

NFC Payments – Revolutionary or Evolutionary Industry Development?



By David Tushie,
Magellan Consulting,
Inc., ICMA Standards
Representative

I have just returned from the first-ever ICMA Technology Summit, where I was energized by each of the topics and speakers. My congratulations to Barry Mosteller, and the ICMA staff, for putting together a dynamic agenda and set of topical issues for discussion.

One of the topics of both much discussion and differing opinion was that of NFC (near field communication) and how it could impact our traditional card business. Since the editorial focus of this issue of *Card Manufacturing* is centered on card market trends, it seemed appropriate to devote this column to my view of NFC and what the near term impact is likely to be.

The anticipated significance of NFC is that a smartphone device (e.g. Apple iPhone, Blackberry, Google Android) could have a payment application that replaces, and thereby eliminates, the need to carry a physical card in a wallet/purse. A “virtual card” application is created within the smartphone using the intelligent chip and wireless communication resources resident within such mobile phones. Most prevalently, NFC is proposed for EMV credit/debit payment applications of Visa, MasterCard, American Express, Discover and JCB as an alternative to their contact and contactless card configurations.

While I am enthusiastic about the promise and utility of NFC technology to simplify and help organize our busy lives, I do not believe a wide-scale adoption of NFC payments is anytime near. There are several technical and practical hurdles to overcome before

we reach meaningful adoption and hence, any broad implementation is likely to be appreciably different than what we see being proposed today. I see some of the biggest hurdles as falling in the following broad categories:

1. Infrastructure changes related to the business model of the key industry providers
2. Technology issues with communication speeds, reliability and backup
3. Standards development
4. Consumer expectations

The business model challenges I refer to deal with the major industry participants who all have a stake in this new payment process. Bank issuers, mobile network operators (AT & T, Verizon, T-Mobile, Sprint, etc.) and handset/operating system providers (Google Android, Apple, Samsung, etc.) all have their own models where they are the center of the customer interaction and they all want to control access to the “secure element” required for the payment application. Basically, the handset providers want to embed the secure element in the handset. The mobile network operators want



to incorporate the secure element into their USIM module (card), issued and managed by the MNO (mobile network operator). And the banks prefer introducing a new micro SD card format that contains both the secure chip and an NFC communication chip, issued and managed by the bank issuers much like they do today. While these large institutions are used to getting their way in the marketplace, my expectation is that they will ultimately find a way to work with each other. This will take time, however, and will not occur easily or quickly.

Magnetic stripe card transactions (swipe or contactless) are straightforward and routine. In contrast, the amount of data being exchanged at the POS for an EMV transaction is not trivial. Mutual authentication of the card and terminal as well as key exchange, cryptogram generation and transmittal take considerably more time than what is commonly experienced with a magnetic stripe transaction. Data communication transfer rates to accommodate this amount of data are only starting to be discussed. This will have a huge impact not only on the ultimate technologies used to effect such high speed data transfer rates but also on the handsets and transaction terminals used in the transaction. When such technologies are under development, I suspect that merchants will be less willing to invest in "interim" capabilities that don't fully realize the expected benefits. Consumers who will have to place their handsets on a terminal

for several seconds, as opposed to tapping a terminal like they do today with a contactless magnetic stripe emulation, will be unhappy with such terminal performance.

Another technology related issue is that of power loss on the handset itself. Smartphones have been known to lose power in operation, whether from heavy use and/or inadvertently failing to turn the device off when not being used. When a consumer relies on their smartphone for payment, they will probably demand a backup card for such situations so that they have some means of financial transaction. A card in the wallet/purse provides such backup.

Ultimately, ISO standards will also be required to assure interoperability with handsets and terminals. Terminal suppliers in particular will be looking for guidance from ISO on these issues of communications protocols, data transfer rates, and technologies to accomplish them. While standards provide a valuable role for industry, we all know how long change takes to work its way through these organizations.

Finally, consumer expectations will ultimately determine the adoption rate and success of NFC payments. One of the speakers at the North American Workshop asserted that research has shown that consumers will not use payment technologies that take longer than two seconds to transact and have less than 99.99 percent transaction reliability. This is a huge hurdle to overcome for NFC in its current form. ☺



single pass edge-to-edge printing from blank to full face

Edge-to-Edge Surface Printing & Personalization

TOP Features:

- Offset press not required
- Two sided printing with varnish in one pass
- Full face edge-to-edge printing
- CMYK surface DoD print for short runs
- Unique CMYK cards



ATLANTIC ZEISER Inc.

15 Patton Drive West Caldwell
New Jersey 07006 - US
Phone +1 973 228-0800
sales@atlanticzeiserUSA.com

www.atlanticzeiser.com

For more information
use your smartphone

