

Chapter 12

Strategy to Regulate Online Knowledge Market: An Analytical Approach to Pricing

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ABSTRACT

This chapter studies different levels of pricing strategies for an online knowledge market, where consumers ask and experts answer questions to make knowledge transactions. Consumers optimally price their questions to obtain answers and a firm manages the online knowledge market by determining the optimal price allocation to experts. This research identifies two types of consumers, spin-off and mainstream, depending on whether additional utilities will be derived from the market. In addition, we investigate how the firm can use minimal and maximal posting prices to regulate the knowledge market.

INTRODUCTION

Internet technologies have revolutionized the ways firms do business and the shopping behaviors of consumers. Firms launch electronic storefronts to advertise their products and attract consumers to shop online. The proliferation of electronic intermediaries make online shopping significantly easy because online shopping can save time and transportation costs as well as provide customers additional benefits such as product reviews, comparison of similar products, best price search, and other advantages which are difficult to obtain when they shop in local stores.

Recent years have also witnessed the steady growth of online knowledge market specializing in various domain knowledge and pricing systems. There are various online knowledge markets available in the economy. For example, Intota Expert Knowledge Services (intota.com) specialize in science and engineering, materials science, industry and technology, and business question answering. Kasamba (kasamba.com) has experts in a field whom customers contact directly with their questions and a bid price. Allexperts (allexperts.com) offers confidential services and uses direct email to experts for customers' questions. SwapSmarts (swapsmarts.com) allows users to choose prices

DOI: 10.4018/978-1-60566-910-6.ch012

for their posted questions. Uclue (uclue.com), following the prior business model of Google Answers, is the online knowledge market place where potential buyers and sellers can meet to transact electronically. In contrast to the traditional transactions of physical goods, buyers set their prices for the “goods”, the knowledge, they want to purchase and sellers choose from available offers from buyers to make transactions. At Uclue, customers post their questions and set a price between \$10 and \$400. Experts hired by Uclue browse all the posted questions and decide whether or not to answer the questions based on their own valuations. A question can only be answered by one expert and once the answer is complete, 75% of the price for the question will go to the expert and the other 25% will remain with Uclue for its maintenance fee. These business practices provide excellent examples for research on online knowledge markets.

Given the growing prevalence of online knowledge markets, it is naturally interesting to understand the working mechanisms supporting online knowledge markets. This chapter investigates different levels of pricing strategies for an online knowledge market. First, we analyze a consumer’s pricing strategy and identify two types of consumers on the knowledge market: *spin-off* and *mainstream* consumers, based on whether additional utilities are derived from the knowledge market. Second, we study the reasons of specifying minimal and maximal posting prices for an online knowledge market; the firm may be able to eliminate some spin-off consumers by designating a minimal posting price and increase its profit by mandating a maximal posting price. Third, we explore the optimal pricing strategy for experts, i.e., the proportion allocated to experts, by comparing different effects on market structure, transaction price, and the probability of questions being answered when the allocation proportion changes.

The chapter proceeds as follows. Next section reviews relevant literature from the perspectives on

knowledge market. The third section outlines an analytical model of online knowledge markets. The fourth section details our analysis and discussion and the last section concludes the chapter.

PRIOR LITERATURE

In this section, we review prior literature related with our research. Beginning with the literature review on knowledge market in organizations, we then continue with the relevant literature on electronic market and online knowledge market. Finally, we differentiate our study with prior research.

The principle of knowledge market has been recently applied to facilitate knowledge transfer within organizations, which has gained growing attentions from researchers. Davenport and Prusak (1998) illustrate the concept of internal knowledge market within organizations and propose to employ the necessary IT support and the indispensable incentives to build an effective internal knowledge market for knowledge transfer. Following the initial idea of knowledge market within an organization, Ba, Stallaert, and Whinston (2001) demonstrate that knowledge components can be optimally traded with a Grove-Clarke like mechanism within different bundles in an internal organization market so that a firm can optimally choose the knowledge bundles for investment. Desouza, Awazu, Yamakawa, and Umezawa (2005) develop a mathematical analytics to show the viability of the market mechanism for knowledge management in organizations. Mueller, Spiliopoulou, and Lenz (2002) formally consider the electronic marketplace as an approach to sharing knowledge assets and investigate the characteristics of knowledge as tradable goods on the e-marketplace within two types of frameworks: the pricing system and the quality evaluation method. Drawing from the lessons from mini-cases, Desouza and Awazu (2003) define the necessary components of an internal

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