Coca-Cola's New Vending Machine (A): Pricing To Capture Value, or Not?

On December 17, 1999, *The Wall Street Journal* ran a front page story headlined "*Tone Deaf*: Ivester Has All Skills of a CEO but One: Ear for Political Nuance." The article detailed how Coca-Cola Chairman and Chief Executive Officer M. Douglas Ivester's handling of one flap after another cost him the Coke Board's confidence, eventually leading him to abruptly announce that he would step down from his position in April 2000.

One of the many events highlighted concerned Ivester's comments about Coke's new vending machine technology. The article reported:

> A few months later came another public relations gaffe. Asked by a Brazilian newsmagazine about Coke's testing of vending machines that could change prices according to the weather, Mr. Ivester gave a theoretical response that came across as both a defense of the technology and a confirmation that it would hit the streets. "Coca-Cola is a product whose utility varies from moment to moment," he said. "In a final summer championship, when people meet in a stadium to have fun, the utility of a cold Coca-Cola is very high. So it is fair that it should be more expensive. The machine will simply make this process automatic."
>
> A Coke spokesman says the remarks were taken out of context. Though the company had tested the technology in a lab, it never had an intention of introducing it, the spokesman says, and [Coke] bottlers confirm this. Nevertheless, the CEO's answer created a flap, seeming to cast the company as one that wasn't customer-friendly.

The article also pointed out that:

> To Mr. Ivester, the accountant, the concept [of changing prices based on the ambient temperature] was just the law of supply and demand in action. To the board, the ensuing flap was Murphy's Law at work.
>
> For a consumer-product company that, in the words of a person close to the board, "is a giant image machine," the pummeling of Coke's image was increasingly intolerable.

Earlier, on October 28, 1999, *The New York Times* (*NYT*) had reported that Coke was testing vending machines that could raise prices in hot weather (see **Exhibit 1**). The *NYT* story precipitated

Professors Charles King III and Das Narayandas prepared this case using publicly available sources as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

an immediate response from the Coca-Cola Company (see **Exhibit 2** for the company press release posted on the firm's web-site on the same day), triggered a lampoon in *The Philadelphia Inquirer* on October 31, 1999 (see **Exhibit 3**), and generated national and international controversy (see **Exhibit 4**).

Exhibit 1 Text of the article that appeared in *The New York Times* on October 28, 1999.

Coke Tests Vending Unit That Can Hike Prices in Hot Weather

by Constance L. Hays

[T] aking full advantage of the law of supply and demand, Coca-Cola Co. has quietly begun testing a vending machine that can automatically raise prices for its drinks in hot weather.

"This technology is something the Coca-Cola Co. has been looking at for more than a year," said Rob Baskin, a company spokesman, adding that it had not yet been placed in any consumer market.

The potential was heralded, though, by the company's chairman and chief executive in an interview earlier this month with a Brazilian newsmagazine. Chairman M. Douglas Ivester described how desire for a cold drink can increase during a sports championship final held in the summer heat. "So, it is fair that it should be more expensive," Ivester was quoted as saying in the magazine, *Veja*. "The machine will simply make this process automatic."

The process appears to be done simply through a temperature sensor and a computer chip, not any breakthrough technology, though Coca-Cola refused to provide any details Wednesday.

While the concept might seem unfair to a thirsty person, it essentially extends to another industry what has become the practice for airlines and other companies that sell products and services to consumers. The falling price of computer chips and the increasing ease of connecting to the Internet has made it practical for companies to pair daily and hourly fluctuations in demand with fluctuations in price -- even if the product is a can of soda that sells for just 75 cents.

The potential for other types of innovations is great. Other modifications under discussion at Coca-Cola, Baskin said, include adjusting prices based on demand at a specific machine. "What could you do to boost sales at off-hours?" he asked. "You might be able to lower the price. It might be discounted at a vending machine in a building during the evening or when there's less traffic."

Vending machines have become an increasingly important source of profits for Coca-Cola and its archrival, Pepsico. Over the last three years, the soft-drink giants have watched their earnings erode as they waged a price war in supermarkets. Vending machines have remained largely untouched by the discounting. Now, Coca-Cola aims to tweak what has been a golden goose to extract even more profits.

"There are a number of initiatives under way in Japan, the United States and in other parts of the world where the technology in vending is rapidly improving, not only from a temperature-scanning capability but also to understand when a machine is out of stock," said Andrew Conway, a beverage analyst for Morgan Stanley. "The increase in the rate of technology breakthrough in vending is pretty dramatic."

Bill Hurley, a spokesman for the National Automatic Merchandising Association in Washington, added: "You are only limited by your creativity, since electronic components are becoming more and more versatile."

Machines are already in place that can accept credit cards and debit cards for payment. In Australia and in North Carolina, Coke bottlers use machines to relay, via wireless signal or telephone, information about which drinks are selling and at what rates in a particular location. The technology is known as intelligent vending, Baskin said, and the information gathered and relayed by Internet helps salespeople to figure out which drinks will sell best in which locations.

"It all feeds into their strategy of micro-marketing and understanding the local consumer," Conway said. "If you can understand brand preferences by geography, that has implications for other places with similar geography."

Coca-Cola and its bottlers have invested heavily in vending machines, refrigerated display cases, coolers and other equipment to sell their drinks cold. Over the last five years, Coca-Cola Enterprises, Coke's biggest bottler, has spent more than $1.8 billion on such equipment. In support, Coca-Cola has spent millions more on employees who monitor and service the equipment. In 1998 alone, it spent $324 million on such support to its biggest bottler.

And last week, Coke's chief marketing officer unveiled the company's plan to pump more sales of its flagship soft drink, Coca-Cola Classic. The program includes a pronounced emphasis on Coke served cold.

Sales of soft drinks from vending machines have risen steadily over the last few years, though most sales still take place in supermarkets. Last year, about 11.9 percent of soft-drink sales worldwide came from vending machines, said John Sicher, the editor of Beverage Digest, an industry newsletter. In the United States, about 1.2 billion cases of soft drinks were sold through vending machines.

In Japan, some vending machines already adjust their prices based on the temperature outside, using wireless modems, said Gad Elmoznino, director of the Trisignal division of Eicon Technology, a Montreal-based modem maker. "They are going to be using more and more communications in these machines to do interactive price setting," he said.

Industry reactions to the heat-sensitive Coke machine ranged from enthusiastic to sanctimonious. "It's another reason to move to Sweden," one beverage industry executive sniffed. "What's next? A machine that X-rays people's pockets to find out how much change they have and raises the price accordingly?"

Bill Pecoriello, a stock analyst with Sanford C. Bernstein, applauded the move to increase profits in the vending-machine business. "This is already the most profitable channel for the beverage companies, so any effort to get higher profits when demand is higher obviously can enhance the profitability of the system further," he said.

He pointed to a possible downside as well. "You don't want to have a price war in this channel, where you have discounting over a holiday weekend, for example," he said. "Once the capability is out there to vary the pricing, you can take the price down."

A Pepsi spokesman said no similar innovation was being tested at the No. 2 soft-drink company. "We believe that machines that raise prices in hot weather exploit consumers who live in warm climates," declared the spokesman, Jeff Brown. "At Pepsi, we are focused on innovations that make it easier for consumers to buy a soft drink, not harder."

Exhibit 2 On October 28, 1999, the Coca-Cola Company posted the following press release on its corporate website.

STATEMENT ON VENDING MACHINE TECHNOLOGY

ATLANTA, October 28, 1999 - Contrary to some erroneous press reports, The Coca-Cola Company is not introducing vending machines that raise the price of soft drinks in hot weather.

We are exploring innovative technology and communication systems that can actually improve product availability, promotional activity, and even offer consumers an interactive experience when they purchase a soft drink from a vending machine.

Our commitment for 113 years has been to putting our products within an arm's reach of desire. Offering the products that people want at affordable prices is precisely why Coca-Cola is the favorite soft drink of people in nearly 200 countries around the world.

The new technologies we're exploring will only enhance our ability to deliver on that promise.

Source: Coca-Cola Company Website: http://www.coke.com

Exhibit 3 Text of the article that appeared in *The Philadelphia Inquirer* on October 31, 1999.

Have a Coke, and Big Brother is sure to smile

by Jeff Brown

Now for the latest evidence that the world is going to hell in a handbasket: The Coca Cola Co., seeking new ways to make thirst pay, is working on a weather-sensing vending machine that will raise prices when it's hot. Isn't that immoral? I mean, if a man crawls in from the desert dying of thirst, would you demand a C-note for a glass of water?

No, but a Coke . . . that's different. It's just an indulgence. So what's wrong with charging what the market will bear - more when it's hot, less when it's cold?

In fact, computer chips may soon enable vending machines to constantly adjust prices according to any number of factors that cause momentary fluctuations in supply and demand, not just weather.

So, some busy fall evening in the not-too-distant future, you sidle up to a well-lit Coke machine in South Philly. The box has no buttons, does not display any prices. A spotlight shines on your face as sensors zoom in on your vital signs. A head-high video screen flickers on.

The machine sees you're in jeans, not a suit, so it scans its library of personalities, skipping the erudite Englishman and the slinky French model. It displays the good-natured face of Sylvester Stallone.

"Yo!" the Coke machine calls. "What can I do ya for?" Sly smiles, thinking of his royalty, perhaps.

"A Coke Classic, please."

"No problem. Four bucks."

"Whoa! They're 50 cents at the supermarket."

The machine pauses while its accent analyzer determines you aren't from the neighborhood.

"You see a supermarket around here?" it says. "Four dollars."

You decide to bluff. "Look, the machine around the corner gave me a Pepsi for half that."

"When?"

"A couple of hours ago."

"Yeah, it's rush hour now. You won't get a two-dollar soda anywhere." The head on the screen shakes from side to side sympathetically. Then the red and white machine goes silent, letting you sweat. This is going to be tougher than you'd thought. You pull out your Palm Pilot X, link to the Internet, and go to sodamachines.com.

"There are 14 soda machines within four blocks," you report, holding up the Palm Pilot for the machine to see. "You're telling me I can't beat four dollars?"

The Coke machine tallies the 90 seconds it has expended on this negotiation. Its motion sensor detects two customers moving around impatiently behind you. Its atomic clock reports that rush hour is winding down.

"Okay, three dollars," it offers, peeved.

"No way." You stuff your wallet into your pants and step back.

The Coke machine focuses an infrared scanner on your lips, calibrating your thirst. It counts its inventory and finds a surplus of Diet Coke. Its hard drive whirs for a second.

"I'll give you a Coke Lite for $2.50," it offers resentfully.

"Terrible aftertaste," you say.

"With a bag of nuts."

"Nah."

"Look, pal, if you're not buyin' move along."

Traffic is getting lighter. The two people behind you give up and leave.

"All right," the box grumbles.

You deposit two dollars, get your can, and turn to go.

"How about those peanuts?" the machine asks hopefully. "Fifty cents."

"I'm allergic," you answer.

The machine pauses a nanosecond while electrons zip around its circuits. It's a week day. Rush hour. Statistics suggest you work nearby. You'll be back. The machine activates its customer relations software.

"Have a nice evening, bud," it calls as you turn away, the face smiling widely.

"Hey!" it calls. "I'm a soft touch today. Just got my circuits cleaned. Don't expect a deal like this next time!"

As you disappear around the corner, the machine counts its remaining cans, assesses the odds of making a sale this late in the day, and looks at how it's doing on its sales goal - a little behind. It cranks up the volume on its Rocky voice and calls out to the nearly empty street.

"Coke Classic! Get your Coke Classic here!

"Only a dollar!"

Source: Reprinted with permission of the Philadelphia Inquirer.

Exhibit 4 Excerpts from an article that appeared on the About.com web-site on November 3, 1999.

Mean Vending Machines

by John S. Irons

This past weekend the news wires were all buzzing about the latest idea to come from the world of soft drinks. Coca-Cola is apparently considering creating a new kind of vending machine that would test the outside temperature and adjust the price of a can of soda upwards when it is warmer outside. Here's some of the typical reactions to the idea:

- "a cynical ploy to exploit the thirst of faithful customers" (San Francisco Chronicle)
- "lunk-headed idea" (Honolulu Star-Bulletin)
- "Soda jerks" (Miami Herald)
- "latest evidence that the world is going to hell in a handbasket" (Philadelphia Inquirer)
- "ticks me off" (Edmonton Sun)

What did they think the Coca-Cola company was doing anyway? Selflessly providing the world with a glorious beverage to further the goals of all mankind? Why should all these people be suddenly offended by a company trying to maximize profits?

"Price discrimination" is the term economists use to describe the practice of selling the same good to different groups of buyers at different prices. In the Coke case, the groups of buyers are segmented by the outside temperature (i.e. Jill when it is hot outside vs. Jill when it is cold). If possible, a company would like to charge a high price to those who place a high value on the good, while charging less to those that do not.

So, are you personally offended by Coke's plan to charge more for soda's when it is warm outside? Well, you had better get over it pretty quickly, there is already plenty of price discrimination out there, and there is MUCH more to come.

Rampant Price Discrimination

Price discrimination is quite common. Ever wonder why hardcover books are produced first and are so much more expensive than paperback books? Or, why it is so much cheaper to buy airline tickets far in advance? Or, why there are student discounts? Or, why matinee prices are cheaper for movies? Ever tried to buy a soda from a vending machine at a hotel or at a movie theater?

All these examples are attempts by sellers to charge different people different prices for the same good.

Much of the price discrimination in the economy may in fact be quite hidden. How do you know that the Crate and Barrel catalogue you just received has the same price for you as for someone living in another zip code? Those with a 90210 zip code see higher prices on their catalogues.

Why is the Vending Machine different?

In principle, the temperature sensitive vending machine is no different from any other form of price discrimination.

Although, I do think the idea that the process is automatic generates some additional discomfort - it is the idea that technology can effectively gauge our buying interests. The heat sensitive machine is a small step toward applying machine "intelligence" to profit maximization.

If you think that the vending machine idea is worrisome, just wait - the internet will be the most sophisticated price discriminator the world has ever seen. Smart vending machines will be the least of your worries. Online vendors such as Amazon.com may know quite a lot about you - your past purchasing habits, your internet preferences, your zip code, etc, - and they may want to use this information to adjust prices. Did you buy a Stephen King book last month? Maybe you'd like to buy another, more expensive, Grisham novel this month with a smaller "discount" chosen just for you.

The internet is much better than the "real world" at price discrimination, because it is so much easier to change prices. In fact they can set a price just for you. It's hard to imagine a traditional store doing this ("Hey, here comes John. Quick, raise the price of the new Krugman Book."). But for an on-line e-commerce store, this is feasible and, with a clever programmer on the payroll, quite easy.

Not all bad: Discrimination means increased efficiency. Actually, price discrimination can actually increase the overall efficiency of a market.

A loss of economic efficiency may occur when a company has some ability to set prices and there is no discrimination. The seller must pick a price that balances their desire to charge a high price to those that really want a product, with their desire to sell a higher overall quantity to those that are not willing to pay very much for it. Because of this, there are trades which would benefit both buyer and seller that do not happen - the resulting price is "too high" and the total quantity traded is "too low".

By identifying individual groups of consumers, a seller can provide an additional unit at a lower price to someone who before would have been priced out of the market. The company would now be willing to do this since they would not have to sacrifice profits by lowering prices for the high-demand group.

In the Coke case, some consumers - those who drink Cokes on hot days - will be worse off since they must pay a higher price, while some consumers - those who drink Coke on cold days - will be better off since they will receive a lower price. The Coca-Cola company, of course, will be better off. The sum total will be positive (pick your favorite Introduction to Economics textbook to see why).

Would you really be as offended if it was described as a discount on cold days?

So, if you are still stewing about the potential of higher Coke prices, I suggest you stock up the refrigerator and put some of that retirement money into Coca-Cola stock.