payments system research briefing

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A Backward Glance While Looking Forward

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It has been almost a decade since the predecessor to the *Briefing*, a column called *The E-Files*, was introduced to cover emerging payments topics.[1] Over this time, the steady introduction of new payments products and technologies conditioned anticipation of the "next big thing." With a new decade approaching, it seems a good opportunity to reflect. This issue of *Briefing* takes a backward glance at some of those early emerging payments and examines their status today and where they may be heading.

Check Conversion

At its introduction, check conversion was taken to mean conversion of a physical paper check to an electronic payment before it ever had the chance to enter the collection process—that is, conversion—at the front end. Check conversion entailed extracting the routing number and payment information from a paper check and transmitting that information electronically to the paying bank via the automated clearinghouse (ACH).

In 1999, the first of many electronic check conversion options introduced by the National Automated Clearing House Association (NACHA) addressed checks used at the point-of-purchase (POP). By the end of the following year, 32 million checks had been converted into ACH debits at retail locations. Soon after, a number of other check conversion options followed. Applications that allowed for check conversion via-Internet (WEB) and phone (TEL) and for the re-presentment of checks (RCK) that did not clear a previous presentment followed. By the end of 2001, more than 200 million checks had been converted to ACH debits. 2002 saw the introduction of a fifth application that allowed for the conversion of checks sent to or placed in a biller's lockbox (ARC). And, by the end of that year, more than 490 million checks, roughly 6 percent of the total 2002 ACH network volume, was converted to electronic payments.

As the adoption of electronic conversion of paper checks at the front end of transactions via the ACH was growing, means evolved for conversion of paper checks to electronic at the back end of processing as well. Back-end conversion entailed using software and hardware to capture images of the front and back of paper checks accepted for payment and then transmitting those images to a financial institution for deposit or subsequent processing. The original check would be stored, or truncated, somewhere along the process. Signed into law in October 2003 and enacted in October 2004, The Check Clearing for the 21st Century Act (Check 21) facilitated such check truncation by creating a new negotiable instrument called a substitute check, essentially a hard copy

of the check image in lieu of the original item. In less than five years, 94 percent of forward checks (items being deposited for a first presentment) and 75 percent of return items (forward items that were denied presentment) deposited at the Fed were in image cash letters (a group of items, in this case check images, accompanied by a listing of contents). With regard to items sent by the Federal Reserve to financial institutions, 69 percent of forward items and 17 percent of return items were delivered in image cash letters.

And, in the meantime, ACH check conversions have continued to grow as well. By year-end 2007, more than 5.2 billion checks were converted to ACH debits. Further, a sixth ACH conversion method, back-office conversion (BOC) also was introduced. In 2008, NACHA reported that nearly 5.7 billion checks had been converted to ACH debits, resulting in electronic check conversions comprising nearly one-third of all ACH transactions processed that year.

When check conversion was first discussed in *The E-Files* as an emerging payment, it was noted that "as electronic check processes continue to evolve, it is likely that the line between the familiar paper check and various forms of electronic payments will continue to blur." In one sense, that result has not materialized. There hasn't really been a blurring of the line between paper checks and electronic payments. Rather, electronic payments have become substitutes for paper check payments, and as a consequence, use of paper checks is on the decline. However, in another sense, a blurring of the line has indeed occurred. But instead of that line being between paper and electronic payments, it is the line between ACH and check imaging that is blurring and creating an interesting dynamic. Check image now appears to be nudging innovation in ACH. Same-day settlement of some ACH transactions is on the horizon, being seen by some industry experts as necessary to level the playing field with check image exchange. The question raised by this dynamic may be, "As check conversion methods and image technologies continue to evolve, will the blurred line between ACH and check image eventually be erased?"

Person-to-Person Payments

The concept of person-to-person (P-2-P) payments arose in 1998 when a service called PayPal was introduced as a way to transfer funds from one Palm Pilot to another. When that idea didn't take off, the model was eventually modified for use as a payment alternative to fill a void in another innovative space—online auctions. It was in online auctions that P2P payment found its niche as a faster and more reliable alternative to personal checks for sellers who couldn't qualify for merchant credit card accounts. PayPal essentially allowed one person to pay another via credit card, bank account or PayPal account balances without sharing personal financial information. Eventually, financial institutions and other nonbank service providers introduced similar services, but ultimately it was the nonbank provider, PayPal, that captured the online auction market.

With success in providing a payment alternative for online auctions, other uses of P2P services were contemplated. NYCE Corporation explored using its EFT network infrastructure to allow P2P payments with immediate funds availability to be made from a number of devices including the Internet, ATMs and by phone. However, concerns such as potential security risks arising from the sharing of ATM or debit card information proved difficult to overcome. Another idea for use involved getting online merchants outside of the auction space to accept P2P services as a payment option. This use of P2P services is experiencing some success. Today, P2P services like PayPal, Google Checkout, and Bill Me Later, are being accepted by online retailers like WalMart, Amazon and Match.com. Further, more than 100,000 organizations that receive charitable donations accept PayPal as well.

In terms of what the future might hold for P2P payments, Glenbrook Partners, a payments strategy consulting firm, predicts that alternative payment systems will be used in 30 percent of online transactions by the year 2012. So, while eight years ago an *E-Files* article suggested that only time could tell how widely P2P payments would be used, there seems now to be at least a partial answer. Though some of the contemplated uses have not fully materialized, today more than just small online businesses utilize P2P as a means of accepting online payments. And, in terms of PayPal, it is now a global online payment service provider conducting transactions in 18 currencies with more than 153 million accounts worldwide.

Account Aggregation

Pioneered by nonbank technology companies like Yodlee, account aggregation was introduced as a financial service

that offered consumers a way to consolidate their account information maintained on various Web sites. By furnishing the service provider with their user names and passwords, consumers could view information from their checking, savings, credit card, brokerage, mutual fund and reward accounts in one place electronically. This account aggregation might have been accomplished through the use of a database that compiled all of the information, but at the product's introduction it was more often accomplished through a process called "screen scraping," which essentially entailed grabbing an image of the desired information at whatever location it resided and pasting it into a consolidated view.

Financial institutions took notice of the service and voiced concerns about the methods used by nonbank providers to gather and consolidate consumers' account information. However, financial institutions also observed that account aggregation services presented cross-selling opportunities, a way to enhance existing customer relationships, and perhaps presented a tool for retaining valuable customers. With such potential benefits, institutions like Chase, Citibank, Morgan Stanley and others introduced their own private-label aggregation sites.

As was speculated in 2001, trust of the provider of aggregation services proved to be an important consideration with regard to which, if any, might gain traction. While there was some consumer adoption of services offered by nonbank providers, eventually it would be the trust advantage that financial institutions enjoyed that drew consumers away from nonbank sites to the services and products financial institutions began to offer. Ultimately, the companies that once marketed services directly to consumers shifted their focus to providing the technology that supports financial institutions in offering services to theirs. However, efforts to provide aggregation services directly to consumers have not completely abated. Companies like Geezeo and Mint offer financial management and recommendation services directly to consumers. Worth noting, though, is that both have recently announced changes to their business models that entail offering aspects of their respective services to financial institutions as well.

Electronic Bill Presentment and Payment

As Web sites evolved from being information-oriented to becoming more transactional, financial institutions began offering their customers the ability to inquire about transaction history, account balances, view account statements, reorder checks and even transfer funds from one account to another. Electronic bill presentment and payment (EBPP) models also were introduced to enable electronic payment for goods or services. With the introduction of this payment option, consumers were provided with other alternatives to bill payment by paper check or recurring ACH debit. They could schedule payments via their financial institution's Web site pay directly at their billing company's Web site or by phone; or they could use the services of a third-party to which they subscribed to have their bills rerouted, scanned and presented in a consolidated view for payment.

EBPP offered benefits to consumers, billers and financial institutions alike. There were substantial savings in time and money required to print and mail traditional billing statements and to remit payment, reduction in the use of paper, and in some cases, the acceptance of credit and debit cards in addition to ACH as payment options. Today, electronic bill payment is a common feature of online banking and billers' sites. And, third-party providers of consolidated services, like PayTrust, still exist.

When first discussed in *The E-Files*, it was suggested that though numerous EBPP models were available and the potential market was large, only time would tell whether EBPP would grow sharply. While reports vary, it is agreed that more than 50 percent of bill payments are now made electronically. And, Hitachi Consulting's 2008 Study of Consumer Payments Preferences finds that consumers made 62 percent of bill payments electronically in 2007. Twenty-three percent were paid online at a biller's site, 18 percent were paid at a bank or credit union's online banking site, and 21 percent were paid automatically either via the ACH or an automatic charge to credit or debit card accounts.

It is reasonable to anticipate that use of EBPP services will continue to grow. Electronic bill payment services are still evolving. For example, NACHA's electronic billing information delivery service (EBIDS) is enhancing financial institutions' ability to present billing information on their online banking sites so consumers can view and pay their bills in one location. This conceivably will make the service more convenient and perhaps more attractive to potential users. And, an untapped

market remains—a significant number of bill payments are still being made by check. The 2007 Federal Reserve Payments Study revealed that of the nearly 31 billion checks paid in 2006, 59 percent were for remittance purposes with 38 percent of those being written by consumers and 21 percent being written by businesses. Clearly, these payments represent opportunities for EBPP services.

Conclusion

While some may exist in formats different than originally envisioned, many early offerings of emerging payments have survived and even flourished. Check conversion technologies and EBPP have had significant impact on the payments landscape, contributing to the decline of the paper check. P2P payments have broadened consumer payment choice and facilitated opportunities for online commerce. And, account aggregation services have enhanced the level of financial information available to consumers. Although the pace of innovation may have slowed a bit, the next wave of emerging payments—mobile, contactless and biometrics—has already arrived. Another decade or so down the road it will be interesting to see what the next backward glance reveals. Perhaps the now-blurred line between payment types will have grown even fainter.

Endnote

[1] *The E-Files* articles referenced in this *Briefing* can be found at http://www.kc.frb.org/EconRes/PSR/Newsletters/PSR-Newsletters.htm?AdLink=PSR

Resources

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