Chapter X
Competition and the Winner’s Curse in B2B Reverse Auctions

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ABSTRACT
This chapter studies the negative effects of the Winner’s Curse, a phenomenon found commonly in auctions. We define the idea of a Winner’s Curse and specify the types of auctions in which this could be prevalent. We look at the data provided by a major multinational corporation on online procurement auctions conducted by them. We specify the effect that this Winner’s Curse would have on the success of procurement auctions. Using this theoretical background, we analyze the given data and show that in some cases, the presence of the Winner’s Curse and the subsequent need for bidders to show caution in the presence of the Winner’s Curse could lead to lower auction success for the firm. We specify the particular cases where this is true. This leads to managerial implications for firms wishing to conduct procurement auctions online, and we spell them out. We also provide some examples of how firms might try and lower the negative effects of the Winner’s Curse. Finally we provide some future research ideas that may be pursued and some additional readings for the curious reader.

INTRODUCTION
Auctions have been widely used as an important purchasing tool in industrial, governmental, and personal consumption environments dating back to 500 B.C. (Milgrom & Weber, 1982). Before the Internet and online revolution, auctions would be conducted mainly through the RFQ (request
for quotes) route in governmental and industrial contexts, and through auction houses in the context of personal consumption products. However, with the advent of the Internet for commercial use in approximately 1993, the breadth of online auction activity has increased tremendously. According to Lucking-Reiley (2000), the earliest Internet auction based on Internet news groups appeared in 1993. The first Internet auction Web sites, OnSale and eBay, appeared in 1995. Right now, there are many thousands of Web sites that are dedicated to online auctions. The variety of goods being auctioned online includes books, stamps, coins, computers, cars, airline tickets, hotel rooms, machine tools, handyman services, and many others. In this chapter, we will look at several procurement auctions conducted online by a reputed multinational firm, and analyze the existence of an interesting characteristic of auctions called the Winner’s Curse in these auctions. The rest of this chapter is organized as follows: In Section 2, we provide a brief introduction of various auction types and mechanisms. In Section 3 we provide a theoretical background to the idea of the Winner’s Curse, explain the presence of the Winner’s Curse under private and common value auctions, and give an example of an auction where the Winner’s Curse could affect the outcome. In Section 4 we review the literature. In Section 5 we briefly describe the dataset that we use for our models. In Section 6 we discuss the various models that we use and look at all our results. Section 7 provides some managerial implications that we believe would be useful to practitioners. We conclude our chapter with some ideas of further research.

**CLASSIFICATION OF AUCTION TYPES AND AUCTION MECHANISMS**

In general, there are four basic types of auction mechanisms. An English auction is an ascending bid auction, in which individual bids are generally transparent. The winner is the highest bid that is also equal to the price paid. An example would be the bidding for goods on eBay. A first-price sealed-bid auction is a secret auction with individuals making a single bid that is sealed. The winner is the highest bidder, with the price also being the highest bid. An example would be the Chicago Wine Company auctions. A second-price sealed-bid auction, also called a Vickrey auction, is similar to a first-price auction in that it is a single secret bid. However, the winning bidder is the one with the highest bid, but the winner pays a price equal to the second highest bid. In a Dutch auction, the seller lowers the price from a starting price. The winner is the first bidder to pay the current price.

In general, auctions can be classified as a C2C or a consumer to consumer auction, B2C or a business to consumer auction, a C2B or a consumer to business auction, and a B2B or a business to business auction, depending on the types of agents involved in the transactions. For online auctions, we can classify auction types by characterizing them as forward or reverse auctions, a forward auction being one with one seller and many buyers, while a reverse auction is one with many sellers and one buyer.

In this chapter, we look at the process of online auctions, or what is sometimes called as Web-based dynamic pricing mechanisms. The most popular category of online auctions is business to consumer (B2C) forward auctions. However in recent times business to business (B2B) forward and reverse auctions have become a significant model for businesses to auction their products and services to each other. Typically, when a business wants to sell its product through an auction to different buyers they use a forward auction, while if they are looking to buy products and services from their suppliers they are looking to operate a reverse auction. Within the realm of supply management, electronic (or online) reverse auctions, or eRAs, have become a widespread and
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