In Chapter 1, we introduced the issue of buyer–seller interactivity in determining prices. When prices are set through interactions between buyers and sellers, the process is known as interactive pricing. The alternative of interactive pricing is for the seller to unilaterally establish a schedule of fixed prices. These are posted prices that must be paid by a customer regardless of any interaction that the customer might have with the seller. Since Chapter 1, we have focused entirely on situations where fixed prices are involved.

However, there are many situations where fixed prices are not used. In fact, despite their greater familiarity, fixed prices may not be the most prevalent type of pricing, at least in terms of the number of dollars being spent. Interactive pricing is widely used for transactions that involve large amounts of money and is used most of the time in business-to-business transactions. Further, interactive pricing has been spreading more widely with the rise of Internet commerce, and this trend can be expected to continue. Thus, we need to consider some of the issues and challenges involved in managing this alternative to the fixed-price policy.

Interactive pricing can be divided into two broad categories based on the number of parties involved in the interaction. When prices are determined by many-to-one interactions, the price setting is by auction. In what most people think of as a typical auction, the price is determined by one seller interacting with numerous buyers. However, auctions can also have many sellers interacting with one buyer, as when a number of providers of equipment maintenance services bid for a contract with a large manufacturing organization. When prices are determined by the interactions between one buyer and one seller, the price setting is by negotiation.

We first discuss price setting by auction. Then we discuss price setting by negotiation.
PRICE SETTING BY AUCTION

Although there are many possible mechanisms by which an auction can be carried out, the following four mechanisms cover the vast majority of business auctions:

1. In an **English auction**, ascending bids from numerous buyers are entertained by the seller. If the bid prices exceed the seller’s reservation price—the minimum that the seller is willing to receive for the item—then the auctioned item will be sold to the last remaining bidder. This bidder will pay the highest bid amount. This is illustrated in Figure 14.1 for the case where there are three bidders: A, B, and C (note that “knocks lot down to” is a traditional auction term for “sells to”). The English auction mechanism is used, for example, by producers when selling commodities such as meat, fish, and tobacco and by auction houses such as Sotheby’s, Christie’s, or Heritage Galleries when selling antiques or other rare or unique items. The English auction, also known as an “ascending-bid auction,” is the most familiar auction mechanism to most people.

2. In a **Dutch auction**, the auctioneer sets a high initial price and starts a clock. At regular intervals, the price of the item is lowered until the first bid is made, which stops the clock. The bidder who makes the first bid purchases the item and pays the amount of
his or her bid. This is illustrated in Figure 14.2. The Dutch auction mechanism, also known as a “descending-price auction,” received its name from its long use in tulip auctions in the Netherlands. It is much less commonly used than the English auction mechanism. Note that in market trading venues such as the New York Stock Exchange, prices are set by a combination of ascending bids and descending-price offers. This is known as a double-auction system.

**Figure 14.2  Sequence of Events in a Dutch Auction**

1. Auctioneer puts goods up for sale
2. Auctioneer solicits bids from buyers on a descending-price basis
3. First bidder on high bidder, thus winning bidder (A), assuming bid is above reserve price


3. In a **first-price sealed-bid auction**, all bidders submit bids without any awareness of the bids of others. Bids are accepted for a specified time period. At the end of the time period, the bidder who submitted the highest bid purchases the item and pays the amount he or she bid. Although first-price sealed-bid auctions are sometimes carried out by sellers, this auction mechanism is most often used in auctions carried out by buyers. An auction that involves a buyer seeking bids from a number of sellers is known as a **procurement auction**. Procurement auctions will be discussed further in a later section of this chapter.

4. A **second-price sealed-bid auction** differs from a first-price sealed-bid auction in only one respect. The bidder who submits the highest bid purchases the item, but pays the
price bid by the second highest bidder raised only by the smallest allowable bidding increment. Note that choosing this procedure over the first-price mechanism does not necessarily involve the seller giving away revenue, because anticipation of not having to actually pay the amount they bid could lead some customers to bid higher than they otherwise would. This auction mechanism is sometimes called a “Vickrey auction,” after the economist who noted that having the winning bidder pay an amount just above the second highest bid serves to make a sealed-bid auction equivalent to the English auction mechanism. To understand why this is so, consider a situation in an English auction where an item has a value to the customer (VTC) of $40 to the second highest bidder and $50 to the highest bidder. The second-highest bidder can be expected to stop bidding at $40. The highest bidder then need bid only the minimum increment over $40.00, say a bid of $40.50, to obtain the item. Thus, the price paid by the highest bidder is just above the second highest bid.  

When to Set Prices by Auction

The main reason that sellers choose to use an auction mechanism to set prices is because they believe that the use of auctions will result in higher revenues for the items they sell. This is interesting, because a large part of the appeal of an auction to customers is the sense that they will be able to get items at prices much below their true value!

Traditionally, an auction has been a relatively slow and expensive way to sell something. For example, when holding an English or a Dutch auction, a large number of potential buyers would have to be present in the same place, an auctioneer would have to be employed, and a process taking at least several minutes would have to be devoted to each item or lot to be sold. Because of these high transaction costs, the auction was practical only for commercial transactions that involved large amounts of money. And even within large transactions, there had to be some particular reason to use an auction to set an item’s price.

One such reason for an auction would be situations where there is considerable uncertainty about the best price for an item. There is often such uncertainty when selling items that are used. The exact condition of each item must be evaluated by buyers, and it is hard to predict how any particular sign of usage will affect the value of an item to buyers. There is also uncertainty about the best prices for many commodity items. For example, fresh fish have long been sold by auction because of the rapid fluctuation of value-related factors, such as the size and quality of the day’s catch and the level of demand for fish on that particular day.

A second reason for an auction would be when there are large differences among potential buyers in a product’s VTC. This reason is particularly relevant for the pricing of items that are rare or unique. As we saw in Chapter 4, a seller who has many units of an item available for sale should consider the trade-off between selling at high prices to the few customers with high VTCs or at low prices to penetrate the market. By contrast, a seller with only one rare item for sale need not consider this trade-off; only one buyer is needed. It then makes sense to set the price close to the VTC of the potential customer who values it most, and auctions can be an effective means of doing that. For example, the light saber used by Luke Skywalker in the 1977 movie *Star Wars* is of little value to most people. However, there is likely to be at least one collector who was a particular fan of that movie and would be willing to pay $60,000 or perhaps much more for this item.
A third reason for an auction involves the impression that it is a fair price-setting method. There is often a transparency in the auction process that leads people to judge that a selling price, even if it is a high one, was arrived at fairly. Indeed, research has shown that losers of an auction tend to blame the other bidders rather than the seller. This aspect of auctions makes them particularly appropriate when price legitimacy is particularly important. Thus, we often see auctions used for setting the selling prices of public assets, such as the rights to conduct logging on government land or licenses for the use of frequencies on the radio spectrum.

The Rise of Internet Auctions

Along with the development of the Internet has come the introduction of websites, such as eBay.com, that offer sellers the ability to carry out electronic auctions for the items they want to sell. Being the largest of these sites, eBay has over 100 million registered users who in 2004 placed 1.4 billion listings that resulted in the sale of over $34 billion worth of merchandise.

A seller can auction an item on eBay by posting a description of the item, perhaps setting a minimum bid or a reservation price and a time when bidding will end. As potential customers make their bids, these bids are shown on the item’s listing. Each bid must be higher than the previous one, and the person who makes the last bid before the bidding closes buys the item and pays the amount that he or she bid. In this sense, eBay uses the English auction mechanism.

However, eBay also uses a procedure known as proxy bidding. In proxy bidding, a bidder submits to eBay a maximum bid—the highest amount that the bidder is willing to pay for the item. If this maximum bid is higher than the current bid, the eBay proxy raises the bidder’s bid just above the current bid by the minimum bid increment. If a new bid is later received, the eBay proxy will raise the bidder’s bid to just above that new bid. This will continue until no new bids are received or until the bidder’s reservation price is reached. If a bidder submits what would truly be his or her maximum bid, then this proxy bidding procedure becomes, in effect, a second-price sealed-bid mechanism. This makes the eBay system a combination of two auction mechanisms.

There are several important consequences of the ability to conduct auctions online. First, because it is automated, an Internet auction is much less costly to the seller than a traditional live auction. For example, eBay’s basic fees for auctioning an item that sells for $20 come to only $2.30. It would clearly be impossible to carry out a live auction for that low an amount. Second, an Internet auction brings access to far more potential bidders than a traditional auction. Because there is no need to be present together at the same time and place and because of the ability to easily search electronically for auction items of interest, it becomes very easy to participate as a bidder in an auction. These two consequences of Internet auctions have greatly expanded the viability of auctions.

Given these consequences of Internet auctions, it is not surprising that we find that items offered in Internet auctions are not limited to expensive items or to items whose value is uncertain or widely varying. Rather, it is common to see mass-produced items that are new rather than used, such as digital cameras and video game consoles, offered on auction sites. In fact, some online retailers offer the same items at a fixed price or at an auction-determined price, and they sometimes do so even in the same listing (as in eBay’s Buy It Now option).
It appears then that the Internet has made possible some new uses for auction price setting. One such new use might be as a means of offering promotional discounts. For example, an Internet retailer could conduct auctions for items also available at fixed prices, as a means of generating traffic to its main website. Online auctions could be used to dispose of excess inventory, alternative to offering end-of-season markdowns. Although this is not a new use of auctions—Filene’s Basement’s automatic markdown policy, discussed in Chapter 11, could in fact be considered a type of slow Dutch auction—this use could be greatly expanded in the online setting. It has also been suggested that many of the bidders in online auctions do so to satisfy needs for excitement, community, or the thrill of winning. Online auctions could be a means by which a retailer could, through the choice of a price-setting mechanism, appeal to the emotional needs of this segment of consumers.

Understanding Bidder Behavior

To effectively use auctions for price setting, it is necessary to have some understanding of the factors that drive the behavior of bidders. A key idea in this regard is the critical importance of getting a first bid on an item. One reason a first bid is important is that a bid from one bidder encourages bids from other bidders. This tendency could be called the herd effect. The herd effect can be at least partly explained by the evidence that bidders value the information they get from observing the bids of others. For example, research has found that the herd effect is particularly noticeable when the product’s quality is difficult to evaluate or when the seller does not have a well-established reputation. This importance of observing other bidders could also help explain why the Dutch auction mechanism is far less popular than the English mechanism. The ascending bids of an English auction are open to all potential bidders—the number, size, and timing of the early bids provide a considerable amount of possibly useful information to later bidders. By contrast, in a Dutch auction, the first bid is the winning bid. Losers may feel surprised, and winners may fear that they paid too much; both groups thus may find the Dutch auction mechanism not completely satisfying.

A second reason that a first bid is important is what could be called the momentum effect. A person who begins the bidding process is likely to feel some urge to follow it through. This could occur even in the face of negative feedback such as an increasing number of bidders or an increasing price. The urge to follow through could be driven by a desire to have something to show for the time and energy expended in the early bidding. It is also possible that bidders might feel a need to justify, at least to themselves, that making an early bid on the item was not a bad idea.

In a bidding situation when herd effects and momentum effects combine, there is the possibility of creating what has been called bidding frenzy. This is a state that occurs in the minds of the bidders that is characterized by a high level of competitive arousal and excitement and a desire to win that is so strong that it can lead bidders to lose sight of their intended bidding limits. These feelings may be ego-related—connected to a sense of being worthy, competent, and smart, like the feelings behind the shopper frenzy discussed in Chapter 8. Research indicates that time pressure and bids coming in rapid succession set the stage for bidding frenzy to occur. Note that for these conditions to occur, there must be real-time interaction between bidders such as occurs during a live auction or during the
“sniping,” or rapid arrival of bids, that often occurs during the last few minutes or seconds of an online auction.\textsuperscript{14}

If getting bidders to make a first bid increases the chances of getting the high closing prices produced by bidding frenzy, then the auction seller should consider what can entice a first bid. Because, as previously mentioned, a large part of an auction’s appeal to buyers is the hope of getting an item at a price below its value, then it is likely that bidders can be enticed with the promise of a bargain. Setting a low minimum starting bid or reservation price, or even none at all, could effectively indicate to potential bidders that a bargain is possible. This presents the counterintuitive idea that a low starting or reservation price could have the effect of creating a high closing price.

Unfortunately, the research on this question does not provide a clear picture. Low starting or reservation prices do seem to attract more bidders and result in a greater likelihood that the auctioned item is actually sold.\textsuperscript{15} However, it has not been shown that low starting or reservation prices lead to higher average closing prices, and some results suggest that they could be used by consumers to infer lower item quality or value.\textsuperscript{16} The results of a survey of 350 online auctions shown in Figure 14.3 illustrate several points.\textsuperscript{17} First, although the average

\textbf{Figure 14.3} Distribution of the Results of 350 Online Auctions

\includegraphics[width=\textwidth]{figure143.png}

closing price increased with minimum initial bid, the higher minimum bids also resulted in more auctions where the item was not sold. Second, the highest closing price occurred in an auction where there was no minimum bid. This price, which was over 1.4 times the fixed price for the item posted at retail websites, was most likely the result of a lively bout of bidding frenzy. Although these results are inconclusive, the proliferation of Internet auctions has created new opportunities for carrying out auction research, so we can expect to learn a lot more about these interesting phenomena in the future.

SELLING TO ORGANIZATIONS THAT PURCHASE BY AUCTION

Although auctions are often conducted by sellers, they are also often conducted by buyers. For example, a homeowner who wants to get his or her house painted may ask several local painters to bid on the job. An automobile manufacturer may contract out the manufacture of taillight assemblies and ask potential auto parts suppliers to make competing bids. Because the bids made by painters, auto parts suppliers, and numerous other businesses are an essential part of their price-setting activities, it is important to consider how this bidding process can be managed.

As mentioned earlier in this chapter, auctions carried out by buyers are known as procurement auctions and usually involve the use of a first-price sealed-bid mechanism. In this auction procedure, the buyer will send a request for quotes (RFQ) to a number of potential sellers. The RFQ should contain detailed specifications of the goods or services that are needed along with the minimum quality standards that must be met. Each interested seller submits a bid, which is referred to as “sealed” because it is not revealed to any other seller during the auction. At the end of the specified bidding period, the buyer compares all of the submitted bids and awards the business to the seller who made the lowest bid. The winning seller’s bid becomes his or her price for this sale. Note that in a procurement auction, the criterion for winning is the reverse of that in a selling auction. In a procurement auction it is the lowest bid, rather than the highest, that wins the auction.

Sellers often make decisions about the level of their bid through an informal and intuitive process. A manager receiving an RFQ might first estimate what it would cost his organization to supply the goods or services in question and then apply a standard markup to arrive at a tentative bid. The manager’s next step would be to consider what his competitors are likely to bid. There are likely to be a number of competitors bidding on the job, and if even one underbids him, the entire sale would be lost. The uncertainties and high stakes involved make this decision difficult. The pressures to win a job are sometimes very intense and lead managers to bid prices so close to costs that even a small error in estimating actual costs could cause the firm to lose money on the job. The tendency for a company to win a bid but then lose money on carrying it out is so common that it has a name—the winner’s curse.

Being Systematic in Bidding

An organization that is repeatedly faced with making procurement-auction bids can improve the intuitive management of the bid-setting process by developing a system for
setting bids. The challenge in developing such a system is that it can never be known for
certain whether or not a given bid will be low enough to win the job. As we saw in Chapter 3’s
discussion of estimating monetary consequences of a differentiating factor and Chapter
11’s discussion of revenue management, the concept of expected value—the worth of an
option in the long run—can be helpful in dealing with such uncertainties.
A basic bid-setting system might involve estimating the expected value of the profit that
would result from each bid in an array of possible bids. An example of such a set of
expected profits can be seen in the table in Figure 14.4. The second column of the table
shows an estimate of the profit that would be earned if the job were won at each possible
bid level. The third column of the table shows, for each possible bid level, an estimate of
the probability of winning the job. Because the expected value of an option is equal to the
sum of the value of each possible outcome of the option multiplied by the probability of
that outcome occurring—and because losing the job would lead to zero profit—the
expected profit of a bid can be calculated by multiplying the estimated profit from winning
the job with that bid by the probability that the bid will lead to winning the job. The
expected profits for each possible bid level, calculated in this way, are shown in the fourth
column of the table. For example, winning the job with a $25 million bid would yield
$10 million in profit. Since the probability that the job would be won with a $25 million bid
is 0.07, the expected profit of a $25 bid is $10 million times 0.07, which equals $700,000.

![Figure 14.4](image)

Information for Calculating the Expected Profit of Each Bid of a Set of Possible Bids

<table>
<thead>
<tr>
<th>Bid Level ($ millions)</th>
<th>Profit at This Bid Level ($ millions)</th>
<th>Probability of Winning the Job</th>
<th>Expected Profit ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>10</td>
<td>.07</td>
<td>0.70</td>
</tr>
<tr>
<td>24</td>
<td>9</td>
<td>.13</td>
<td>1.17</td>
</tr>
<tr>
<td>23</td>
<td>8</td>
<td>.25</td>
<td>2.00</td>
</tr>
<tr>
<td>22</td>
<td>7</td>
<td>.35</td>
<td>2.45</td>
</tr>
<tr>
<td>21</td>
<td>6</td>
<td>.57</td>
<td>3.42</td>
</tr>
<tr>
<td>20</td>
<td>5</td>
<td>.64</td>
<td>3.20</td>
</tr>
</tbody>
</table>


Examination of the expected profits in Figure 14.4 shows that, in this example, the bid
of $21 million has the highest expected profit. This indicates that, even if a $21 million bid
is not successful in winning this particular job, choosing to bid $21 million now and
continuing in future auctions to choose the highest expected-profit bid is likely to result over time in the highest level of accumulated profits. Because constructing this table of the expected profits of possible bids can provide such useful guidance in making bids, it is worthwhile to consider how one can estimate each possible bid level’s probability of winning the job.

**Estimating the Probability of Winning**

As with the estimation of room-booking probabilities in revenue management, the estimation of bid-winning probabilities can be accomplished through the systematic collection and use of bidding history information. This information would typically draw on bids from procurement auctions of widely varying size and possibly occurring over a long time period. To make these bids comparable, a common scale is needed. A convenient common scale is the ratio consisting of the bid for a job divided by an estimate of the seller’s cost of supplying the goods or services involved in the job.\(^{19}\) This will be referred to as the relative bid. For example, if a seller who is collecting historical information notes that a winning bid in a 1995 procurement auction was $800,000, the seller can estimate what it would have cost his firm in 1995 to have carried out that job. If that cost estimate is $615,000, then the winning bid could be recorded in the seller’s database as a relative bid of 1.30 (i.e., $800,000/$615,000).

The source of historical bid information would be the announcements by the buyer of the results of the auction bidding.\(^{20}\) If the buyer reveals the level of every bid submitted, then a seller could convert each of these bids into a relative bid and enter it into the database. Eventually, the seller would create from this database a table such as that shown in Figure 14.5. The first column of this table shows a set of relative bids ranging from those involving the seller losing money on the job (0.90, 0.95) to those involving a markup of 25 or 30 percent (1.25, 1.30). The second column shows the cumulative proportion of the relative bids collected in the database that exceeded each of these relative-bid levels. Each of these proportions represents the probability that an average bidder in these procurement auctions will place a bid above each level of relative bid. For each relative bid level \(B\), this probability can be designated, \(p_{avg}(B)\).

If the seller is bidding in a current procurement auction against only one opponent, the second column of the table in Figure 14.5 can be used directly to estimate each bid level’s probability of winning a job. In the absence of any additional information, the seller can assume that one opponent will bid like an average bidder. If the seller makes a relative bid of 1.05, the historical data tell him that there is a 0.90 probability that the average bidder’s bid will exceed that level. Thus, that seller’s probability of winning with a relative bid of 1.05 is 0.90.

If, in the current procurement auction, the seller is bidding against more than one opponent, then estimating the probability of winning is a little more complicated. For example, if the seller is bidding against two opponents, then a relative bid of 1.05 will be successful only if the bid of both of the opponents exceeds 1.05. If it is assumed that each of the two opponents are average bidders, then the probability that both will bid higher than 1.05 equals the probability that one opponent will bid higher than 1.05 (which Figure 14.5 tells us is 0.90) times the probability that the other opponent will also do so (this probability is also 0.90). Thus, in this situation, when bidding against two opponents, there is a
0.81 probability that a relative bid of 1.05 would be successful. If the probability of a relative bid level $B$ being the winning bid is designated $p_{\text{win}}(B)$, and the seller is bidding against $n$ opponents, then the general formula is as follows:

$$p_{\text{win}}(B) = [p_{\text{avg}}(B)]^n$$

Columns 3 through 5 of Figure 14.5 illustrate the use of this formula. For example, if the seller is considering a relative bid of 1.20 and he anticipates four opponents, then his probability of winning the bid would be as follows:

$$p_{\text{win}}(1.20) = [p_{\text{avg}}(1.20)]^4 = (0.42)^4 = 0.031$$

If the seller is considering a relative bid of 1.10 and anticipates six opponents, then his probability of winning the bid would be as follows:

$$p_{\text{win}}(1.10) = [p_{\text{avg}}(1.10)]^6 = (0.77)^6 = 0.208$$
Making the Most of Limited Information

The use of this method of estimating the probability of winning with a particular bid requires that the seller estimate the number of opponents who will be bidding against him in the procurement auction. This estimate would be based on specific information about the intentions of competitors as well as on past experience concerning factors such as how the size of the job relates to the number of bidders. If there is uncertainty between two (or more) number-of-opponent estimates, a seller could take an average. For example, if it is considered as likely that there would be three bidding opponents as that there would be four opponents, then the probability of winning with a relative bid of 1.20 could be calculated as an average of the two number-of-opponent possibilities:

\[ p_{\text{win}}(1.20) = \{0.50 \times [p_{\text{avg}}(1.20)]^3\} + \{0.50 \times [p_{\text{avg}}(1.20)]^4\} \]
\[ = (0.50 \times 0.42^3) + (0.50 \times 0.42^4) \]
\[ = (0.50 \times 0.074) + (0.50 \times 0.031) \]
\[ = 0.037 + 0.016 = 0.053 \]

It is sometimes the case that there is specific information available about one of a seller’s bidding opponents. Let’s call this competitor Opponent A. The specific information about Opponent A could be obtained from quantitative data on Opponent A’s past bids, or it could be more subjective information, such as the knowledge that Opponent A has new management that is more aggressive and therefore more likely than average to make a low bid. Such specific information can be used for estimating the probability of winning by splitting Opponent A out from the group of average bidders. The probability of Opponent A’s bid exceeding a bid level B would be designated \( p_{\text{Opponent A}}(B) \). If a seller is bidding against \( n \) opponents, one of which is Opponent A, then the probability of winning the job with a relative bid level of B would be as follows:

\[ p_{\text{win}}(B) = p_{\text{Opponent A}}(B) \times [p_{\text{avg}}(B)]^{n-1} \]

For example, say a seller is bidding against Opponent A and three other bidders. If it is estimated that the new management makes Opponent A’s probability of submitting a bid higher than 1.20 drop from the average level of 0.42 down to, say, 0.20, then the probability of winning with a relative bid of 1.20 would be calculated as follows:

\[ p_{\text{win}}(1.20) = 0.20 \times [p_{\text{avg}}(1.20)]^3 \]
\[ = 0.20 \times 0.074 = 0.015 \]

In this example, knowing that one opponent is more aggressive than average causes the probability that a relative bid of 1.20 will win the job to decrease from 0.031 to 0.015.

These procedures illustrate an important advantage of being systematic in the bid-setting process. The system does not remove the uncertainty in the bidding process. But
what it does do is provide a means whereby whatever limited information is available to
the seller can be used to maximum advantage.

**PRICE SETTING BY NEGOTIATION**

As was mentioned in Chapter 1, the setting of prices through a process of negotiation
between a seller and a buyer was, for much of human history, the only means of arriving
at a price. In recent centuries, a variety of forces have contributed to the replacement of
negotiated pricing with the policy of posting fixed prices. A desire to achieve the maximum
amount of honesty and fairness led George Fox and the Quakers to be the first to abandon
negotiation, but other factors fueled the trend. For both buyers and sellers, price negotiations
tend to evoke strong feelings—sometimes stronger than seems justified by the amounts of
money involved. Replacing negotiation with fixed pricing removed a source of emotional
stress in the commercial interaction. Finally, as cash registers and other advances in
merchandise distribution developed, retailing began to be conducted on a larger scale. It
became simply impractical for most sellers to expend the necessary time and effort to carry
out price negotiations for most everyday consumer goods.

On the other hand, there are also forces that have supported the continued use of nego-
tiated pricing. Having the opportunity to determine price through a one-on-one interaction
with sellers offers buyers the ability to feel that they are paying the lowest possible price.
As was mentioned in Chapter 10, sellers see in negotiated price setting an opportunity to
very flexibly and effectively carry out price segmentation. For transactions that involve
large amounts of money, it is practical for both buyers and sellers to devote the time and
effort necessary to set prices through negotiation. Thus, for expensive consumer prod-
ucts—such as automobiles and real estate—and for most business-to-business products,
negotiation remains the most common means of price setting.

**Some Basic Principles of Price Negotiation**

A seller who wants to be successful in using negotiation to set prices must understand how
some basic principles of negotiation can be applied to price negotiation. A negotiation
typically consists of two phases. The **preparation phase** involves the collection of informa-
tion before interacting with the other party in the negotiation. The **meeting phase** involves
communicating with the other party with the goal of arriving at an agreement.

Say an electronics manufacturer has asked one of its current suppliers if it could provide
compact transformers for one of the manufacturer’s new products. The supplier indicated
that it could provide the transformers. Dave, vice president of sales for the supplier, will
meet with Cheryl, the product manager for the new product, to try to arrive at a mutually
agreeable price.

During the preparation phase of this price negotiation, Dave and his staff should focus
on gathering information in three areas:

1. **Estimation of the customer’s reservation price for the product.** Here, the key piece of
   information is the product’s VTC. Dave should attempt to gather the information that
would enable him to go through the four steps of VTC estimation described in Chapter 2. As you recall, these steps would involve determining what the electronics manufacturer considers the next closest substitute of Dave’s transformers, identifying the factors that differentiate Dave’s transformers from the next closest substitute, and so on. The VTC obtained in this manner would be a good candidate for the electronic manufacturer’s reservation price for Dave’s product.

It would also be useful to estimate the buyer’s degree of price sensitivity. This would provide an indication of how much the customer would appreciate a product’s price being less than its VTC. For example, if, for the electronics manufacturer, the transformers were a small part of a highly profitable product, then the manufacturer would probably be less price-sensitive than if the transformers were a large part of an only marginally profitable product.

2. Determination of the seller’s own reservation price for the product. Dave’s calculation of his reservation price for selling the product to this electronics manufacturer would be based largely on the costs that would be incurred as the result of this sale. With this cost information, Dave can calculate the contribution dollars that would be earned at any given price level. Dave’s reservation price would be the price corresponding to the profit level that Dave’s company could make on the compact transformers (or on the capacity to make them) if these items were not sold to this electronics manufacturer. This alternative profit level would correspond to what has been referred to as the “best alternative to a negotiated agreement.”

3. Characteristics of the negotiating situation. Before entering the meeting phase of the negotiation, it is important for the seller to understand the rules of the situation, which are often implicit rather than stated openly. Dave would try to gather some information on Cheryl’s negotiating style. For example, does she expect many rounds of haggling, or does she try to arrive at price quickly, with minimal haggling? Does she often bluff in price negotiations, or does she tend to be straightforward? Dave should also gather information on the likely place of his meeting with Cheryl, the amount of time available to reach an agreement, and the individuals who Cheryl may bring along with her to the meeting.

During the meeting phase of this price negotiation, Dave and the other individuals he brings to the meeting will likely engage in most of the following activities:

1. Stating an asking price. Dave should state an asking price higher than his estimate of Cheryl’s reservation price. This gives him room to lower his price during the haggling and sets an advantageous reference point. There is research evidence that higher asking prices result in higher final negotiated prices.

2. Making concessions. Assuming that Cheryl’s initial offer is less than Dave’s asking price, Dave will probably make one or more concessions. A concession is a movement toward the position of one’s negotiating opponent. There is often an expectation that concessions will occur in a reciprocating fashion, with a concession by one side in the negotiation followed by a concession by the other side. Research evidence suggests that people feel better about a negotiation’s outcome when the negotiation involves a series
of concessions. Negotiators often interpret the size and frequency of concessions as indications of the amount of movement that can be expected from their opponents.

3. Providing rationales. A negotiator will typically offer a rationale for his or her initial position, for his or her concessions, and for requested concessions that are not made. More general than the price rationales mentioned in Chapter 8, a negotiating rationale is any explanation or justification for a proposed action or for declining to take a requested action. These often serve the purpose of helping the customer fully appreciate the product’s value, as when Dave might talk about the useful features of his company’s transformers when justifying his asking price. Convincing negotiating rationales tend to include specific facts and detailed measurements and make use of any important search characteristics of the product that can be demonstrated. In price negotiations, rationales often involve an argument that a particular price level is one that is fair.

4. Responding to the rationales of the customer. A negotiator should be able to evaluate and perhaps counter the rationales of the other side. For example, if Cheryl supports a low initial offer with a rationale about the low costs of producing the compact transformers, Dave might counter by suggesting that Cheryl has neglected to take into account his company’s elaborate quality control procedures and then providing details of the high costs of those procedures. If one of Cheryl’s rationales presents new information, such as a low price offered by one of Dave’s competitors, then Dave must evaluate this claim by considering the context in which it is said and by determining the consistency of this claim with what he already knows.

5. Dealing with threats. Sometimes the urge to prevail leads a negotiator to make a threat—a claim that negative consequences will occur if the other side does not give in. For example, Cheryl may threaten Dave with taking her transformer business elsewhere if he does not accept her low-price offer. The influence of a threat has to do with its credibility and with the relative power of each side. If Dave’s company is desperate for the transformer contract, then he has low relative power and could be susceptible to the threat. On the other hand, if Cheryl’s company is dependent on Dave’s company for other products, the relative power of the two sides would be more equal. Dave could choose to make a counterthreat, say, that her failure to award him this contract could weaken his company and increase its likelihood of being acquired by a larger company that does not have his company’s culture of high product quality.

6. Managing the emotional dimension of negotiation. Because of the powerful negative emotions that can be evoked by the sense of losing in a negotiation, it is useful whenever possible to help a negotiator save face. For example, if Cheryl feels it important to negotiate a low price on the transformers, Dave could help her save face when accepting a higher offer by relabeling the offer’s terms to give a low price on the transformers themselves, but a higher price for delivery or for another necessary service aspect of the products.

Although a negotiator may not like the outcome of a negotiation, it is important that he or she feel that this outcome is the best that could be had. A negotiator who feels that he or she has been fast-talked or rushed into accepting a position will tend to look for ways to modify or back out of the agreement and/or avoid future negotiations with the
other side. This underlines the importance of providing negotiating rationales that are convincing and, when exerting relative power, doing so in the gentlest way possible.

Keeping in mind that negotiation has two phases, not just one, helps the seller avoid the mistake of putting too much emphasis on the communication skills that come into play during the meeting phase. Although it is helpful to be able to think on one’s feet during a negotiation meeting, often what is most important is to go into the meeting with a good, well-researched plan and to stick with it. The quality of the work done in the preparation phase of the negotiation really matters. When the preparation has been done well, a negotiator with even modest communication skills is likely to come away with a satisfactory outcome.

**Win-Win Negotiation in Pricing**

This outline of the principles of price negotiation leaves out many subtleties of the negotiation process. The negotiation between Dave and Cheryl is an example of distributive negotiation. This is where the goal of the negotiation is to divide up a fixed pie. It involves an essentially competitive, win-lose situation. The price of the transformers determines whether it is Dave’s company or Cheryl’s that gets the bulk of the profits available with this product. If one company gets more profit, the other company gets less.

It is important to note that alternatives to straight distributive negotiation exist. Consider the following story concerning an individual’s pricing of his professional services:

Rick was graduating soon and had just finished a round of final interviews with several companies. He was very pleased because the company he wanted to work for had made him an offer; he was going to take it. The salary they offered was good, but he had a nagging feeling that it could be better. He wanted to ask them for more money before he accepted the job, but he didn’t want to alienate them in any way because he fully intended to accept the job, even if they couldn’t or didn’t offer him any additional money.

Rick’s immediate priority was to be accepted by the people in the firm. The starting salary was secondary: He wanted to deal with it if he could, but he wanted to be very careful. He didn’t want the salary issue to interfere with a smooth transition into the job. How could he increase his chances for a better salary without turning off anyone at the company?

Normally, salary negotiations are strictly distributive. . . . But Rick’s circumstances were different—salary wasn’t the most important issue. As a result, the strategy . . . that was finally accepted was exactly the opposite of the obvious one. Rather than asking for more money before he accepted the job—with the expectation that he would then get involved in potentially difficult negotiations—he simply accepted the job and said how happy he was to be coming to the firm. (That was completely true.) Then he said that there was one thing troubling him—the starting salary. He couldn’t help feeling that it was a little low. (That was also true.) Could they do something about it?

This strategy restructured the entire interaction. Rather than taking an aggressive, distributive bargaining stand, as many people think they must in salary negotiations, Rick shook hands first, accepted the job, and then asked the firm, as a matter of good faith, to help on the salary issue. He didn’t beg or plead or bargain hard—just the reverse. He agreed
with them on the big issue and left his final salary—the issue he had defined as secondary—up to them. He was already part of the team; it was now their turn. Rick’s strategy opened the door for the company to reciprocate. He hoped that they would say to themselves, “Rick accepted, now it’s our turn to do something.” Rick’s strategy also took the burden off his own shoulders and placed it squarely on the firm’s: If they didn’t come through, they would be the ones who looked bad.

Early the next day Rick proceeded just as planned. Someone from the company called him back a few hours later and said that they could increase his salary by $5,000. Needless to say, Rick was very pleased.

Rick’s restructuring of the interaction created the possibility of a win-win negotiation (also called integrative or accommodative negotiation). Rick won the higher salary, but the firm didn’t lose. Rather than being forced to make a concession, they won the likelihood of having a more enthusiastic and dedicated employee at what the firm probably regarded as a small cost.

Thinking of such restructurings takes some creativity, and it is hard to give general rules for identifying them. However, the stage can be set for coming up with win-win negotiations by attempting to unbundle the many issues that are often involved in a negotiation and considering the relative importance of each. For example, an item’s per-unit price may be an important issue in the negotiation, but there may be subsidiary issues of extra product features, purchase quantity, delivery time, policy on taking returns, training of the buyer’s personnel, and so on.

Of particular interest are issues that involve a value asymmetry—a situation where something is more highly valued by one side than the other. For example, price negotiations between a home improvement retailer and a manufacturer of patio tiles might also involve the question of whether the manufacturer can ship the tiles in batches of assorted colors. The labor savings resulting from this packaging could be of considerable value to the retailers, yet it could cost the manufacturer very little to produce this assortment. If so, this packaging issue could be conceded to the retailer in return for something that is more important to the manufacturer than the retailer, thus creating a situation where both parties gain. Value asymmetries are at the heart of the commercial exchange (see Chapter 1) and help provide the basis for win-win outcomes in price negotiations.

**MANAGING PRICE NEGOTIATIONS**

Given our understanding of some of the basic principles of price negotiation, we can take up some key issues in the seller’s day-to-day management of price negotiation. The issues involved in selling to business customers, where negotiated pricing is the norm, are very different from those involved in selling to consumers, where fixed prices are the norm.

**Price Negotiations With Business Customers**

When negotiating prices with business customers, it is important to appreciate that a business organization is not a monolithic entity. Talking to different people within an
organization can lead to very different outcomes. For example, the owner of a small company selling job control and accounting software for printing operations was finding it difficult to negotiate profitable prices with the print-shop managers. A breakthrough in these difficulties occurred when the owner hired an experienced salesperson who pointed out that the owner had been talking to the wrong person in the printing companies. A print shop manager has a relatively small budget to work with and has difficulty appreciating the full benefits of this software product. When the owner and his new salesperson began talking with the VPs of operations and other top executives of the printing companies, they were easily able to negotiate prices five or six times higher than what the owner had ever been able to squeeze out of a print shop manager.

The description in Chapter 3 of the five decision-process roles of an organization’s buying center (user, influencer, gatekeeper, decider, and purchaser) can serve as a helpful guide to understanding the differing needs and viewpoints of the individuals who are negotiating for the buyer. In general, it should be the seller’s goal to be negotiating with the people in the buying organization who can appreciate the product’s value and who have the incentives and power within the organization to authorize the appropriate expenditures.

Up until this point, we have talked about negotiating situations that occur at predictable times. A seller expects price negotiations when the buyer is making a new purchase or when the time comes to renew a contract. However, a seller may be suddenly challenged on price by a regular customer if, for example, the customer is approached by a lower-priced seller or finds out that other customers are paying less for the same product. In the short-notice negotiations that will ensue, it would be beneficial for the seller to provide negotiating rationales that communicate the full extent of the product’s VTC. The seller might describe the differentiating factors that make his or her product worth more than that of the lower-priced competitor or might detail the ways in which the higher-paying customer is given greater product selection, better service, or other benefits not available to the customers who are paying less. Because such negotiations can come up suddenly, it would be wise for a seller to routinely engage in some preparation-phase information gathering about all of his or her customers.

As a customer buys from a seller repeatedly, the customer becomes more experienced in negotiating with the seller and thus becomes more able to “beat up” the seller on price. To prevent this kind of difficulty, it may be appropriate to pull back from negotiating and establish a fixed-price policy for business products that tend to be frequently purchased. This can be done while maintaining at least some of the pricing flexibility needed for dealing with diverse customers by the use of price menus. A price menu is a schedule of fixed prices for each of the tangible and service features of the seller’s product. An example of such a menu can be seen in Figure 14.6. In the use of price menus, the salesperson does not have the authority to change prices. If a customer wants a lower price, then the customer must decide what product feature(s) he or she is willing to give up.

Although the use of price menus can remove a means by which customers can pressure a seller to lower prices, for it to work, it is necessary that the same menus are used for all customers and that the menu prices are set at the right levels. In an environment where there are many competitors who negotiate individual prices with customers, it may be hard for a seller to effectively implement this or any other form of fixed-price policy.
Price Negotiations With Consumers

The vast majority of consumer products are sold at fixed prices. There are only a few product categories—such as real estate and automobiles—where most consumers expect to engage in the back-and-forth haggling of price negotiation. However, it should be noted that there is a middle area between fixed prices and full negotiation. Some retailers have adopted, at least implicitly, what could be called a **partial-negotiation policy**. This involves the use of fixed prices with some accommodation to those customers who want to negotiate. This policy is characterized by most consumers paying the fixed price—only a minority engaging in negotiation. For example, a *Wall Street Journal* reporter did an informal study of retailers such as a furniture store, a lighting store, and a men’s clothing store. He picked out an item in each store and attempted to negotiate a lower price. He found that approximately half of the retailers were willing to shave something off their fixed prices, sometimes as much as 20 percent!

To carry out a partial-negotiation policy, the seller must set the price high enough that it allows for making one concession. The advantage of this policy is that it provides a means for price segmentation. The concession is a possibility for only those customers who ask for it. Further, among those customers, the concession need be granted to only those who the seller judges are so price-sensitive that the concession is likely to make a difference in whether or how much they buy. If, for example, a customer who reveals he absolutely loves the suit that he is trying on asks for a price concession, the salesperson can simply say something like, “I’m sorry, but I can’t do anything with the price of this particular suit. It is one of our best sellers.”

The disadvantage of a partial-negotiation policy is that it could lead to hard feelings among consumers. A consumer who has received a price concession in the past is likely to feel disappointed if he or she does not receive one during every visit to the store. Customers

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**Figure 14.6 Example of a Price Menu**

<table>
<thead>
<tr>
<th></th>
<th>Turnaround</th>
<th>Special Processing</th>
<th>Long-Term Contract</th>
<th>On-Site Customer Support</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low price package</strong></td>
<td>3–7 days, when available</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Regular package</strong></td>
<td>3 days(+15% for 24 hours)</td>
<td>Service A +3%  Service B +7%  Service C +5%</td>
<td>–10%</td>
<td>+15%</td>
</tr>
<tr>
<td><strong>Full service package</strong></td>
<td>24 hour</td>
<td>A, B, C include with added performance guarantee  Service D +9%</td>
<td>1 year minimum</td>
<td>Included</td>
</tr>
</tbody>
</table>

of a retailer who hear that others have received a price concession from the retailer may consider themselves to have been treated unfairly. They may plan to ask for concessions when they next visit the store. Some may even tend to avoid the store so as to not have to deal with the stress of having to ask for a price concession. In other words, even an only occasional use of negotiation threatens the consumer’s trust in the seller’s fixed prices. We should not let the commonness of fixed pricing lead us to believe in its sturdiness. Perhaps, like the thin veneer of civilization, negotiation lurks behind fixed-price transactions, ready to rise up whenever the genteel structure of the fixed-price discipline begins to break down.

The risks involved in a partial-negotiation policy may help explain the common retailing practice of advertising a price-matching guarantee. This is the seller’s promise to match a lower price offered by any other seller of the same item and to refund the difference if the item has already been purchased from the seller. This device serves to offer a structure for partial negotiation. Those consumers who are seeking a lower price know what to do. They shop for a low price, bring in the competitor’s ad or other evidence of the low price, and receive their price concession. Those consumers who are unaware of the policy, too busy to collect the evidence, or who are not sufficiently price-sensitive will pay the regular price. Although it is likely that the vast majority of consumers will pay the regular price, the availability of the price concessions to all who follow the specified procedures will tend to blunt any resentment that they may feel. Price-matching guarantees may have the additional benefit of giving the retailer a low-price image in the minds of consumers.29

Compensating the Negotiators

Just as the individuals in an organization’s buying center can have differing needs that may impact the outcome of price negotiations, it is also important to consider the differing needs of those on the seller’s side of these negotiations. In particular, it is important that salespeople, who are often on the frontline of price negotiations for the selling organization, have negotiating incentives that are in line with the goals of the firm that employs them.

Typically, sales force compensation formulas are based on the dollar revenue of the products that the salespeople sell. Thus, if a salesperson sells 100 units of a product at a price of $5 per unit, a revenue-based compensation method would lead the salesperson’s credit for the sale to be based on the $500 of revenue ($5 price × 100 units sold) that would be brought into the company by that sale. Although the typical company rewards salespeople for bringing in revenue, the goals of the company are to gain the profits associated with the revenue. If, for example, a product’s contribution margin is 50 percent, then $500 of sales revenue would yield the company $250 of profits.

The consequences of a profit-motivated company using revenue to motivate salespeople in this situation are illustrated in the table in Figure 14.7. If the salesperson doesn’t hold firm during price negotiations and lets the product go for $4.50 per unit, then the salesperson’s credit would decrease by 10 percent. However, the company’s profit from this sale would decrease by 20 percent. If the salesperson sold the product for $4.00, the salesperson’s credit would decrease by 20 percent, but the company’s profit would decrease by 40 percent. On the other hand, if the salesperson worked hard at communicating to the customer the benefits of the product and sold the item for $5.50 or even $6.00, the
salesperson’s credit would increase, but the company’s profits would increase by twice as great a percentage. The revenue-based sales force compensation method puts the salesperson’s incentives out of line with the company’s goals and gives the salesperson too little motivation to negotiate the highest possible price.

To correct for this disparity, a profit-based compensation method should be used. A simple method for implementing profit-based sales force compensation begins with setting a target price (TP), which is the price at which management expects the item to be sold. The formula for calculating the salesperson’s compensation would then be as follows:

\[
\text{Sales credit} = \{TP + [w \times (\text{Actual price} - TP)]\} \times \text{Units sold}
\]

The salesperson’s credit is calculated by multiplying the units sold by the target price plus the difference between the actual selling price and the target price. This difference is weighted by \(w\), the profitability factor. The profitability factor equals \(1\) divided by the product’s proportion contribution margin at the target price. Note that the profitability factor becomes larger as the product’s profit margin gets smaller. Thus, for a product with a 75 percent contribution margin, which is a rather high profit level, here is the outcome:

\[
w = \frac{1}{0.75} = 1.33
\]

For a less profitable product, with a 25 percent contribution margin, the profitability factor is much larger:

\[
w = \frac{1}{0.25} = 4
\]

Assumptions:
1. Salesperson sells 100 units
2. Target price = $5/unit
3. Item’s contribution margin at target price = 50%

<table>
<thead>
<tr>
<th>Selling Price</th>
<th>Revenue-Based Sales Credit</th>
<th>Salesperson’s Credit Difference</th>
<th>Company’s Profits</th>
<th>Company’s Profit Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6.00</td>
<td>$600</td>
<td>20% more</td>
<td>$350</td>
<td>40% more</td>
</tr>
<tr>
<td>$5.50</td>
<td>$550</td>
<td>10% more</td>
<td>$300</td>
<td>20% more</td>
</tr>
<tr>
<td>$5.00</td>
<td>$500</td>
<td></td>
<td>$250</td>
<td></td>
</tr>
<tr>
<td>$4.50</td>
<td>$450</td>
<td>10% less</td>
<td>$200</td>
<td>20% less</td>
</tr>
<tr>
<td>$4.00</td>
<td>$400</td>
<td>20% less</td>
<td>$150</td>
<td>40% less</td>
</tr>
</tbody>
</table>

Figure 14.7 Effects of Using a Revenue-Based Salesperson Compensation Method
Note also that if all sales revenue was treated as profit, then $w$ would become equal to one, and this profit-based formula would become the traditional revenue-based (price-times-units-sold) formula for calculating sales credit.

The sales credit numbers shown in the table in Figure 14.8 illustrate how this profit-based compensation formula can put the salesperson’s incentives in line with the company’s profit goal. With the profit-based formula, the salesperson’s credit for selling the product at $4.50 per unit would not be $450 as with the revenue-based formula, but rather $400:

$$\text{Sales credit} = \{(5.00 + \left(\frac{1}{0.50}\right) \times (4.50 - 5.00))\} \times 100 \text{ units} = 400$$

This is 20 percent less than the salesperson’s credit for selling the item at the target price of $5.00, which exactly equals the percentage reduction in the company’s profits from selling the item at $4.50 rather than $5.00. Similarly, using the profit-based formula, the salesperson’s credit for selling the item at $5.50 would be 20 percent above that for selling it at $5.00, exactly equaling the percentage increase in the company’s profits that would result from selling it at $5.50 rather than $5.00.

**Figure 14.8 Effects of Using a Profit-Based Salesperson Compensation Method**

<table>
<thead>
<tr>
<th>Selling Price</th>
<th>Profit-Based Sales Credit</th>
<th>Salesperson’s Credit Difference</th>
<th>Company’s Profits</th>
<th>Company’s Profit Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6.00</td>
<td>$700</td>
<td>40% more</td>
<td>$350</td>
<td>40% more</td>
</tr>
<tr>
<td>$5.50</td>
<td>$600</td>
<td>20% more</td>
<td>$300</td>
<td>20% more</td>
</tr>
<tr>
<td>$5.00</td>
<td>$500</td>
<td></td>
<td>$250</td>
<td></td>
</tr>
<tr>
<td>$4.50</td>
<td>$400</td>
<td>20% less</td>
<td>$200</td>
<td>20% less</td>
</tr>
<tr>
<td>$4.00</td>
<td>$300</td>
<td>40% less</td>
<td>$150</td>
<td>40% less</td>
</tr>
</tbody>
</table>

Assumptions:
- Salesperson sells 100 units
- Target price = $5/unit
- Item’s contribution margin at target price = 50%

The use of a profit-based sales force compensation method helps give the salesperson the appropriate motivation to do the hard work necessary for negotiating successfully. It increases the negative consequences of selling at a low price, thus reducing the salesperson’s inclination to use price to close the deal. It also increases the positive consequences
to the salesperson of selling at a high price. In so doing, it points the salesperson toward doing the hard preparation-phase work of understanding and communicating the product’s VTC, which, as we have seen, is at the heart of carrying out successful price negotiations.

**SUMMARY**

There are many situations where prices are not fixed but set through an interaction between buyers and sellers. This may occur through the many-to-one buyer–seller interactions of auctions or the one-to-one buyer–seller interactions of price negotiations.

Sellers choose to use auctions for price setting when there is uncertainty about an item’s best price and when there are large differences between buyers in the product’s VTC. Traditionally, auctions have been expensive to carry out, but the development of websites that carry out automated auctions has made it practical to also use auctions for the sale of everyday items.

Auctions carried out by buyers—procurement auctions—involve requesting price quotes from a number of sellers. The seller who makes the lowest bid wins the job. Although sellers often use an intuitive process to decide on bid levels, available information can be utilized more effectively if the seller uses a systematic procedure, such as choosing the bid that has the highest expected profit.

Price negotiation can help give buyers the feeling of getting a low price and can help sellers with price segmentation. Before meeting with the buyer, it is important for the seller to gather information on the product’s VTC. In the meeting phase of the negotiation, the seller should state a high asking price and be prepared to make concessions. The seller should also give supporting rationales for his or her actions and be prepared to respond to rationales, and possibly threats, from the buyer.

A seller to business customers might consider replacing negotiation with menus of many options at fixed prices. Fixed-price retailers may offer occasional concessions or price-matching guarantees. It is useful to have sales force compensation methods that are based not on sales revenue but rather on the level of profits resulting from the sale.

**KEY TERMS**

- interactive pricing
- auction
- negotiation
- English auction
- Dutch auction
- double-auction system
- first-price sealed-bid auction
- procurement auction
- second-price sealed-bid auction
- proxy bidding
- herd effect
- momentum effect
- bidding frenzy
- request for quotes (RFQ)
- winner’s curse
- relative bid
- preparation phase
- meeting phase
- concession
- negotiating rationale
- threat
- relative power
- distributive negotiation
- win-win negotiation
- value asymmetry
- price menus
- partial-negotiation policy
- price-matching guarantee
- revenue-based compensation method
- profit-based compensation method
- profitability factor
1. What distinguishes the two types of interactive pricing: auctions and negotiations?

2. Describe the four auction mechanisms that cover the vast majority of business auctions.

3. What are the three types of reasons for using an auction to set an item’s price?

4. Describe how eBay uses a combination of two auction mechanisms. How have Internet auction sites such as eBay expanded the viability of setting prices by auction?

5. Explain how setting a low starting price in an auction could have the effect of increasing the level of the closing price.

6. What is a procurement auction?

7. How would one calculate the expected profit of a bid? How would you use information on the expected profits of an array of possible bids?

8. What is a relative bid? Why is it important for the collection of bidding history information?

9. Give and explain the formula for using information about the average bidder to estimate the probability of winning the job. How would this formula be modified if there is specific information about one particular bidder?

10. Describe the forces that have worked against the continued use of price negotiations and the forces that have worked for its continued use.

11. Give some examples of the types of information that should be collected during the preparation phase of a price negotiation.

12. What are concessions? Why are they important in price negotiations?

13. What are value asymmetries, and what is their role in restructuring negotiations so that both sides can come out ahead?

14. How can an understanding of the individuals and roles in an organization’s buying center be used in preparing for price negotiations?

15. How could the use of price menus be an effective response to a seller being “beaten up” by regular customers in price negotiations?

16. What is a partial-negotiation policy? How might devices such as price-matching guarantees reduce the risks of such a policy?

17. Describe the formula given in the chapter for profit-based sales force compensation. How might the use of such a formula improve the outcome of price negotiations?
EXERCISES

1. For each of the following items, give and justify your view concerning whether the item should be offered in a catalog for a fixed price or whether an auction would be a more desirable method for determining the item’s selling price:

   (a) A Civil War military order actually signed by General Ulysses S. Grant
   (b) Sony’s PlayStation 3 video game console
   (c) A 1923 Ford Model T automobile, partially restored
   (d) Government sales of the oceanfront lots at an abandoned naval base

2. It is mentioned in the chapter that (1) auctions are appealing to sellers because they believe that auctions will allow them to sell items at relatively high prices and (2) auctions are appealing to buyers because they believe that auctions allow them to buy items at prices much below their value. Explain how both of these beliefs could be correct, even on the same transaction.

3. Say that you have inherited a sterling silver necklace with a six-carat ruby pendant from a distant relative and you would like to sell it on eBay. What would you take into account when considering what, if any, minimum price to mention in your listing of this item?

4. You are evaluating the possibility that your company bids $150,000 for a particular construction job.

   (a) If a bid of $150,000 corresponds to a relative bid of 1.20, what is the dollar profit that your company would make from winning the job with this bid? Show your work.
   (b) Calculate an estimate of the expected profit of the bid of $150,000 for this job. Assume that, historically, 55 percent of the bids of an average bidder for this type of job would exceed the bid ratio of 1.20. Assume also that you are bidding against three other construction companies. Show your work.

5. Your company, which provides bookkeeping services to municipalities and small businesses, is about to bid on a five-year contract to provide payroll services to a large suburban school district. Your past data indicates that the average bidder for this type of contract will submit a bid higher than a relative bid of 1.10 about 80 percent of the time. However, there is a new, more aggressive competitor in the area, Compu-Pay. You estimate that Compu-Pay will bid higher than a relative bid of 1.10 only 40 percent of the time. If your company will be bidding against Compu-Pay and four other bookkeeping services companies, what is your probability of winning the contract with a relative bid of 1.10?

6. Diversified Production Corp. is a large manufacturer of high-quality plastic parts. A major automobile company is one of Diversified’s oldest and largest customers. Annette, one of Diversified’s sales
representatives, has recently received a call from Patrick, the purchasing agent for the automobile manufacturer. Patrick told Annette that the price she quoted for the renewal of their contract for front-seat console supports was too high. Her price was $1.52 million. A competitor from Japan had offered to provide these supports for $1.20 million, and a domestic competitor has submitted a proposal for a price only a little higher than that. Patrick tells Annette that he will be unable to renew Diversified’s contract unless she offers a “substantial” price reduction. Annette has scheduled a meeting with Patrick to try to work out an agreement on this.

(a) What information should Annette gather in preparation for the meeting with Patrick?

(b) Give and justify your view as to what price Annette should start with when she meets with Patrick.

(c) How should Annette decide what concessions to make? Give some examples of negotiating rationales she could use to support her positions during the negotiation process.

(d) How might this situation be restructured into a win-win negotiation?

7. The management of a packaging materials company has decided to change how the company calculates the sales credit that forms the basis for determining the sales commissions for their sales force. Rather than use a salesperson’s sales revenue to calculate his/her sales credit, management now uses the profit-based compensation formula discussed in the chapter. To calculate the profitability factor, management uses the firm’s average contribution margin of 25 percent.

(a) For a product with a target price of $500 per unit, calculate a salesperson’s sales credit for selling 10 units of the product at a price of (1) $450 per unit, (2) $500 per unit, and (3) $550 per unit.

(b) What are the effects that this change is likely to cause on the behavior of the sales force? How might these effects be beneficial to the packaging materials company?

NOTES


3. This predicted equivalence has been supported by the results of an experimental study showing that English auctions and second-price sealed-bid auctions produce comparable amounts of revenue. See David Lucking-Reiley, “Using Field Experiments to Test Equivalence Between Action Formats: Magic on the Internet,” American Economic Review 89, no. 5 (1999): 1063–1080.


21. Ibid.


24. Ibid., 47.


