixed costs typically represent investment in plant and equipment as well as research and development. For information products, this includes significant investment in developing prototypes, establishing standards, and building a customer base. Variable costs typically cover raw materials and labor expenses and are determined largely by the marginal quantity produced. For information products, this includes the cost of replicating digital data and computer code as well as the means of delivering this digitized information to the end user.

The importance of this distinction between fixed and variable costs is that under traditional economic assumptions, fixed costs are presumed sunk and are therefore irrelevant for production decisions, which are then governed entirely by variable costs. In contrast, for information products, the relative importance of fixed and variable costs is reversed. We argue that it is fixed rather than variable costs that will influence corporate business strategies. The following discussion clarifies the issue.

A key assumption in traditional economic theory is that marginal costs rise with the number of units produced. This argument is founded on the "law of variable proportions," which says that if (plant) capacity is fixed, then beyond some point, doubling of all other inputs will lead to a less than doubling of output. It's like having three lawnmowers to a football field. More than three people will not improve the output; in fact, they might get in each other's way. And coordinating their use of just three mowers is not worth the cost. In other words, the marginal cost of producing one additional unit of output will rise. For instance, as a company that makes widgets grows, it will increasingly use its fixed resources. Initially, this expansion

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