
Coffee, Tea, or Tuition-Free?

A few years ago, Internet retailing giant Amazon.com received some unwanted publicity when it was revealed that the company was charging different prices for movies sold to different customers. Amazon insisted that the price differences were random and amounted to an effort to simply test the market. But some customers complained that Amazon was using the practice to tailor prices to customer characteristics, charging more to people who were likely to be willing to pay more. The flap over Amazon's "market test" soon died out, but as time passes, Internet firms will find it almost irresistible to regularly charge different prices to different customers. The reason is simple: by tracking past buying habits, other sites visited, and so forth, firms can get a pretty good idea of how to engage in **price discrimination** among their customers, and thus increase their profits.

Now, price discrimination not only sounds like something that should be illegal, it *is* illegal, at least under some circumstances. Despite that, it is routinely practiced by businesses of all descriptions—and perhaps even by the college you attend. Interestingly, although price discrimination definitely benefits the firms (or colleges) that engage in it, you too may benefit. Let's see how.

First things first: Price discrimination is defined as the existence of price differences across customers for the same good that are not due to differences in the marginal costs of supplying the customers. Thus, price discrimination can occur when marginal costs are the same across customers, but prices are different, or

when prices are the same, despite differences in marginal costs. An example of the former occurs when pharmacies or movie theaters charge lower prices to "senior citizens" than to other customers. An example of the latter can be found at "all-you-can-eat" buffets, where the price is the same to all diners, even though some eat much more food than others.

There are three conditions that must exist for a firm to engage in price discrimination. First, the firm must be, at least to some extent, a **price searcher**—that is, it must be able to raise price above marginal cost without losing all of its sales to rivals. Second, there must be identifiable differences across customers in their willingness (or ability) to pay different prices for the same good. Third, the firm must be able to prevent customers who pay lower prices from reselling the good to customers who otherwise would be charged higher prices—or else customers eligible for the lowest price will buy on behalf of all customers.

The objective of price discrimination is, of course, higher profits for the firm that engages in it. To see how this might work, consider a firm selling to two identifiable groups of customers, say, retirees and working people. Also suppose that the retirees have lower income, and so perhaps have a higher **price elasticity of demand** for the good; that is, they tend to be more sensitive to changes in price. In this case, it may be possible for the firm to reallocate sales among customer groups, lowering prices slightly to retirees and raising them somewhat to working people, thereby getting more revenue at the same costs, and so earning higher profits. Of course, to be able to accomplish this, the firm must be able to distinguish between the two groups. (This ability is often approximated by offering the lower prices only to persons who can prove they are older and thus more likely to be retired.) Moreover, the firm must be able to prevent resale from low-price buyers to other customers; in the case of prescription medicines, pharmacies are aided by federal and state laws that forbid such resale, while in the case of movie theaters, the person getting the lower price generally must attend the movie personally to get the lower price. (This helps explain why movie rental companies like Blockbuster are less likely to offer senior-citizen discounts than are movie theaters: it would be too easy for seniors to rent movies

on behalf of other people who wish to avoid the higher prices applicable to them.)

If you have ever traveled on an airplane, you are likely to have been a beneficiary of price discrimination (although your parents—or their employers—may have been the victim of such discrimination if they fly on short-notice business trips). Prior to 1978, the fares charged by airlines in the United States were regulated by the federal government, so all airlines offered the same government-approved fares; discounts were rare beyond late-night (“red-eye”) or weekend flights.¹ Once deregulation occurred, airlines quickly discovered there were large differences in the price elasticity of demand across customers. Business travelers typically had a lower price elasticity of demand, and thus were willing to pay higher fares, than leisure travelers. Fares charged business travelers are now higher than they used to be, even though leisure fares are significantly lower than they were in the days of government regulation.

The precision and effectiveness with which the airlines engage in price discrimination have been rising steadily over time, thanks to a process known as “yield management.” Combining sophisticated statistical techniques and massive historical databases, together with computerized up-to-the-minute bookings, the airlines can predict with almost pinpoint accuracy how many business customers will want seats on a given flight—and how much they’ll be willing to pay. As a result, says one industry insider, “high fares get higher and low fares get lower.”

The process begins months before a flight ever departs, as the airline divides the seats on a plane into as many as seven or more different fare classes, or categories. Initial fares on a flight are established for each of the categories, and the yield-management computers begin the process of monitoring the reservations, comparing them to historical patterns. If advance bookings are slow, the airline will move seats to low-fare categories. But if business travelers buy higher-priced, unrestricted tickets sooner than expected, the yield-management computer removes seats from

¹ Those fares were also considerably higher on average than they are today, because the federal government agency responsible for regulating the airlines also prevented them from competing with one another on the basis of price.

discount categories and holds them for last-minute business passengers that are predicted to show up.

A host of techniques are utilized to optimize the blend between filling the seats on a plane and getting the highest possible fare for each seat. In the weeks leading up to a flight, the level of fares assigned to each category may be adjusted up or down based on the latest moves by competitors, and as the flight date approaches, lower-priced categories are likely to be closed out altogether. Moreover, some people seeking reservations may be told a given flight is "sold out" even though passengers using that flight as a connector to another of the airline's routes may find ample seating—for a price, of course. The result of all this fine-tuning is that passengers on the same flight from, say, Chicago to Phoenix, may pay round trip fares that vary by a factor of *five*—ranging, say, from \$240 for the lowest-priced seats to \$1400 for the top fares.

Interestingly, the same yield-management techniques refined by the airlines are now being used by universities when they decide on financial-aid packages offered to students. After all, given the nominal tuition at a university, a more generous financial-aid offer can be thought of as a lower price, and students, like everyone else, behave according to the **law of demand**. Universities have found, for example, that they can offer less generous aid packages to students who apply for early admission, because such students are more anxious to attend; as one financial-aid consultant notes, "Those who have the most interest in the school are going to be less price sensitive." In a similar vein, some colleges have found that people who come for campus interviews are more interested in attending; the response has been to offer slightly less generous aid packages to such students, even though the colleges routinely recommend that students come for interviews.

In addition to these regular features of price discrimination in financial-aid offers, universities also monitor their enrollment figures each year, just as the airlines watch bookings by fare category. If a school is getting, say, too many pre-med students and not enough in the humanities, financial-aid offers will be adjusted accordingly, with bigger than usual aid offers being made to the students the school is trying to attract. Schools that are noted for excellence in one area but are trying to maintain a balanced mix of majors have become particularly adept at the financial-aid game.

As the enrollment vice president for Carnegie Mellon University notes, without sophisticated adjustments to the blend of aid packages offered, "I'd have an institution full of engineers and computer scientists and I wouldn't have anybody in arts and design." Carnegie Mellon also recognizes the importance of competition in determining the prices it charges: After admitted students are notified of their aid offers in the spring, they are invited to fax the school any better offers they receive from other colleges. Using money from a special fund set aside for the purpose, the university generally meets competing offers received by desirable students.

Price discrimination has also shown up in the news lately on the international front. Most major pharmaceutical companies price-discriminate based on the nationality of the people buying their drugs. Partly because incomes in other nations are lower than in the United States, people in other nations have higher elasticities of demand than do American citizens. Hence, pharmaceutical companies sell prescription drugs elsewhere at lower prices than they do in the United States. But one of these other nations is Canada, and American senior citizens have found that by getting on a bus (or even just visiting the Web site of a Canadian pharmacy) they can save a bundle on their prescriptions.² Although this practice is technically illegal, as of this writing not much has been done by the governments of either the United States or Canada to stop it. If cross-border reshipments of prescription drugs continue to mount, however, the Canadians may find that American pharmaceutical companies wishing to protect their profit margins are unwilling to sell to them at the low prices of the past.

Price discrimination certainly profits the firms that practice it, but there is an entirely different question—one that cannot be answered by economics—as to whether it is fair. Most college students who can stay over a Saturday night, or make reservations a month in advance, probably don't mind the lower fares made possible by price discrimination. But business travelers are far from

² Another reason for lower prices in Canada is that it has a nationalized health care system, therefore, the government buys drugs on behalf of all Canadians. This practice makes the Canadian government a **monopsonist** (literally, "single buyer"), with the power to force drug prices down below what they otherwise would be.

pleased with the high fares they must pay to get where they want, when they want to, usually on short notice. "They've got you, and they know it," says one executive. The flip side, of course, is that without the extra revenue generated by price discrimination, some companies or colleges would be hard-pressed to survive. Indeed, when asked about the equity of fine-tuning aid packages to willingness to attend rather than ability to pay, one financial-aid official noted he had little choice in the matter: "I could make it very fair—and be out of business."

DISCUSSION QUESTIONS

1. First-class passengers generally pay higher fares than coach-class passengers, even when they take advantage of advance-purchase discounts. Is this price discrimination? (Hint: Seats in first class are generally leather rather than fabric, and are about 50 percent wider than coach seats. Also, there are more flight attendants per passenger in the first-class section.)
2. Is it price discrimination when a professional football team charges, say, \$150 per ticket for 50-yard line tickets in the lower deck and \$30 per ticket for upper deck tickets overlooking the end zone?
3. What factors other than income are likely to affect willingness to pay? How will differences in these factors among its customers affect the likelihood that a firm will engage in price discrimination?