Remote Deposit Capture for Consumers:
Is It Niche or Mainstream?

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This paper provides an overview of remote deposit capture for consumers and examines whether this service will be widely adopted by banks.

The views expressed herein are the author's and not necessarily those of the Federal Reserve Bank of Atlanta or the Federal Reserve System.

I.   Introduction

The Check Clearing for the 21st Century Act (Check 21) removed impediments to check truncation[1] and helped spur innovations in check processing such as remote deposit capture. Remote deposit capture (RDC) is a service that allows bank customers to scan or capture images of check deposits and present them electronically to the bank of first deposit without having to physically deliver the paper check to the bank[2]. As promoted, the benefits to the bank can include an expanded geographic footprint, increased deposit growth, and reduced processing costs. In turn, the bank customer may benefit from increased availability of funds and reduced transportation costs.

While the RDC market has generally consisted of large commercial customers with established banking relationships, some banks have begun to offer the service to small businesses and consumers. Recent innovations in RDC that have focused on making the service more convenient and affordable for a broader market have facilitated this expansion. For example, the cost of check scanners has been a common stumbling block for small merchants interested in RDC, who are accustomed to getting their hardware (e.g., credit card terminals) cheaply or at no cost.[3] RDC vendors have responded by adapting corporate capture applications to interface with the widely available flatbed scanners that are typically used by small business owners and consumers. Several RDC vendors have introduced moderately priced check scanners (most under $400) that are primarily targeted to the small business client.[4] Applications have also been developed that will allow a user to capture an image of both sides of a check and transmit those images to a bank from a mobile device that has a camera feature.

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[1]According to Reg CC (www.fdic.gov/regulations/laws/rules/6500-3210.html), the term *truncate* means to remove an original check from the forward collection or return process and send to a recipient, in lieu of such original check, a substitute check or, by agreement, information relating to the original check (including data taken from the MICR line of the original check or an electronic image of the original check), whether with or without the subsequent delivery of the original check (see Regulation CC § 229.2 [ddd]).

[2] The term *bank* is used to include all financial institutions, including commercial banks, savings institutions, and credit unions.

[3] John Stewart, "The 10 Most Pressing Issues in E-Payments," *Digital Transactions,* November 2008, pp. 24–30.

[4] Remotedepositcapture.com provides a matrix of leading check and document scanners in a downloadable Excel worksheet at www.remotedepositcapture.com/toolbox/scanner.matrix.aspx.

Consumer capture presents new opportunities for banks to gather deposits while providing an appealing service to bank customers who are often driven by the need for speed and convenience. The question is whether the benefits outweigh the risks of extending RDC to consumers. Can banks mitigate their risk exposure by targeting the product to a niche consumer segment?

This paper provides an overview of remote deposit capture for consumers and examines whether this service will be widely adopted by banks.

II.   Consumer remote deposit capture

Consumer capture is a low-cost RDC solution aimed at consumers and micro businesses[5] with low check volume and occasional usage. Recent technological advancements by RDC vendors have made it possible to support the less expensive and widely available TWAIN[6]-compatible flatbed scanners that are typical for home use. The interface has also been simplified: the user is able to submit deposits via a Web-based application that is usually integrated with the bank's existing online presence. This thin-client[7] alternative eliminates the need for a costly investment in additional software and hardware for both the customer and the bank.

Initial adoption by banks with trusted customer base. In December 2006, USAA Federal Savings Bank was the first bank to offer consumer capture. Its membership is primarily comprised of military personnel and their families, who are often deployed far from the bank's sole branch office in San Antonio, Texas. USAA's Deposit@Home[SM] consumer capture service allows its customers to make deposits from anywhere in the world using a scanner and an Internet connection.

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[5] The Association for Enterprise Opportunity defines microenterprise as a business with five or fewer employees (see www.microenterpriseworks.org/).

[6] TWAIN is the interface standard for the Windows and Macintosh operating systems that allows imaging hardware devices (such as scanners and digital cameras) to communicate with image-processing software (see www.twain.org).

[7] "Thin client" is an information-technology term that describes the client software in a client-server architecture network where the main processing occurs on a server. In the context of RDC applications, a thick client resides on the end user's personal computer while a thin client is run on a remote server that is connected to the client's computer over the Internet. Generally, the thick client offers more functionality, such as being able to integrate with accounting and document-management systems. Corporate customers with large check volumes typically use a thick-client product. The thin client is best suited for low-volume users because it is less expensive to implement and support.

Two years later, First Command Bank, another bank focused on military customers and headquartered in Fort Worth, Texas, introduced a consumer capture product called Deposits on Command™ that was designed to provide another self-service channel to their remote customers and to better compete with industry peers (like USAA). As of April 2009, First Command had 2,200 registered users averaging about 1,600 deposits per month.[8]

In August 2009, USAA took the lead again in consumer capture by launching Deposit@Mobile[SM], a remote capture service for its mobile banking application for Apple's iPhone. In its first six weeks, a reported 270,000 members installed the updated iPhone application, and approximately 40,000 of them used the software to deposit more than 100,000 checks worth a total of $61 million.[9]

Will credit unions drive demand for product? Beyond USAA and First Command, a relatively small number of banks have deployed consumer capture products, with the majority being credit unions.[10] In fact, credit unions have had the greatest growth in consumer capture adoption and have potential to drive growth in the future.

Several factors make consumer capture an attractive product offering to credit unions. First, credit unions typically have a small branch network, and often their members are geographically dispersed across the country. To accommodate a remote customer (member), credit unions have relied on automated teller machines (ATMs) and mail-in deposits. With consumer capture, credit unions are able to provide an alternative and perhaps more convenient way for customers to make deposits. Consumer capture has helped to level the playing field and has allowed for some credit unions to better compete with commercial banks that have large branch networks.

Second, the per-item processing costs of deposits for credit unions present a compelling business case for consumer capture. Although all banks incur deposit-processing costs, credit unions have disproportionate costs related to receiving deposits from remote customers who are unable to make deposits at a branch. Credit unions

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[8] Sherry Sitton, EVP, First Command Bank, "Consumer Remote Deposit Capture," presented at the RemoteDepositCapture.com and Bank Administration Institute (BAI) Remote Deposit Capture Summit, Nashville, Tennessee, April 28, 2009.

[9] Marian Raab, "Will Bank of America Propel Mobile Deposit to Mainstream?" *American Banker*, October 6, 2009.

[10] According to a 2009 vendor survey conducted by Celent, 100 banks and credit unions were either offering or piloting consumer capture as of June 30, 2009.

typically participate in a shared branching arrangement that allows their customers to make transactions at other credit union facilities across the country. However, the per-deposit cost for shared branch networks can approach $3. The cost of foreign ATM and mail-in deposits are also fairly high at $2.25 and $1.75 per deposit, respectively.[11] In comparison, recent estimates indicate direct costs of a bank transaction through a branch or ATM to be $1.27 and $0.27, respectively.[12]

Third, credit unions may have less concern about fraud issues with consumer capture because they have a "trusted" customer base. Most credit unions restrict their membership to defined segments of the population, such as people who live, work, worship, or attend school in a well-defined geographic area. However, this "trusted circle" has not meant that credit unions have offered unrestricted access to the service to their entire membership. Typically, credit unions offering consumer capture have managed their risk by placing limits on who can use it (i.e., length of membership, credit history, account relationship) and limits on deposit frequency and amounts. For example, First Command requires a customer relationship of six months, and along with a deposit account, the customer must have at least one of the bank's credit, insurance, or investment products.

Banks offering consumer capture typically make funds available according to the same schedule as they would branch deposits. Most RDC systems allow the bank to set funds availability by account and dollar amount so that holds can be placed, if deemed appropriate for risk-management purposes. Some credit unions have chosen to give immediate credit for consumer capture deposits. This choice may be attributed to the "trusted relationship" with their members and the fact that they are offering the product to customers with good account histories. However, industry experts have advised credit unions that providing immediate funds availability is the same as extending a short-term loan, in which case they should be underwriting these accounts in the same way as they would an account for which automated clearinghouse origination is permitted.[13]

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[11] Bob Meara, "State of Remote Deposit Capture 2008: Sprint Becomes a Marathon," Celent, October 15, 2008, p. 49.

[12] Jayaram Kondabagil, *Risk Management in Electronic Banking: Concepts and Best Practices* (Hoboken, N.J.: Wiley, 2007), p. 6.

[13] Ed McLaughlin, executive director and editor, Remotedepositcapture.com, personal interview, September 9, 2009.

III.   Does consumer capture pose risk-management challenges to banks?

Generally, RDC presents risks to a bank by extending payments processing outside its direct control, stepping out of the "trusted zone" of bank-to-bank payments processing, where there are established policies, procedures, and internal controls. Although the Federal Financial Institutions Examination Council (FFIEC) RDC Risk Management Guidance[14] broadly covers RDC performed at any customer location, issues exist that may present particular concern with consumer customers.

Customer suitability. Essentially, RDC customers become an extension of the bank by virtue of their direct access to the back office for payments processing. Banks may implement a risk-management program that establishes qualifying criteria for all customers or limits availability to a select group of customers. However, the potential pool of customers for consumer capture will far outnumber that for commercial RDC. Even a limited consumer customer base for a large bank could number into the hundreds of thousands. One question is whether a bank will want to broaden their RDC risk that widely.

Duplicate presentment. At least three possible scenarios exist for duplicate presentment with consumer capture: (1) a paper check is converted into an electronic image and submitted for clearing and then mistakenly resubmitted for deposit, (2) a customer transmits an image to the bank and deposits the original check at the same bank, and (3) a customer transmits an image to the bank and deposits the original check at a different bank.

The bank's RDC software typically will have duplicate-detection features to identify items that have been presented multiple times. Also, the bank could process all items captured through remote deposit through its existing deposit fraud filters. Duplicate-detection software solutions are available to monitor incoming and outgoing checks at a bank across all platforms, channels, and products.

With commercial RDC, banks have required certain visible markings be placed on the paper checks that have been imaged and deposited to help reduce item duplication,

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[14] The FFIEC RDC Guidance is available at www.ffiec.gov/pdf/pr011409_rdc_guidance.pdf.

such as restrictive endorsements and franking[15]. Similarly, some banks offering consumer capture require a restrictive endorsement[16] before the check is scanned. However, a consumer capture customer using a flatbed scanner would not have the capability to frank a check to indicate that it has been deposited. This situation is not necessarily contrary to common practices with commercial RDC. Even though document franking is standard on RDC scanners, some commercial customers opt to disable this feature because it can prove problematic in those cases where there is a legitimate need to represent a check (e.g., poor image quality).

Although sophisticated duplicate-detection software is available to detect duplicate items within the same bank, no software is currently available to detect duplicates across banks. For example, if a customer has a RDC relationship at Bank A and an account at Bank B, the customer could make a deposit via RDC at Bank A and then subsequently deposit the physical check in an account at Bank B. Alternatively, the customer could have RDC relationships at multiple banks and carry out the same scenario by both scanning images and presenting the physical checks. In each case, the bank would not be able to detect the duplicate until it is presented at the paying bank where it would be processed as a return item.

A possible exception where a cross-bank duplicate situation could be detected is if all the banks involved used the same check-image exchange and archive service. One benefit of a shared image archive is the ability to provide duplicate processing across participating banks. The third-party vendor is able to provide "on-we" processing[17] and duplicate-detection services for all of its bank clients.

Fraud risk. Certain aspects of fraud may be elevated in an RDC environment for both consumer and corporate customers. One such fraud risk is the presentment of a

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[15] Franking refers to printing "Electronically Presented," "Processed," or other similar language on the front of the original check that has been scanned for conversion to an electronic image. The purpose is to indicate that the paper check has been processed electronically and should not be deposited in physical form.
[16] A restrictive endorsement is a signature placed on the back of the check with instructions to deposit to a specific bank or account, such as "Jane Smith, Account #12345678." This type of endorsement limits the risk of fraud by restricting the deposit to the specific account indicated.
[17] An "on-we" image-exchange network is a group of banks whose check images are aggregated by a service provider for check clearing. The network participants transmit check images to the provider. Check images drawn on participating banks ("on-we") are exchanged and cleared. Items not drawn on network participants are aggregated and sent to other intermediaries, such as the Federal Reserve, for clearing and settlement.

counterfeit or altered item, which can be more difficult to detect as a scanned image. Many of the check security features, such as watermarking and microprinting in the signature line, can be circumvented when the check is imaged.[18] However, some vendors offer various fraud-detection systems that can identify imaged counterfeit or forged items. For example, some solutions automatically interrogate the face of the check for inconsistencies with a legitimate check while others apply predictive analytics on databases of check-writing and check-cashing histories to assess the potential fraud risk for every deposit. The limitation is that many of these solutions work only for "on-us" items or require exception processing that can entail a longer processing timeframe.

Banks have been selective in deploying consumer capture to their most trusted customers,[19] thereby limiting their exposure to fraudulent schemes. In addition to limiting availability, imposing restrictive limits on deposit amounts and frequency can further help to mitigate any potential losses.

IV.   Is it a niche business?

Conflicting views exist on the possible adoption of consumer capture for a broad consumer market base. One perspective is that the potential fraud risk makes it unsuitable for the everyday retail customer. Instead, a bank should restrict it to a subset of its consumer portfolio.

One such segment would be customers with high net worth (e.g., private banking customers) who are well-known to the bank. These customers typically have infrequent, large dollar deposits that could be easily facilitated by consumer capture. In this case, the bank provides another layer of convenience to a valued customer that may also make for a more loyal banking relationship. Private banking customers are also accustomed to, and often demand, a high-touch relationship with their banker. The relationship managers typically have a strong connection and familiarity with their customers. Quite often these customers are business executives who become familiar with RDC through their company's banking relationship and decide they would like the same service for their personal accounts.

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[18] Karen Epper Hoffman, "The Changing Face of Check Fraud," BAI *Banking Strategies*, September 11, 2009.
[19] Meara, p. 39.

Other examples of niche market segments are customers who are geographically dispersed far from their bank's limited branch network, such as military personnel or credit union members. Theoretically, banks with a limited investment in brick and mortar branches have more to gain from enhancing their Internet banking presence with consumer capture functionality than those banks who have a large branch network.

Entrepreneurs and microbusiness owners are another niche segment. Many of these small businesses fall below the threshold to qualify for a business account and other related services, such as business RDC. As a result, they will often maintain a consumer account for both personal and business purposes.

On the other hand, some industry observers feel that consumer capture is not any riskier than business RDC and limiting availability to these kinds of niche markets is not necessary.[20] Furthermore, under this view, the electronic process of authenticating the customer through the Internet can be more secure than a physical deposit in a branch where the customer making the deposit is not verified. Typically, no customer authentication takes place for a deposit at a physical branch, whereas online banking portals usually require a log-in password or other form of customer authentication.

Despite some differing views, the balance of opinion seems to indicate that consumer capture will not be ubiquitous and will remain a niche offering in the near future. Most banks will offer this product to their highly valued customers. Those banks that have a trusted consumer base, such as credit unions, will also offer this product.

VIII. Conclusion

Consumer capture has had limited adoption among banks; however, signs are emerging of greater acceptance in the future. Recent technological developments have made the hardware and software more affordable for low-volume users of remote deposit capture. The simplified interface has also made the service more accessible to the average consumer. The next generation of consumer capture that involves a mobile phone application could potentially provide an even broader customer base of technically savvy consumers who value the time savings of mobile banking.[21] USAA's mobile capture

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[20] David Peterson, "Why Deny Remote Deposit to Any Customer?" *American Banker*, August 5, 2009.
[21] Susan Stellan, "Bank Will Allow Customers to Deposit Checks by iPhone," *New York Times*, August 10, 2009, p. B4.

service and reports that Bank of America is planning to test a mobile capture application could also prompt other banks to enter the market as a defensive measure.[22]

Banks are abating concerns about fraud and risk by being selective in offering the service. Commercial banks that offer the service do so only to their high net worth customers or those who have an established credit relationship (e.g. credit card or consumer loan) in good standing with the bank. Although credit unions have offered the service more widely, they have also imposed restrictions on who qualifies and the types of deposits that can be accepted.

Consumer capture does present an attractive way to gain cheaper deposits in a challenging financial environment. In the past, many larger banks with an extensive branch network may have been hesitant to offer the product widely because of the potential fraud risk. However, Bank of America's reported plans to test a consumer capture service for the iPhone this year may prompt other larger banks to reconsider entering the market. In the meantime, consumer capture will likely continue to be a niche product among banks and credit unions until competitive pressures spur more rapid adoption.

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[22] "How Mobile Could Revitalize RDC," *Digital Transactions*, November 2009, pp. 6–12.