

Electronic check processing solutions: Choosing the right option for retail payments

Executive Summary

The check payments industry is undergoing a major change, driven by significant technological advances in electronic check processing options and growing merchant demand for these solutions. Because traditional check processing methods are expensive, labor-intensive and increasingly subject to fraud, the question for merchants today has shifted from "Should I consider an electronic check method?" to "Which electronic check method should I choose?" Although the slow but steady decline in check payments is well documented, checks still comprise a significant portion of merchant transactions. Recent First Data/TeleCheck® research indicates that, within the American population, a core base of check writers exists for whom checks are the preferred method of payment. Merchants cannot afford to lose business by refusing to accept checks, but instead must make checks as effective and efficient as possible. This paper is written for individuals involved in managing check processing in the traditional retail space and aims to provide an objective, analytical framework that will help merchants to evaluate electronic check processing options: point-of-purchase (POP) check conversion, back-office conversion (BOC) and Check 21.

Introduction

As electronic check processing evolves, merchants are faced with increasingly complex choices. This paper aims to help merchants to analyze their options quickly, clearly and efficiently, in order to make the right decision for their specific business needs. The environments addressed by this paper generally have the following characteristics:

- Checks are currently settled in a traditional manner, entailing the physical transportation of paper checks to a local bank.
- Transactions consist of payment for the exchange of goods and services in a face-to-face environment.
- The vast majority of checks presented are consumer checks.
- Some checks are returned owing to insufficient funds and fraud.

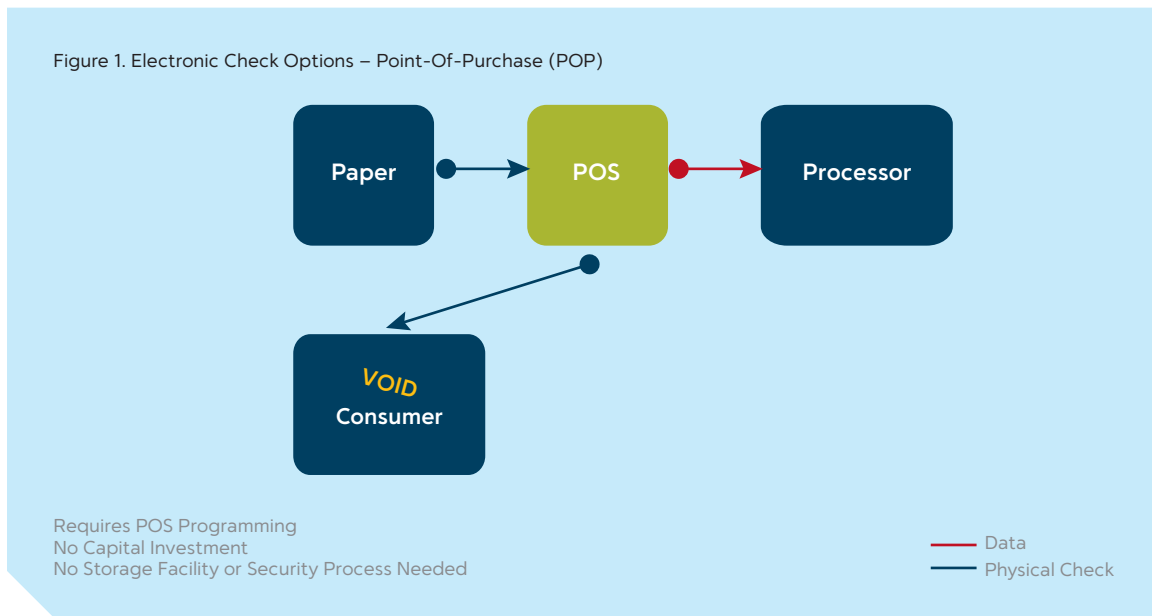
Although many aspects of this paper apply to smaller merchants, it also takes into consideration larger, multi-location regional and national chains whose customers are primarily consumers (not other businesses). Internet, delivery, mail order and drop box scenarios are not covered in this paper.

Life Cycle of a Check

Check processing is composed of three interlinked sub-processes, the 'ABCs.'

Authorization	Systems and processes that help a merchant determine whether or not to accept a check. Merchants are generally moving from static negative files to realtime verification systems based on sophisticated statistical models. Potential costs include vendor fees and lost sales on declined transactions.
Back-office/settlement	Processes that facilitate the movement of funds. From a merchant perspective this process begins when a consumer hands a check to a cashier. Costs include labor, bank fees, transportation and float.
Collections	Processes that allow a merchant to recover funds effectively when a check is returned. Merchants have generally moved from store-based internal collections to outsourced providers of collections services. Costs include uncollected returned checks, additional bank fees and collections efforts.

The performance of each of the above sub-processes can be improved by fully integrating that system with another sub-process.



Check Processing Options

To understand the various electronic check processing options, merchants need to know their key business rules, regulations and technical requirements. It is also imperative to realize the impact of each option on consumers, store operations and financial performance. Currently, in addition to traditional paper processing, there are three main options for converting a paper check accepted at the point-of-sale (POS) into an electronic transaction: point-of-purchase (POP), back-office conversion (BOC) and Check 21.

This paper defines the check processing solutions as follows:

Point-of-purchase

Point-of-purchase conversion is a process based on automated clearing house (ACH) settlement. This paper assumes that merchants implementing POP are also using sophisticated authorization systems with every transaction and that authorization, settlement and collections processes and systems are fully integrated.

Back-office conversion

Back-office conversion is a process based on ACH settlement. Merchants implementing BOC will settle most items through the ACH network, with a small number of items settled via image/substitute check clearing. Most merchants implementing BOC will not make significant changes to their current authorization and collections processes.

Check 21

Check 21 is a process based on image and substitute check clearing. 'Check 21' refers to both the legislation and the settlement methods the legislation enabled. Check 21 is a back-room settlement solution that is not fully integrated into authorization and collections processes.

Point-of-purchase conversion

Service summary

Point-of-purchase is an integrated authorization, settlement and collections solution whereby a merchant runs checks through magnetic ink character recognition (MICR) readers at the POS, returns the paper check to the consumer and settles the items via the ACH network (see Figure 1).

Background

In effect since September 2000, POP allows a merchant to accept a check at the POS, return the paper check to the customer and process it as an ACH transaction.

Federal Regulation E requires merchants to place signage at the POS for POP.¹ Additionally, POP requires the consumer to sign a slip (or signature capture device) similar to a credit card signature slip. This signature provides authorization to convert the consumer's check and to initiate an ACH debit in order to collect the non-sufficient funds (NSF) fee electronically if the check is returned for insufficient funds.

Checks converted in the POP process do not have to be imaged. Because processors have developed the ability effectively to collect returns without images, over half of all POP transactions are processed in environments without imaging.²

Not all items can be converted into ACH transactions; some items can be processed by alternative methods but, generally, a small percentage must remain paper checks. The items that must remain paper checks are identified during the authorization process. Simple prompts instruct cashiers to keep these checks for deposit.

Merchant applications

In the most common version of POP for multi-lane merchants, a check is inserted into an existing MICR reader/printer device at the POS. A message is sent from the merchant to the processor, and the processor sends a return message telling the merchant whether or not to accept the check and whether or not the check can be converted.

The merchant translates those instructions into prompts for the cashier. The MICR reader/printer voids the check which is returned to the consumer. The consumer signs a signature slip or signature capture device. An image of the check is not required, as the leading processors have the ability to map the consumer's MICR and/or driver's licence information to other data sources should the check be returned.

¹ Signage also generally describes NSF fees.

² Based on analysis of transaction volume from merchants known to have installed a non-imaging POP solution in comparison with industry volume.

Limitations

Point-of-purchase requires that the MICR line be machine-read, so MICR readers, which many merchants already own, are required. Also, merchants must incorporate POP into existing long/short controls to ensure that cashiers are adjusting to the new prompts. Point-of-purchase often requires POS programming in order to create a new tender type, print a signature slip (or incorporate into signature capture) and create new, realtime messages between the merchant and the processor.

Statistics

Point-of-purchase transactions are tracked by the National Automated Clearing House Association (NACHA). There were more than 127 million POP transactions in the second quarter of 2007, a 112 percent increase from the 60 million POP transactions in the second quarter of 2006.³ This growth is primarily driven by the recent and ongoing rollout of POP to multiple large, national merchants.

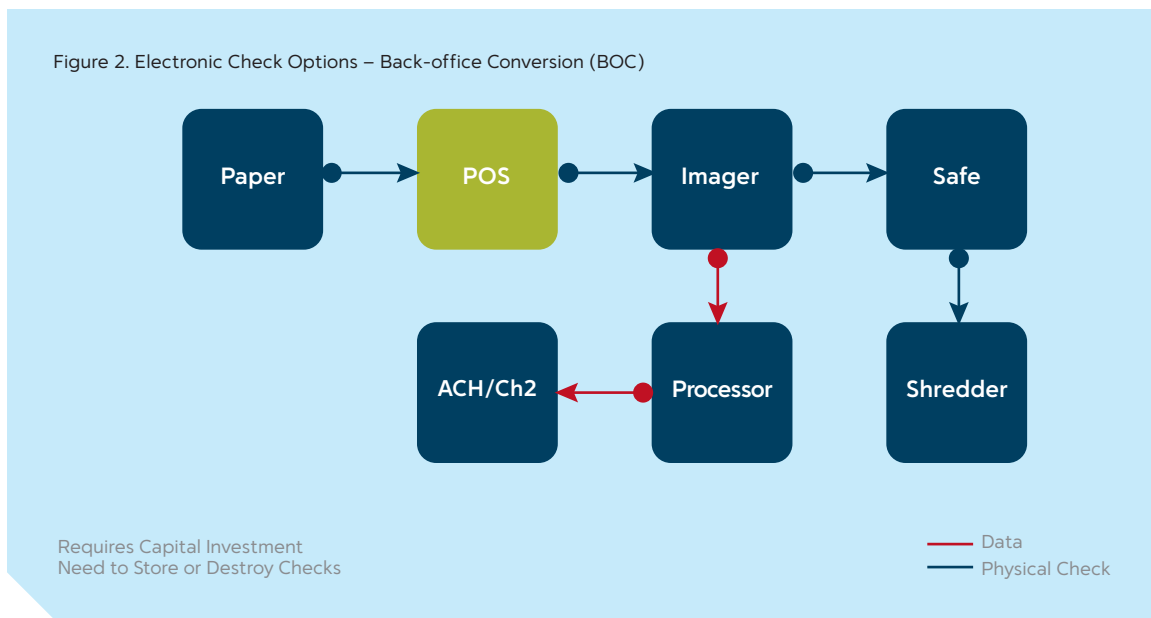
Benefits

Point-of-purchase creates operational efficiencies by eliminating paper checks at the earliest possible stage. For some merchants, POP enhances authorization by ensuring that every check is analyzed by an advanced verification system and that returned items are received much faster than paper checks. Float and bank fees may be reduced, as may other indirect costs such as those from eliminating internal collections efforts and reducing non-compliant items (returned checks that fall outside a warranty agreement, often because a cashier failed to write a piece of consumer information on the paper check).

Finally, POP may improve lane speed as some consumers will no longer fill out their check before handing it to the cashier, and cashiers are freed from the need to write additional information on the paper check, as required by many retailers. Compared with Check 21, POP generally provides less expensive settlement.

Compared with BOC (and Check 21), POP's biggest difference may be the efficiency gained by eliminating most paper checks at the POS compared with processing them in the back room. Point-of-purchase also provides more enforceable authorization, as any store ignoring instructions to decline a check will be quickly discovered because the declined check will not be converted. Point-of-purchase also streamlines check collections, as the authorization, settlement and collections systems are fully integrated. Also, for merchants with MICR readers, POP can often be implemented with no financial investment in hardware. In-store BOC requires investing in check imaging equipment.

³ "ACH Network Volume Increases 15 Percent in 2nd Quarter 2007." Available at <http://www.nacha.org>.



Back-office conversion

Service summary

Back-office conversion is a settlement solution whereby a merchant takes checks into the back-office and converts most checks into an ACH transaction, with the remainder being settled via Check 21 (see Figure 2).

Background

In May 2006, NACHA approved BOC as a new form of electronic check conversion, with rules and requirements distinct from POP and accounts receivable conversion (ARC). The BOC application officially began on March 16, 2007.

NACHA requires that signage be posted at the POS, and that written information regarding the converted item, including a 1–800 number, is handed back to the consumer at the POS. Customers authorize conversion of their checks by signing the checks after they have been provided with notification. Consumers pay not sufficient funds (NSF) fees when a check is returned owing to insufficient funds; therefore, merchants may not electronically collect service fees without explicit authorization to do so from the consumer. Merchants are also required to employ commercially reasonable methods to validate the check-writer's identity.

NACHA also mandates that, if a consumer asks a cashier not to convert his/her check (known as opting out), the merchant may not convert the check into an ACH.

Every check converted in the BOC process must be imaged; however, the rules do not state explicitly where the check must be imaged. Finally, the rules also state that the paper checks must be securely stored until destroyed.

Limitations

Back-office conversion requires merchants to image every check. Therefore, merchants have to invest in imaging equipment for every store. Furthermore, merchants potentially have to invest in backup imagers, software, improved network connections and image archive and retrieval systems. If back-room computers are older and less powerful, updated computers may also be necessary. Back-office conversion also requires merchants to train every cashier to execute the merchant's consumer opt-out process.

Finally, with in-store BOC, paper checks must be handled within the store. Merchants must develop processes and controls to ensure that paper checks are securely stored until destroyed and not both deposited and converted, thus causing double-debits. Merchants must account for less than perfect store-level execution, which could lead to issues such as the destruction of checks before they are converted and lost, or stolen consumer data.

Statistics

Back-office conversion is too new to have generated statistics related to this form of check conversion.

Trends

It is believed that several Top 100 merchants are considering or planning on initiating BOC pilots in 2007. As with any new payment application, it is difficult to predict how many merchants will widely deploy BOC.

Benefits

Float may be reduced although merchants are cautioned to consider the potential negative impact on sales and potential for an increase in returned checks owing to insufficient funds should the consumer's float be reduced. Bank fees may also be reduced, with ACH settlement potentially being less expensive than paper check processing. This may apply especially to smaller merchants who tend to pay higher depository banking fees. Finally, merchants will receive returned ACH transactions much faster than traditional returned paper checks, reducing fraud and improving their check authorization systems. Back-office conversion might be especially attractive to merchants who do not have MICR readers at the POS.

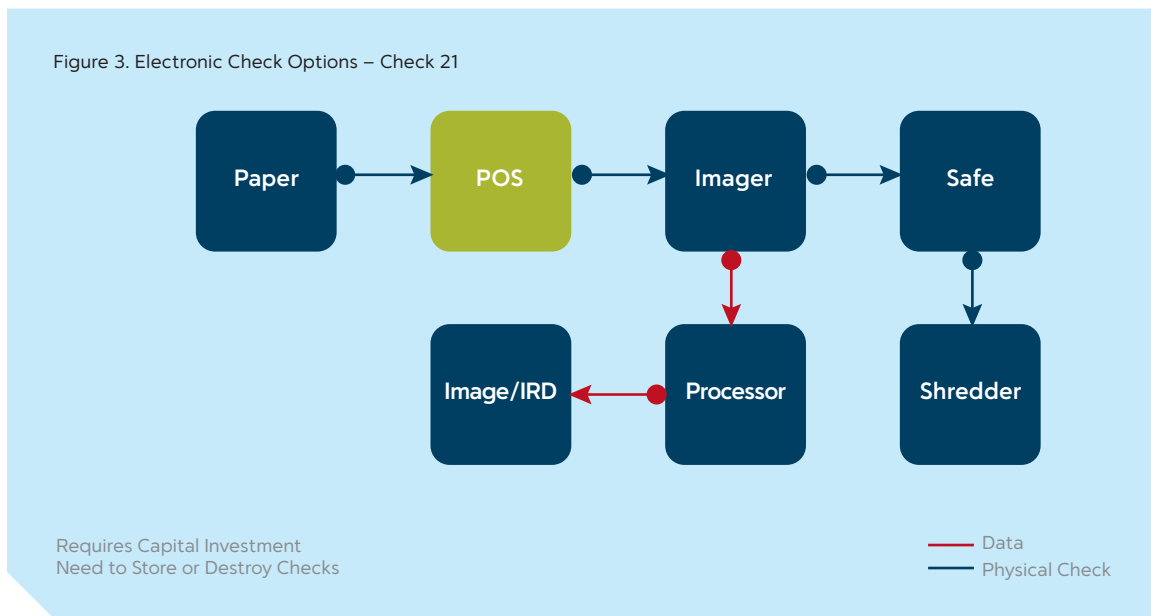
Like Check 21, BOC checks are taken to the back room, imaged and transmitted electronically. Back-office conversion, however, has the advantage of moving funds through the less expensive and fully developed ACH settlement network.

Back-office conversion's biggest difference from POP is usually related to POS programming. Although BOC will require receipt changes and potentially the need to link a POS transaction to ACH settlement to an image, it is generally thought to be less work than the new prompts, new tender type and other changes required by POP. Furthermore, for merchants without MICR readers, BOC requires less investment in equipment. For merchants with existing MICR readers, the opposite is true.

Alternative option

Another form of BOC allows merchants to avoid the cost of imaging equipment in every store. This is achieved by creating the data file from POS MICR readers and creating the image file by transporting the paper checks to a centralized processing center, managed by either the merchant or a third party, or by using a vault transportation service. Merchants, however, should analyze the following items:

- **Check handling costs:** merchants may want to consider the direct or indirect costs of receiving, handling, and imaging checks at centralized locations.
- **Transportation costs:** merchants should analyze the cost of transporting or mailing paper checks.
- **Data security:** merchants should consider the potential error rates and security risks associated with the transportation of checks under this scenario.
- **Consumer impact:** merchants should evaluate the potential for errors by third parties, some of which may be performing services that are new to their firm, especially those which may result in duplicate debits to consumer accounts.



Check 21

Service summary

Image/substitute check clearing is a settlement solution whereby a merchant takes a full front and back image of a check and electronically transmits that image to a processor or financial institution (see Figure 3).

Background

Effective October 2004, the Check Clearing for the 21st Century Act (known as Check 21) is a federal law designed to enable banks to handle more checks electronically. Check 21 gives a substitute check (also known as an image replacement document (IRD)) the same legal status as the original paper check. A substitute check is a printed copy of a check that meets very specific technical requirements.⁴

A recent study by the Federal Reserve and Electronic Check Clearing House Organization (ECCHO), a non-profit national clearing house, estimates that about 67 percent⁵ of financial institutions cannot receive and process image files. Therefore, the most common Check 21 process flow is one in which a paper check is imaged by a bank, electronically transmitted to a processor such as the Federal Reserve, printed as a paper substitute check, and manually transported to another bank for payment. This method of settling a check can be more expensive than processing a check in the traditional fashion.

Merchant applications

Checks are accepted in the traditional manner at the POS. When the checks are collected in the back office, the merchant uses a scanning device to convert checks into two-sided images which are transmitted to a processor or financial institution. Once these images are transmitted to a processor or financial institution, the items are settled as either images or substitute checks.

⁴ <http://www.frbervices.org/FedFocus/2004/SubstituteCheck.pdf>. See "Anatomy of a Substitute Check" published by Federal Reserve Financial Services for more on the structure of substitute checks.

⁵ "Federal Reserve/ECCHO Communications Work Group; Number of R/Ts Receiving Image Files." Available at http://www.eccho.org/check_ps.php.

Limitations

Because clearing an item through Check 21 can be more expensive than traditional check clearing, few mid-market and national merchants have piloted or adopted this technology. Another barrier is that the process requires scanning equipment, and sometimes software and new computers. Finally, some merchants are concerned about handling the original paper checks after they are imaged.

Statistics

Numerous organizations track the volume of Check 21 items. These statistics, however, do not differentiate between items that originated at a financial institution and those that originated at a merchant location. Therefore, it is not possible to quantify the volume of Check 21 items that originated at merchant locations.

Trends

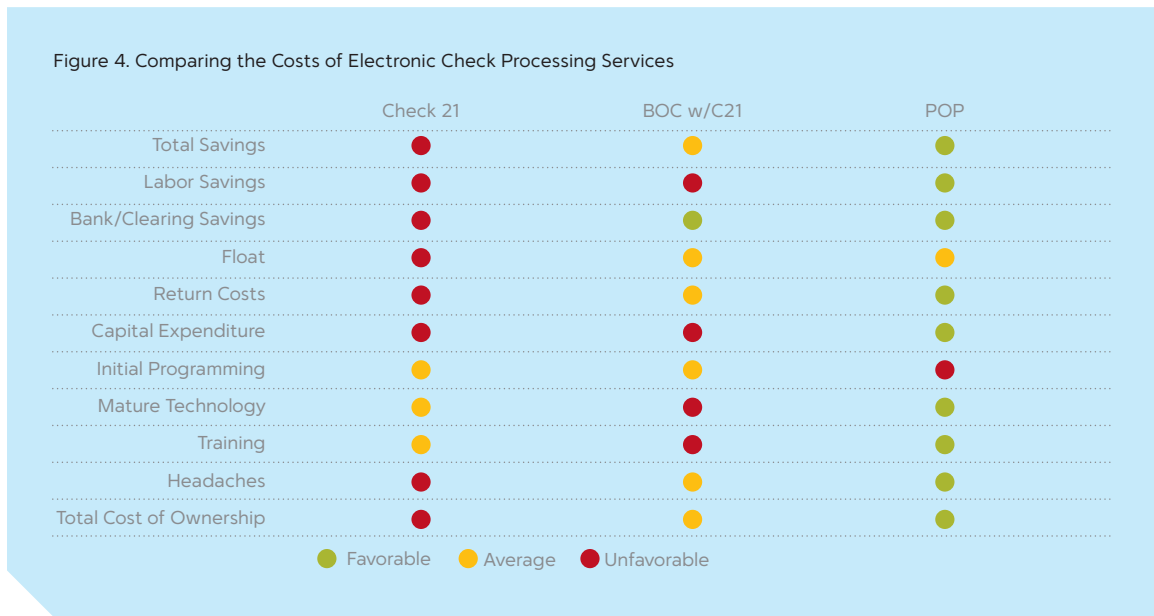
Adoption has primarily been by payroll check cashers, organizations that sell primarily to businesses and non-traditional retail environments.

Benefits

If merchants do not accept cash, Check 21 can reduce trips to the bank or use of armored car services. If a merchant receives high dollar checks drawn on non-local accounts, float savings can potentially outweigh increased settlement costs.

The chief advantage of Check 21 when compared with BOC and POP is simplicity. All items can be imaged and settled as images or substitute checks. Furthermore, the consumer does not need to be notified and cannot opt out of the process.

Quantifying check processing options



Many merchants have a detailed understanding of their cost of credit and debit processing. But because different components of checks have historically been managed by different departments, it is often more difficult to measure the total cost of checks.

One approach is to divide and analyze each key component of the total cost of checks — labor, authorization, lost sales, bank/settlement, float, uncollected returns, collections efforts, non-compliant items (NCIs) and overhead expenses (see Figure 4).

Labor

One way to calculate these costs is to estimate the number of hours per week each store spends on tasks related to paper checks, then use wage and non wage labor costs to determine the value of each of those hours. Check-related labor costs tend to be highest in grocery, department and 'big box' retailers.

- Check 21 and BOC are generally thought to be labor-neutral.
- Point-of-purchase provides significant labor savings, especially where check volume is high.

Authorization costs

These include costs incurred by a merchant for services that assist the accept/decline decision-making process at the POS. Authorization fees are commonly billed as per-use fees for check verification services and/or per-item or flat annual fees for negative files. These costs are highest for merchants in high-loss categories that use a check verification solution instead of a check warranty service.

- Check 21 and BOC are generally thought to have a neutral impact as the authorization system is not changed.
- Point-of-purchase potentially creates additional efficiencies by both authorising and settling the check with one transmission of data to one service provider.

Bank/settlement costs

Even merchants with consolidated banking relationships must manage large numbers of banks owing to the limited footprints of even major financial institutions. These costs are usually highest for merchants with lower overall depository volume and lower volume per location, e.g., 10-location drug stores.

- Check 21 generally is thought to have a negative impact on settlement costs.
- Back-office conversion and POP may provide settlement savings, especially for merchants who have not been able to reduce depository bank charges.

Float

Float costs begin as soon as a check is handed to a cashier. Float includes the delay in transporting a check to the local depository bank and the delay in having corporate control of those funds. Float costs are highest for merchants who deliver check and cash deposits to a bank in fewer than six days a week. Float costs are also higher for merchants who accept a large percentage of non-local checks, and for those who have negotiated reduced bank/settlement costs.

- Check 21, BOC and POP can reduce float costs though the impact varies widely by merchant.
- Reduction in float costs may be tempered by a desire not to affect sales by reducing the consumer's float. Consider the following: if 10 percent of sales are checks, and 10 percent of customers write checks for float, should merchants be willing to risk one percent of sales?

Uncollected returns

These are the costs of either the uncollected face value of returned checks (write-offs), or warranty fees paid to a vendor. Especially as a percentage of face value or as a per-item cost, uncollected returns are generally increasing as 'good' check writers convert to other payment methods. Uncollected returns tend to be higher for merchants not using realtime authorization, and for merchants whose products attract theft, such as electronics.

- The impact of Check 21 on uncollected returns is unknown, as it is difficult to determine whether the timeline for receiving returned checks is much improved.
- Back-office conversion is expected to improve uncollected returns slightly, as ACH transactions are returned much faster than are paper checks. Back-office conversion may also have the advantage of providing easily accessible image archives of returned checks.
- Point-of-purchase generally provides significant improvement related to uncollected returns as an improved and enforceable authorization system is applied to every check, and ACH transactions are returned much faster than are paper checks. Even though processors have developed the ability to collect returned checks without images, collections may suffer slightly in certain industries.

Collection efforts

These include all costs associated with attempts to collect returned checks, such as internal collections departments. These tend to be highest for merchants that perform some or all the collections function in-house.

- Check 21 and BOC are generally thought to have a neutral impact as the authorization system is not changed.
- Point-of-purchase may eliminate additional fees for collections services, as collections services are integrated into the POP conversion service.

Non-compliant items

Many merchants using a paper check warranty service suffer from high rates of non-compliant items (NCIs) that are excluded from the warranty because the cashier failed to write the consumer's phone number or similar data on the check.

- Check 21 and BOC are generally thought to have a neutral impact as the authorization system is not changed.
- Point-of-purchase may reduce fees for NCIs, as processors are less particular about what is written on a check that is immediately returned to the consumer.

Overhead expenses

These include costs such as call centers, affidavit processing, loss prevention and accounting.

- The impact of Check 21 or BOC on the merchant's home office is unknown at this time.
- Point-of-purchase requires a redesign of many of the functions that support check acceptance. With POP, checks are managed in a manner similar to credit or debit cards. This potentially reduces home office costs.

The financial analysis is not complete without studying the following three upfront, one-off investment costs required to achieve potential savings.

Hardware costs

These include any capital investment in equipment related to check processing.

- Check 21 and in-store BOC require check imaging equipment for every store. Merchants may also have to buy back-up imagers and upgraded computers.
- Outside the store, BOC does not require the merchant to purchase hardware, but the merchant is advised to analyze the costs of transportation and centralized check handling.
- For merchants who already have MICR readers, the hardware investment for POP is often zero, as processors have developed the ability to collect returned checks without images. For merchants without MICR readers, the hardware investment is generally greater than with BOC, especially in multi-lane environments.

Technical infrastructure

This category includes any improvements to ongoing systems required by the check processing solution.

- Check 21 and in-store BOC require the merchant to transmit large image files, potentially requiring a network connection or transmission protocol upgrade. Furthermore, merchants may have to create an image archive and retrieval system.
- Point-of-purchase requires the transmission of data files in a manner similar to other electronic payment types, and thus has a minimal impact on the IT infrastructure.

Programming costs

This category includes any POS programming, changes to back-end systems, and any purchases or licences of software.

- Check 21 requires integration into back-end accounting and reconciliation systems.
- Back-office conversion requires the merchant to change the consumer's receipt to accommodate required language, and potentially to link a POS transaction to ACH settlement (and returns) to an image. Back-office conversion also requires merchants to manage a consumer opt-out process which may or may not involve technical changes. Finally, BOC may change back-end accounting and reconciliation systems.
- Point-of-purchase often requires POS programming in order to create a new tender type, print a signature slip (or incorporate into signature capture), and create new realtime messages between the merchant and the processor. Point-of-purchase also must be incorporated into back-end accounting and reconciliation systems.

Other considerations

Other factors to analyze include overall process risk, corporate culture, store operations, systems interaction, disaster recovery, administrative hassle and information security. Although these can be difficult to quantify, a qualitative analysis performed by informed members of Finance, Operations, Loss Prevention, and Information Technology could begin by answering the following questions:

- Have any national merchants implemented this process across their chain? How is it working? Have we written checks at this merchant as consumers and thereby witnessed the process? Are all the risks known? How are others handling them?
- How would store managers and other operators react to each solution? Will the proposed changes make life easier for store employees?
- Is the service provider willing and able to be the primary receiver of support calls from both consumers and stores?
- How will authorization, settlement, collections and customer service link? How many handoffs between different systems and different vendors must be managed?
- Will the proposed solutions affect the manner in which the company protects consumers' financial information? Would audit, legal, operations, public relations and senior management agree that we are properly protecting consumer data?

Note on data security

Protecting consumer financial identity is one of the most important payment issues in retail. Paper checks often contain sensitive and personal data, such as routing and account number, name, address, phone number, date of birth, driver's license number, etc. Merchants are advised to consult the appropriate departments within their firms such as Compliance, Legal and IT Security. Before choosing Check 21, BOC or POP merchants should study the flow of paper checks under the proposed new process. For example, some solutions may require checks to be mailed. What if a store's parcel of checks is lost? Some merchants are considering storing paper checks within the store. What about theft?

Vendor Selection: Choosing a Service Provider

When adopting a method of electronic check processing, it is vital to understand that merchants will be entrusting their funds and their consumers' data to flow through potential service providers. It is recommended that merchants begin by requesting and evaluating the following information from vendors:

- **Financial Statements:** not just the financial statements of the primary vendor, but any firm in the process through which funds might be settled. Large firms are generally hesitant to have small or unstable firms process their debit and credit card transactions. Vendors proposing to settle a merchant's check/ACH transactions should be held to the same standard.
- **SAS 70:** the Statement on Auditing Standards No. 70 is a guideline that auditors and others use to assess the internal controls of a service organisation.⁶
- **In-store, retail conversion or image transaction volume:** check conversion in a controlled lockbox environment should be viewed as a completely different application with limited relevance to a retail environment. Retail stores with inexperienced employees using low-cost equipment should not be compared with large lockbox operations with specialised employees and equipment.
- **Transaction flow of each check from authorization to settlement to returns collection:** description of how data and information is handed from one vendor to another.
- **Customer service:** hours of operation, redundancy, escalation procedures. It is important to question and challenge the capabilities and experience of any vendor proposing to play an important role in the management of customer data and merchant funds. The questions to be asked may vary by solution— Check 21, BOC or POP — but the concept of expecting a vendor to prove their expertise with verifiable facts applies to all check processing options.

Conclusion

As discussed in this paper, merchants can choose from a variety of check processing options. Understanding the important details of each application, such as those regarding rules and regulations, is crucial to selecting the right option. Checks affect several different departments within a merchant; therefore, key members of Finance, Operations, Loss Prevention and IT should have at least a basic understanding of each option. It is recommended that a cross-functional team perform a qualitative analysis of the impact of different electronic check processing options, with a particular focus on store operations and the security of consumers' financial and personal information.

Finally, it is recommended that merchants seek additional information, not only from vendors and financial institutions, but also from other merchants who have invested in and deployed (preferably beyond a pilot) different check processing options. Ideally, merchants should study first-hand how the different options work in the field by observing consumers making check purchases using the various solutions.

⁶ http://searchcio.techtarget.com/sDefinition/0,290660,sid19_gci1095696,00.html.



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