DISCUSSION PAPER
PAYMENT CARDS CENTER

The Merchant-Acquiring Side of the Payment Card Industry: Structure, Operations, and Challenges

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Summary: *On January 19, 2007, the Payment Cards Center of the Federal Reserve Bank of Philadelphia sponsored a workshop led by Marc Abbey, managing partner at First Annapolis Consulting, to discuss the merchant-acquiring side of the payment cards industry. Abbey described the often overlooked acquiring industry as a dynamic growth business that is an integral part of the payment cards industry. He outlined several factors that have affected the evolution of the industry and described the current state of industry dynamics in terms of growth, competition, and business economics. In addition, Abbey discussed two recent developments: the emergence of data security standards and the new public structure of payment networks, which have drawn the focus of lawmakers, policymakers, and consumers to the merchant-acquiring business.*

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

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I. Introduction

On January 19, 2007, the Payment Cards Center (PCC) of the Federal Reserve Bank of Philadelphia hosted a workshop led by Marc Abbey, the managing partner at First Annapolis Consulting,[1] to discuss the merchant-acquiring side of the payment cards industry. In his role at First Annapolis, Abbey, who has been with the company since its inception in 1991, focuses on the merchant-acquiring, transaction-processing, and card-issuing businesses. The workshop's purpose was to learn more about merchant acquiring, a relatively less understood section of the payment cards industry. This paper, which is based in large part on Abbey's remarks, will describe the merchant-acquiring function, the industry structure, and how the business has evolved.

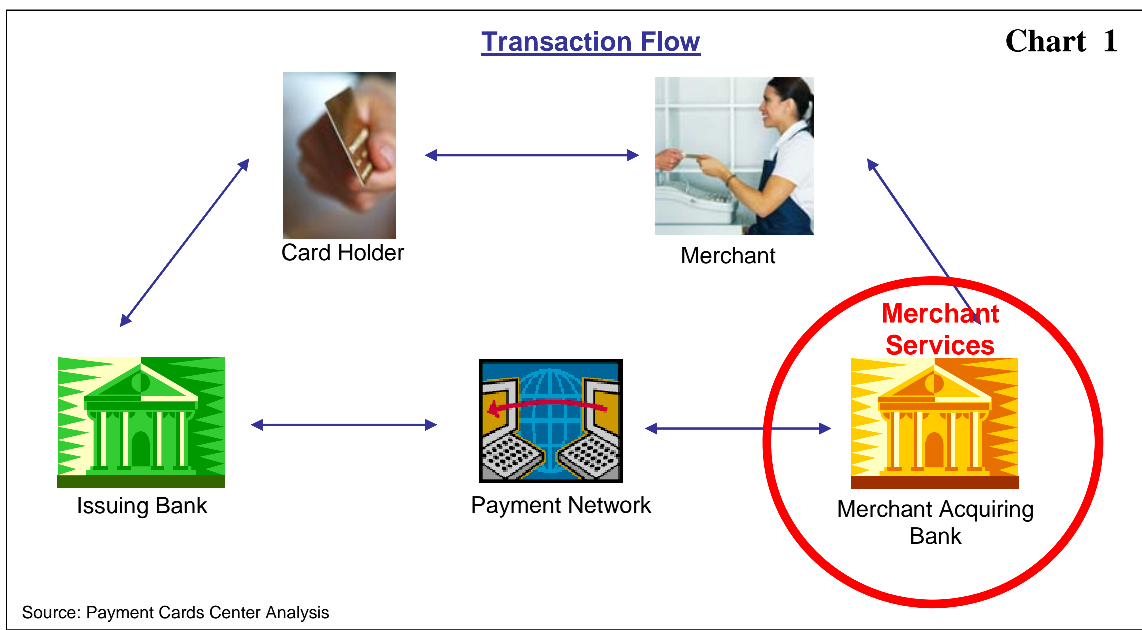
The paper begins with background information that describes the role of merchant acquiring in the payment cards business, outlines key functions performed by merchant acquirers, and defines various entities generally associated with the business. To help workshop participants better understand the current market structure, Abbey outlined several factors that have affected the evolution of the industry. He then described the current state of industry dynamics in terms of growth, competition, and business economics. The paper concludes with a discussion of two recent developments that have heightened the focus on the industry and may have important implications for the merchant-acquiring business: the emergence of the Payment Card Industry (PCI) Security Standards and other responses to highly publicized data breaches involving merchants and the recent decisions by Visa and MasterCard to become publicly traded corporations.

[1] First Annapolis Consulting, which was founded in 1991, is described on its website as "a specialized management consulting and mergers and acquisitions advisory services firm." The company primarily focuses on the payments industry, which includes "credit and debit card issuers, transaction processors, and other vertical markets reliant on consumer and commercial payments such as the retail, utility, automotive, and healthcare industries." For more information about First Annapolis Consulting, visit www.firstannapolis.com.

II. Background on the Business of Merchant Acquiring

A. Definition of a Merchant Acquirer

The merchant-acquiring function may best be understood in the context of card use in a typical retail purchase transaction. As the diagram below illustrates, there are several stages in the transaction flow involving cardholders and their banks on the one side, merchants and their banks on the other, and a payment network in the middle that coordinates the flow of information and money underlying the transaction.



There are many relationships within the payment card industry. The merchant services industry is shaped by the relationships between merchants and acquirers.

The various activities associated with merchant services (highlighted in Chart 1, and described later) can generally be thought of as the merchant-acquiring function. But who is the merchant acquirer? For bank-centered payment networks such as Visa and MasterCard, the merchant acquirer is defined as the member financial institution responsible for its merchant-customers' transactions with the network (the merchant-acquiring bank in Chart 1). In practice, member financial institutions often contract with third parties to perform any number of the functions associated with merchant-acquiring services. In some cases, the extensive scope of

merchant-acquiring services provided by these specialized third-party firms has led these companies to be commonly identified as merchant acquirers. Irrespective of name, it is important to note that it is the network member financial institution that is ultimately responsible for the underlying transactions with its direct or indirect merchant-customers.

In addition to Visa and MasterCard, other network structures involve other acquiring models. Most significant among these are American Express and Discover. Unlike Visa and MasterCard, these two card networks are not based on a bank-member structure but, rather, operate as independent entities. As such, they maintain the contract relationship with cardholders as "issuers" and similar direct relationships with the merchant that accepts their cards as "acquirers." In a sense, the generally independent functions of issuers, acquirers, and networks that exist in the Visa/MasterCard models are collapsed into one entity in the cases of Discover and American Express.

Although Discover, American Express, and other networks play significant roles in the broader payment cards industry, the merchant-acquiring business is more generally associated with Visa and MasterCard transactions[2] (commonly known as bankcard transactions), and this part of the payment cards business is the focus of this paper.

B. Merchant-Acquiring Services

In Chart 1 and in the earlier discussion about participants in the payment cards transaction flow, the general term merchant services was used to describe the activities undertaken by merchant acquirers. In essence, these activities may be seen as the services rendered by the acquirer to enable merchants to accept their customers' payment cards at the point of sale. In support of the transaction flow, merchant acquirers generally perform four key functions: (1) signing up and underwriting merchants to accept network-branded cards, (2) providing the means to authorize valid card transactions at client merchant locations (3)

[2] These transactions include Visa and MasterCard credit card and signature/offline debit transactions.

facilitating the clearing and settlement of the transactions through the payment network, and (4) providing other relevant information services, such as sending out statements.

Signing up and Underwriting Merchants. Signing up merchants to accept card-based payments is a key marketing function of a merchant acquirer. This starts with soliciting merchants to accept the network-branded payment cards. The next step is the underwriting process, which ensures that the merchant meets the network requirements for financial stability and other conditions. This is an important step, since the merchant acquirer is ultimately responsible for its customers' transactions with the network. Very often, the merchant acquirer or its agent may also assist the merchant in obtaining necessary point-of-sale equipment and provide other relevant services. These and other functions are documented in a contract, called the merchant agreement.

Authorization and Capture. Operationally, a critical function of the acquirer is facilitating the authorization for purchase transactions. From a merchant's perspective, authorization means that, barring future disputes, payment is guaranteed for authorized purchases. When a payment card is swiped at the merchant's terminal, a request for authorization, along with the cardholder's information and the transaction amount, is transmitted to the merchant acquirer. The merchant acquirer then forwards the request through the network, which, in turn, queries the cardholder's issuing bank. The cardholder's bank either approves or rejects the transaction based on credit or funds availability.[3]

If the transaction is approved, the issuing bank confirms the transaction with an authorization code, and the amount of the authorization is set aside from the available credit or available funds in the cardholder's account. The authorization code is sent through the network from the issuing bank to the merchant-acquiring bank and then on to the merchant's terminal. The

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[3] For credit card transactions, the authorization process involves ensuring that the issuing bank will approve the additional extension of credit represented by the purchase amount. For signature debit transactions, the authorization is tied to the availability of funds in the customer's demand account.

authorization process does not result in an actual collection of funds at that time, but rather, it confirms that the issuing bank authorizes the transaction and agrees to a future settlement with the acquiring bank and its merchant customer.

Once the transaction is authorized, the sales process at the merchant location proceeds. The next step involves capturing the sales transaction information, which is separate from the authorization data. Typically, merchants capture their daily transaction details and either group all of the transactions together for transmission to the acquirer at the end of the day or, in the case of large merchants, process the transaction on a real-time basis. In either case, the transaction is confirmed with the cardholder, typically with a paper receipt.[4]

Clearing and Settlement. The process of collecting the funds from the issuing bank and reimbursing the merchant is known as clearing and settlement. This process begins once the merchant submits transaction information, generally at the end of the day, to its merchant acquirer. The acquirer then transmits the transaction data to the appropriate payment network, which, in turn, directs the transaction to the respective card-issuing banks. The issuing banks charge their customers' card account and remit funds through the network to the acquiring bank, less the issuing banks' fees. The process is completed when the acquiring bank credits its merchant customer's account, net of fees paid to the issuer, the payment network, and the acquirer. Typically, merchant accounts are funded between 24 and 72 hours after the purchase transaction.[5]

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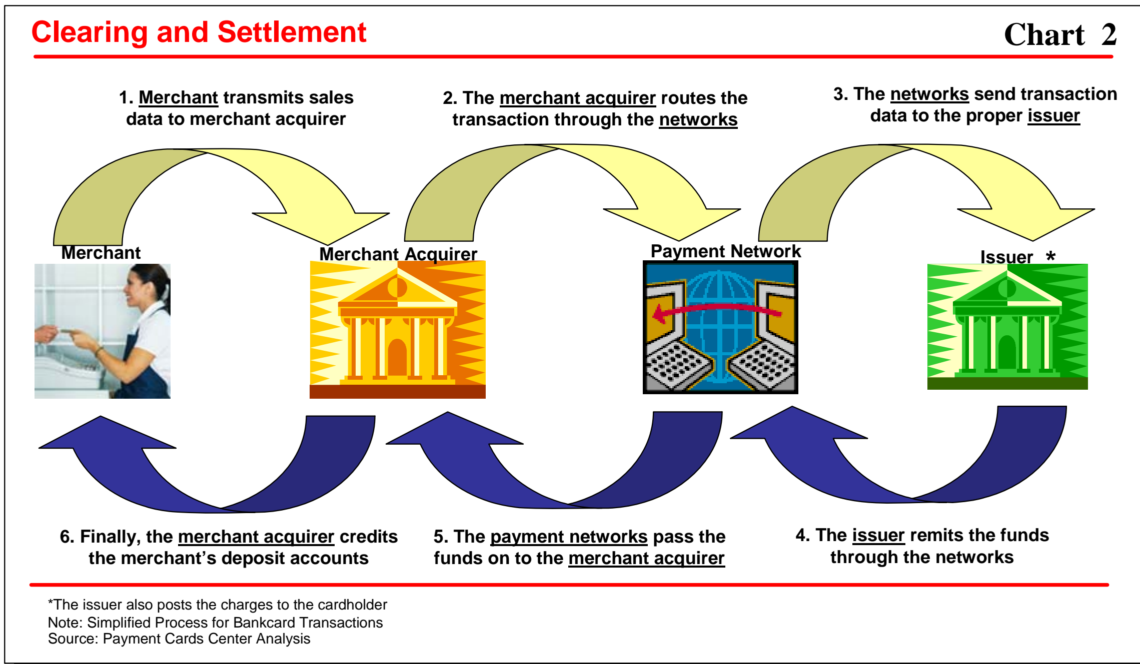
[4] Network rules generally do not require that receipts be given for credit card transactions of less than $25. In 2007, the Federal Reserve amended Regulation E, the implementing regulation for the Electronic Fund Transfer Act, which governs debit card transactions. The amendment changed the receipt requirement, so that merchants are not required to provide a receipt for debit card transactions of $15 or less.

[5] The exact timing of remitted funds varies between merchants and is not exact. In *How to Survive and Thrive in the Merchant Services Industry II,* Marc J. Beauchamp states, "The merchant usually has their money within 48-72 hours," Performance Training Systems (2003), p. 54. Industry sources suggest that for many large merchants, funds are generally received sooner.



Statements and Information Services. Compiling and reporting on its merchant customers' transaction data are an important service provided by acquirers. The extent to which this is done and the degree of integration into merchants' accounting systems vary and can be a source of competitive advantage for acquiring entities. In recent years, the fee structures of networks and issuing banks have become increasingly complex, and most major acquirers now also offer a range of analytical services to assist merchants in better understanding and managing their payment card costs.

C. Industry Participants Within Merchant Acquiring

As will be described in more detail later, the bankcard industry has gone through significant structural change since its inception in the 1960s.[6] At that time, both issuing and acquiring functions were generally conducted by a single bank servicing its cardholders and merchant customers located in a common geographic market. Over time, the industry has seen substantial change as the business of banking and retailing expanded well beyond local

[6] For more information on the structure of the early credit card business, see David S. Evans and Richard Schmalensee, *Playing with Plastic: The Digital Revolution in Buying and Borrowing, Second Edition*, Massachusetts Institute of Technology (2005), pp. 53-66.

geographies. Driven in large part by these market factors and concurrent advances in technology, the payment cards industry today is dominated by large scale, specialized entities. Consequently, the issuing and acquiring functions historically conducted within a single bank are now more generally seen in separate institutions, and various nonbank partners play important supporting roles, especially on the acquiring side.

In today's market, various combinations of business structures are used to carry out the functions of merchant acquiring. At one end are acquiring banks, such as Fifth Third, that provide most of the relevant merchant services directly to their merchant-customers. In other cases, banks and large nonbank acquirers have formed jointly owned firms. One notable example is Paymentech, a joint venture between JPMorganChase and First Data Corporation. Under this arrangement, JPMorganChase serves as the banking sponsor into the payment networks. Heartland Payment Systems is an example of a third model. Under contract with a sponsoring financial institution, this publicly traded company provides virtually all market services for its merchant-customers, including access to the Visa and MasterCard networks.[7]

Supporting all of these models are a number of specialized service and transaction processing companies that provide everything from sales and merchant servicing, including training and technical assistance, to purchase transaction processing, terminal support, encryption servicing, and statement processing. While many of these service providers are common to the payment cards industry, one third-party entity is unique to the acquiring industry. These are the

[7] Heartland Payment Systems Inc. has three sponsoring banks: Heartland Bank, Keycorp, and, most recently, Bremer Financial Corp. For more details, see Daniel Wolfe, "In Latest Processing Deal, Heartland Has Room to Grow," *American Banker*, July 6, 2007.

independent sales organizations (ISOs),[8] which specialize in signing up new merchants for payment card acceptance and managing merchant relationships.[9]

Note that despite the sometimes complex chain of service providers, they are always linked by contracts to the network member bank and subject to network-defined registration requirements designed to ensure safe and sound practices.

III. Key Characteristics of the Merchant-Acquiring Business

In his presentation, Abbey suggested that the structure and dynamics of today's merchant-acquiring industry can best be understood by considering several key characteristics of the business. Specifically, he argued that technology and related scale economies along with resulting commodity-like characteristics have been important forces in shaping the industry.

A. Technology and Scale Economies

As in other areas of payments, advances in technology have had an important impact on the acquiring business. As Abbey explained, the application of technology to the acquiring process has in large part created an environment where economies of scale have come to dominate many sectors of the business.

To illustrate the impact of technology, he described the pervasive impact that the emergence of point-of-sale terminals has had on the industry. In the early days of credit cards, data capture and signature authorizations involved paper documents that had to be physically batched and sent by the merchant acquirer to the consumer's card-issuing bank for collection, in much the same way that paper checks continue to be processed and cleared through the banking system. As a result, acquiring merchant relationships were generally defined by the geography of

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[8] See MasterCard International for a description of the most common types of ISOs and the organizations they partner with in "Independent Sales Organization Guide North America Acceptance, ISO Guide to Working with Acquirers" (September 2002), pp. 7-8.
[9] For more on the types of acquirer relationships, see the Office of the Comptroller of the Currency's Administrator of National Banks Handbook, "Merchant Processing" (December 2001), p 2. (www.occ.gov/handbook/merchproc.pdf)

the bank's branch network. In the late 1970s and early 1980s, the payments industry introduced electronic terminals at the point of sale, which eliminated the need for physical deposit of credit card receipts. In short, this technology innovation greatly lessened the need for the merchant and the acquirer to be near each other. During this period of restructuring, many major retailers were also expanding their franchises geographically, further diminishing the need for local bank acquirers.

The widespread use of point-of-sale electronic terminals for payment card transactions resulted in a business model that became heavily data intensive, putting a premium on those acquirers that excelled at data processing. Data processing is, at its heart, a scale-oriented business wherein size and volumes drive profitability. Recognizing these forces, technology-savvy entrepreneurs entered the picture offering common processing capabilities to multiple banks at prices well below what they might be able to achieve as individuals.

The introduction of terminals and of scale-driven processing dramatically affected the industry's cost structure. As the market moved from paper to electronics, the cost of processing those transactions decreased as the number of transactions increased. Acquiring quickly became recognized as a volume business. Historically, acquirers would compete for local merchants. But soon after terminals came on the scene, acquirers began to compete for large merchant accounts from one corner of the country to another. Without the barrier of geography, capturing transactions was the priority, and competition among acquirers increased. Large merchants bringing in high transaction volumes were highly sought after and began to see lower prices and other incentives.

B. Industry Economics

Much of the activity described earlier under "merchant services" tends to be data-processing intensive and driven by scale economies.[10] While this is true of many segments of the payments industry, Abbey used the comparison of the issuing side of the credit card business to explain why this is especially true for the acquiring business.

The economics of the issuing versus the acquiring sides of the credit card business are very different. In addition to receiving compensation for facilitating cardholder transactions with merchants, issuers derive most of their business revenue and income from extending credit to their customers.[11] Issuers actively compete for customers and strive to differentiate their credit product services. In contrast, merchant acquirers earn virtually all of their revenue from relatively standard and commodity-like processing functions. Unlike with competition for individual cardholders, acquirers have fewer ways to differentiate their services to merchants; so price tends to be a dominant competitive factor. This, in turn, further emphasizes the need to increase size and maximize economies of scale.

C. Risk-Based Revenues

For many segments of the financial services industry the extension of credit and pricing of relative risk are the primary sources of revenue and a way to differentiate products. This is certainly true on the issuing side of the credit card market, where most card issuers' revenues come in the form of interest payments related to the extension of credit.[12]

On the acquiring side, however, there is no comparable direct extension of credit that might be priced into contracts with merchants. Acquirers' financial exposure to merchants is

[10] A notable exception is in the highly personal activities associated with signing up and servicing merchant accounts, generally conducted by independent sales organizations (ISOs).

[11] The Survey of Consumer Finances reported that in 2004, 46.2 percent of families carried a credit card balance. The Survey of Consumer Finances can be found on the Federal Reserve Board's website, www.federalreserve.gov/pubs/oss/oss2/2004/scf2004home.html.

[12] Sixty-five percent of issuing revenue is derived from net interest; the other 35 percent is primarily from interchange and other servicing fees. See "Bank Card Profitability 2005," *Card Industry Directory, 18th edition,* SourceMedia (2006), p. 11.

generally limited to brief periods during the clearing and settlement process described earlier. Here again, advances in technology have significantly compressed this time factor since the days when paper deposits were cleared manually. Outright merchant fraud and potential exposure to chargebacks[13] for disputed transactions are the principal credit risks faced by merchant acquirers.[14] On balance, the industry has learned to effectively manage these risks at a relatively low and stable cost. Abbey noted that the cost of chargebacks has been consistently around 1.5 to 2.5 basis points (0.015-0.025 percent) of volume. These low and stable loss rates leave little room for risk-based pricing, a fact that further explains the industry's commodity-like pricing structure.[15]

Technological innovations, economies of scale, and low-risk business models are characteristics that have helped shape the industry's current structure. Acquirers have been driven to increase merchant transaction volumes, outsource back-office operations, and form strategic partnerships in order to achieve profitable growth. After discussing these defining characteristics within the acquiring business, Abbey then described the resulting impact on the shape of the industry today.

IV. Industry Structure and Market Dynamics

In many ways, the trends toward consolidation and the resulting industry concentration have been reflected on both the issuing and acquiring sides of the business. In his discussion, Abbey suggested that, in many respects, the two sides of the card business have evolved along

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[13] The chargeback process is discussed in detail in *Rules for Visa Merchants, Card Acceptance and Chargeback Management Guidelines*, "Section 6 Chargebacks" (2006), pp. 69-82.

[14] Other types of payment fraud, such as factoring (when one unregistered merchant compensates a legitimate merchant or vendor to use an account to process transactions) and business format change (merchants who run certain types of high-risk businesses may lie about business practices when applying for a merchant account), are described in the Electronic Transaction Association's white paper, *Risk Management*, Volume 2 Issue 1 (April 17, 2006).

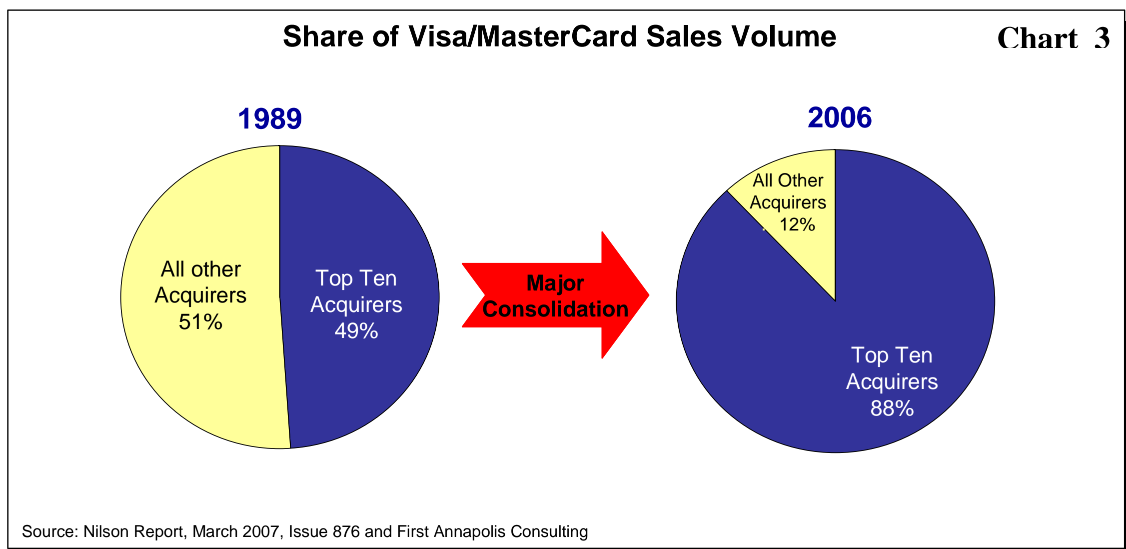
[15] As will be discussed later, Abbey noted that the increased incidence of data breaches at merchant locations may affect this dynamic. To the extent that acquirers become exposed to potential financial liabilities associated with these breaches, these risks will likely be priced into the merchant contracts.

similar paths. Among the similarities has been the growth of nonbanks' participation in the industry; nonbanks play an especially prominent role in merchant acquiring. Abbey then turned to an analysis of the trends in transaction growth and expectations for the future. He pointed to the growth in Visa/MasterCard offline debit transactions as a major factor contributing to the recent strong industry growth; he then discussed several emerging areas where he expects future growth. He also addressed how differentiated business strategies are being deployed to capture market shares in a highly competitive environment. Last, he discussed how all of this shapes the economics of the industry.

A. Evolution of the Merchant-Acquiring Industry Structure

As noted earlier, banks typically functioned as both issuers and acquirers when payment cards first entered the market. The model was relatively straightforward, since those banks that issued credit cards to their customers simply regarded the merchant payment-acceptance function as part of their traditional commercial depository business. However, in the 1980s, the industry structure changed quickly and significantly. The once familiar issuer/acquirer bank structure rapidly evolved into two generally separate business lines, with nonbanks carrying out significant functions.

In the early days, credit card transactions involved processing paper receipts through the banking system, not unlike traditional bank check deposits. Then in the 1980s the advent of



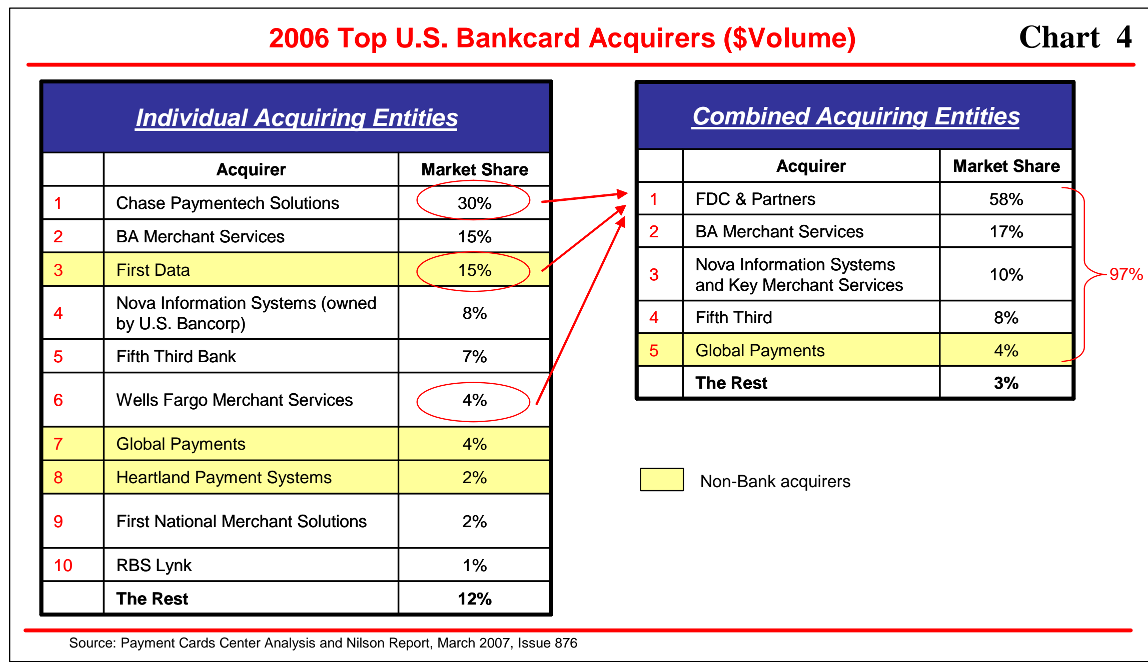
electronic terminals at the point of sale changed the processing environment and set in motion the forces that fundamentally altered the industry's structure. Far more efficient electronic credit card terminals did away with the need to physically deposit and collect paper receipts. This critical development dramatically changed the nature of relationships between merchants and acquiring banks as geography became far less important. Point-of-sale terminals and the introduction of nonbank entities into the business process were also key factors in spurring industry consolidation. With the emergence of electronic terminals, the paper-based merchant-acquiring business changed into a high-tech, data-intensive industry. Banks without technical expertise or scale began exiting the business, and, in many cases, nonbank processors took over many of the merchant-acquiring functions. Abbey noted that between 1989 and 2004, approximately 50 commercial banks exited the business and five nonbank processors emerged as significant players. First Data Corporation and Heartland Payment Systems are prominent examples of nonbanks that entered the acquiring industry during that period and now process billions of electronic transactions on behalf of their banking partners, or sponsors, in the Visa/MasterCard networks.

Looking back, Abbey recounted that, in 1993, Wells Fargo Bank's credit card operation began searching for alternative merchant-processing capabilities and sought to gain processing expertise by forming an alliance with CESI Holdings, Inc., and its merchant credit card processor subsidiary Card Establishment Services (CES). Soon after, CES was purchased by First Data Corporation, another payment card processor that saw an opportunity to vertically integrate its processing base. This transaction established First Data and Wells Fargo as partners and jump started First Data's successful program of establishing joint-venture merchant-acquiring businesses with bank partners. First Data has gone on to become a dominant presence within the

acquiring industry.[16] The banks contributed their base of merchant accounts and access to the payment networks, while First Data provided the processing technology and business scale. Together they built strategic joint ventures that have value for both partners. Meanwhile, other banks in the acquiring business were forced to find a way to increase their transaction volumes in the new scale economy, develop similar partnerships, or exit the business.

The result was the massive consolidation illustrated in Chart 3. In 1989, the top 10 acquirers processed nearly 50 percent of U.S. bankcard volume. By 2006, almost 90 percent of U.S. bankcard acquiring volume was processed by the top 10 acquirers, leaving approximately 10 percent for a large number of smaller acquirers. Importantly, three of these top 10 acquirers (see Chart 4) are nonbanks: – First Data, Global Payments, and Heartland Payment Systems. [17]

As noted earlier, partnerships and alliances are common organizational models in the acquiring industry. When the top 10 individual acquirers are aggregated by their partnerships and


2006 Top U.S. Bankcard Acquirers ($Volume) Chart 4

Individual Acquiring Entities

	Acquirer	Market Share
1	Chase Paymentech Solutions	30%
2	BA Merchant Services	15%
3	First Data	15%
4	Nova Information Systems (owned by U.S. Bancorp)	8%
5	Fifth Third Bank	7%
6	Wells Fargo Merchant Services	4%
7	Global Payments	4%
8	Heartland Payment Systems	2%
9	First National Merchant Solutions	2%
10	RBS Lynk	1%
	The Rest	**12%**

Combined Acquiring Entities

	Acquirer	Market Share
1	FDC & Partners	58%
2	BA Merchant Services	17%
3	Nova Information Systems and Key Merchant Services	10%
4	Fifth Third	8%
5	Global Payments	4%
	The Rest	**3%**

Source: Payment Cards Center Analysis and Nilson Report, March 2007, Issue 876

[16] According to the *Nilson Report*, Issue 876, by 2006, First Data and its partners processed 58 percent of the total U.S. bankcard merchant sales volume.
[17] It was not only the acquiring side of the card business that went through significant consolidation. A similar story is observed on the issuing side. In 2006, the top 10 issuers made up 88 percent of the bankcard volume outstanding; in 1989, the number was only 45 percent. See the *Nilson Report*, Issue 872 (January 2007), p.10 and Issue 472 (March 1990), p.1.

alliances, the top five alliances make up 97 percent of the industry, with First Data Corporation and its partners firmly holding the number one position at 58 percent. JPMorganChase's merchant-acquiring business, Chase Paymentech Solutions, Sun Trust, PNC, and Wells Fargo are a few of First Data's partners.

While the participation of nonbanks in the merchant-acquiring business is a key factor, some banking companies have indicated a renewed interest in increasing their acquiring business. For example, in 2004 Bank of America acquired National Processing Inc. and integrated the business into BA Merchant Services. As seen in Chart 4, BA Merchant Services was the second largest acquiring entity in 2006. In 2006, Nova Information Systems, a wholly owned subsidiary of U.S. Bancorp, acquired First Horizon Merchant Services Inc., which pushed Nova to the number four ranking.

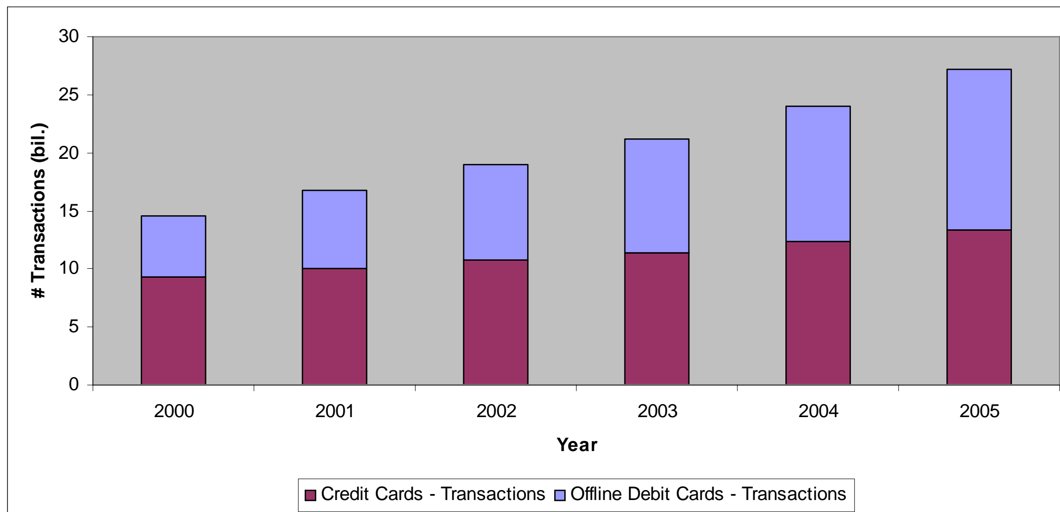
B. Analysis of Growth Trends in Transactions

The payment cards industry in the U.S., especially the credit card segment, is often characterized as a mature business. In 2005, there were 862 million credit and debit bankcards in circulation — about four bankcards for every adult in the United States[18] — and 6.1 million merchants that accepted credit cards.[19] In short, virtually everyone who can own a credit card has one, and cardholders can use the cards in most retail locations. Nevertheless, and as Abbey argued, the card business, including the acquiring segment, continues to be a dynamic sector with positive growth prospects.

By most measures, merchant acquirers have enjoyed relatively strong transaction growth in recent years. Between 2000 and 2005, transaction volumes for Visa/MasterCard have grown, on average, 13 percent a year. As Abbey described, much of this recent growth has come from the

[18] According to the U.S. Census Bureau there are 226 million people over the age of 18 in the United States, which translates to 3.9 bankcards per person. The number of credit cards held by individual households is higher.
[19] The number of bankcard credit and offline debit cards in 2005 comes from the *Nilson Report*, February 2006, Number 851. The February 2007 issue of the *Nilson Report* (Number 874) listed the number of merchants that accept cards by payment system.

U.S. Payment Transactions for Visa & MasterCard **Chart 5**



Source: Nilson Report, March 2007, Issue 876
Note: Bankcard transactions for Visa and MasterCard represent purchase transactions and do not include cash advances.

rapid expansion of debit-card use in the U.S. and a broadening of merchant locations that accept payment cards. Continuing product innovation and consumer demand for electronic payments are expected to provide healthy growth opportunities for the acquiring industry in the future.

As seen in Chart 5, the number of credit card transactions was more than two times greater than that of offline debit card[20] transactions in 2000 and continued to grow at a rate of about 8 percent a year through 2005. Over the same period, however, the use of offline debit cards at the point of sale grew at an average of 21 percent a year.[21] As Chart 5 shows, the number of Visa and MasterCard offline debit transactions exceeded the number of credit card transactions in 2005. Debit card use is growing faster than credit card use for a number of reasons, not the least of which is that consumers are rapidly adopting debit cards as a preferred payment vehicle

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[20] Offline debit cards are also called signature debit cards. These card transactions do not require a PIN and are processed through bankcard networks.

[21] The Federal Reserve Board has been tracking changes in the use of payments and, in 2004, released a study, "The 2004 Federal Reserve Payments Study Analysis of Noncash Payments Trends in the United States: 2000 – 2003." The study confirmed similar results: offline debit grew, on average, 25 percent each year between 2000 and 2003. See page 3 of the study. The 2006 Federal Reserve payment study is forthcoming.

and at the same time writing fewer checks at the point of sale.[22] It also appears that certain demographic segments are adopting debit cards faster than others. Younger consumers, for example, are using debit cards to purchase many small-ticket items, greatly affecting transaction volume.[23]

Furthermore, acquirers' transactions have also grown as new types of merchants have started to accept payment cards. In 1990 most Americans would not have thought of paying for groceries with a credit card, and most grocery stores did not accept payment cards. By 2003, cards accounted for more than 60 percent of grocery store sales.[24] More recently, the industry has seen new venues for payment cards, such as quick-service restaurants, taxi cabs, and pharmacies; however, Internet sales, where payment cards are the dominant form of payment, have also increased significantly. All of these new merchant locations contribute to card growth. Looking ahead, Abbey and other analysts expect that new payment card innovations will continue to fuel transaction growth. Specifically, the growing popularity of network-branded prepaid cards[25] and the emergence of contactless card applications for micro payments[26] have been cited as examples of new sources of transactions and new opportunities for acquirers.

Competitive Strategies. As evidence of the intense competition among merchant acquirers and their efforts to develop differentiated business strategies, Abbey noted that

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[22] See "The 2004 Federal Reserve Payments Study Analysis of Noncash Payments Trends in the United States: 2000 – 2003," p. 3. The study reported a decrease of 4.3 percent in check volume each year between 2000 and 2003.
[23] See Meghan Boyer, "Debit Cards and Online Banking Favored by Young Generation M," *ATM & Debit News* (July 26, 2007). This article reported that "debit cards represent more than 60% of payment transactions by 18 to 24 year olds compared to 45% of payment transactions by those more than 50 years old, according to Lightspeed Research."
[24]The Food Marketing Institute released a document, "Hidden Credit/Debit Card Interchange Fees," addressing grocery store payment trends (www.fmi.org/gr/interchange/FMIonepager.pdf).
[25]More detailed information on prepaid card applications can be found in Julia Cheney and Sherrie Rhine's "Prepaid Cards: An Important Innovation in Financial Services," Payment Cards Center Discussion Paper (2006) (www.philadelphiafed.org/pcc/papers/2006/D2006JulyPrepaidCardsACCIcover.pdf); and James McGrath, "General-Use Prepaid Cards: The Path to Gaining Mainstream Acceptance," Payment Cards Center Discussion Paper (2007).
(http://www.philadelphiafed.org/pcc/papers/2007/D2007MarchGeneralUsePrepaidCards.pdf)
[26] For more on contactless payments and developments in micro payments, see James McGrath, "Micropayments: The Final Frontier for Electronic Consumer Payments," Payment Cards Center Discussion Paper (2006) (www.philadelphiafed.org/pcc/papers/2006/D2006JuneMicropaymentsCover.pdf)

approximately 1.4 million merchants change acquiring relationships each year. In large part this reflects price shopping, but it also speaks to acquirers' ability to develop new strategies to attract emerging merchant categories. Abbey discussed two divergent strategies currently deployed in the industry; he called them "deep discounters" and "category killers."

For many acquirers, the strategic focus is on volume. These players recognize the commodity-like nature of their business, particularly when competing for large national market accounts, and they strive to be low-cost providers. Abbey called these firms deep discounters and noted that most of the high-volume acquirers listed in Chart 4, such as Fifth Third Bank, would fall into this category.

Niche acquirers fall into another category, which Abbey called the category killers. This group targets a specific market segment by providing specialized services and expertise tailored to the merchant's needs. Abbey provided examples of niche markets, including mail order, telephone order, and Internet merchants. He also recognized Heartland Payment Systems as a successful niche acquirer that has grown in large part because of its focus on meeting the specialized need of restaurants.

Banks that are unable to develop a viable strategy for the acquiring business often exit the business. While some banks sell their portfolios and underlying merchant contracts, in some cases, the selling acquirer may continue to earn commissions for the referral of new merchant customers. Though there are various combinations of agreements buyers and sellers can enter into, almost all of the banks that sell their portfolios collect residuals, or a percent of the future transaction volume, on the sold merchant portfolio.

Different strategies have been successfully deployed by different acquirers, and Abbey argued that the new business models will continue to emerge as the industry evolves. The industry is dynamic and today's acquirers look significantly different than they did 15 years ago. Payment acceptance, which began as a simple depository service offered by local banks, has

evolved into a highly sophisticated data-intensive industry where nonbanks thrive. Transaction growth has been extraordinary and bankcard dollar volumes grew from $218 billion in 1989 to $1.9 trillion in 2006.[27] Along with rapid advancements in technology that have created substantial scale economies, the structure of the industry has also changed. In addition to increased market consolidation among the largest acquirers, many new firms have entered the market as niche acquirers or specialized service providers.

C. Industry Economics

Acquirers receive revenues from a broad spectrum of services they provide, i.e., installing terminals, sending out statements, operating help desk hotlines, and, most important, processing transactions. The fee associated with transaction processing is called the merchant discount and is usually 1.5 to 3.5 percent of the purchase amount. This rate is a percentage of sales that the merchant pays the acquiring bank to cover the cost of the transactions, services, and risk. The merchant discount rate can vary depending on many factors, such as the type of business, whether the card is present at the point of sale, whether the transaction is done over the Internet, the merchant's credit standing, and the size of the transaction.

Three distinct fee components make up the merchant discount, and the different fees are paid to different parties. For example, suppose a credit card is used to purchase a $100 jacket at a merchant location. As mentioned earlier, the merchant will authorize the transaction and typically send the information to the acquirer at the end of the day. That $100 transaction request will be sent to the issuer from the acquirer through the payment network. Finally, the merchant receives the payment from the issuer through the acquirer. All three entities — the issuer, the acquirer, and the payment network — will be paid for their services.

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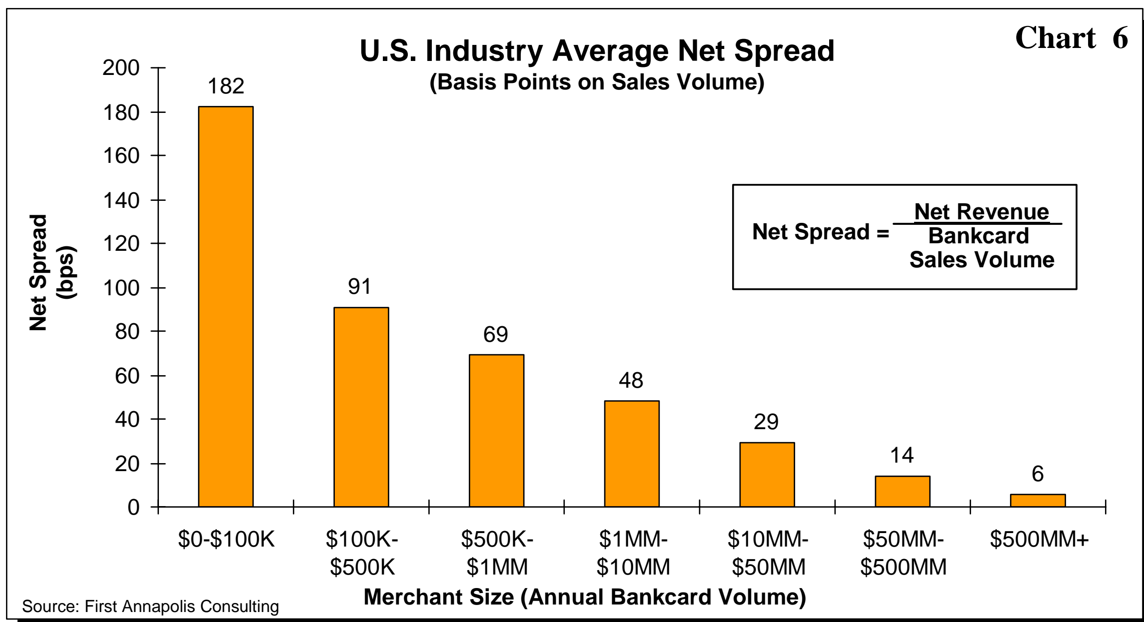
[27] The 1989 volume number represents gross volume (purchase volume and cash advance volume), *Nilson Report*, May 1990, Number 475. The 2006 volume number represents purchase volume only, *Nilson Report*, March 2007, Number 876.

The first fee, the interchange fee, is passed through the acquirer to the card-issuing bank. Interchange rates are set by the networks. The interchange fee is by far the largest portion of the merchant discount rate. The interchange rate varies greatly and can depend on the type of transaction, the ticket amount, and the type of merchant. For simplicity, in this example, let's say that the interchange rate is 1.5 percent, generating $1.50 for the issuer. The issuer will send the remainder, $98.50, back to the acquirer through the payment network.

The payment network receives the second fee, called the dues and assessments fee. Visa and MasterCard collect this fee for the use of their network, although this fee is much smaller than the interchange fee; it is approximately 0.10 percent. In the case of the jacket, $0.10 would be the payment network's revenue, and $98.40 would be sent back to the acquirer.

Finally, the acquirer receives $98.40 from the payment network and nets out its fee of 0.40 percent, or $0.40, before remitting $98 to the merchant's account. Recall that the merchant discount rate (the rate charged to the merchant) was 2 percent. Of the $2 paid in fees, the acquirer receives $0.40 in revenue, essentially 0.40 percent of the total transaction. The acquirer then completes the transaction by sending the remaining $98 to the merchant. As seen in Chart 6, acquirer fees vary by merchant size. In this example we are assuming that the merchant is mid-



size with $1 million to $10 million in annual bankcard volumes.

More generally, Abbey described the acquiring industry's economics by sharing proprietary research from First Annapolis. A key to understanding the business economics is to understand that pricing and profit vary with underlying sales volumes. Abbey pointed out that small to medium-size merchants produce most of the industry's profitability despite accounting for only a small percentage of overall sales volume. Large merchants are priced with little markup (lower merchant discount), while small merchants are charged an interchange fee plus a greater markup in other acquiring fees (higher merchant discount). As described earlier, competition for merchants with high transaction volumes drives pricing down for large retailers.

Chart 6 provides a picture of acquirers' margins (net spread)[28] and implied pricing structure. Acquirers tend to see lower margins from large merchants but are able to price small merchants on a greater margin. Large merchants have more bargaining power because they are bringing more transactions to a scale business. According to Abbey, the results suggest that merchants with annual bankcard volumes of over $500 million provide a "net spread" of around 0.06 percent; merchants with sales volumes of less than $100,000 generate a net spread of 1.82 percent (see Chart 6). In emphasizing the significance of this volume-based pricing differential, Abbey noted that the smallest merchants pay an average of 30 times more than what the largest merchants are charged by their acquirers.

Abbey turned to Chart 7 to provide another perspective on the acquiring industry's revenues. Moving across the chart from left to right, the three triangles represent the number of merchants, 2004 sales volume, and 2004 net revenue. Merchants are segmented by transaction dollar volume; the majority of the merchants had sales of less than $100,000 a year and are positioned at the bottom of the first triangle. The largest merchants are at the top of the first

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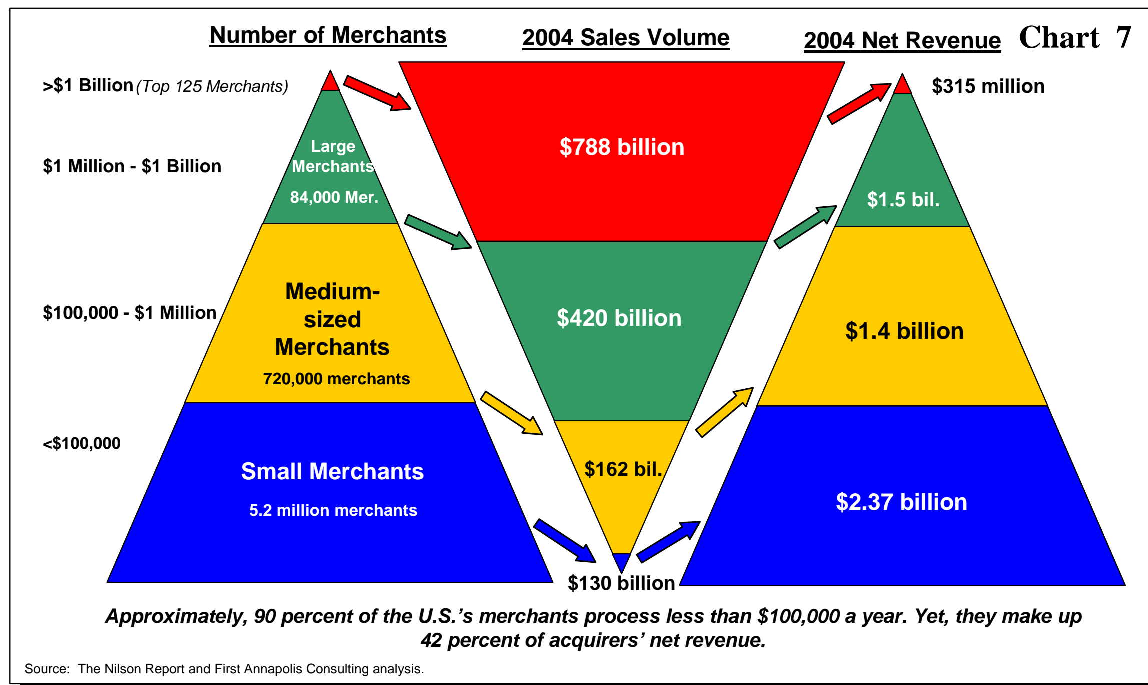
[28] Net spread is a common industry measure that relates profit to volume. Specifically, it is defined as acquirers' net revenue over processed bankcard sales volume. Net revenue is defined as gross revenue less interchange fees paid to the issuer and assessment fees paid to the networks.

triangle and recorded over $1 billion in sales for 2004. Those 125 largest merchants accounted for 52 percent ($788 billion) of the total 2004 sales volume, while small merchants accounted for less than 10 percent of sales volume. The third triangle, which represents net revenue, illustrates the



result of the marginal pricing structure (variations of net spreads) discussed earlier. Small merchants generated 42 percent ($2.37 billion) of the acquiring industry's net revenue with less than 10 percent of the volume. At the same time, the largest merchants provided 6 percent ($315 million) in net revenue with 52 percent of the sales volume. In 2004, approximately 90 percent of U.S. merchants made up only 10 percent of the country's total sales volume and 42 percent of merchant acquirers' net revenue.

Despite the fact that small merchants provide most of the industry's profits, they also account for the largest share of costs. While Chart 7 shows that a small number of large merchants provide the bulk of transaction dollars, economies of scale result in relatively low processing costs per transaction. First Annapolis's monthly newsletter, *Navigator*, recently addressed merchant size and pricing: "Small merchants obviously support pricing well beyond

large merchants, but on the other hand, they are inherently more expensive to serve (a statement or customer service call costs the same for a $50,000 merchant or a $500,000 merchant, but has a much lower per transaction impact for the larger merchant)."[29] Abbey also noted that it can cost an acquirer approximately 27 cents more to process one transaction for a merchant with sales less than $100,000 than a merchant with $200,000 in sales or more.

Reducing unit costs has become a top priority for all acquirers and has led to the development of a range of specialized service providers supporting acquiring activities. It has become a common practice to outsource such back-office services as terminal deployment and setup, underwriting, training, chargeback processing, fraud monitoring, customer services, and the point-of-sale help desk.

V. The Future of the Merchant-Acquiring Industry

Abbey concluded his discussion by suggesting that this relatively less understood and often overlooked area of the payment cards industry may become the focus of attention in the future. He based this comment on his perception of the potential impact that two emerging market developments may have on the acquiring industry and its merchant customers: the spread of data breaches and other security concerns to the market and the transition of the member-bank payment networks to public ownership.

A. Data Security Concerns

The recent data security breaches within the payment cards industry have brought public awareness to the acquiring side of the business. Several of the large data compromises have taken place at merchant locations, DSW stores[30] in 2005 and TJX[31] in 2007. Such breaches have

[29] First Annapolis *Navigator*, "The Relationship Between Average Merchant Size and Profit Margin in U.S. Acquiring" (March 2007).
[30] DSW is a chain of shoe stores whose data security was breached in 2005; 1.4 million credit cards were compromised. Further details can be found on DSW's website at www.dswshoe.com/pressRelease.jsp.

become the focus of regulators, policymakers, and the industry and have also prompted action on the part of the payment networks to protect cardholder data at the merchant level through acquirer relationships. The payment networks have imposed security standards on the acquirers and their merchants as a way to combat fraudulent activity on the front lines. Abbey discussed the emergence of the Payment Card Industry (PCI) Security Standards[32] and the new focus on acquirers' responsibilities to ensure that their merchants are PCI compliant. He first provided a brief description of PCI and the consequences of noncompliance. Finally, Abbey addressed the burden and the potential impact from complying with PCI on the economic structure of the acquiring industry.

The PCI Security Standards Council was founded by American Express, Discover Financial Services, JCB, MasterCard Worldwide, and Visa International. The council was formed in September 2006 to "develop, enhance, disseminate and assist with implementation of security standards for payment account security organizations."[33] The PCI Data Security Standard (DSS) is composed of 12 requirements that members, merchants, and service providers must implement and maintain to be compliant. Such requirements include installing and maintaining a firewall, assigning a unique ID to people with computer access, and protecting stored cardholder data. These mandates are in place to protect the system from data compromises and to provide safe harbor for entities that are in full compliance with the standards, shielding them from fines issued by payment networks.[34]

Monthly fines imposed by the payment networks are becoming a reality as compliance deadlines approach. In fact, Visa required all member acquirers to submit their PCI compliance

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[31] TJX is an "off-price apparel and home fashions retailer" that experienced a data breach in its computer systems that potentially exposed 46 million credit card accounts.
[32] For more information on the recent threats to sensitive consumer information and public perception and understanding, see James C. McGrath and Ann Kjos, "Information Security, Data Breaches, and Protecting Cardholder Information: Facing Up to the Challenges," Conference Summary, Payment Cards Center (2006); www.philadelphiafed.org/pcc/conferences/2007/C2006SeptInfoSecuritySummary.pdf
[33] PCI Security Standards Council, LLC. For more information, visit www.pcisecuritystandards.org.
[34] Visa USA Cardholder Information Security Program (CISP).

plans by July 31, 2007, for their small merchants.[35] Large merchants had to validate compliance by the end of September 2007. As of July 2007, Visa reported that 40 percent of the largest merchants have been validated.[36] If merchants do not make the deadline, their acquirers can be fined between $5,000 and $25,000 a month for each merchant not in compliance. Monthly fines have been in place since March 31, 2007, for acquirers that have failed to confirm that their largest merchants are not storing full track data (i.e., card number, expiration date, PIN, and service code).[37]

Abbey explained that these new PCI standards have placed a new cost burden on merchant acquirers to ensure that third-party processors and merchants are PCI compliant. Acquirers are now responsible for merchants' PCI compliance and monitoring. Fines for merchant noncompliance are passed through to the offending merchant, but they become the acquirer's liability if the merchant is unable to pay. While large merchants appear to be on track to reach compliance, Abbey and others argue that because there are so many small merchants, it is difficult to enforce PCI compliance, and according to a recent article in *Digital Transactions*, it is even difficult to track.[38]

It is still unclear whether acquirers will be held liable for fraud that takes place at merchant locations. This January, TJX Companies, Inc. (TJX) reported that it had experienced a data breach in its computer systems that potentially exposed 46 million credit card accounts. The industry is waiting to see how PCI will affect the allocation of liability among networks, issuers, the acquirer, and TJX. In the meantime, some states are seeking to police the industry and to make the merchant responsible for the costs associated with the breach. Minnesota became the

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[35] For more details on the July 31, 2007, deadline requirements, see Visa USA's May 2007 press release at http://usa.visa.com/download/merchants/level_4_merchant_compliance.pdf. Small merchants are also known as level 4 merchants, which process less than 20,000 transactions a year.
[36] Other deadlines and compliance statistics are available in Visa's July 2007 press release, available at: www.usa.visa.com/about_visa/press_resources/news/press_releases/nr419.html.
[37] For more on other fines and incentives for PCI compliance, see Visa's press release from December 2006 at http://usa.visa.com/about_visa/press_resources/news/press_releases/nr367.html.
[38] See *Digital Transactions*, "Mom and Pops Get on the Security Radar," 4 (June 2007), p. 8.

first state to make merchants more accountable for data compromises and identity theft: It is now illegal for a merchant to store certain card information for longer than 48 hours.[39]

It is too early to predict the impact of merchant-based data breaches and the ultimate costs of any resulting fraud. What is known is that there is increasing attention being paid to the issue by lawmakers, regulators, and the payment networks. With this focus ultimately come costs that will have to be borne by the payment cards industry and merchant acquirers in particular. In Abbey's view, these economic and political forces have the potential to create new competitive dynamics that are likely to affect the structure of the merchant-acquiring industry.

B. The Changing Organizational Structure of Associations

Finally, Abbey addressed another new development: the changing organizational structure of the bankcard associations and its potential impact on the acquiring industry. As described earlier, Visa and MasterCard were established as bank-owned associations with goals and objectives closely tied to their ownership interests. In the cooperative model, the associations would operate the payment networks and build both issuer and acquirer relationships. In 2006, MasterCard ceased operations as a cooperative association and converted its ownership structure to that of a publicly traded corporate entity. Later in 2006, Visa announced its own plans to move from the current membership structure to that of a publicly traded company.

As is the case with the issues surrounding the impact of data breaches on the acquiring business, it is too early to predict the effect of ownership changes at MasterCard and Visa. In one industry executive's view, "the move from an association format to a public company will help make the [payment networks] more commercially oriented and accountable than in the past. The

[39] This law went into effect the week of August 1, 2007. See Jackie Crosby, "Law May Make Credit-Card Users Feel a Bit More Secure," *Star Tribune*, July 28, 2007.

move will ensure more of a focus on key areas than in the past due to shareholder pressure, and this will be good for acquirers."[40]

For his part, Abbey does not expect any significant changes in the short term. He argued that both networks have been very successful in serving the needs of their bank customers and there is little to suggest that there is a compelling need to alter the business model. Looking further into the future, Abbey speculated that market demands for financial performance could lead the new companies to compete more directly with acquirers and their partners for processing volumes.[41]

Abbey concluded his discussion of the privatization of associations by re-emphasizing the important strategic difference between an association owned by banks and a payment network owned by shareholders. MasterCard and soon Visa will be working to satisfy their shareholders as well as their customers. Although Abbey theorized that the payment networks' new structure would not dramatically change their overall strategy to operate a network and build relationships, he says to stay tuned.

VI. Conclusion

In summary, Abbey described the often overlooked acquiring industry as a dynamic growth business that is an integral part of the payment cards industry. Acquiring is a complex process made up of many entities with various relationships, which will maintain growth and continue to be driven largely by technology. Abbey concluded the discussion with two recent developments: the emergence of data security standards and the new public structure of payment networks, which have drawn the focus of lawmakers, policymakers, and consumers to the merchant acquiring business. While it is too early to tell how these developments will affect the

[40] "An Exciting Place to Be: A Conversation with euroConex CEO Roger Alexander," First Annapolis, *Navigator* (July 2007).
[41] Abbey's remarks were echoed in "Visa IPO Could Set it up to be a Super Discounter," *Digital Transactions, Trends and Tactics*, (November/December 2006).

acquiring business, it is clear that this once-overlooked sector of the payment cards industry will be subject to greater attention and will be a source of competitive innovation in the future.