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Case Article

Bidding on Priceline

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Priceline.com is an Internet-based corporation offering services (airline tickets, hotel rooms, rental cars, and home mortgages) with the option for consumers to dictate prices. Priceline's original success stemmed from its innovative "name your price" approach whereby consumers bid for service with Priceline to find a willing provider at the bid price. Consumers are only allowed to bid once on a service so they must be strategic in bidding—bid too low and potentially lose out on service, bid too high and overpay for the service. While they are only allowed to bid once per product, bidders can slightly alter their service and potentially re-bid in an effort to get new information (from failed attempts)—such alterations may include a different class of hotel (3 star versus 4), a flight with 1 stop versus direct, or (as in the case below) a different class (economy versus luxury) of rental car.

The case is designed to cover a broad range of topics while introducing students to auctions. The case teaches strategic bidding while covering probability, decision analysis, and integer programming. The case has had great success at the undergraduate and MBA levels as students enjoy the setting, are familiar with Priceline, and immediately see an everyday use of management science.

Key words: auctions; pricing

History: Received: April 2007; accepted: July 2008. This paper was with the authors 4 months for 2 revisions.

We provide a short introduction to the case, Bidding on Priceline, addressing how it has been used and some of the pedagogical outcomes of the case. The case has been used successfully in very diverse settings, such as in introductory and elective operations management, and management science courses for MBAs and business undergrads. If the case is used towards the end of a course in which students have been exposed to optimization and decision analysis, it provides a good review and a chance to use multiple modeling techniques. The case has also been used as an introduction to decision analysis as bidding provides an intuitive example of payoff and probability tradeoffs.

The case has been used over multiple classes within the same course; in the first class it is used as an introduction to the course (obviously having not covered any formal tools). Students find the case topical and interesting as it provides a unique way to frame a modeling course. We return to the case again once we have completed discussions on decision analysis and optimization. This method works especially well

in non-case environments where students can work on the case over a longer period of time. This allows them the chance to complete more complex analysis.

Case Setting

The case centers on a student with upcoming travel and the need to rent a car. The student can choose to rent the car via traditional methods (a travel agent, Expedia, or from the supplier directly, e.g. Hertz.com) or more novel approaches such as Priceline.com. The case provides a quick introduction into the "name your price" format of Priceline, focusing on the determination of bids to place on the site.

Case Focus

The case can be used as a simple introduction to auctions where students develop a deeper understanding of expected outcomes and the tradeoff between losing the auction and paying too much. This simple, single-auction example can then be extended into a setting with a sequence of bids for multiple auctions where

students develop a conditional bidding strategy for subsequent auctions given the failure of earlier bids. The optimal bid sequence can be treated as an optimization problem or as a decision tree. The case provides a rich setting for students to make assumptions in the face of incomplete information, updating this information in the event of unsuccessful bids.

Student Interaction

Students should be encouraged to experiment with Priceline prior to the class. They should submit bids without disclosing credit card or personal information and assess the information the site provides to bidders. Similarly, they should visit other travel sites (Expedia, Orbitz, Hotwire, etc.) to compare and contrast the purchase transaction. While the case is written from the standpoint of renting a car, students

should also be encouraged to attempt the acquisition of an airline seat or hotel room.

As a post-case assignment or reflection question, students can be asked to visit the many sites geared to helping potential Priceline users. Once such site, www.biddingfortravel.com, is a message board where other Priceline users report successful and failed bids for rental cars, flights, and hotel rooms.

The Bidding on Priceline case provides an interesting illustration of the application of management science approaches. The case appeals to a very broad audience and requires very little industry-specific knowledge. Modeling approaches vary from simple decision analysis to potential complex dynamic programs using Bayes' theorem. It provides an excellent illustration of benefits to making simplifying assumptions.