

What IBM wrought at RTP: the supermarket scanner

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When IBM announced recently that it was selling its Retail Sales Solutions Unit to Toshiba it hit me hard, very hard, because I was one of the members of the development team for the IBM Scanning Supermarket System.

The Supermarket System was released in 1974, followed soon after by the Retail Store System, and still later by the Banking Terminal – the ATM. The first two products were developed in Raleigh while the third, the banking terminal, was developed in Kingston, N.Y.

The earliest work on the IBM Scanning Supermarket started about 1971 when George J. Laurer, a Raleigh IBM engineer, began studying specifications being developed by the supermarket industry for a Uniform Product Code. At the time IBM did not have an optical bar code or equipment to read one. More important, the supermarket industry had not yet chosen a bar code design. Laurer's design was ultimately chosen and became the UPC symbol we have today.

I believe that at least 60 people were involved in developing the hardware and software for Supermarket, and twice that many for Retail. Most of these people worked at IBM Building 602, a leased building on Yonkers Road in Raleigh. Many other associated departments were involved – planning, marketing, field engineering, packaging, product test, quality assurance, safety engineering, human factors, and “the factory” in a building at Research Triangle Park that actually made and assembled the hardware, loaded the “ship-level” microcode, ran final tests and shipped the product.

Those of us who worked on Supermarket and Retail worked very hard, worked long hours, and were very conscious that what we were doing was very new and of great importance to IBM. Extreme secrecy surrounded the product – we did not tell family or friends what we were doing. We knew that a race was on with our major competitor to see who could make it to the marketplace first. (We did!)

In spite of – and perhaps because of – our hard work and dedication and accomplishments, friendships were formed that exist to this day. That is why I feel compelled to write about this. I may not be the best person to tell the story, but the story needs to be told.

These systems marked IBM's entry into the consumer marketplace. Up to that time, computers and their associated devices were kept in the “glass house,” a part of a

building specially outfitted for them and to which access was restricted to authorized personnel.

The mainframes and associated printers, communications devices and storage devices were very much larger than those that are used today. They sat on raised floors that provided room for the myriad electrical wires and cables that routed power and communication lines between the various devices and to the outside world, and, in many cases, for water pipes to cool devices. Some of these devices required enormous amounts of electrical power – and therefore required the additional cooling.

By contrast, Supermarket and Retail, as we called them, sat right out in the open and were operated by ordinary people.

For example, in the Supermarket System, the customer went through checkout just as before and saw the cashier pass the item over the scanner, saw totals and other messages displayed, gave tender and watched the cashier make change out of the cash register.

What the customer did not see was that the cash register, scanner and display were three components of a fully programmed computer system. Two printers, a scale and a controller completed the system. The controller or “big box” as we called it, was located in a room somewhere in the building. There, in a small office, store personnel could manage the local part of the store system and could communicate with a central hub, usually referred to as the host, where other store personnel could manage the data for a group of stores.

What the customer saw was called the “front end”. Everything else was the “back end. And though store chains saved some money at the front end, most of the savings were at the back end.

The intelligence provided by this computerized checkout system not only helped the central store manage inventory and sales, measure performance of individual cashiers, change prices and add and delete items, it could also measure the effectiveness of ads, determine which items to send to each store and target sales of specific items to specific stores.

Today we have computers all around us. Our children and grandchildren grow up with them. Inexpensive children’s toys have them. Our automobiles have ignition modules instead of distributors. Our smart phones can do magical things.

But this was not the case when IBM introduced the Supermarket and Retail systems. It was new, it was startlingly different, it was daring, it took a lot of courage and commitment from a lot of people right here in the Triangle.

Now, IBM is selling this part of the business to Toshiba for \$850 million.

\$850 million! Suddenly somehow that doesn't seem like a whole lot of money.
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