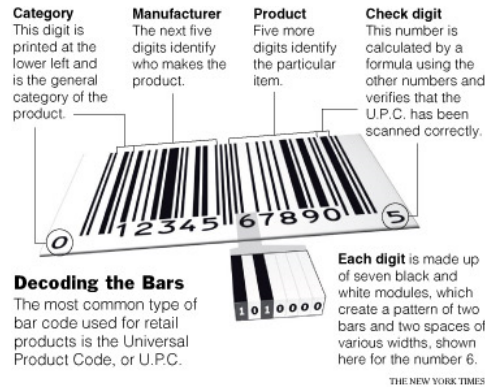


Game Changer in Retailing, Bar Code Is 35

Gerry C. Shih

NYT Published: June 25, 2009 The design was straightforward — 59 black and white bars. And the inventors' objectives were simple enough, too — to speed up the grocery checkout line and give supermarkets a new tool to track their stock.



In 1992, President George Bush tested a cash register that read bar codes. A bar code taken from the front page of The New York Times.

In 2006, Kathy Augustitus and her daughter Marissa read a code with a shopping cart scanner in Seymour, Conn.

But the bar code has become much more than that since it was first used to read the price on a 10-pack of Juicy Fruit gum (67 cents) on the morning of June 26, 1974. Now they are used to board airplanes and track packages. Bar codes help people with diabetes calibrate glucose meters and researchers study the pollination habits of bees. They inspired a hand-held video game, [Barcode Battler](#), in 1991.

They even played a role in the 1992 presidential race, when then-President [George H. W. Bush](#), at a campaign stop, seemed surprised by what had already become a technological staple of everyday life.

Today, bar codes are scanned more than 10 billion times a day around the world. And after 35 years, they are both the mundane minutiae of modern life and cultural icons of cold efficiency, identification and control.

“It was cheap and it was needed,” said George J. Laurer, who was already a veteran engineer at [I.B.M.](#) in 1970 when he was asked to lead a team assigned to devise a checkout system for grocery stores. “And it is reliable. Those three things probably contributed more than anything else.”

Now 84 and retired, Mr. Laurer continues to be a cheerleader for his invention even as the bar code is challenged by newer and much more sophisticated competitors. Radio frequency identification, or RFID, is one such technology.

RFID uses the same technology as dashboard toll collectors and building access key cards and allows businesses to identify and track specific items without a direct line of sight. But even as big players like [Wal-Mart](#) and [Procter & Gamble](#) have pushed ahead with the RFID technology, the cautious retail business, in particular, has pushed back, in part because of concerns about price.

Bar codes, after all, cost just half a cent each, while the electronic tags used in RFID cost more than 5 cents each. As a result, a significant portion of Wal-Mart’s suppliers rejected its mandate to adopt the newer technology.

“The technology took a bit of a black eye,” said Bob Sanders, a [Motorola](#) executive who once led a company that developed the first hand-held bar code scanner. A Wal-Mart spokesman, John Simley, acknowledged that “we hit realism” after the initial surge of “media-generated hype” for RFID in 2003. But he said Wal-Mart continued to introduce the technology.

Bar codes have evolved to respond to the competition. In recent years, two-dimensional matrices, which resemble jumbled checkerboards and carry much more information than bar codes, have come into use in Japan and have gained a foothold in America. Cellphones equipped with technology for scanning those patterns can read them and display bar codes that could, for instance, be used instead of a ticket for a concert or board a plane.

Mr. Laurer recalled that several designs, including a circular symbol, were considered before the team settled on what is now recognized as the Universal Product Code, the name of the familiar format that uses 30 black and 29 white lines to convey 95 bits of data in binary code. The 12 digits give nothing more than “an address to look up information” in a database, Mr. Laurer said.

When the initial design was proposed to a committee of reviewers at the [Massachusetts Institute of Technology](#) in 1972, he said, it was returned with only one recommendation: that the font of the “human readable,” the numbers found below the bar code, be changed to another font that was soon expected to become readable by machines and to supplant the striped pattern.

“They were absolutely sure that within a few years no one would be reading the bar code,” Mr. Laurer said. “Well, they were wrong.”

Mr. Laurer said neither I.B.M. nor any of its developers ever patented the bar code, though manufacturers pay a minimal annual fee to a nonprofit group, GS 1, to cover the administrative costs of overseeing the international standards.

Sharon Buchanan was a 31-year-old cashier at the Marsh supermarket in Troy, Ohio, the day the bar code made its debut. One or two other clerks were working that day, but she was chosen to work the checkout, she said Thursday in an interview.

“I was a little bit nervous at the time,” she said. “I mean what if this doesn’t work? Everybody was there taking pictures, the photographers, the local press, people from around town. But it worked just fine. It was quite my 15 minutes of fame, I suppose.”

For all the excitement that day, the adoption of the bar code was gradual. For years, businesses were hamstrung by shoppers who refused to buy bar-coded products, worrying that they might be cheated at the checkout counter without price labels.

At the time, “the vision of the bar code as some sort of surveillance device with ominous social implications was quite resonant,” said T. J. Jackson Lears, a cultural historian at [Rutgers University](#). But with the advent of [Google Earth](#) and global tracking devices, “it now seems comparatively innocuous.”

The bar code “has almost acquired a certain antique appeal as an early expression of the sorting and categorizing impulse in computer-driven marketing and sales,” he added. It seems, he said, “in some ways a charmingly archaic icon.”

RJN Note. The article was found by Ron Johnson in Chicago. Two years after their proposed use HP users were using barcodes for program sharing. See email exchanges about the article below. Jack is

Jack Stout, founder of the second chapter of PPC in Chicago.

From: [Jake Schwartz](#)

To: [Ronald Johnson](#)

Cc: [Jack Stout](#) ; [Richard J Nelson](#)

Sent: Saturday, June 27, 2009 5:33 PM

Subject: Re: Game Changer in Retailing, Bar Code Is 35

Ronald Johnson wrote:

Jack,

This article reminds me of the time we were creating bar codes for the HP41 in an RV in your driveway... That was a LONG time ago! Any idea what year?

Ron

Hi Ron,

That was 1980, in Wes Staples' RV.

Jake



What do programmers do when they get together? Program! Here Richard Nelson, (L to R) tries to get Barcode out of the HP-85 while Jim DeArras checks the previous effort. Jake Schwartz (far right) reads off the codes. Ron Johnson wrote the program and looks in the window of the motor home driven from Michigan by Wes Staples and Clarence Meister. Good barcodes were obtained by using HP-9845 paper in the HP-85A. Photo by Staples.

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