

## **THE FUTURE OF E-COMMERCE PAYMENTS**

**Stanley J. Sienkiewicz**  
Payment Cards Center  
Federal Reserve Bank of Philadelphia

**Marilyn Bochicchio**  
Senior Consultant and eCPC Director

**Summary:** *On June 19, 2002, the Payment Cards Center of the Federal Reserve Bank of Philadelphia and the Electronic Funds Transfer Association's Electronic Commerce Payments Council (eCPC) sponsored a joint conference. This meeting was part of the regularly scheduled quarterly council meetings that bring together stakeholders interested in developing or enhancing e-commerce payment alternatives. The session included both Federal Reserve staff and industry leaders discussing how electronic payments are becoming an alternative to paper-based payment products and the adoption of electronic payments by consumers and merchants.*

\*The views expressed here are not necessarily those of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

## **INTRODUCTION**

The Payment Cards Center of the Federal Reserve Bank of Philadelphia and the Electronic Funds Transfer Association's Electronic Commerce Payments Council (eCPC) sponsored a joint conference on June 19, 2002, to initiate a dialogue on a variety of topics related to the proliferation of e-commerce payments as an alternative to paper-based instruments and adoption of electronic payments by consumers and merchants.<sup>1</sup>

Attendees included academics, regulators, consultants, bankers, processors, and other private-sector representatives engaged in providing products and services that support e-commerce payment initiatives and service delivery.

The June 19 meeting presented an opportunity for individuals with varying interests in e-commerce payments to explore the wide range of issues that directly and indirectly affect the development, acceptance, and growth of this rapidly emerging payments category. Participation by a number of representatives from the Federal Reserve emphasized the importance of dialogue that advances the business and regulatory environment in which e-commerce payments will continue to grow – an environment that gives priority to safety and soundness while meeting the needs of a cross section of marketplace constituencies and enhancing the efficiency of the payments system.

What follows are highlights from the conference sessions, beginning with a summary of the keynote address from Anthony M. Santomero, president of the Federal Reserve Bank of Philadelphia.

### **E-PAYMENTS: CONTINUING THE REVOLUTION IN THE PAYMENTS INFRASTRUCTURE**

#### ***Dr. Anthony M. Santomero, President, Federal Reserve Bank of Philadelphia***

Dr. Santomero welcomed the group and started the day's discussion by recounting the origins of the modern payments system, emphasizing two key themes: revolution and trust.

He noted that revolution in the U.S. payments system is “nothing new.” In 1690, the move to paper currency from gold and silver was considered revolutionary, as was the still earlier move to gold and silver from a variety of other forms of payment. Today's inexorable movement toward electronic payments is a continuation of a revolution that began centuries ago.

Dr. Santomero noted that the cashless, checkless society – a bold notion when introduced four decades ago – might be a near-term reality as a result of the confluence of structural and technological changes altering the economics of the payments system. Structurally,

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<sup>1</sup> E-commerce payments refer to the electronic movement and settlement of funds to support purchases of goods and services by consumers, businesses, and governments. E-commerce payments are commonly associated with Internet purchasing but may include automated payments initiated through a variety of channels using a variety of devices.

increased use of debit cards, credit cards, the ACH, and other emerging retail payment vehicles already may have begun to displace cash and checks in the U.S. economy. Moreover, growth in Internet use across all demographic segments, combined with declines in telecommunications and computer costs, creates a technological environment in which the use of cash and checks can be significantly curtailed.

Yet, if the cashless/checkless – or at least less-cash/less-check – society is technically feasible, why isn't it already here?

Trust, Dr. Santomero said, is the underpinning of the payments system and the element that enables it to transcend revolutionary changes: “Payments in any form, at any time, reflect the degree of trust market participants place in the institutions governing them.”

Dr. Santomero reminded the audience that it takes time to build trust in new payment systems. The speed with which new instruments are adopted depends on consumers' perceptions of the distribution of risks, costs, and benefits. To gain widespread use, payment innovations must represent considerable advantage over existing mechanisms and successfully address consumers' concern over issues such as privacy, security, and convenience.

According to Dr. Santomero, private-sector innovation and competition will be the catalyst for future development of the payments system, with the markets sorting out the success of one payment vehicle over another. He noted that the role of the Federal Reserve System is to provide “flexible, yet watchful, regulation” that fosters the safety and soundness of the system. The private sector is encouraged to be proactive in self-regulating. In this environment, he concluded, successful new means of payments may evolve without undue regulatory interference, creating long-term benefits for consumers and businesses.

## **PAPER AND ELECTRONIC VOLUMES AND CONSUMER PREFERENCES**

*Henry H. Bourgaux, Senior Vice President, Federal Reserve Bank of St. Louis*  
*Anthony Hayes, Director, Dove Consulting*

Key metrics for those working in fields related to e-commerce payments are check and electronic payment transaction volumes. These data are needed by private-sector enterprises to evaluate market acceptance of new payment innovations and to make critical business decisions affecting support for specific products and services, as well as investment in new business models and emerging technologies.

As an outgrowth of the 1998 Rivlin Committee study examining the role of the Federal Reserve System in the payments system, the Fed commissioned several studies to determine the size and dynamics of the retail payments system and to identify opportunities for migrating payments from paper to electronic instruments. These studies offer significant information useful to the Fed in its ongoing evaluation of its role in the

payments system and to the private sector as the most authoritative “snapshot” of the state of consumer payments in the U.S.<sup>2</sup>

Hank Bourgaux and Tony Hayes discussed results from the recent Fed studies and reflected on their implications.

### **The Evolving Retail Payments Market**

Bourgaux described three recent studies commissioned by the Fed to determine the size and dynamics of the retail payment system and to identify opportunities for migrating check payments to electronic payments:

- **Depository Financial Institutions Check Study.** This study estimated the total annual volume and value of check payments in the U.S. It collected data about checks from a sample of institutions during March-April 2001. Estimates for the entire industry were produced using this two-month sample and are reported on an annual basis.
- **Check Sample Study.** This study evaluated the composition of the check market, including who writes checks to whom and the purpose of checks written.
- **Electronic Payments Instrument Study.** This study estimated the total volume and dollar value of electronic payments, including credit cards, debit cards, and ACH transactions, in the U.S. during 2000.

Bourgaux presented the following key findings:

- **Payment Growth.** Electronic payments, as a percentage of noncash payments, have increased from a 15 percent share in 1979 to approximately a 40 percent share in 2000-2001, but checks have not gone away.
  - In 2000, 29.5 billion electronic payments were originated in the U.S., compared with 5 to 6 billion in 1979.
  - In 2001, 49.6 billion checks were written in the U.S. (average value \$965), compared to 32 billion in 1979 (average value \$757).
  - Total noncash retail payments (checks and electronic payments) have approximately doubled since 1979, although relative use of checks declined from approximately 85 percent of noncash retail payments in 1979 to about 60 percent today.

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<sup>2</sup> The last comprehensive study of check payments by the Federal Reserve was conducted in 1979. During the intervening years, non-cash retail payment instruments, including debit and credit cards and ACH payments, have grown substantially, making a significant impact on consumer payment behavior.

- **Check Volume Origination.** Consumers are the predominant check writers, and businesses receive the majority of checks; however:
  - Consumer-written checks account for approximately 19 percent of the total value of check payments.
  - By value, businesses are both the biggest writers and receivers of check payments. Taken alone, business-to-business checks account for more than 42 percent of total check payment value.
  
- **Check Volume and Value by Purpose.** Remittance and point of sale (POS) check payments combined represent more than half of all check payments. No single category (consumer-to-consumer [C2C], income, remittance, POS, or uncategorized business/government payments) clearly dominates the value of checks.
  - Bill payment is the largest single category of consumer payment.
  - Nearly half of checks written by businesses or governments are income payments to consumers.
  
- **Check Value.** Most checks are written for relatively low dollar amounts.
  - 32 percent are for \$50 or less.
  - 76 percent are for \$500 or less.

Bourgaux concluded that the combined studies support the continued presence of cash and checks in the payments environment because of their “own redeeming qualities” but suggested that electronic payments would play an increasingly significant role. He noted that the Fed is a proponent of moving consumer, business, and government payments to electronic formats, but it will not attempt to accomplish this by “regulating out” the check.

***Post-Conference Update:** The statistics provided in this paper are based on numbers that were current as of June 19, 2002. However, on August 14, 2002 the Federal Reserve System, after continued analysis and data verification, lowered its estimate of the number and value of checks written. The new estimate is 42.5 billion, down from the previously announced 49 billion. Based on the revised estimate, the Fed stated that check volumes were undeniably in decline – a conclusion that it was not willing to draw based on the number reported earlier. The Fed also revised downward the share of checks as a percentage of retail noncash payments in 2000 to 59.5 percent from 77.1 percent in 1995 and 85.7 percent in 1979. Data on electronic payments and on the composition of the check market were unchanged. A copy of the revised "Retail Payments Research Project: A Snapshot of the U.S. Payments Landscape," a Federal Reserve Bulletin article entitled "The Use of Checks and Other Noncash Payment Instruments in the United States," and the August 14, 2002, press release are available on the Federal Reserve Financial Services web site at [www.frbsservices.org](http://www.frbsservices.org).*

## The E-Payments Evolution

Tony Hayes based his remarks on two studies that Dove Consulting conducted:

- **The Electronic Payment Instruments Study.** This study was part of the Federal Reserve-sponsored study described above.
- **The 2001 Consumer Payment Preferences Study.** This study examined consumer payment dynamics for in-store and Internet purchases and for bill payment.

Hayes drew on these studies to offer answers to three fundamental questions:

- ***How Do Consumers Pay Today?***
  - **Credit Cards.** Based on volume, credit and charge cards were the most common electronic consumer payment instrument used in the U.S. in 2000 (15 billion transactions worth \$1,235 billion). Eighty-two percent of volume and 87 percent of value came from general-purpose credit cards.
  - **Online and Offline Debit.** Debit cards were the second most common form of electronic payment in 2000 (8.3 billion transactions worth \$348 billion). Offline debit card transactions dominated, representing 64 percent of volume and 60 percent of value.
  - **Automated Clearing House (ACH).** ACH is the third most commonly used form of electronic payment, but it accounts for 78 percent of all electronic payment value. Average value is more than 11 times greater than general-purpose credit cards (\$1,009 vs. \$87).
  - **Electronic Benefit Transfer (EBT).** Despite dramatic growth during the 1990s, EBT (food stamp disbursements and POS transactions only) remained the smallest volume electronic payment instrument in 2000 (0.5 billion transactions worth \$13.7 billion).
  - **Emerging Payments.** Volumes for emerging payments in 2000 were small (76.2 million worth \$12.6 billion). The emerging payments category includes electronic bill payment and presentment, C2C payments, stored-value cards, Internet currencies, online debit over the Internet, transponders, check electrification, and Internet-initiated ACH debit.

- ***Why Do Consumers Make the Payment Choices They Do?***
  - **Consumer Perceptions of Debit.** Since 1999, the most significant gains in perceived payment speed and comfort occurred for debit payment options, which cardholders now regard as nearly as “comfortable” as credit cards and checks. Even cardholders who do not use debit at the point of sale express a high comfort level with the product and perceive it to be fast.
  - **Recurring Bill Payments.** ACH continues to gain popularity as a bill-payment option (direct debit accounts for 43 percent of electronic volume) and has the highest penetration rate among electronic bill-payment options.
  
- ***How Will Consumers Pay in the Future?***
  - **Projected Changes in Payment Choices.** In stores, use of cash, check, and credit card payments will decrease and use of prepaid and debit cards will increase. When paying bills, consumers will increase their use of debit, direct payment, and online bill payment.

Hayes cited evidence that consumers want to increase their use of electronic payments but are doing so less quickly than financial institution providers of electronic services would like. He suggested that financial institutions could speed consumer adoption by implementing four key strategies:

- **Promote Debit and the Rest Will Follow.** Consumer ownership and use of debit cards are predictors of their willingness to use electronic bill-payment options, including recurring payments.
- **Use Pricing as a Motivator.** Fees and other pricing strategies are powerful tools for changing consumers’ attitudes and behaviors.
- **Educate Consumers About Debit.** Consumers’ resistance to adopting debit may lie in the perception that debit is less safe than other payment options.
- **Provide a Compelling Reason to Change.** Consumers need to understand the benefits of changing the way they pay.

## **PAYMENTS SYSTEM INNOVATION: THE FEDERAL RESERVE’S ROLE**

***Erik Kiefel, Senior Analyst, Board of Governors of the Federal Reserve System***

Innovation in the payments system, according to Erik Kiefel, is a complex and constantly evolving mosaic that continually challenges existing system structures. While supporting appropriate innovation, the Federal Reserve also holds paramount its responsibility to foster a smoothly functioning, safe, and efficient payments system.

Kiefel explained that in recognition of this mandate, the Federal Reserve performs multiple roles within the payments system:

- **Oversight.** Ensures the safety and soundness of the banking system as required by law.
- **Regulatory.** Establishes the rights and obligations of consumers and payments-system providers within established legal frameworks.
- **Operational.** Provides payment services within the economy.
- **Facilitator.** Partners with industry to pursue improvements to the payments system.

He added that the Federal Reserve has developed the following principles to guide its fulfillment of those roles as they relate to innovation:

- Encourage innovation.
- Support market-driven solutions, where practicable, above regulatory solutions.
- Identify and reduce inappropriate barriers to innovation.
- Exercise appropriate regulatory authority granted by Congress.
- Maintain awareness of industry needs and trends to ensure that the payments system supports emerging e-commerce initiatives.

### **Supporting Innovation**

According to Kiefel, the Federal Reserve has a long and varied history of addressing the challenges of payments system innovation. For example, Congress authorized the Federal Reserve to have an operational role in check clearing. That operational presence, in turn, has allowed the Federal Reserve to facilitate improvements within the check payments system such as the introduction of magnetic ink character recognition (MICR) and check imaging. Congress has also granted the Federal Reserve regulatory authority within the check payments system.

As Kiefel noted, sometimes the Federal Reserve has helped generate innovation within the payments system. Other times, it has chosen not to become directly involved except as directed by Congress in a regulatory capacity. In the case of the automated clearinghouse (ACH) network, the Federal Reserve responded operationally to requests from the private sector and the Treasury for an electronic payment alternative to traditional check payments. Congress then established a regulatory role for the Federal Reserve in protecting consumers' rights associated with electronic funds transfer.

On the other hand, and despite similar industry requests, the Federal Reserve declined to become a processor of credit card receipts and a national retail EFT switch. Kiefel explained that the Federal Reserve chose this path because of guidance from a congressional National EFT Commission and its own estimation that the private sector was sufficiently capable of providing those services without the Federal Reserve's involvement. At the same time, Congress granted the Federal Reserve regulatory authority to protect consumer rights associated with these payment innovations.

## **Responding to New Payment Challenges**

Kiefel stated that the same issues regarding the Federal Reserve's role within the context of these historical innovations exists today because of numerous new payments challenges. He then provided some examples of how the Federal Reserve is applying its principles regarding innovation within the current payments environment, focusing his comments on check truncation and conversion.

## **Check Truncation Act**

In December 2001, the Federal Reserve submitted proposed legislation to the Senate Committee on Banking, Housing, and Urban Affairs to facilitate check truncation. The goal of the proposed act is to reduce legal impediments to check truncation that exist under current law, which requires financial institutions to physically present and return original checks *unless* they have obtained agreements to do so electronically. The act would permit banks to use electronics to streamline the check collection and return processes, even in cases in which they do not have electronic agreements.

In drafting the act, the Federal Reserve attempted to strike a fair balance among the competing interests of various payments system participants. Through its warranty, indemnity, and expedited re-credit provisions, the proposed act attempts to keep financial institutions and their customers in substantially the same legal and practical positions, regardless of whether they received the original checks.

The fate of the Check Truncation Act is unclear. It is possible that Congress will hold hearings on the act in late summer. It is also possible that Congress will not address the act before the end of its current session, making it necessary to reintroduce it in another Congress.

*Post-Conference Update: During August, the House Financial Services Committee met with financial services and consumer groups to discuss the Check Truncation Act. Hearings are expected to be held in September, and it appears that the committee is planning to consider the bill in 2003.*

## **Regulation E**

The official staff commentary to Regulation E was updated in early 2001. The updates provide guidance on Regulation E coverage of electronic check conversion transactions,

computer-initiated bill payments, authorization of recurring debits from a consumer's account, telephone-initiated transfers, and other related issues.

As electronic payments evolve, the need arises to periodically update and clarify aspects of the regulation. Examples from the 2001 update include:

- Regulation E is deemed to apply if a consumer agrees actively or tacitly to an electronic funds transfer transaction.
- A check is never an "access device" but can be a "source document" for Regulation E purposes.
- Regulation E does not apply to check truncation (although the UCC and Regulation CC cover check truncation).

Kiefel concluded his remarks by re-emphasizing the Federal Reserve's commitment to respond appropriately to the challenges of payment innovation and to partner with industry on standards and initiatives to promote the efficiency of the payments system.

## **WHAT YOU NEED TO KNOW ABOUT BUSINESS METHODS PATENTS**

*Louis M. Heidelberger, Partner, ReedSmith LLP*

A major challenge to many businesses involved in e-commerce is avoiding litigation based on business methods patents. Penalties for infringement are severe and include treble damages. But how can a business protect itself when the potential area of infringement is not a visible physical product but a process or method used to deliver electronic payment services?

Lou Heidelberger began his discussion with an explanation of what constitutes patentable subject matter and the court decision that provided clarity about the patentability of business methods. He continued by offering advice on how to file patent applications to increase their likelihood of acceptance and concluded by offering advice on how e-commerce organizations can protect themselves from lawsuits alleging infringement of business methods patents.

Heidelberger cautioned that businesses that fail to receive or defend against patents may be precluded from practicing or expanding their businesses, as competitors receiving and enforcing patents "wall them in."

### **Patentable Subject Matter**

According to Heidelberger, the Supreme Court has indicated that any new and useful process, machine, manufacture, or composition is patentable. Patents are granted for

“anything under the sun that is made by man.” Three types of subject matter are not patentable: laws of nature, natural phenomena, and abstract ideas.

### **Business Methods Are Patentable**

Until the matter was settled by *State Street Bank & Trust v. Signature Financial Group* (1998), some believed that the Supreme Court’s definition excluded patenting business methods. State Street Bank was denied a patent on a business method, a mathematical algorithm, based on “pure method” without “concrete result.” The federal circuit court supported State Street’s position, finding that its method was patentable because it produced “a useful, concrete, and tangible result.”

The *State Street* ruling opened the floodgates to patenting business methods.

### **Rise in Business Methods Patents Draws Scrutiny**

In response to the “skyrocketing” number of business patents issued since *State Street*, guidelines were introduced in March 2000 requiring business methods claims to receive supervisory review and examiners to search more databases for prior art, which includes publications and prior works that would prevent unpatentable subject matter from being erroneously patented.

Enhanced scrutiny has resulted in a significant reduction in patent applications issued as a percentage of those filed (21 percent in 1999 compared with 5 percent in 2001).

### **Practical Information for E-Commerce Businesses**

Heidelberger offered practical information for e-commerce businesses interested in improving the likelihood of receiving patents for their business methods and defending themselves in a patent infringement action.

#### **Allowable Claims**

- **The “One Box Test.”** Make certain that patent applications meet the “one box test,” meaning that a single entity or person performs “all claimed steps.”

#### **Defenses to Infringement**

- **If You’re Sued.** If an action is taken against your firm for infringing on another’s business methods patent, be sure to explore all your defenses:
  - Multiple parties – If two or more parties are needed to infringe the claim, there may be no infringement.
  - First inventor defense – This is a new statutory defense allowing those who have used the patented invention secretly prior to the asserted patent not be held liable for infringement. This is a complete, but personal, defense to a charge of patent infringement.

## **Strategic Planning in the Corporate Environment**

Heidelberger advised e-commerce businesses to protect their organizations by considering intellectual property in their ongoing strategic planning process. He recommended:

- Conducting due diligence by reviewing competitors' patent portfolios to determine if any of their processes are covered.
- Reviewing new products and processes for potential patentability early in the R&D cycle.
- Brainstorming about what competitors might do and how to "own it first."
- Determining what existing technology can be protected.
- Promoting disclosure and development.
- Regularly tracking disclosure submission and development.

## **MOTIVATIONS FOR MERCHANTS TO PARTICIPATE IN AUTHENTICATION INITIATIVES**

*Ken Silver, Moderator, Director of E-Commerce Business Development, Chase Merchant Services, LLC*

*James Hillmer, Senior Corporate Investigative Services, Amway-Access Business Group*

*Robert Miller, formerly of govONE Solutions*

*Todd R. Pearson, Senior Vice President, PayPal, Inc.*

There is no higher profile issue in the world of e-commerce payments today than authentication.<sup>3</sup> Major associations and groups (including Visa, MasterCard, and Liberty Alliance, a consortium of major businesses, associations, and vendors) have introduced or announced their intention to launch authentication schemes that offer various fraud protections to consumers paying electronically and businesses accepting electronic payments.

Although merchants generally welcome assistance in reducing e-commerce-related fraud, not all are jumping on the authentication bandwagon. They cite a variety of concerns for not doing so, including the cost and technical difficulty of supporting multiple authentication schemes being advanced by different segments of the e-commerce industry.

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<sup>3</sup> Authentication is the process by which one party in an electronic transaction validates its identity to another party. It is a critical component of electronic transactions because of the increased risk of fraud when parties do not transact business face to face and the "normal" means of authenticating identities (for example, signatures or PINs) are unavailable for merchants to verify the identity of consumers.

The purpose of the panel was to provide merchants with a forum to communicate what they need from providers of authentication services and how currently available or announced authentication services meet or do not meet their needs.

### **Maintaining the Quality of the Customer's Shopping Experience**

Moderator Ken Silver framed the discussion by noting that authentication is a significant industry challenge because it must satisfy the diverse – and often contradictory – needs of all constituencies, including consumers, merchants, and card issuers (financial institutions).

He highlighted two primary needs of merchants accepting e-commerce payments: protection from chargebacks resulting from unauthorized e-commerce purchases and authentication solutions that do not interrupt the “shopping experience,” consequently jeopardizing merchant revenue.

An appropriate tradeoff for mandatory merchant participation in standardized authentication services, Silver suggested, might be a shift in chargeback liability from merchants to card issuers.

### **Cost Breeds an In-House Solution**

Jim Hillmer cited cost as a reason for the lack of merchant acceptance of third-party authentication and fraud prevention products. He emphasized the need for products and technologies that help merchants control authentication/fraud-protection costs even as transaction volumes grow and transactions become more technically complex – such as those delivered via online channels.

Hillmer explained that fraud solutions should be rules based, easy to integrate, and cost effective for merchants. When available solutions are intrusive and expensive, merchants may elect to budget funding for losses, rather than adopt technology.

To address the high cost of third-party authentication/fraud-protection solutions, Amway developed its own e-commerce fraud protection program, which has been successful in keeping the company's online fraud at minimal levels. Amway is currently enhancing its program and plans to offer it as a solution to other merchants.

Authentication as we know it today, concluded Hillmer, is not a science of analytics but one of behavior that creates some uncertainty for merchants when deciding whether to ship a suspect order that may be fraudulent.

### **Government as Biller and Merchant**

Bob Miller introduced the concept of government not only as a political and regulatory body but as a merchant and biller. For example, government acts as a biller when it collects taxes, fees, and fines and as a merchant when it sells permits and receives

payment for goods and services. To facilitate both roles, government entities are cautiously beginning to accept credit cards for payments from individuals.

His experience suggests that government billers are generally “hostile to interchange”<sup>4</sup> for a variety of reasons and tend to view interchange as the “price of not being able to authenticate” the identity of those that pay through the Internet or telephone with credit and offline (signature-based) debit cards. He noted the irony that a major government function is authenticating the identity of individuals, and it does this day in and day out in a variety of ways, including issuing passports and driver’s licenses. The information to authenticate the identity of individuals is available to government.

The challenge to government is – given the disparate ways in which it maintains information – how to access the information to directly authenticate the identities of individuals with whom it transacts business, while protecting the confidentiality and privacy of government records.

### **What’s the Value to Merchants?**

Todd Pearson confirmed the common perception that Internet purchases carry higher potential for fraud because of the absence of face-to-face interaction with customers. He noted that merchants pay for this increased risk in several ways:

- Assessment of the higher “card not present” interchange rate.
- Assumption of liability for chargebacks.

Pearson acknowledged that reducing fraud is a key merchant objective, but he added that there is little value in being an early adopter and incurring the high costs associated with implementing fraud-reduction software without a shift in the liability for chargebacks. In addition, he reiterated merchants’ concern about authentication procedures that interrupt customers’ shopping experiences.

In Pearson's view, the card industry has not provided effective fraud control mechanisms or liability protections for online merchants. With the amount and sophistication of online fraud growing, merchants are left to defend themselves with home-grown tools and methods, which can often run afoul of card association rules. He applauded the efforts of the card associations for attempting to tackle the problem but insisted that they must be more aggressive in rolling out solutions by mandating issuer participation and instituting liability transfer from merchants (acquirers) to issuers.

### **Group Recommendations**

The panelists summarized the key requirements to gaining merchant support for authentication services:

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<sup>4</sup>Interchange is a fee that merchants (through their acquirers) pay to card issuers. For most categories of merchants, interchange represents a portion of the sale or transaction amount.

- User friendly and comfortable to use for customers.
- Standards and requirements with minimal impact on customers and the supply chain.
- Inexpensive and effective.
- More education on fraud tools and their use.
- A shift in liability for chargebacks.
- No interruption to doing business.

## **THE CONSUMER SIDE OF E-PAYMENTS**

*Jim Brown, Moderator, Director of the Center for Consumer Affairs, University of Wisconsin-Milwaukee*

*Howard DeBow, Vice President, Visa U.S.A.*

*Lee Manfred, Partner, First Annapolis Consulting*

*Anthony Hayes, Director, Dove Consulting*

Current authentication initiatives – implemented or proposed – require consumers to take specific actions to obtain higher levels of identity security for their online purchases.

Placing this added requirement on consumers raises a number of key questions for merchants, card issuers, and others involved in the delivery of e-commerce payment services:

- *Are consumers really concerned about added security for their Internet purchases?*
- *Will adding another level of security motivate “browsers” to become shoppers?*
- *Will adding another level of security discourage shoppers from purchasing on the Internet?*
- *Which authentication processes are most acceptable to consumers?*
- *Will today’s authentication services (implemented and proposed) succeed in the consumer marketplace?*

The goal of this panel, which included individuals with different types of expertise in consumers’ use of and attitudes toward financial services, was to share knowledge about consumer acceptance of online payment, emphasizing consumers’ perceived need for greater online purchasing security and their willingness to take extra steps to authenticate their identities.

### **The Consumer Always Pays**

Moderator Jim Brown began the discussion by stating, “The consumer always pays. Ultimately, the interesting question is, ‘Who gets to give him the news?’” Applying this

maxim to the online consumer payments/authentication environment, Brown noted that adding levels or means of security will entail additional "costs," that is, either actual financial costs or costs in the form of barriers to consumer adoption or usage.

Brown added, "And, as always, these 'costs' will be recouped from consumers either in the form of higher costs for payment services, general bank services, goods or services from merchants, or some combination of all of these." He continued, "Whether these costs are recovered only from the users of such new services or from consumers more broadly is, of course, an important question for policymakers."

Brown commented that assessing whether consumers will use new payment means or shopping channels depends on a number of factors, including their comfort level with existing payment and shopping alternatives.

He then listed entry-level questions that are prerequisites to the introduction of any new payment method or innovation:

- *Is the method a truly new and unique way to pay, or is it an improvement on a currently available payment method?*
- *Are consumers happy with their current payment options?*
- *What is the utility of the current and new payment methods? Does the new payment method offer sufficient increased or improved utility to justify investment?*
- *Is the payment method secure, easy to use, and reliable?*
- *Does the payment method provide privacy and anonymity to quell consumer fears on matters such as discrimination and fraud?*

### **Credit Cards Aren't Optimal for Online Payments, Leaving the Door Open for New Options**

Tony Hayes shared his perspective on consumers' use of payment instruments for Internet purchases and the limitations of the current Internet payments environment for all parties.

According to a 2001 Online Consumer Survey conducted by Star Systems, the breakout of payment instruments used for Internet purchasing is:

- |  |                            |
|--|----------------------------|
| • 82 percent – Credit cards                                      | • 13 percent – Money Order |
| • 32 percent – ATM/debit cards                                   | • 4 percent – COD          |
| • 15 percent – Direct debit from Demand<br>Deposit Account (DDA) | • 3 percent – Other        |

*Respondents could select multiple choices, indicating whether they have ever used the payment method.*

Hayes noted that use of payment instruments differs radically in the physical world. In the physical world, consumers select from a range of choices: cash, checks, credit cards, and online and offline debit cards whereas online consumers basically are restricted to credit and offline debit. Moreover, in a typical grocery store, for example, cash and checks account for 70 percent of transactions and credit card for less than 10 percent. Clearly, consumers have fewer practical choices for paying online.

### **Limitations of Credit Cards**

Credit cards, said Mr. Hayes, in their current form are sub-optimal for all participants in the Internet payments value chain. Specific limitations include,

- **For consumers:**
  - Fewer payment choices compared with the physical world.
  - Security concerns about using credit cards to pay online.
  - Preference for debit over credit payment (with some consumers).
  - Not all qualify for or own credit cards.
  
- **For issuers:**
  - High costs associated with chargebacks.
  
- **For merchants:**
  - High card-not-present interchange rates.
  - High discount rates.
  - High fraud and chargeback losses (user not authenticated).
  - Complicated forms, leading to abandoned sales.
  - Limited consumer reach.

Hayes concluded that the limitations of credit cards create the potential for new online payment products that better meet participants' needs. Early attempts with wallets and Internet currencies attempted to fill the void, but failed. PIN-based debit for Internet purchases has not gained traction. And whether new authentication initiatives, such as Verified by Visa, will usher in new flexibility for card-based Internet purchasing remains to be seen.

Although credit cards are not the optimal Internet payment solution, they remain the practical answer until an option is developed that addresses participants' broader online payment needs.

## **Is Value Being Passed on to Consumers?**

Lee Manfred reminded the audience of the importance of “value” in gaining consumer acceptance of new payment products.

He suggested that a common reason for the lack of consumer acceptance of previously introduced payment products is a “breakdown in value.” New payment forms, he explained, are typically built on legacy systems, which, with each iteration, become increasingly more expensive to upgrade and operate. The inevitable result is that costs are passed on to consumers, undercutting the value proposition of the new product.

Reliability and security of new payment methods are essential attributes to gaining consumer acceptance, Manfred said. Connection failures, for example, can undercut consumer acceptance of the Internet as a purchasing/payments. And bad publicity, especially related to the security of the payment channel, will also lead to its failure.

On the issue of fraud, Manfred questioned if consumers – protected by the major card associations’ zero liability policy – really care. And if they don’t care, why would they be willing to take an additional step to authenticate their identities? He categorized authentication as an “insurance premium” applied to all consumers to “underwrite the bad guys,” and he questioned if that is what consumers are really looking for.

## **Consumer Support for Online Authentication**

Howard DeBow shared consumer research conducted by Visa as part of its recent launch of Verified by Visa, an identity authentication service designed to make consumers more comfortable buying online by enhancing the security and integrity of Internet purchasing.

At a high level, the research suggests:

- Although consumer Internet spending is booming, some consumers either restrict their purchasing or do not buy online because of concerns about the security of using their payments cards online.
- Consumers are concerned about the fraudulent use of payment data and have a low level of trust in online merchants with which they are unfamiliar.
- Potential exists for increased consumer use and spending over the Internet if consumers with security concerns can be made to feel more comfortable about purchasing online.
- Consumer interest in a cardholder authentication service is high. Three-fourths of consumers surveyed agreed that they would use a card that allows them to be authenticated.

DeBow shared the following findings based on a Visa Research Study conducted in 2001:

- **Top Three Concerns of Browsers, Not Buyers.** 94 percent – security of payment information, 79 percent – privacy of personal information, 44 percent – unfamiliarity (no trust) with unknown merchants.
- **Top Three Concerns of Those Who Shop Online “Regularly.”** 55 percent – shipping costs, 35 percent – security of payment information, 33 percent – privacy of personal information.
- **Effect of Security Concerns on Buyer Spending Levels.** Online shoppers with “low” concerns about security spend more than twice as much online as online shoppers with “high” security concerns.

According to DeBow, the following factors will help consumers get over the “security hurdle”:

- 81 percent agreed that entering a PIN or password before completing an online transaction is secure.
- 18 percent found swiping credit cards through readers attractive.
- 15 percent would download special software.
- 14 percent would provide mother’s maiden name.
- 14 percent felt no need for increased credit card protection.

He concluded by noting that although growth of online shopping is strong, there are still barriers preventing further spending. Security is the key barrier to converting browsing consumers to online buying consumers, and security – unlike other barriers – can be addressed successfully by consumer-friendly authentication services.

## CONFERENCE SPONSORS

The Payment Cards Center was established in early 2001 to provide meaningful insights into payment card industry developments. It carries out its mission through research and analysis, as well as forums and conferences that encourage interaction among the diverse groups that are stakeholders in the payments system.

Web site: [www.phil.frb.org/pcc](http://www.phil.frb.org/pcc)

The Electronic Funds Transfer Association (EFTA) is a Washington, D.C.-based trade association that provides industry leadership in the advancement of electronic value transfer systems, technologies, and service. Its Electronic Commerce Payments Council (eCPC) provides a forum for exploring e-commerce payments products and issues in an inter-industry environment.

Web site: [www.efta.org](http://www.efta.org)