payments system research briefing

December 2005 | Federal Reserve Bank of Kansas City

Contactless: The Next Payment Wave?

by Terri Bradford, Payments System Research Specialist

The U.S. payments system continues to transition from one that was predominantly paper-based to one that is increasingly electronic. While increased use of automated clearinghouse (ACH), debit card, and credit card payment options have sharply reduced the market share of check payments, the number of cash payment transactions also is likely to be reduced by conversion to electronic transactions.

It is reported that the number of debit and credit cards in consumers' wallets is not expected to grow rapidly in the coming years (*ATM & Debit News* 10/06/05). So, one challenge for networks and issuers is to get consumers to use their cards more, in particular as a replacement for cash. Toward that end, the card industry has employed a number of product development and pricing strategies to increase acceptance of card products by merchants who deal primarily with smaller-ticket sales. Specific industries targeted include theaters, quick-service restaurants, drug stores, service stations, and convenience and specialty stores. Just this past month, for example, Visa announced that it will ease further small-ticket restrictions, lowering the fees it charges for certain retailers to accept credit and debit cards for purchases of under $15 and raising to $25 the maximum purchase for which qualifying merchants may accept a credit card without a signature (*American Banker* 11/1/05).

These strategies appear to be producing results: 1) consumers are increasingly using cards for purchases at these newly targeted retail locations, 2) these retailers and their consumers are experiencing faster transaction times, and 3) average ticket sales are higher for card payments versus cash payments. So, with card payments making inroads into the market share of cash payments, what could be next?

The answer: making card payments an even faster and more convenient option. Enter contactless capabilities. Just as the magnetic stripe expedited card payments as compared to impression machines and telephone authorization, contactless technology has the potential to do the same.

What are contactless payments?

A very simplified explanation of contactless payments is that they are "traditional" payments (credit and debit cards, for the most part) that utilize microchips and radio frequency identification or near field communication technologies to effect transactions without physical contact between the payment

Exhibit 1029
Microsoft v. Proxense
IPR2024-00407

device and the point of sale (POS) terminal. The contactless element, however, can be embedded in "nontraditional" items such as key fobs, watches, or even telephones.

ExxonMobile was one of the pioneers of contactless payments in the United States, having launched its SpeedPass product in 1997. SpeedPass enabled ExxonMobile's customers to pay at the pump with the wave of a key fob. Though SpeedPass was piloted for use at other merchant locations, such as McDonald's and Stop and Shop, those pilots were discontinued. Today, the more than 6 million active SpeedPass devices remain proprietary to ExxonMobile locations.

In 2003, American Express launched its ExpressPay "waveable" product, and MasterCard introduced PayPass, a "tap and go" product. And, in 2004, Visa introduced Visa Wave. Whether waved or tapped, all employ a standard, open technology and can be used for payment at any merchant that is able to accept it (*The Philadelphia Inquirer* 10/27/05).

However, until recently, the deployment and adoption of contactless payments had been relatively modest. So what is the impetus for the renewed interest in contactless payments? Widespread and growing merchant acceptance of card payments in small-dollar settings and subsequent consumer adoption have created a ripe atmosphere. And card issuers, realizing the opportunity to capitalize on the revenues to be gained by converting cash transactions, have demonstrated both an interest and willingness to explore ways to differentiate their card products.

Issuer deployment

MBNA has been issuing contactless affinity cards targeting sports stadiums in a host of cities. And, during the last several months, issuers like Citibank, HSBC, JPMorgan Chase, and Key Bank have announced partnerships and/or plans to deploy contactless payments products. Citibank has announced that it will issue 2.5 million debit cards and key fobs with MasterCard's PayPass technology. HSBC Group's U.S. banking unit began replacing existing customers' debit cards with new cards embedded with MasterCard's PayPass technology. It reportedly has plans to issue cards to more than 1 million existing and new customers by year-end and eventually will reissue to its nearly 3 million debit card customers. JPMorgan Chase has begun deploying its product, "blink," in both MasterCard- and Visa-branded cards in Atlanta, Denver, New York, New Jersey, and Connecticut. In addition, Key Bank has begun issuing MasterCard's PayPass cards for debit transactions to its 1.5 million checking account customers. With all of this activity, it appears that contactless devices will be widely distributed to consumers in the weeks and months to come.

Not only are issuers deploying cards, but also other contactless devices are on the way. Citibank has reported plans to roll out a contactless key chain attachment to its estimated 2.5 million debit card customers by the end of this year. And, it has plans to offer its customers a money clip that can substitute for a credit card sometime next year. Also, MasterCard has developed prototypes of jewelry and watches that double as credit cards. Discover reportedly is testing contactless cell-phone payments with vendors that accept ExpressPay and PayPass products. In addition, KeyCorp's banking unit also is exploring non-card devices. It all sounds a bit like the old television show "Get Smart," doesn't it? But, the motivation is product differentiation.

Merchant acceptance and early results

As small-ticket merchants began to accept card payments, some opted to install POS equipment that was already contactless-enabled. Others, having experienced the increase in speed at checkout that has come with cards, now are interested in the additional time that can be saved with contactless payments.

Drug stores like CVS Corporation, Duane Reade, and Walgreens; quick-service restaurants like Arby's, Carl's Jr., Cold Stone Creamery, Kentucky Fried Chicken, and McDonald's; movie theater chains like Regal Entertainment Group and AMC Theaters; 7-Eleven and Sheetz convenience stores; and a host of NFL stadiums (Kansas City Chiefs, Washington Redskins, Seattle Seahawks, Baltimore Ravens, Philadelphia Eagles, and New York Giants) all have begun to accept contactless payments.

Aite Group reports that CVS, the drug store chain, has found the average contactless transaction takes 12.5 seconds versus 26.7 seconds for a magnetic-stripe card payment and

33.7 seconds for a cash transaction. In addition, they have reported that the average transaction value with a contactless payment is 20 percent higher than that of a cash transaction. Sheetz, the convenience store chain, also has reported that contactless payments are faster than magnetic-stripe and cash payments, although, in their case, cash is somewhat faster than magnetic stripe.

Clearly, there is much to be learned about the benefits that contactless payments may offer parties involved in POS transactions. Further, there remain unanswered questions, such as what are the operational and fraud risks, and how will interchange fees impact merchants' decisions to accept contactless payments? But, momentum seems to be building for contactless payments, and a rise in their use seems very likely.

payments system research

Web site: www.kansascityfed.org/home/subwebs.cfm?subweb=9

The Payments System Research Department of the Federal Reserve Bank of Kansas City is responsible for monitoring and analyzing payments system developments. Staff includes:

Terri Bradford
Payments System Research Specialist
Terri.R.Bradford@kc.frb.org
816-881-2001

Fumiko Hayashi
Senior Economist
Fumiko.Hayashi@kc.frb.org
816-881-6851

Zhu Wang
Economist
Zhu.Wang@kc.frb.org
816-881-4742

Nathan Halmrast
Research Associate
Nathan.Halmrast@kc.frb.org
816-881-4721

Rick Sullivan
Senior Economist
Rick.J.Sullivan@kc.frb.org
816-881-2372

Stuart E. Weiner
Vice President and Director
Stuart.E.Weiner@kc.frb.org
816-881-2201

The views expressed in this newsletter are those of the author and do not necessarily reflect those of the Federal Reserve Bank of Kansas City or the Federal Reserve System.