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If it works, don't change it!

How a stalwart technology from the 1980s continuesto be the workhorse for DSD digital invoicing.

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While it's good to be constantly looking ahead for new technologies that can benefit our business operations and our lives in general, sometimes it's also good to remember that technology that is already in place, and works, is worth a great deal more than technology firms marketing the next gizmo might have us believe.

Here's a good example. The electric telegraph had become a viable way of sending messages in the 1830s, yet it did not enjoy widespread adoption until decades later. This was, in part, because there was already a system capable of transmitting text-based message across hundreds of miles. First used in 1792 in Napoleonic France, le systeme Chappe used articulated arms mounted on tall towers to send line-of-sight semaphore messages from Paris to the fringes of the country in three to four hours. At its height, the French system comprised a network of 556 stations stretching a total distance of 3,000 miles. Other, similar systems were used elsewhere in Europe.

Another example is email. The first email message was sent, by computer programming pioneer Ray Tomlinson, in 1971. Yet it took a good 25 years for emails to begin to replace other forms of rapid communication. And it's a mistake to think we were all waiting around for hours even when we had to rely entirely on physical mail. In Victorian London, mail was delivered 12 times a day, and postal customers would complain if it took more than a couple of hours for a letter to arrive. Even in a small town, more than a hundred years ago, you could invite someone to lunch by the morning mail and expect a response before the soup was warmed.

And sometimes, it's not just a question of the expense involved in building a whole new infrastructure or persuading people to change the way they do things. We're still using home and office printers that are little different from 30 years ago. Sometimes, the old technology simply does what it needs to, at reasonable cost, and there's no need to change it.

A case in point is the DEX (Data EXchange) digital communication protocol that has enabled direct store delivery (DSD) drivers to quickly and easily transmit digital invoices to retailers' receiving clerks at their loading docks for more than 30 years. As such, it has more than earned its stellar reputation as the industry standard. Not only is it still in use by the majority of grocery chains and other large retailers, new companies are adopting it afresh on a regular basis.

"Everyone says DEX is dead or is going to die, but it keeps going," says Andrew Lynch, Director, at Versatile Mobile Systems (a Barcoding Inc. company), which supplies DEX/UCS systems – including Android-compatible ones -- to resellers and large consumer packaged goods companies. "It's



an old solution, and there's better stuff out there, but it costs money to upgrade. A lot of people have old antiquated accounting systems they don't want to change, either."

The DEX standardized system was developed in the early 1980s, designed to minimize the time, costs, errors and rework associated with issuing paper invoices. Since then, the protocol has been revised several times (the most currently used versions today are 4010 and 5010). Since the late 1990s Versatile Mobile Systems, a subsidiary of Barcoding Inc., has offered DEX software solutions on every major mobile operating system, including DOS, Pocket PC, Windows Mobile, and now, Android. It continues to support up to UCS version 6030.

Basically, DEX allows supermarket chains to accept invoices through handheld devices carried by delivery staff. A driver arrives at the delivery dock at the back of a store and unloads 50 cases of Doritos. He or she then plugs a handheld device into a dedicated port at the site and – after confirming quantities and pricing with the receiving staff at the back door – generates an invoice that gets submitted electronically. The advantages over paper-based invoicing are impressive. Not only does the supplier get paid faster, but the invoicing data stays in one accounting system which can then push information into inventory management and other business management systems.

In theory, DEX could be replaced by more up-to-date technology such as NEX. NEX is more of a trust-based system and leaves room for shrink. DEX is an EDI system, and it requires a device



that has to be plugged in via a cable. As the devices have gotten smaller – including relatively new Android devices -- plugging in a cable has become somewhat more challenging. Sometimes the cable is considerably more rugged than the device being used. The drivers also often lose the cables, or they break, and some DEX device manufacturers have tried developing Bluetooth capabilities. Another challenge is that the DEX system requires users to generate individual certification for each individual location used -- each retailer has its own nuances that require a software fix to match the way they operate. Nevertheless, it remains the go-to proven solution.

"Retailers don't want anything new," argues Lynch. "People say they're going to do their own thing, but that never happens because there's a big barrier to entry. It takes suppliers a year or two to figure out how to get the equipment to speak the language the retailer needs. None of the retailers wants to put a Bluetooth dongle in every back door in the country. It's just not going to happen."

Paul Brill, Head of Information Technology at Home Run Inn Pizza, a Chicago-based pizza restaurant chain, is happy with the benefits of the DEX system as they stand. He said it greatly aids in ensuring the speed of operations. "There's



a dramatic reduction in wasted time through not having the same process performed twice – once by the sales rep, and an identical second time by the customer's receiver, who you often must wait for." Brill says the DEX system also delivers great accuracy. "The DEX challenge/reply protocol ensures that the customer has received the data properly at the point of delivery, and that mistakes in pricing, as well as other billing issues, don't crop up days or weeks later with the customer's accounts receivable department," he added.

Jim Hilton, Director of Vertical Marketing Strategies at Zebra Technologies, which manufactures DEX systems, among other technologies, admits advancements in the DEX system have been tardy at times. "The technology almost froze in time up until four or five years ago," he says. "The cable was the single largest point of failure, so we partnered with Versatile Mobile Systems and Barcoding Inc. four years ago to make it more transparent and smarter." As Hilton explains, when you had a "dumb" cable passing a file between one point and another, if it failed, there was no way of knowing if it was sending or receiving properly. Plus, neither the person who was operating it or watching it being operated was a technology expert. "A back-door receiver and a delivery guy were in no position to troubleshoot," Hilton points out. "Sure, the supplier's back office could send an Advance Shipping Notice (ASN) electronically, but that implies that what is planned a week earlier is what's going to be what's needed to be delivered on the day. And that's simply not the nature of the supermarket retail business. Add to that there's going to be returns coming out of that store, which means creating an invoice record out of nothing."

Why not just change it all so the same functions can be performed via Wi-Fi? Hilton says it's not just about the pain and expense of widespread replacement of hardware and software. "The DEX connection is like a church key into the network. It's tough to hack something when you have to be physically standing there with the people you're trying to hack," he says. "So, actually, DEX is a beautiful thing in terms of security. We at Zebra and Barcoding want to put the message out there: the transactions and the technology are as solid as ever. We're focused on making it smarter and more transparent, so that it's seamless for the delivery person."

Meanwhile, many major supermarket chains continue to swear by DEX. Others that chose to adopt different methods have recently adopted DEX to gain visibility to store inventory in this era of e-commerce.

"Whether it dies or continues to grow depends on the retailers," concludes Lynch. "As new devices/smartphones are introduced, we reciprocate by ensuring sustainable DEX operations can be performed on those platforms. In the end, it's a case of: if it works, don't change it. If you need DEX, we have a solution for you. It's not cutting edge -- it's pretty simple and old school. But it's out there, it works, and we have been supplying the software for over 20 years."

We live in an age of technology, for sure. Funnily enough, that's what they said during the Industrial Revolution of the 18th Century, the rise of manufacturing in the 19th Century, and the astonishing developments in transport, communications, medicine and just about everything else in the 20th Century. In the current era, it's more important than ever to carefully assess whether new technologies provide better solutions than the old ones.

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