

I've been thinking...



Medication-Use Technology Following Point-of-Sale Migration Patterns July 2012

I've been thinking about shopper and patient migration patterns during my lifetime.

For most of my years, the point of sale has been fixed at the front of the store. We shoppers have been gathering our goods and taking them to cashiers who manually key prices into registers and collect our cash (or Visa Cards, which were introduced the year I graduated from high school with the class of '66). IBM studies during the early '70s revealed that 23 percent of items were entered over or under their actual prices.



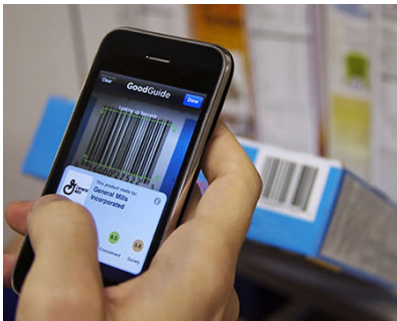
While the bar code was invented the year I was born (1948), it wasn't until two days before my first child was born (June 26, 1974) that the first bar-coded grocery item was scanned at a checkout counter. It was a ten-pack of Wrigley's Juicy Fruit gum at Marsh's

Supermarket in Troy, Ohio. Data-error rates virtually disappeared for scanned items, eventually paving the way for self-checkout stands during the late '90s—still at the front of the store.



A few years ago, Apple stores dumped their cash registers. To make a purchase, simply snag the nearest blue T-shirt to scan the product with his or her iPod and swipe your credit card. A transaction receipt will arrive via e-mail before you leave the store.

But wait, there's more. The other day, at the Bellevue Apple Store, I bought a Square (more in a moment) *all by myself*. I snapped a picture of the bar code on the package, my credit card was automatically charged, and I walked out with my purchase—all without having engaged a blue T.



And more. With Red Laser's smart phone app, the point of sale moves with me wherever I am in the world. In Minneapolis a friend recommended a book lying on his desk. Before leaving his office, I had scanned its bar code and bought the paperback on Amazon.com, which made it to my home in Bellevue before I did. I made a similar purchase from Brazil last month.

I promised more about Square. It's a small smartphone peripheral (pictured) that accepts payments by swiping credit cards wherever there is Internet or mobile phone service. Interestingly, both Obama and Romney campaign organizers are equipping staff and volunteers with Squares for collecting contributions for their candidates. Street vendors are taking payment for hot dogs and baseball hats with the same technology.

You will also recall during the '70s, cash withdrawals migrating from 9-to-5 teller windows in banks to 24/7 ATMs in convenience stores. Two years ago this month, Chase introduced an iPhone app that threatens to displace ATMs. Pull a bank check from a mailbox, snap its picture, and deposit it in your account without leaving home.



With the same phone, you may transfer funds to your Starbucks' account. While ordering that double-tall mocha latte, the GPS on your iPhone determines which of their 17,000 stores you are in. And, after moving four bucks and change from your pocket to Howard Schultz's, the app displays how much you have left in your coffee account.

Similarly, in today's healthcare environment, data retrieval and collection technology is migrating closer to the point of care. Computerized medication-administration programs first appeared in hospitals in the late '90s. However, back then computers were fixed at nursing stations (think front of store) rather than at the point of care. Today nurses in half of America's hospitals take mobile computing devices to bedsides to scan patient wristbands and medications. They are ensuring matches and documenting med administrations when and where they occur rather than down the hall at nursing stations at the end of shifts. In a few years, virtually all hospitals in our country will be using these applications.

More recently and closer to our homes, Walgreens now offers [outpatient applications](#) to their customers—moving the point of sale from pharmacies in the back of their

drugstores between 9 and 9 to patient's fingertips around the clock. Refills may be ordered simply by scanning bar codes on prescription bottles with Androids or iPhones.

While [Refill by Scan](#) offers Walgreens' customers convenience and promotes patient compliance, [Pill Reminder](#) improves safety and quality of care. This mobile app empowers users to track medication schedules and receive hourly, daily, and weekly alerts. Reminders are set up by scanning prescription bar codes and selecting preferences.

Yesterday I read about a mobile phone [app](#) developed by a hospital in Ireland for hemophiliacs. Patients record their medication usage at home by scanning drug-package bar codes prior to self-administration. They and caregivers are alerted to any potential risks (e.g., wrong medication, passed expiry date, recalls, refills, etc.), and medication administrations are electronically charted.

Then there is the emerging fields of telepharmacy and telemedicine. But I'm out of space.

In a hospital, at home, or on a trip, expect medication technology to increasingly meet you as point-of-sale systems do—wherever you are.

What do you think is next?



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