

Opportunities to Improve Payments Services:

Results from a Survey of Large Corporations

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I. Introduction

A considerable amount of recent research and product development has focused on improving the efficiency and integrity of the payments process. However, many new products have failed to improve the process significantly. Market researchers suggest this failure may reflect deficiencies in properly assessing customer needs.¹ Meanwhile, the payments process continues to require a mixture of manual and automated procedures that often involve many time-consuming steps and inquiries.

This study attempts to improve the process of identifying what users of payments services want. The methodology we use, which the *Harvard Business Review* highlights as a best practice, identifies the *most important* and the *least well-met* areas of payments processing.²

In 2003 and 2004, we undertook a study that asked businesses what they seek to achieve in each step of the process of making and receiving payments. The questions were intended to help businesses identify their priorities for improvements. The study establishes which aspects of the payments process are most important and which are the least well met by current services. This study goes beyond past work that has tended to ask one or the other question but not both. By asking about both importance and satisfaction, we identified the top opportunities for improvement.

The first part of this study asked focus groups of payments experts from large, nonfinancial businesses in the United States to describe each step in their companies' payments processes and then identify the objectives for each step. This process identified ninety-one objectives, or "outcomes." The second part of the study used these ninety-one outcomes as the basis for a survey of a random sample of nonfinancial U.S. businesses with 10,000 or more employees. Survey respondents were screened to establish their expertise and the payment types used by their firms. Then, the survey asked them about the importance of each relevant outcome to their companies and the companies' satisfaction with their current payments services' abilities to achieve that outcome.

¹ See Anthony Ulwick, "Turn Customer Input into Innovation," *Harvard Business Review*, January 2002, and *Business Strategy Formulation*, Quorum Books, 1999, for a discussion of determining and assessing business customers' needs in other industries.

² See Ulwick 2002.

About 40 percent of the survey respondents note that reducing the time needed to detect and resolve unauthorized debits, as well as reducing their frequency and associated financial losses, are very important or critically important to their firms and that current services are less than satisfactory. In addition, the respondents put high priority on reducing the time required to identify insufficiently funded debit transactions, receive credit for overseas payments, and obtain sufficient information to process an incoming payment. Corporations also see a strong need to improve their abilities to reconcile information received from banks on use of payment services and reduce bank fees for payment services.

The survey results also provide insights into the payments options that companies rate as very important but with which they may not be sufficiently dissatisfied to invest in new products. For example, controlling fraudulent transactions generally is very important or critically important to virtually all respondents. However, the percentage of respondents who are dissatisfied with the ability of current payments methods to control fraud is lower than for many other payments objectives.

In a similar vein, the study identifies the payments areas where firms are dissatisfied but which relatively few firms rate as very or critically important. For example, a relatively low percentage of companies see making payments to the unbanked and various cross-border payments services as very or critically important.

The areas of opportunity identified by the study merit further discussion among corporations, their banks, and their service providers. The results provide a starting point for developing improvements to payments services that will lead to greater integrity and efficiency in payments processing.

II. The Approach: Focusing on Users' Needs and Priorities

This study employed a multipart process to identify and prioritize the objectives that large, nonfinancial companies expect to achieve through their payments processes. Objectives were defined in terms of *desired outcomes*, which are the goals that a user has for each step in a process. Previous research has shown the importance of asking customers what they want products and services to do for them but not asking them to devise solutions to fulfill those outcomes.³ Using desired outcomes that isolate underlying service needs enables service

³ Ulwick 2002 and 1999.

providers to design *solutions* that can exploit approaches and technologies with which users may not be familiar.

An example may help to illustrate the differences between desired outcomes and solutions. Years ago, office workers copied documents using carbon paper. If the office workers had been asked how to improve this work process, they might have suggested the use of erasable ink, less smudge-prone carbon paper, and maybe a quality of paper that lets one make multiple copies without intricate setup or strain on the original. These all are solutions. The desired outcomes would have included a clean copy, a copy that could easily accommodate changes, and the ability to quickly make additional, legible copies on plain paper. Note that these outcomes do not require a particular technology (for example, carbon paper) and can be achieved using more than one product, such as copy machines and word processors with printers. It is doubtful that carbon paper users would have imagined these dramatically different alternatives.

Accordingly, in the first step of this study, we formed focus groups of payments experts at large nonfinancial businesses and asked them to describe each step in their companies' payments processes. A facilitator then asked them to identify their objectives for each step.⁴ Participants were asked to avoid making judgements about how these objectives should be achieved. The facilitators helped them turn vague statements, solutions, and anecdotes into statements of desired outcomes that they, as users of the services want. Their desired outcomes were formulated to state the process being addressed (such as matching payments to the amount billed), the improvement required (typically, to minimize or increase) and a unit of measure (usually an amount of time, but also frequency). The interviews yielded ninety-one desired outcomes for payments services (see Appendix A for list).

For the second step of the study, we used the ninety-one desired outcomes to create a Web-based, interactive survey questionnaire. The questionnaire asked respondents to rate each outcome's importance to their companies and to rate their companies' satisfaction with the ability of current payment services to meet the stated objective.

The survey questionnaire asked for descriptive information about the respondent's expertise with each outgoing and incoming payments services, as well as about the organization's use of payments services. A respondent needed to be at least very

⁴ The sessions were facilitated by Anthony Ulwick and the approach was based on methodology he describes in Ulwick 2002 and 1999.

knowledgeable about a payment flow (that is, outgoing or incoming payments) to answer the related questions. Similarly, the firm needed to actually use a payment type for the respondent to be asked questions about that payment type. Thus, for example, only respondents who reported that their companies engaged in cross-border payments were asked about the importance of and their satisfaction with cross-border payments processes.

III. The Population and Survey Respondents

Our population encompassed 733 U.S. nonfinancial firms with at least 10,000 employees.⁵ We sent letters to a randomly selected sample of 200 corporate treasurers and chief financial officers from this population, requesting that the person most knowledgeable about the firm's payments needs respond to our online survey.⁶ In total, 101 surveys were completed, representing a response rate of 50 percent. This sample size is consistent with a 90 percent confidence level for the survey results and a confidence interval of plus or minus about 7 percentage points.⁷

Respondent Characteristics

Analysis of the data shows that our sample represents the population from which it is drawn.⁸ First, the distribution of industries found in the sample, based on standard industrial classification (SIC) codes, is consistent with that of the population.⁹ More than one-third of the respondents are service providers, a category that includes service companies, hotels, and educational institutions. More than 25 percent of the respondent organizations are manufacturers and another 20 percent are retailers. The remaining respondents are wholesalers, construction, energy, and transportation or communications companies. Although most of the respondents represent for-profit businesses, sixteen represent large nonprofit organizations, such as universities, hospitals, and public school districts (see Chart 1).

⁵ The sample was selected from a Dunn and Bradstreet database. The names of the corporations that participated in our survey are confidential.

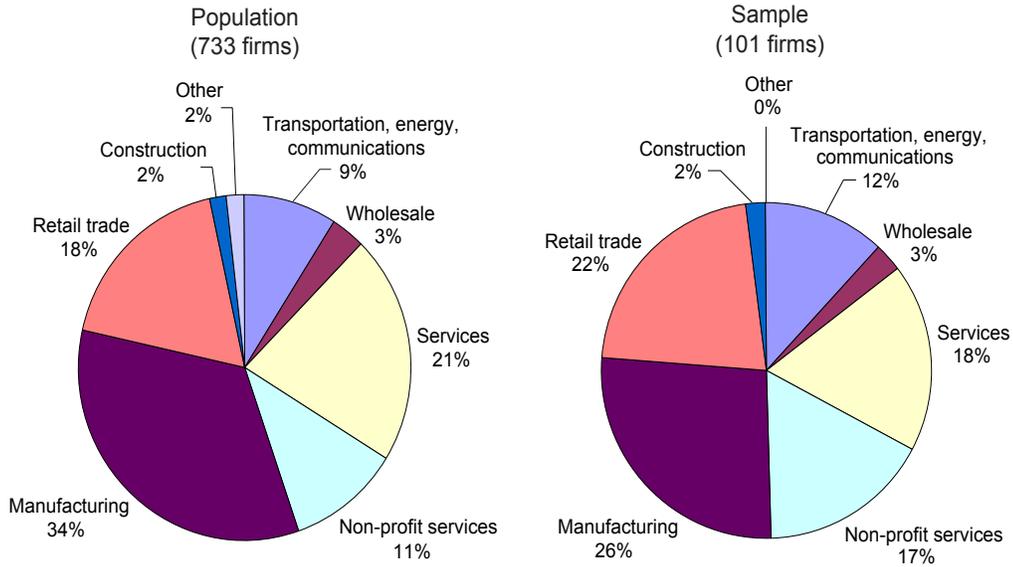
⁶ The survey was conducted in August and September 2003. In the few instances where the respondent was unable or unwilling to complete the survey online, the respondent completed a paper questionnaire.

⁷ This test used a two-sided confidence interval.

⁸ Percentages in tables may not equal 100 because of to rounding.

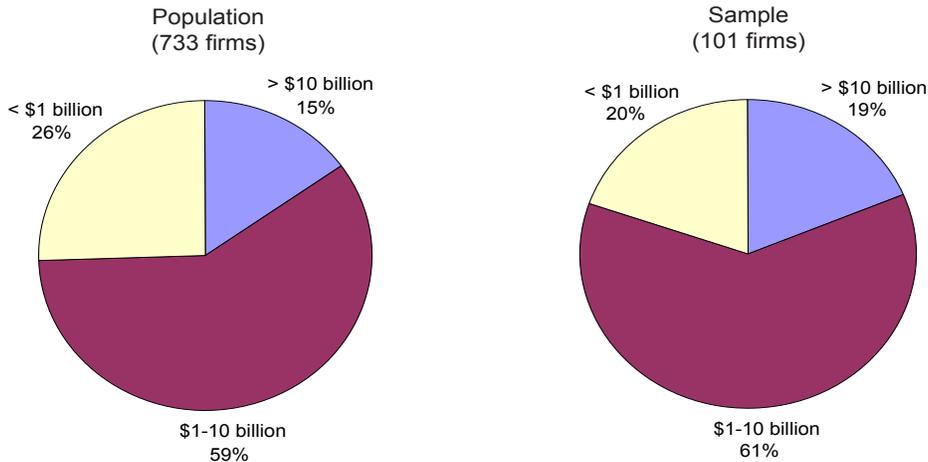
⁹ We retain the hypothesis that respondents were distributed across industries in the same proportion as observed in the total population (in a chi-square test) at an alpha = .05 level of significance.

Chart 1
Respondents, by industry



Second, the array of respondent firms according to level of sales is consistent with that of the population.¹⁰ About 60 percent of the respondents are from organizations with annual sales of between \$1 billion and \$10 billion. The balance of the responses are split about equally between organizations with sales of more than \$10 billion and those with sales of less than \$1 billion (see Chart 2).

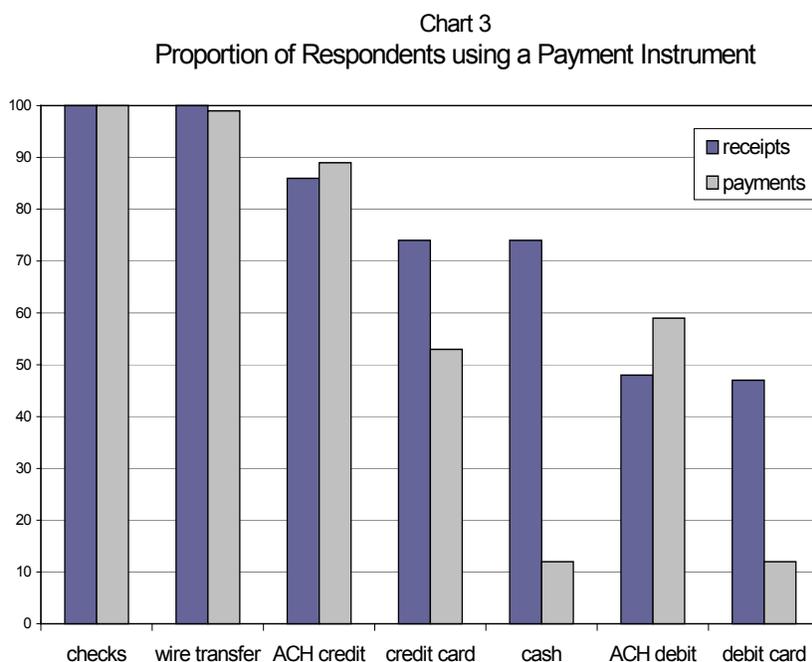
Chart 2
Respondents, by sales



¹⁰ We retain the hypothesis that the distribution of respondents into categories based on annual sales was the same

Payment Instruments

The descriptive data supplied by the respondents show that the companies in our sample are heavy users of payments services and employ a wide variety of payment instruments for both payments and receipts. More than 70 percent of the survey respondents report making more than 10,000 payments each month, while about 60 percent receive more than 10,000 payments each month. On average, these organizations use more than four different instruments to make payments and accept more than five different instrument types. Checks, wire transfers, and automated clearinghouse (ACH) credits are widely used for both payments and receipts. Use declines across the categories of credit cards, cash, ACH debit, and debit cards and is almost always greater for receipts than it is for payments (see Chart 3).



Cross-Border Payments and Receipts

Most survey respondents—88 percent—report either sending payments to or receiving payments from a foreign location. Sending a payment from the United States to a non-U.S. location is more common than receiving payments from a non-U.S. location: 87 percent of the respondents said their companies send at least a few cross-border payments, while 77 percent said they receive payments from non-U.S. locations. In general, cross-border payments do not

as observed in the total population (in a chi-square test) at an alpha = .05 level of significance.

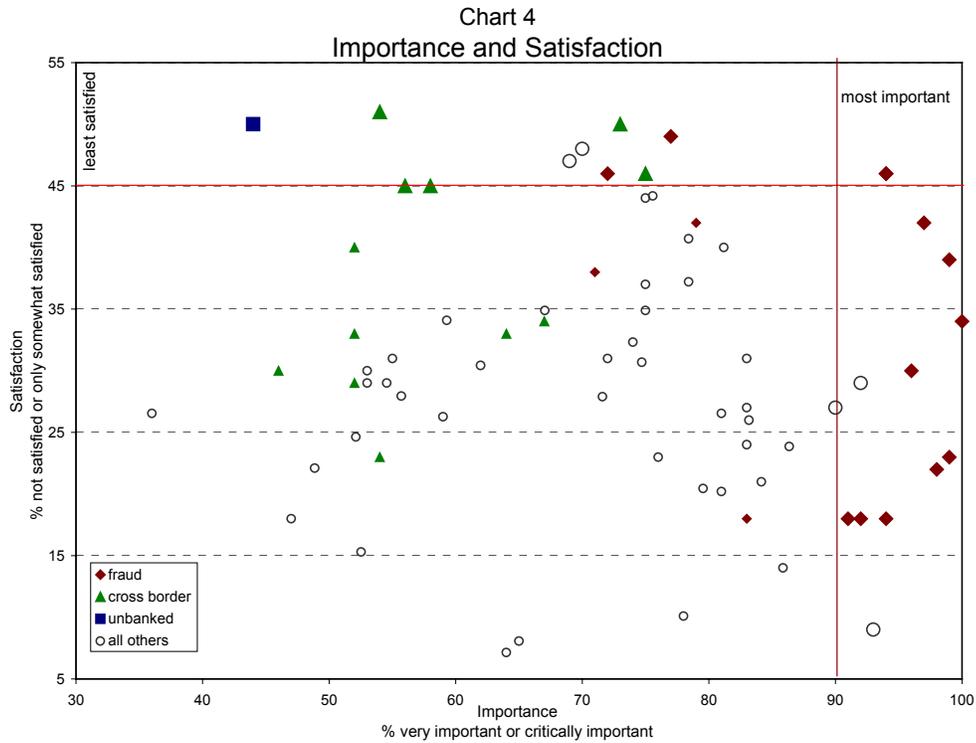
represent a large portion of the respondents' payments activities. Of those companies that engage in cross-border payments activity, about three-quarters report that the volume of cross-border payments is 10 percent or less of their companies' payments activity.

IV. Survey Results

As noted above, respondents were asked about the degree of importance of each of the desired outcomes and also about their firms' satisfaction with the ability of current payments options to achieve each of the desired outcomes. Respondents rated each outcome for its level of importance to the company. Respondents then rated the firm's level of satisfaction with their abilities to achieve that same desired outcome. On a five-point scale, an item of lowest importance ("of little importance") was given one point and the highest possible importance ("critically important") was given five points. We do not include "not important" in the scale because the focus groups only identified outcomes of some importance. The middle rank ("important") was given three points. A five-point scale was also used to evaluate satisfaction: the lowest rank ("not satisfied") received one point while the highest level ("completely satisfied") received five points. The middle rank ("satisfied") was given three points.

Outcomes of Highest Importance and Lowest Satisfaction

The scatter plot below (Chart 4) shows the ratings of all outcomes in the dimensions of importance and satisfaction. The horizontal axis shows the proportion of respondents that rate an outcome as very or critically important. The vertical axis shows the proportion of respondents who are less than satisfied with current services.



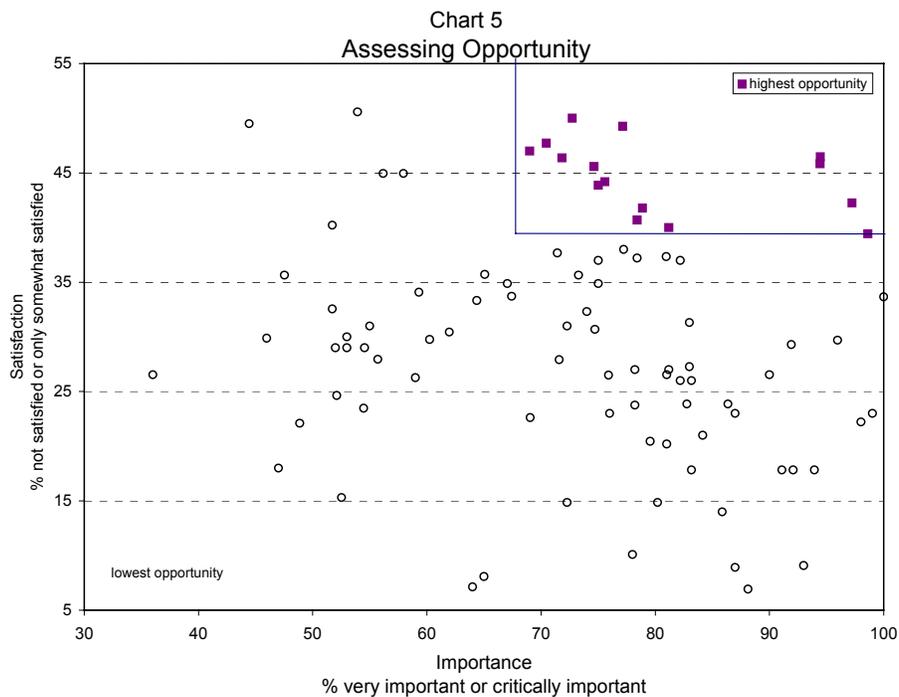
The red diamonds represent outcomes related to minimizing fraudulent transactions, including questions about minimizing the occurrence and financial losses from fraud, unauthorized debit transactions, and insufficient funds.¹¹ The clustering of these outcomes along the right-hand side of the chart illustrates that these are among the most highly rated for importance. Other desired outcomes that are top rated for importance include minimizing payments sent in the wrong amount, the potential for loss when a payment is sent in error, and the time needed to determine that a payment has not already been made.

The green triangles represent outcomes associated with making and receiving cross-border payments. The clustering of these triangles across the top of the chart means that these outcomes are among those with which firms are least satisfied. The blue square represents the responses to the question about sending electronic payments to individuals without bank accounts. The blue square's position on the chart indicates that a high percentage of respondents were dissatisfied with current outcomes but a much smaller percentage of respondents regard this area as very important or critically important compared with other outcomes. Other elements of the payments process that are associated with relatively high

percentages of less-than-satisfied respondents are unauthorized debit transactions, insufficiently funded transactions, the reconciliation process for and level of bank fees, and obtaining complete information needed to process incoming payments. For a detailed list of ratings, including importance, satisfaction, opportunity, and sample size, see Appendix B.

Areas of Greatest Opportunity

To consider importance and satisfaction together, we ranked the outcomes by the percentage of respondents who both rated an outcome to be very or critically important to the firm and also indicated that the firm was less than satisfied with the ability of its current payment options to achieve the outcome. We label this percentage “opportunity” on the theory that factors identified in this way offer the greatest potential for successful improvements. Of the fifteen outcomes that are ranked highest in terms of opportunity, at least 35 percent of the respondents rated each outcome as very or critically important and also rated their current ability to achieve the outcome as less than satisfactory. These fifteen outcomes cross five areas in payments: unauthorized debit payments, insufficiently funded debit payments, cross-border receipts, data requirements for posting payments, and payments administration (statement reconciliation and fees).



¹¹ We assume that unauthorized debit transactions primarily reflect fraudulent transactions. However, it is likely

In Chart 5, we reproduce the scatter plot of the two-dimensional ratings of all outcomes and place purple boxes around those outcomes that ranked highest using this measure of opportunity. Table 1, below, presents these outcomes and their rankings.

Table 1
Areas of Greatest Opportunity

| Statements of Desired Outcome | Score ^a | Rank ^b |
|--|--------------------|-------------------|
| When an account belonging to your firm is debited by payor (for example, ACH debit, credit card, debit card) minimize... | | |
| ▪ the time it takes to detect an unauthorized debit to your firm's account. | 44 | 1 |
| ▪ the time it takes to resolve an unauthorized debit to your firm's account. | 42 | 3 |
| ▪ the occurrence of unauthorized debits to your firm's account. | 41 | 5 |
| ▪ the risk of loss associated with an unauthorized debit to your firm's account. | 38 | 10 |
| When receiving a payment by debiting an account belonging to the payor, minimize... | | |
| ▪ the time that passes before learning that a payment was returned due to insufficient funds in the payor's bank account. | 42 | 4 |
| ▪ the time it takes to collect on payments returned due to insufficient funds in the payor's bank account. | 38 | 9 |
| ▪ financial losses due to insufficient funds in the payor's bank account. | 37 | 13 |
| When receiving cross-border payments, minimize... | | |
| ▪ the time that passes before an incoming payment sent from a foreign country is credited to your bank account in the United States. | 42 | 2 |
| ▪ the number of incoming payments sent from a foreign country that are not credited to your bank account in the United States when expected. | 39 | 7 |
| When receiving a payment via a credit to your firm's bank account, minimize... | | |
| ▪ the time it takes to obtain missing information needed to process an incoming payment. | 39 | 6 |
| ▪ the number of payments received that cannot be matched to a specific business activity (for example, a specific business transaction or customer). | 38 | 8 |
| When managing your firm's demand deposit account balances, minimize... | | |
| ▪ the time it takes to reconcile a bank statement with actual payments activity. | 38 | 11 |
| ▪ the time it takes to reconcile bank fees to actual usage of payment services. | 36 | 15 |
| When receiving a payment, minimize... | | |
| ▪ bank fees associated with incoming payments. | 38 | 12 |
| When making outgoing payments, minimize ... | | |
| ▪ bank fees associated with making payments. | 37 | 14 |

^a Proportion of respondents indicating very or critical importance and not or (only) somewhat satisfied with current services. The highest possible score is 100.

^b Rank is determined by sorting the percentage-based opportunity score from high to low.

Respondents' assessments of the high importance of each outcome and their lack of satisfaction with current services are generally consistent across subgroups of respondents that share business or payment characteristics. We tested for, but did not find, statistically

that at least some unauthorized transactions are inadvertent processing errors.

significant differences in ratings based on the number or types of payments instruments used, the proportion of cross-border payments, the size of the organization, and the respondents' industries.¹²

The results highlight five areas for improvements. First, the debit process represents a prime area of opportunity. As payors, respondents that use or permit their employees to make payments using ACH debits, credit cards, or debit cards perceive that there are too many unauthorized debits and that these transactions take too long to correct. Close to 30 percent of this sample of very large businesses do not even use the types of payment that can yield unauthorized debits, perhaps because of these risks.¹³ Second, as payees, these firms feel exposed to the risk that the payor's account will have insufficient funds and to the expense of collecting on payments returned for insufficient funds.

Third, large companies seek greater certainty and shorter time intervals for receipt of cross-border payments. A fourth set of high-scoring outcomes addresses minimizing the time it takes to obtain missing information needed to process incoming payments and minimizing the number of incoming credit payments that could not be reconciled with a specific business activity. This set of outcomes points to very specific steps in the payments process, in addition to echoing the general theme that businesses seek to reduce the costs of matching and appropriately posting incoming payments.

Finally, a fifth area for improvement pertains to the level of bank fees and the difficulty of reconciling them to actual services used. Our respondent businesses seem to experience difficulty reconciling their use of payment services with reports they receive from their banks.

Areas of Least Opportunity

Although this study has emphasized those attributes desired by corporate end-users of payments services that provide the greatest opportunities for improvement, it is also interesting to look at those desired outcomes that present the areas of least opportunity. For this metric, we use the attributes that fell to the bottom of the opportunity list, that is, those with the lowest opportunity scores.

¹² Chi-squared analyses and various logit regressions failed to find significant differences based on the descriptor variables mentioned. The sample size was insufficient to use "segmentation" analysis described by Ulwick as an additional technique to determine if response patterns varied by customer group.

Most of the outcomes with low opportunity rankings were so rated because respondents are at least satisfied with their firms’ abilities to achieve the outcome, rather than because the outcome is not important. By at least satisfied, we mean that the respondents are satisfied, very satisfied, or completely satisfied with their abilities to achieve the outcome. The two outcomes addressing (1) governance of a payment method by trusted parties and (2) operation by trusted parties provide good examples of this (see Table 2). These two outcomes are very or critically important to 88 percent and 87 percent of respondents, respectively. However, 93 percent and 91 percent of respondents indicate they are at least satisfied with their abilities to achieve these governance and operational outcomes, respectively. As a result, we calculate opportunity scores of 6 percent and 7 percent, respectively, for both outcomes.¹⁴ Similarly, minimizing the number of payments made in the wrong amount is very or critically important to 93 percent of the respondents, but 91 percent say their firms are at least satisfied with their abilities to achieve this, placing the opportunity score at 9 percent.

Table 2
Selected Satisfaction, Importance, and Opportunity Scores

| | Governance of a Payment Method by a Trusted Party | Operation of a Payment Method by a Trusted Party |
|--|---|--|
| Percentage of respondents that rated outcome very or critically important | 88 | 87 |
| Percentage of respondents satisfied, very satisfied, or completely satisfied | 93 | 91 |
| Opportunity score | 6 | 7 |

At the same time, several low-opportunity outcomes received mid-range importance ratings. For example, 64 percent of the respondents say that minimizing the time to determine the correct amount to pay is very or critically important. At the same time, 93 percent of respondents are at least satisfied with current services. As a result, only 5 percent of the respondents identify this attribute as an opportunity. Sixty-five percent of the survey participants indicate that minimizing the time needed to communicate outgoing credit payment instructions is very or critically important, but 92 percent are satisfied, suggesting that this

¹³ Because respondents reported that their firms do not make payments with ACH debits, debit cards, or credit cards, they were not asked to rate the outcomes for importance or satisfaction, and we do not know why they do not use these instruments.

¹⁴ That is, only 6 and 7 percent of respondents, respectively, rated the outcome as very important or critically important and also noted his/her firm was either not satisfied or somewhat satisfied with its ability to achieve the outcome.

attribute offers limited opportunity for improvement (an opportunity score of 6 percent). Further examination of the attributes on the low end of the ratings, in addition to those on the high end, may help service providers devise appropriate service enhancements or decide when not to tinker.

Discussion

We compared the results of this study with other recent work on payments system issues, including reports by the Federal Reserve System's Payments System Development Committee (PSDC), The Clearing House (CH), and the Association of Financial Professionals (AFP).¹⁵ Although the studies are not directly comparable because of differences in methodologies, we are able to infer some areas of consistency, as well as some areas of difference.

Five topics are addressed in at least three of the four studies:

- a trading partner's or bank's ability to send and receive electronic remittance information with a payment transaction,
- corporations' limited abilities to post electronically provided payments or payment information,
- security and fraud concerns, particularly for debit payment models,
- cross-border payments, and
- the lack of standards for payment methods.

The studies explore the role of remittance information in the payments stream in different ways. A key finding in the CH study is that businesses would like to receive remittance information electronically with the payment. Similarly, in the AFP study, corporate financial officers rated the inability of electronic payments to contain remittance information as the greatest barrier to receiving more electronic payments. However, both of these studies focus on solutions—precisely what our study seeks to avoid. The participants in the PSDC study focused more on the underlying business need, noting the value in receiving payment information that can be processed electronically. Our approach assesses the individual pieces

¹⁵ Payments System Development Committee, "The Future of Retail Electronic Payments Systems: Industry Interviews and Analysis," *Staff Study 175*, (Washington, D.C.: Federal Reserve Board of Governors, 2002). The Clearing House, "The Remaining Barriers to ePayments and Straight-through Processing" (New York: The Clearing House, 2002). Association for Financial Professionals, "Electronic Payments Initiatives and the Internet: Report of Survey Results" (Bethesda, MD: Association for Financial Professionals, 2000).

of the underlying process of sending and receiving payment information and finds that the greatest concerns are with matching a payment to a specific business activity and obtaining missing information needed to process an incoming payment. Attaching the informational details to the electronic payment is only one of several means of satisfying these two desired outcomes.

The relationship between a payment and a firm's accounts payable and accounts receivable systems also is a recurring theme. The AFP study notes that the lack of integration of a payment with accounts payable and accounts receivable systems is a major barrier to achieving straight-through processing. The CH work notes a number of products introduced to support automated straight-through processing but that few companies appear able to justify the cost. The relatively high opportunity score in our survey for minimizing the time needed to reconcile incoming credit payments with accounts receivable suggests there is a need that has not been met by recent approaches. Greater integration of systems and automated posting might also address other concerns noted in our study, such as the desire for faster identification of unauthorized debits.

Security and fraud risks surface as concerns in most of the studies, although not with consistent emphasis. As noted above, in our study, top areas of opportunity are reducing the cost and risk of unauthorized debits to the respondents' accounts.¹⁶ The PSDC study notes discussion of the need to improve authentication and authorization techniques to manage security and fraud risks for retail payments. Some discussants in the PSDC study said that the so-called risk-based assessment of higher fees for online credit card transactions does not really reflect risk. In the AFP paper, security over the Internet is recognized as a significant barrier to more extensive adoption of electronic payments. The CH study notes that companies rarely use ACH debits for regular business-to-business payments for three reasons: fear of unauthorized debits, mistakes in the amount debited, and loss of float.¹⁷

¹⁶ In our study, respondents rated two issues that directly address fraud as very or critically important: minimizing financial losses associated with fraudulent payments (99 percent) and minimizing the number of attempts (96 percent). However, respondents are not terribly dissatisfied with current services, so the final opportunity rankings are only moderate (forty-sixth and twenty-eighth of ninety-one, respectively). To reconcile these results with the concerns about unauthorized debits, we hypothesize that these might be significant issues in the specific context of electronic debits (incoming and outgoing, respectively) but that they are not as significant in the context of all payment processes.

¹⁷ The CH study is the only study of the four that finds loss of float to be a significant concern.

Cross-border payments are discussed in three of the studies. The PSDC and AFP studies report discontent with fees and incompatible standards for cross-border payments. In our study, respondents are dissatisfied with fees but do not rate this as terribly important. Rather, they express discontent with the timeliness of receipts from non-U.S. sources.

The use of standards in different aspects of the payments process is another frequently discussed area. For example, the PSDC study notes that the lack of agreed-upon standards for payments messages—such as message formats and the way in which payments information is included—and the consequent lack of systems interoperability, are the greatest problems for the financial industry. The CH study notes that corporations' origination of electronic payments is limited by conflicting, multiple message formats and a lack of minimum remittance information standards. Our study asks about the underlying business needs that may be met by standards. Thirty-five percent of our respondents whose firms work with multiple banks said that minimizing differences in bank-specific data requirements and formats when sending or receiving payments is very or critically important and an area of some dissatisfaction.

On a separate note, a finding of the PSDC study supports the general approach of this study. In the PSDC study, a number of interviewees stated that having a “business case” by providing a benefit to key participants is the most important factor in successfully introducing a payments innovation. The methodology used in our study asserts that product developers should focus on outcomes that are at least very important and also not well served by current products. In other words, we are implicitly assuming that these requirements are necessary to make a business case for innovation. Of course, there is an explicit cost dimension to successful products as well: cost considerations enter into the innovation process in a next step, when solutions to high opportunity outcomes are proposed and analyzed. The AFP conclusions are another reminder that the direct and opportunity costs associated with developing and implementing new automated systems can be barriers to innovation.

Examining recent payments innovations, we note that several appear to address some of the opportunities identified in this study. For example, the ACH transaction types that convert check payments to electronic payments may decrease the risk of payments being returned for insufficient funds, and they do reduce the fees that corporations must spend for payment

services.¹⁸ At the same time, two ACH transaction types that enable consumers to pay bills or make purchases electronically (TEL and WEB for instructions given over the telephone and Internet, respectively), perhaps benefiting both corporations and consumers, appear to have increased the occurrence and also the risk of losses associated with unauthorized debits to corporate accounts. Maybe recent experience with these transactions has contributed to high opportunity scores for unauthorized debits.

V. Conclusion

This study identifies what large corporations want to achieve when they make and receive payments. It also establishes areas of relative opportunity, based on the importance and need that payments experts in these organizations assign to individual steps of the payments process.

From this study, we find that the largest corporations in the United States see as a top priority the ability to minimize unauthorized use of debit payments and initially unfunded debit payments. Minimizing costs associated with making payments through one's banks, including the time to connect payments charges to actual usage, is another priority. Corporations also want to be able to link incoming payments more quickly to underlying business transactions, and they want to reduce the time required to receive overseas payments.

These areas of opportunity merit further discussion among corporations, their banks, and their service providers. They provide a starting point for identifying some necessary improvements to payments services that will lead to greater integrity and efficiency in payments processing.

¹⁸ These ACH transaction types were created by the National Automated Clearing House Association (NACHA) under its rules. The check-to-ACH transaction types referred to here include the point-of-purchase (POP) and accounts receivable conversion (ARC) standard entry class codes for point-of-sale and lock-box transactions, respectively.

Appendix A

Desired Outcomes: Improvements That Large Corporations Want in Their Payments Systems

Listed below are improvements that large nonfinancial businesses want to see in their payments systems.¹ We gathered these ninety-one *desired outcomes* during focus group sessions with thirty-three payments services experts from thirty-two organizations in April 2003.² The organizations came from a broad spectrum of industries and market focus in the United States.

Focus group participants were asked by a facilitator to state the benefit or outcome their firm would like to achieve for each step of the payment process. The sessions were facilitated by Anthony Ulwick.

The outcomes presented here are grouped into eight different areas.

I. Processing Outgoing Payments

Processing outgoing payments, in general

1. Minimize the time it takes to determine the correct amount to pay.
2. Minimize the number of payments made in the wrong amount.
3. Minimize the time it takes to identify the correct payee.
4. Minimize the time it takes to determine that a payment has not already been made (that is, the payment is not a duplicate).
5. Minimize the time it takes to reconcile outgoing payments activity with accounts payable.
6. Minimize the time it takes to demonstrate legal proof that a payment has occurred.
7. Minimize bank fees associated with making payments.
8. Increase the number of hours during which payments may be sent.

Being debited by payee (for example, ACH debit, credit card, debit card)

1. Minimize the occurrence of unauthorized debits to your firm's account.
2. Minimize the time it takes to detect an unauthorized debit to your firm's account.
3. Minimize the time it takes to resolve an unauthorized debit to your firm's account.
4. Minimize the risk of loss associated with an unauthorized debit to your firm's account.

Crediting payees account (for example, ACH credit, wire transfer)

1. Minimize the time it takes to collect the payee's bank account information.

¹ We interviewed thirty-three experts from large nonfinancial U.S. businesses in four groups. The sectors represented included services, retail trade, manufacturing, transportation, energy and communications, education, and government. For the twenty-two nongovernment, noneducational institutions, sales volume tended to be more than \$1 billion and the total number of employees was about evenly split between less than 10,000 and more than 10,000.

2. Minimize the time it takes to verify that the payee's bank account information is correct.
3. Minimize the time it takes to verify that the account to be credited belongs to the payee.
4. Minimize the time it takes to collect remittance information the payee will need to process the payment, for example, invoice or customer/vendor number.
5. Minimize the time it takes to format information so that the payee can understand it.
6. Minimize the time it takes to communicate outgoing payment instructions to your firm's bank.
7. Minimize the number of payment instructions that are rejected due to errors, for example, missing or incorrect information, duplicates, formatting problems.
8. Minimize the number of inquiries resulting from payments sent.
9. Minimize the time it takes to resolve an inquiry on a payment sent.
10. Minimize the number of payments that are credited to the wrong account in error.
11. Minimize the time it takes to determine where a misdirected payment has been credited.
12. Minimize the time it takes to retrieve a payment sent in error (for example, payment misdirected or sent in the wrong amount).
13. Minimize the potential for loss when a payment is sent in error (for example, payment misdirected or sent in the wrong amount).
14. Increase ability to control the timing of the credit to the payee's bank account.
15. Minimize the amount of time that passes to learn that a payment was not credited to the payee as expected.

II. Processing Incoming Payments

Receiving payments, in general

1. Minimize the amount of time that passes from initiation of the payment until it is credited to your firm's bank account.
2. Minimize the amount of time that passes before being notified by your bank that you have received an incoming payment.
3. Minimize the amount of time that passes before funds received are final and irrevocable.
4. Minimize the time it takes to determine the status of an expected payment.
5. Minimize the time it takes to learn when a payment is to be expected.
6. Minimize bank fees associated with incoming payments.
7. Increase the number of hours during which payments may be received.

Receiving payment by debiting an account belonging to the payor

1. Minimize the time it takes to collect payor account information needed to create an instruction to debit an account.
2. Minimize the time it takes to determine that the payor is authorized to permit the account to be debited.
3. Minimize the time it takes to determine if account information is correct before debiting an account.
4. Minimize the time it takes to determine if funds are available when debiting an account.
5. Minimize the amount of time that passes before learning that a payment was returned due to insufficient funds in the payor's bank account.
6. Minimize the time it takes to collect on payments returned due to insufficient funds in the

payor's bank account.

7. Minimize financial losses due to insufficient funds in the payor's bank account.

Receiving payment via a credit to your firm's bank account

Minimize the number of payments received that cannot be matched to a specific business activity (for example, a specific business transaction or customer).

1. Minimize the time it takes to match a payment to a specific business activity.
2. Minimize the time it takes to obtain missing information needed to process an incoming payment.
3. Minimize the time it takes to determine if the payment matches the amount billed.
4. Minimize the time it takes to post a payment to the correct general ledger account at your firm.
5. Minimize the time it takes to reconcile incoming payments activity with accounts receivable.

III. Controlling Fraudulent Payment Activity

1. Minimize unauthorized viewing of/access to your firm's bank account information.
2. Minimize unauthorized usage of your firm's bank account information.
3. Minimize unauthorized viewing of/access to your customers'/business partners' bank account information.
4. Minimize unauthorized usage of your customers'/business partners' bank account information.
5. Minimize the time it takes to detect fraudulent payment activity in a bank account belonging to your firm.
6. Minimize the number of fraudulent payments attempted in a bank account belonging to your firm.
7. Minimize financial loss associated with fraudulent payments made from a bank account belonging to your firm.

IV. Sending or Receiving Cross-Border Payments

Sending or receiving cross-border payments, in general

1. Minimize cross-border transaction fees.
2. Understand cross-border transaction fees applied to a payment.
3. Understand foreign exchange rates applied to a payment.
4. Increase the ability to control the timing of a payment.

Sending cross-border payments

1. Minimize the time it takes to assemble the payee information.
2. Minimize the time that passes before a payment sent from the United States is credited to a payee in a foreign country.
3. Minimize the number of payments sent from the United States that are not credited to the payee in a foreign country when expected.
4. Minimize the time it takes to determine when a payment sent from the United States has been credited to a payee in a foreign country.

Receiving cross-border payments

1. Minimize the time that passes before an incoming payment sent from a foreign country is credited to your bank account in the United States.
2. Minimize the number of incoming payments sent from a foreign country that are not credited to your bank account in the United States when expected.

V. Managing Demand Deposit Account Balances

1. Increase the timeliness of information regarding debits and credits to your bank account on a given day (that is, get information earlier).
2. Increase the accuracy of information regarding debits and credits to your bank account on a given day.
3. Minimize the time it takes to reconcile bank fees to actual usage of payment services.
4. Minimize the time it takes to reconcile a bank statement with actual payment activity.
5. Minimize the number of unexpected high-value payments that are received late in the day.
6. Minimize the number of high-value payments that are not received on the expected business day.

VI. Managing Systems Costs Associated with Payment Activity

1. Minimize the capital investment required to adopt a payment method.
2. Minimize the maintenance costs of using a payment method (for example, business and technology upgrades).
3. Minimize the cost of managing multiple payment methods simultaneously.

VII. Working with Multiple Banks to Conduct Payment Activity

1. Minimize the time it takes to research payment activity when sending/receiving payments.
2. Minimize differences in procedures (for example, cutoff hours) when sending/receiving payments.
3. Minimize the time it takes to support bank-provided systems when sending/receiving payments (for example, managing software, security).
4. Minimize differences in bank-specific data requirements and formats when sending/receiving payments.
5. Minimize the time it takes to redirect payment activity to a different bank.

VIII. Constraints That May Prevent Use of a Specific Payment Method

The desired payments method...

1. permits the payor and payee to exchange remittance information, (for example, invoice or invoice number).
2. enables your firm to send and receive payments to/from other countries.

3. has a consistent legal basis across the United States.
4. has a consistent legal basis internationally.
5. enables your firm to send and receive payments to/from all business partners/customers.
6. provides an adequate level of security for payments.
7. provides an adequate level of security for remittance information, (for example, invoice or invoice number).
8. is governed by trusted parties.
9. is operated by trusted parties.
10. has rules that assign risk, costs and benefits fairly to all participants.
11. has rules defining standard practices and processes that are adhered to by all participants.
12. enables you to send/receive electronic payments to/from the unbanked.
13. enables you to send/receive electronic low value, one-off electronic payments.

Appendix B

Section-by-Section Discussion of Outcomes

In this section-by-section discussion of the ninety-one outcomes (see Appendix A), we present the results of the survey and explain how the respondents rated each outcome. Respondents were asked about the degree of importance of and satisfaction with the ability of current payments options to achieve each of the desired outcomes identified in the group interviews. Respondents rated each outcome on a five-point scale for its level of importance to their companies. Respondents then rated the firm's level of satisfaction (also on a five-point scale) with their abilities to achieve that same desired outcome. On a five-point scale, an item of lowest importance ("of little importance") was given one point and the highest possible importance ("critically important") was given five points. We do not include "not important" in the scale because the focus groups only identified outcomes of some importance. The middle rank ("important") was given three points. A five-point scale was also used to evaluate satisfaction: the lowest rank ("not satisfied") received one point while the highest level ("completely satisfied") received five points. The middle rank ("satisfied") was given three points.

The tables show the percentage of respondents who rated each of the outcomes as "very important" or "critically important." The tables also show the percentage of respondents who said their companies are "not satisfied" or only "somewhat satisfied" with their ability to achieve a particular outcome.

- Scores of importance range from 36 to 100 percent, with 36 percent indicating that somewhat more than one-third of the respondents rated the outcome as "very important" or "critically important" and with 100 percent indicating that all respondents rated that outcome as "very important" or "critically important."
- Scores of satisfaction range from 7 percent to 51 percent. This score indicates the percentage of respondents who said that their firms are "not satisfied" or "somewhat satisfied" with their abilities to achieve an outcome. The lower figure means that 7 percent of the respondents said that their companies are not satisfied or somewhat satisfied, while 93 percent are "satisfied," "very satisfied," or "completely satisfied"

with their abilities to achieve a desired outcome. The higher figure means that just over half of the respondents' firms were not satisfied or somewhat satisfied.

In addition, we provide the “opportunity” score and rank of the ninety-one outcomes based on the methodology described in the body of this paper (see Sections II and III). Opportunity scores reflect the percentage of respondents who rated a particular outcome as “very important” or “critically important” and rated their companies' ability to achieve an outcome as “not satisfactory” or “somewhat satisfactory.” To assign relative rankings, we sorted those percentage scores from high to low and assigned ordinal rankings from one through ninety-one. The tables also show the number of respondents who responded to both the importance and the satisfaction sections of the survey for each question.

The sections below reflect the topical sections used in the survey. In some cases, the number of responses varies significantly across sections because respondents were asked to rate a group of outcomes

- only if they reported that they were at least very knowledgeable about their firms' practices in that area (for example, incoming versus outgoing payments),² and
- only if the outcomes were relevant to their firms' activities (for example, cross-border attributes would be rated only by those respondents making or receiving cross-border payments).

In addition, some respondents may have skipped questions or not responded to both the importance and satisfaction components.

² Respondents were asked to assess their knowledge of their firms' desired outcomes with respect to payments services on a scale of one to five, where one means “not at all knowledgeable” and five means “extremely knowledgeable.” Respondents who selected one, two, or three were asked to recommend someone extremely knowledgeable about payment preferences at the firm who was then invited to complete the survey instead.

1. DISBURSEMENTS

Table B1
Processing an Outgoing Payment

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|---|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| Minimize the time it takes to determine the correct amount to pay | 64 | 7 | 5 | 91 | 98 |
| Minimize the number of payments made in the wrong amount | 93 | 9 | 9 | 85 | 99 |
| Minimize the time it takes to identify the correct payee | 78 | 10 | 9 | 86 | 99 |
| Minimize the time it takes to determine that a payment has not already been made | 90 | 27 | 24 | 36 | 98 |
| Minimize the time it takes to reconcile outgoing payments activity with accounts receivable | 81 | 27 | 23 | 41 | 98 |
| Minimize the time it takes to demonstrate legal proof that a payment has occurred | 53 | 15 | 9 | 84 | 97 |
| <i>Minimize bank fees associated with making payments</i> | <i>75</i> | <i>44</i> | <i>37</i> | <i>14</i> | <i>98</i> |
| Increase the number of hours during which payments may be sent | 36 | 27 | 20 | 61 | 98 |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important or critically important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of an outcome and their firms' satisfaction with the outcome described.

The group of eight outcomes in Table B1 concerns processing outgoing payments in general, without distinguishing a payment method. Within this group of outcomes, 45 percent of the respondents said their firms were very satisfied or completely satisfied with their abilities to minimize the number of payments made in the wrong amount—the highest level of satisfaction reported—while only 9 percent reported being less than satisfied. In contrast, 44 percent of the respondents reported being less than satisfied with bank fees associated with outgoing payments. This outcome is one of the top fifteen areas of opportunity for improvement.

Table B1 includes the lowest-rated outcomes of the set of ninety-one, based on importance and opportunity. The first outcome in the table is lowest for opportunity and the last item is the lowest for importance.

Table B2
Payment Methods That Permit Payees to Debit an Account Belonging to Your Firm
(for example, ACH debit, credit card, debit card)

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|--|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| <i>Minimize the occurrence of unauthorized debits</i> | 97 | 42 | 41 | 5 | 71 |
| <i>Minimize the time it takes to detect an unauthorized debit</i> | 94 | 46 | 44 | 1 | 72 |
| <i>Minimize the time it takes to resolve an unauthorized debit</i> | 94 | 46 | 42 | 3 | 71 |
| <i>Minimize the risk of loss associated with an unauthorized debit</i> | 99 | 39 | 38 | 10 | 71 |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important or critically important and the percentage of respondents who said their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

The four outcomes in Table B2, which describe the consequences of unauthorized debits to firms' accounts, were ranked by respondents as being among the eight most important of all ninety-one outcomes, but were the least satisfactory. These outcomes are worth consideration as they offer some of the greatest opportunities to improve services.

We were unable to identify a clear statistical relationship between organizations' use of automated clearinghouse (ACH) debits, debit cards, and credit cards to make payments and the high importance/low satisfaction ratings that yielded the high opportunity scores. That is, the data do not tell us whether organizations that permit their accounts to be debited are more or less comfortable with the risks associated with unauthorized debits than those that do not use these payment options. For example, it could be that the organizations that permit ACH debits to their bank accounts (that is, do

not have “debit blocks” on their accounts and issue instructions to others to initiate debits) do so because they do not have a choice, not because they are more comfortable with the arrangements than those who do not permit this access.

Table B3
Payments Made by Sending an Electronic Credit

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|---|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^c |
| Minimize the time it takes to collect the payee’s bank account information | 47 | 18 | 8 | 87 | 100 |
| Minimize the time it takes to verify that the payee’s bank account information is correct | 55 | 29 | 18 | 66 | 99 |
| Minimize the time it takes to verify that the account to be credited belongs to the payee | 55 | 31 | 22 | 52 | 100 |
| Minimize the time it takes to collect remittance information the payee will need to process the payment | 53 | 30 | 17 | 74 | 100 |
| Minimize the time it takes to format information so that the payee can understand it | 53 | 29 | 15 | 79 | 100 |
| Minimize the time it takes to communicate outgoing payment instructions to your firm’s bank | 65 | 8 | 6 | 89 | 99 |
| Minimize the number of payment instructions that are rejected due to errors | 81 | 20 | 18 | 67 | 99 |
| Minimize the number of inquiries resulting from payments sent | 76 | 23 | 18 | 69 | 100 |
| Minimize the time it takes to resolve an inquiry on a payment sent | 74 | 32 | 28 | 30 | 99 |
| Minimize the number of payments that are credited to the wrong account in error | 86 | 14 | 13 | 82 | 99 |
| Minimize the time it takes to determine where a misdirected payment has been credited | 83 | 27 | 24 | 37 | 99 |
| Minimize the time it takes to retrieve a payment sent in error, for example, misdirected or sent in the wrong amount | 83 | 31 | 29 | 27 | 99 |
| Minimize the potential for loss when a payment is sent in error, for example, misdirected or sent in the wrong amount | 92 | 29 | 29 | 29 | 98 |
| Increase ability to control the timing of the credit to the payee’s bank account | 59 | 26 | 23 | 43 | 99 |
| Minimize the amount of time that passes to learn that apayment was not credited to the payee as expected | 75 | 37 | 34 | 18 | 100 |

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important or critically important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

These fifteen outcomes pertain to sending an electronic credit to a payee's account by ACH credit or by wire transfer. In particular, steps in the process for these "push" payments include collecting and verifying payee bank account information, collecting and formatting remittance information, communicating the outgoing payment instructions to the firm's bank, and resolving problems.

Overall, the outcomes in this section present few outstanding opportunities for improvements. Only one outcome—minimizing the potential for loss when a payment is misdirected or sent in the wrong amount—ranked in the top fifteen for importance. No outcomes fell among the highest ranked for dissatisfaction or opportunity.

A few of the outcomes in Table B3 were among those raising the least concern overall. For example, our respondents agreed that minimizing the time needed to collect the payee's bank account information was important, but, relative to other outcomes, few rated this as very or critically important. In addition, few respondents were less than satisfied with their abilities to achieve this outcome, which means firms seem to be fairly satisfied or more than satisfied with current outcomes. This appears to conflict with the priority that other studies, such as one by The Clearing House, attribute to electronic payee bank account information for improving business-to-business payments.³ The apparent differences between what we read in The Clearing House study and our responses may reflect differences in what was actually asked, as well as the differences in the composition of respondents and the time period of the study.

³ The Clearing House, *The Remaining Barriers to ePayments and Straight-through Processing*, (New York: The Clearing House, 2002).

2. RECEIPTS

Table B4
Processing an Incoming Payment

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|---|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| Minimize the amount of time that passes from initiation of the payment until it is credited to your firm's bank account | 86 | 24 | 22 | 55 | 88 |
| Minimize the amount of time that passes before being notified by your bank that you have received an incoming payment | 80 | 20 | 17 | 73 | 88 |
| Minimize the amount of time that passes before funds received are final and irrevocable | 83 | 24 | 23 | 49 | 87 |
| Minimize the time it takes to determine the status of an expected payment | 75 | 31 | 24 | 38 | 87 |
| Minimize the time it takes to learn when a payment is to be expected | 59 | 34 | 21 | 58 | 86 |
| <i>Minimize bank fees associated with incoming payments</i> | <i>70</i> | <i>48</i> | <i>38</i> | <i>12</i> | <i>88</i> |
| Increase the number of hours during which payments may be received | 49 | 22 | 16 | 77 | 86 |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important or critically important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

This group of seven outcomes addresses processing an incoming payment generally (Table B4). Respondents expressed concern about minimizing bank fees associated with incoming payments, making this the twelfth highest opportunity for improvement. The high-opportunity ranking suggests that respondents are not comfortable with the cost-versus-service trade off.

Table B5
Receiving a Payment by Debiting an Account Belonging to the Payor

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|---|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| Minimize the time it takes to collect payor account information needed to create an instruction to debit an account | 52 | 25 | 15 | 81 | 68 |
| Minimize the time it takes to determine that the payor is authorized to permit the account to be debited | 56 | 28 | 21 | 57 | 66 |
| Minimize the time it takes to determine if account information is correct before debiting an account | 62 | 30 | 24 | 40 | 68 |
| Minimize the time it takes to determine if funds are available when debiting an account | 71 | 38 | 33 | 20 | 67 |
| <i>Minimize the time that passes before learning that a payment was returned due to insufficient funds</i> | <i>77</i> | <i>49</i> | <i>42</i> | <i>4</i> | <i>67</i> |
| <i>Minimize the time it takes to collect on payments returned due to insufficient funds</i> | <i>72</i> | <i>46</i> | <i>38</i> | <i>9</i> | <i>68</i> |
| <i>Minimize financial losses due to insufficient funds</i> | <i>79</i> | <i>42</i> | <i>37</i> | <i>13</i> | <i>67</i> |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

Table B5 shows those outcomes covering the process and risks of collecting payments by debiting an account held by others, for example by originating an ACH debit or charging a credit or debit card. The three questions that specifically address collecting on payments returned for insufficient funds ranked among the fifteen outcomes with the highest opportunities for improvement. The question that asked about minimizing the time needed to determine if sufficient funds were available to be debited was also fairly highly rated, representing the twentieth highest opportunity. We note that for two of the instruments addressed in this section—credit cards and debit cards—current processes quickly confirm balances and memo-post charges, but ACH debit processes do not offer a mechanism for confirming the availability of funds.

Table B6
Receiving a Payment via a Credit to Your Firm's Bank Account

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|--|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| <i>Minimize the number of payments received that cannot be matched to a specific business activity, for example, a specific business transaction or customer</i> | 78 | 41 | 38 | 8 | 86 |
| Minimize the time it takes to match a payment to a specific business activity | 78 | 37 | 35 | 17 | 86 |
| <i>Minimize the time it takes to obtain missing information needed to process an incoming payment</i> | 76 | 44 | 39 | 6 | 84 |
| Minimize the time it takes to determine if the payment matches the amount billed | 67 | 35 | 27 | 31 | 86 |
| Minimize the time it takes to post a payment to the correct general ledger account at your firm | 72 | 28 | 23 | 42 | 86 |
| Minimize the time it takes to reconcile incoming payments activity with accounts receivable | 75 | 35 | 31 | 23 | 86 |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important or critically important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

This group of six outcomes addresses the process and risks associated with collecting payments sent by the payor, generally by ACH credit or by wire transfer (Table B6). In general, respondents placed the outcomes in this section in the middle third of the importance rankings. Respondents did, however, report fairly substantial dissatisfaction with two outcomes—minimizing the time it takes to get missing information needed to process an incoming payment and minimizing the payments that cannot be matched to a specific business activity (for example, a specific business transaction or customer). Both outcomes received opportunity scores that placed their rankings in the top fifteen. A third outcome—minimizing the time needed to match a payment to a specific business activity—also received a fairly high opportunity score (35

percent, or seventeenth highest). These desired-but-not-yet-satisfied outcomes have to do with a company's ability to process receipts more quickly.⁴

3. FRAUD

Table B7
Controlling Fraudulent Payment Activity

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|---|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| Minimize unauthorized viewing/access of your firm's bank account information | 92 | 18 | 17 | 75 | 101 |
| Minimize unauthorized usage of your firm's bank account information | 98 | 22 | 22 | 50 | 99 |
| Minimize unauthorized viewing/access of your customers'/business partners' bank account information | 83 | 18 | 16 | 78 | 101 |
| Minimize unauthorized usage of your customers'/business partners' bank account information | 91 | 18 | 18 | 70 | 101 |
| Minimize the time it takes to detect fraudulent payment activity in a bank account belonging to your firm | 100 | 34 | 34 | 19 | 101 |
| Minimize the number of fraudulent payments attempted in a bank account belonging to your firm | 96 | 30 | 29 | 28 | 99 |
| Minimize financial loss associated with fraudulent payments made from your firm's bank account | 99 | 23 | 23 | 46 | 100 |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important or critically important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

Seven outcomes explored payments fraud issues generally, in addition to questions earlier in the survey about unauthorized debits and insufficient funds that may

⁴ The outcome about minimizing the time it takes to reconcile incoming payments activity with accounts receivable has an opportunity ranking of twenty-three. Apparently, respondents distinguished between matching payments to a specific business activity and matching that payment with the accounts receivable ledger.

be fraud related (Table B7). These questions were clearly the most highly rated in terms of importance: six of the outcomes were among the top fifteen most important outcomes, and the seventh fell only slightly below that. At the same time, a relatively low percentage of respondents rated their firm as less than satisfied with their ability to achieve these outcomes with their current options. As a consequence, these general fraud outcomes were not highly rated as opportunities for improvement. The highest opportunity is to minimize the time needed to detect fraudulent activity in a company bank account, which received the nineteenth highest ranking. Respondents are far more dissatisfied with specific fraud problems associated with unauthorized debits and insufficient funds.

4. CROSS-BORDER TRANSACTIONS

Table B8
Cross-Border Payment Activity

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|---|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| Cross-border payments, general | | | | | |
| Minimize the cross border transaction fees | 56 | 45 | 30 | 26 | 89 |
| Understand cross border transaction fees applied to a payment | 54 | 51 | 31 | 24 | 87 |
| Understand foreign exchange rates applied to a payment | 67 | 34 | 21 | 56 | 89 |
| Increase the ability to control the timing of a payment | 58 | 45 | 32 | 22 | 88 |
| Cross-border disbursements | | | | | |
| Minimize the time it takes to assemble the payee information | 46 | 30 | 17 | 72 | 87 |
| Minimize the time that passes before a payment sent from the United States is credited to a payee in a foreign country | 52 | 33 | 20 | 62 | 86 |
| Minimize the number of payments sent from the United States that are not credited to the payee in a foreign country when expected | 64 | 33 | 25 | 35 | 87 |
| Minimize the time it takes to determine when a payment sent from the United States has been credited to a payee in a foreign country | 52 | 40 | 26 | 34 | 87 |
| Cross-border receipts | | | | | |
| <i>Minimize the time that passes before an incoming payment sent from a foreign country is credited to your bank account in the United States</i> | 73 | 50 | 42 | 2 | 66 |
| <i>Minimize the number of incoming payments sent from a foreign country that are not credited to your bank account in the United States when expected</i> | 75 | 46 | 39 | 7 | 67 |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important or critically important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

The ten outcomes associated with cross-border payments were among the outcomes with which the respondents were least satisfied (Table B8). In fact, they rated five of these outcomes among the fifteen least satisfied of all ninety-one steps in the

payments process. In general, however, respondents did not believe that the cross-border outcomes were very or critically important to their firms. Rather, they rated only two cross-border outcomes as sufficiently important to place them among those desired outcomes that present the highest opportunities to improve payments processing for their firms.

The outcome with which respondents said they were least satisfied asked about understanding how cross-border transaction fees applied to a payment. While 54 percent of respondents rated this outcome as very important or critically important, the outcome did not rank among the greatest opportunities for improvement. Rather, the greatest opportunities for improvement were minimizing the time it takes for an incoming payment sent from a foreign country to be credited to a firm's bank account in the United States and minimizing the number of incoming payments from a foreign country that are not credited to a firm's bank account when expected.

5. DEMAND DEPOSIT ACCOUNTS, COSTS, BANK RELATIONSHIPS, AND OTHER TOPICS

Table B9
Managing Demand Deposit Account Balances

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|---|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| Increase the timeliness of information regarding debits and credits to your bank account on a given day | 83 | 26 | 22 | 53 | 100 |
| Increase the accuracy of information regarding debits and credits to your bank account on a given day | 84 | 21 | 19 | 65 | 100 |
| <i>Minimize the time it takes to reconcile bank fees to actual usage of payment services</i> | <i>69</i> | <i>47</i> | <i>36</i> | <i>15</i> | <i>99</i> |
| <i>Minimize the time it takes to reconcile a bank statement with actual payments activity</i> | <i>81</i> | <i>40</i> | <i>38</i> | <i>11</i> | <i>100</i> |
| Minimize the number of unexpected high-value payments that are received late in the day | 72 | 31 | 23 | 47 | 100 |
| Minimize the number of high-value payments that are not received on the expected business day | 78 | 27 | 22 | 54 | 100 |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

Six desired outcomes asked about steps required to manage a company's demand deposit accounts (Table B9). In general, respondents tended to rate these outcomes as moderately important, with individual scores varying widely—from twenty-second place for the timeliness of information on account activity to sixty-first place for the time needed to reconcile bank fee statements with use of payment services. Levels of satisfaction also varied widely, with the latter outcome, about reconciling bank fees, being rated at the sixth outcome with which firms are least satisfied. Taken together, two outcomes were ranked among the fifteen highest opportunity factors; both addressed firms' difficulties in reconciling their records with those of their banks.

Table B10
Managing System Costs Associated with Payment Activity

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|---|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| Minimize the capital investment required to adopt a payment method | 81 | 27 | 23 | 48 | 100 |
| Minimize the maintenance costs of using a payment method, for example, business and technology upgrades | 82 | 37 | 31 | 25 | 100 |
| Minimize the cost of managing multiple payment methods simultaneously | 77 | 38 | 32 | 21 | 100 |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important or critically important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

The survey included three outcomes inquiring about the costs associated with managing a firm's systems (Table B10). Respondents did not rate any of these questions in the top ranks for importance, level of satisfaction, or opportunity.

Table B11
Managing Payment Activities at Multiple Banks

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|---|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| Minimize the time it takes to research payment activity when sending/receiving payments | 69 | 23 | 19 | 64 | 84 |
| Minimize differences in procedures, for example, cutoff hours when sending/receiving payments | 65 | 36 | 27 | 33 | 83 |
| Minimize the time it takes to support bank-provided systems when sending/receiving payments, for example, managing software, security | 76 | 27 | 23 | 45 | 82 |
| Minimize differences in bank-specific data requirements and formats when sending/receiving payments | 81 | 37 | 35 | 16 | 83 |
| Minimize the time it takes to redirect payment activity to a different bank | 60 | 30 | 20 | 60 | 83 |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important or critically important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

The five outcomes in Table B11 are associated with using more than one bank for payments services. (Eighty-three percent of respondents reported that their firm conducts payments activities with two or more banks.) With one exception, these outcomes were not highly ranked as opportunities for improvement. The outcome about differences in bank-specific data requirements and formats when sending or receiving payments ranked highest in this section for opportunity and sixteenth overall.

Table B12
Constraints Associated with Payment Methods

| Desired Outcome | Percentage of Respondents That Rated Outcome Very or Critically Important ^a | Percentage of Respondents Not Satisfied or Somewhat Satisfied with Outcome ^b | Opportunity | | |
|---|--|---|------------------------------|-------------------|----------------------------------|
| | | | Score ^c (Percent) | Rank ^d | Number of Responses ^e |
| Permits the payor and payee to exchange remittance information, for example, invoice or invoice number | 73 | 36 | 27 | 32 | 101 |
| Enables your firm to send and receive payments to/from other countries | 54 | 23 | 16 | 76 | 98 |
| Has a consistent legal basis across the United States | 72 | 15 | 13 | 83 | 101 |
| Has a consistent legal basis internationally | 52 | 29 | 19 | 63 | 99 |
| Enables your firm to send and receive payments to/from all business partners/customers | 78 | 24 | 21 | 59 | 101 |
| Provides an adequate level of security for payments | 94 | 18 | 18 | 68 | 99 |
| Provides an adequate level of security for remittance information, for example, invoice or invoice number | 80 | 15 | 15 | 80 | 101 |
| Is governed by trusted parties | 88 | 7 | 6 | 90 | 101 |
| Is operated by trusted parties | 87 | 9 | 7 | 88 | 100 |
| Has rules that assign risk, costs and benefits fairly to all participants | 82 | 26 | 24 | 39 | 100 |
| Has rules defining standard practices and processes that are adhered to by all participants | 87 | 23 | 22 | 51 | 99 |
| Enables you to send/receive electronic payments to/from the unbanked | 44 | 50 | 23 | 44 | 99 |
| Enables you to send/receive electronic low value, one-off electronic payments | 48 | 36 | 18 | 71 | 101 |

Note: Italicized text indicates that the outcome is among the first fifteen when ranked by opportunity score.

^a This figure is the percentage of respondents who rated an outcome as either very important or critically important.

^b This figure is the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with their abilities to achieve a desired outcome.

^c The opportunity score is the percentage of respondents who identified each outcome as very important or critically important and the percentage of respondents who said that their companies are not satisfied or are somewhat satisfied with a current service (outcome).

^d Opportunity rank is based on the opportunity score, sorted from highest to lowest for all ninety-one outcomes, where the higher number represents a greater degree of opportunity for improvement.

^e The number of respondents who rated both the importance of and their firms' satisfaction with the outcome described.

Table B12 captures thirteen outcomes not associated with any particular payment method, but that constrain firms' ability to make and receive payments as the firm's management would prefer. Respondents rated two factors in this section among the fifteen most important: providing an adequate level of security for payments and governance by trusted parties. At the same time, respondents rated the latter outcome as the one with which they are most satisfied. Respondents reported a high level of dissatisfaction with only one outcome in this section: the ability to send or receive

payments to or from the unbanked. One-half of all respondents said they were not satisfied or somewhat satisfied with the ability to do this; this was third-highest ranked for dissatisfaction. However, this outcome was very or critically important to less than half of the respondents, and half the outcomes had higher opportunity scores.

Appendix C

Description of Survey Population

Table C1
Company Type and Size by Annual Sales

| Industry | Less Than | | Greater Than | | Total | Distribution (Percent) |
|-----------------------------------|-------------|----------------|--------------|-----|-------|------------------------|
| | \$1 Billion | \$1-10 Billion | \$10 Billion | | | |
| Population | | | | | | |
| Transport, energy, communications | 12 | 39 | 17 | 68 | 9.3 | |
| Wholesale | 2 | 13 | 8 | 23 | 3.1 | |
| Services ^a | 76 | 70 | 8 | 157 | 21.4 | |
| Nonprofit/services | 38 | 41 | 0 | 79 | 10.8 | |
| Manufacturing | 19 | 177 | 51 | 247 | 33.7 | |
| Retail trade | 36 | 76 | 23 | 135 | 18.7 | |
| Construction | 2 | 9 | 0 | 11 | 1.5 | |
| Other | 2 | 7 | 4 | 13 | 1.8 | |
| Total ^a | 187 | 432 | 111 | 733 | | |
| Distribution (percent) | 25.5 | 58.9 | 15.1 | | 100.0 | |
| Total in sample receiving survey | 48 | 120 | 30 | 199 | | |
| Respondents | | | | | | |
| Transport, energy, communications | 0 | 9 | 3 | 12 | 11.9 | |
| Wholesale | 1 | 1 | 1 | 3 | 3.0 | |
| Services | 6 | 10 | 2 | 18 | 17.8 | |
| Nonprofit/services | 7 | 10 | 0 | 17 | 16.8 | |
| Manufacturing | 1 | 18 | 8 | 27 | 26.7 | |
| Retail trade | 5 | 12 | 5 | 22 | 21.8 | |
| Construction | 0 | 2 | 0 | 2 | 2.0 | |
| Total | 20 | 62 | 19 | 101 | | |
| Distribution (percent) | 19.8 | 61.4 | 18.8 | | 100.0 | |

Source: Dunn & Bradstreet.

Note: Percentages may not equal 100 because of rounding.

^a Annual sales data not available for three service companies.

Table C2
Company Size by Number of Employees and Corporate Purpose

| | 10,000 to 24,999 | 25,000 to 50,000 | More than 50,000 | Total | Distribution (Percent) |
|------------------------|---------------------|---------------------|---------------------|-------|---------------------------|
| Population | | | | | |
| For profit | 372 | 151 | 131 | 654 | 89.2 |
| Nonprofit | 64 | 13 | 2 | 79 | 10.8 |
| Total | 436 | 164 | 133 | 733 | |
| Distribution (percent) | 59.5 | 22.4 | 18.1 | | 100.0 |
| Total in sample | 106 | 61 | 32 | 199 | |
| Respondents | | | | | |
| For profit | 39 | 25 | 20 | 84 | 83.2 |
| Nonprofit | 12 | 5 | 0 | 17 | 16.8 |
| Total | 51 | 30 | 20 | 101 | |
| Distribution (percent) | 50.5 | 29.7 | 19.8 | | 100.0 |

Source: Dunn & Bradstreet.

Note: Percentages may not equal 100 because of rounding.

Table C3
Proportion of Respondents Able to Accept or Receive Payments by Instrument and Industry

Percent

| | Total | Wholesale | Retail | Transport, Energy, and Communications | Construction | Services | Manufacturing |
|------------------------------|-------|-----------|--------|---|--------------|----------|---------------|
| For Outgoing Payments | | | | | | | |
| Checks | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Wire transfer | 99 | 100 | 100 | 100 | 100 | 97 | 100 |
| ACH credit | 89 | 100 | 95 | 92 | 0 | 82 | 96 |
| ACH debit | 59 | 67 | 59 | 67 | 100 | 53 | 59 |
| Credit card | 53 | 67 | 55 | 67 | 50 | 44 | 56 |
| Cash | 12 | 0 | 27 | 25 | 0 | 3 | 7 |
| Debit card | 12 | 0 | 14 | 0 | 50 | 12 | 15 |
| For Incoming Receipts | | | | | | | |
| Checks | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Wire transfer | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| ACH credit | 86 | 100 | 85 | 73 | 100 | 83 | 95 |
| ACH debit | 48 | 33 | 50 | 73 | 50 | 50 | 32 |
| Credit card | 74 | 67 | 95 | 91 | 50 | 70 | 55 |
| Cash | 74 | 67 | 90 | 73 | 50 | 87 | 45 |
| Debit card | 47 | 33 | 75 | 64 | 50 | 47 | 14 |

Notes: Table based on descriptive data provided by survey respondents. Percentages may not equal 100 because of rounding.

Table C4
Proportion of Firms' Payment Volume Sent or Received via a Payment Instrument
(For Only Those Respondents Reporting That They Use a Particular Instrument)

| Payment Instrument | Payments Made | | Payments Received | |
|--------------------|-----------------|-------------------|-------------------|-------------------|
| | Number of Firms | Average (Percent) | Number of Firms | Average (Percent) |
| Check | 100 | 66.0 | 88 | 48.9 |
| Wire transfer | 99 | 11.6 | 88 | 12.9 |
| ACH credit | 89 | 19.2 | 76 | 14.8 |
| ACH debit | 59 | 3.1 | 42 | 4.5 |
| Credit card | 53 | 4.7 | 65 | 14.3 |
| Cash | 12 | 1.6 | 65 | 13.9 |
| Debit card | 12 | 6.0 | 41 | 4.6 |

Table C5
Proportion of Firms' Payment Volume Sent or Received via a Payment Instrument, by Industry (For Only Those Respondents Reporting That They Use a Particular Instrument)

Average percentage

| Payment Instrument | Total | Wholesale | Retail | Transport, Energy, and Communications | Construction | Services | Manufacturing |
|------------------------------|-------|-----------|--------|---------------------------------------|--------------|----------|---------------|
| | | | | | | | |
| For Outgoing Payments | | | | | | | |
| Checks | 66 | 30 | 68 | 64 | 75 | 73 | 60 |
| Wire transfer | 12 | 30 | 6 | 18 | 15 | 12 | 10 |
| ACH credit | 19 | 37 | 8 | 13 | 0 | 13 | 27 |
| ACH debit | 3 | 0 | 2 | 3 | 5 | 5 | 2 |
| Credit card | 5 | 5 | 7 | 7 | 10 | 3 | 3 |
| Cash | 2 | 0 | 2 | 1 | 0 | 2 | 1 |
| Debit card | 6 | 0 | 10 | 0 | 0 | 1 | 10 |
| For Incoming Receipts | | | | | | | |
| Checks | 49 | 62 | 37 | 51 | 50 | 46 | 61 |
| Wire transfer | 13 | 23 | 2 | 21 | 20 | 12 | 17 |
| ACH credit | 15 | 12 | 8 | 9 | 20 | 20 | 16 |
| Cash | 14 | 1 | 27 | 4 | 0 | 14 | 3 |
| Credit card | 14 | 3 | 21 | 12 | 20 | 14 | 8 |
| ACH debit | 5 | 3 | 4 | 7 | 0 | 4 | 3 |
| Debit card | 5 | 0 | 9 | 3 | 0 | 2 | 3 |

Notes: Table based on descriptive data provided by survey respondents. Percentages may not equal 100 because of rounding.

Table C6
Proportion of Firms' Payment Volume Sent or Received via a Payment Instrument, by Industry (For Only Those Respondents Reporting That They Use a Particular Instrument)

Median percentage

| | Total | Construction | Manufacturing | Retail | Services | Transport, Energy, and Communications | Wholesale |
|------------------------------|-------|--------------|---------------|--------|----------|---|-----------|
| For Outgoing Payments | | | | | | | |
| Checks | 75 | 75 | 60 | 75 | 80 | 69 | 20 |
| Wire transfer | 5 | 15 | 5 | 4 | 6 | 6 | 15 |
| ACH credit | 10 | 0 | 21 | 10 | 10 | 5 | 30 |
| ACH debit | 1 | 5 | 1 | 1 | 4 | 1 | 0 |
| Credit card | 4 | 10 | 2 | 5 | 1 | 5 | 5 |
| Cash | 1 | 0 | 1 | 1 | 2 | 1 | 0 |
| Debit card | 0 | 0 | 3 | 5 | 0 | 0 | 0 |
| For Incoming Receipts | | | | | | | |
| Checks | 47 | 50 | 68 | 25 | 45 | 72 | 75 |
| Wire transfer | 5 | 20 | 7 | 2 | 5 | 5 | 5 |
| ACH credit | 10 | 20 | 15 | 2 | 15 | 4 | 15 |
| Cash | 5 | 0 | 1 | 22 | 3 | 4 | 1 |
| Credit card | 5 | 20 | 5 | 12 | 5 | 2 | 3 |
| ACH debit | 1 | 0 | 0 | 1 | 3 | 4 | 3 |
| Debit card | 1 | 0 | 5 | 4 | 1 | 1 | 0 |

Notes: Table based on descriptive data provided by survey respondents. Percentages may not equal to 100 because of rounding.

Table C7
Percent of Respondents with Cross-Border Payments Activity

| Payment Type | All Payments Domestic | Some Payments Domestic, Some Cross-Border | |
|-------------------|-----------------------------|--|----------------------------------|
| | | 10 Percent or Less Cross-Border | 11 to 50 Percent Cross-Border |
| Payments made | 13 | 75 | 25 |
| Payments received | 23 | 74 | 26 |

Notes: Table based on descriptive data provided by survey respondents. Percentages may not equal to 100 because of rounding.