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The Inefficiencies of Cross-Border Payments: How Current Forces Are Shaping the Future

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Visa, as a payment industry leader, is focused on increasing the efficiency and reducing the cost of cross-border payments for financial institutions and their clients.

Cross-border trade is growing rapidly as more companies source goods and services overseas. Most cross-border trade payments are handled through correspondent banking relationships. As volume continues to grow, pressure is being exerted on financial institutions and payment systems to improve the cross-border payment process.

Visa commissioned Dr. Yoon S. Park, an expert on global financial markets and Professor of International Finance at the School of Business at George Washington University, to examine the current challenges of the cross-border payments process and how a combination of forces are influencing the future of payment processing.

We hope you find this report useful in understanding the cross-border payment landscape. We believe that improving the cross-border payment process will provide quantifiable benefits for both banks and corporates.

Sincerely,

Aliza Knox
Senior Vice President
Visa International, Commercial Solutions

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JAPAN
UNITED KINGDOM
SWITZERLAND

Executive Summary

Cross-border trade is growing rapidly as more companies source goods and services globally. International trade doubled over the past decade to $10.5 trillion in 2005.[1] Most cross-border trade payments are handled through correspondent banking relationships, whereby a series of banks and domestic payment systems are typically linked together to move funds.

While volume continues to grow and migrate to open account terms (supplier credit extended to buyer at time of sale), pressure is being exerted on both banks and payment systems to improve the cross-border payment process. The paper, "The inefficiencies of cross-border payments: How current forces are shaping the future," looks at the challenges of the current cross-border payments process and how a combination of forces are influencing its future.

Cross-border payment challenges

Cross-border payments are intrinsically inefficient because there is not one single ubiquitous global payment system. There are three challenges that must be overcome in order to improve the cross-border process:

1. Most payment systems are based on local laws and practices within existing domestic banking and financial structures.
2. Lack of a common global standard and variations between systems have reduced the ability of both bank and corporate treasury/enterprise systems to seamlessly pass data between each other.
3. Government regulations are changing how payments are made. Payments are subject to domestic regulations which compound the challenges of cross-border payments because often rules vary between an originating and receiving country.

Trends shaping the future

A number of forces are shaping the cross-border payment landscape:

1. Transnational payment systems – Emerging transnational systems are reducing the reliance on correspondent networks for payments and standardizing data formats.
2. Government-led initiatives and mandates – Government-led initiatives are influencing how payments are made and what fees can be charged.
3. Risk and liquidity management – Payment systems are becoming more efficient at managing credit risk, liquidity needs, and funding costs.
4. Multinational banks and corporations – Multinational banks are achieving processing economies of scale while unintentionally concentrating credit risk during settlement.
5. Operational efficiencies through outsourcing – Banks are bundling payments and outsourcing operations to other banks and third-party processors. This is driving process efficiencies, but further disintermediating financial institutions from the payment process and the financial supply chain.

Today, cross-border payments are slow, inefficient and costly for banks and businesses. Increase in global trade and improvements in physical supply chain efficiencies are creating demand for process improvements. Improvement in the efficiency and effectiveness of cross-border payments is likely, but all stakeholders are being required to increase investments to change the processes and systems of corporates, banks and payment systems.

1 Jack Stephenson, "Growing Pains: Outlook for the U.S. Payments Industry," McKinsey & Company, 2005.

Overview of Cross-Border Payments

Scale of cross-border payments and international trade

Payments are big business. Revenues from the U.S. payments industry alone have grown at 6% per year since 1994, topping $207 billion in 2004. In aggregate, the payments business generates more revenues than do the airline, personal computing, lodging, or entertainment industries.[2]

In terms of volume, cross-border payments are estimated to represent approximately 8% of total payments.[3] Although it is difficult to size exactly, one can indirectly estimate the *relative* magnitude of cross-border payment flows by analyzing the scope of international trade. During the past ten years, the world trade volume as measured by total imports has roughly doubled in dollar value from $5.5 trillion in 1996 to $10.6 trillion in 2005. Correspondingly, one can surmise that the cross-border payments related to international trade have doubled in size.

Table 1: World Trade as Measured by Imports (in trillions of U.S. dollars)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
World	5.5	5.6	5.6	5.8	6.6	6.3	6.6	7.7	9.3	10.5
Industrial Countries (23)[1]	3.6	3.6	3.7	3.9	4.3	4.2	4.3	4.9	5.8	6.4
Developing Countries (164)	1.9	2.0	1.9	1.9	2.3	2.1	2.3	2.8	3.5	4.1

The Boston Consulting Group estimates that the volume of cross-border payments will increase at a compound annual rate of 10.2% globally and 7.8% for the North and Latin Americas during the decade of 2000 through 2010.[4]

2 Jack Stephenson, "Growing Pains: Outlook for the U.S. Payments Industry," McKinsey & Company, 2005.
3 Celent Communications, Cross-Border Business-to-Business Payments: The New Frontier, Boston, October 2004.
4 Boston Consulting Group, Global Payments 2003: The Payment Puzzle, 2003.

How cross-border payments work today

Most of the world's major banks maintain correspondent banking relationships with local banks in each of the important foreign cities of the world. This two-way link between banks is one of many interbank relationships, such as nostro/vostro accounts and the selling of cash management and treasury services to other financial institutions. The institution providing the services is the *correspondent bank* or upstream correspondent, while the institution buying the services is the *respondent bank* or downstream correspondent. At least 80% of bank-to-bank cross-border payments currently take place through traditional correspondent banking arrangements or via intra-bank transactions.[5]

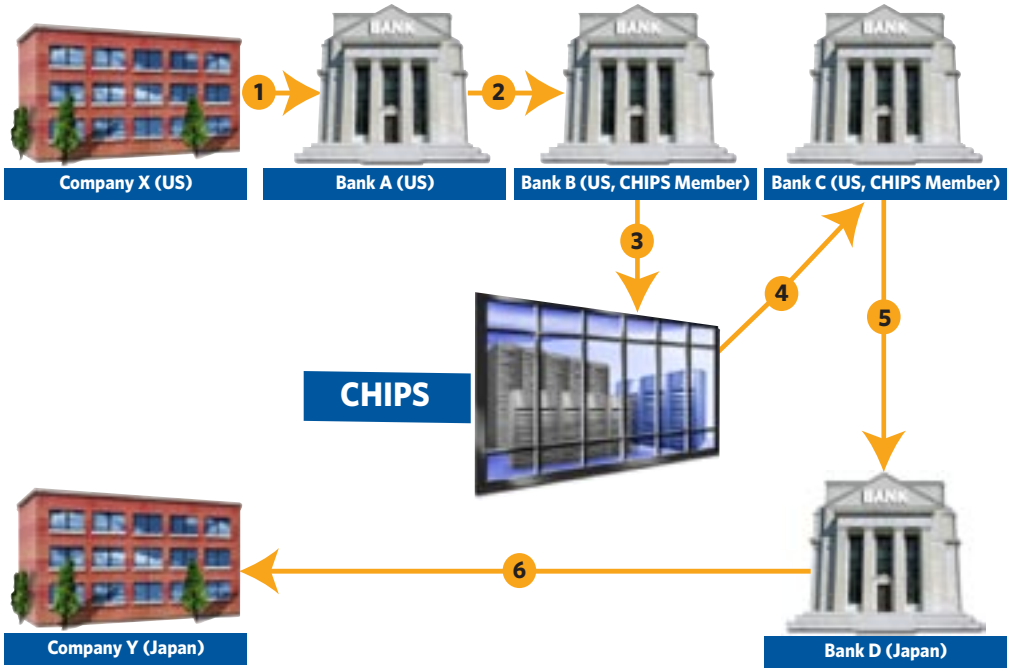
Often banks do not separate domestic and cross-border payments, blurring the line of demarcation in payment flows. Global financial institutions utilize their internal networks to clear and settle both domestic and cross-border payments. Often many payments are bundled in a single transfer, with both domestic and international transactions commingled by currency.

Many cross-border payments are actually settled in a specific country's domestic settlement system. For example, a British company making a U.S. dollar payment to a Korean company transfers the necessary dollar amount from its U.S. correspondent bank to the Korean company's U.S. bank account in the U.S. If the Korean company does not maintain an account at a bank in the U.S., the funds are transferred to the Korean company bank's correspondent bank in the U.S.

5 Retail Banking Research Ltd., *Regulation 2560/2001: Study of Competition for Cross-Border Payment Services*, Final Report prepared for the European Commission, London, September 2005.

Example of cross-border payment flow

Company X in the United States needs to make a payment to Company Y in Japan. Company X requests its bank in the United States, Bank A, to send a U.S. dollar payment to Company Y. Since Bank A does not belong to CHIPS, it requests its correspondent bank, Bank B, which is a member of CHIPS, to facilitate the transfer. Bank B sends the funds transfer via CHIPS to Bank C which is also a member. Bank C is the correspondent bank for Bank D which is where Company Y has an account to receive funds.[6]



(1) Company (X) in the U.S. requests its U.S. bank (A) to send a dollar payment to its client (Y) in Japan.
(2) Bank A asks its U.S. correspondent bank in the U.S. (B) to facilitate this transfer.
(3) Bank (B), a member of CHIPS, sends the funds transfer command to CHIPS.
(4) CHIPS executes the fund transfer by crediting the account of another U.S. CHIPS member bank C.
(5) Bank (D) in Japan is bank C's correspondent bank.
(6) Company Y has an account with Bank D.

6 Not shown in the diagram, SWIFT (Society for Worldwide Interbank Financial Telecommunications) is an industry-owned limited liability cooperative that supplies secure messaging services and interface software for financial transactions to more than 7,650 banks, securities brokers and investment managers in more than 200 countries. SWIFT provides the messaging infrastructure for most electronic cross-border payments today.

Cross-Border Payment Challenges

Cross-border payments amount to trillions of dollars each year. A study by the Board of Governors of the Federal Reserve System finds that end users and financial service providers consider cross-border payments to be costly and cumbersome, but that the incentives to develop faster and lower cost systems do not exist.[7]

1. Domestic infrastructures are not designed to handle cross-border payments

Over the past few decades, many countries have established both high and low value payment systems that are based on proprietary communication and security standards. As a result of largely independent development, there is a lack of standardization and automation in inter-bank and intra-bank networks. This adversely affects banks and businesses alike and results often in manual intervention to collect and repair data.

Major banks with subsidiaries, branches and associated banks in many countries may move funds to a destination country by an intra-bank transaction. The beneficiary is either credited directly where it has an account with the foreign operation or the payment is sent to the beneficiary's bank via a bilateral transfer, or a national clearing and settlement system. A report by the European Central Bank, however, finds this method to be the most costly and inefficient due to the use of non-standard customer interfaces, incompatible formats between domestic and foreign banks, and the low degree of automation in banks' internal systems.[8]

For example, the United States has dozens of siloed and underutilized payment infrastructures, often competing with one another for volumes. With more than 60 distinct clearing and settlement entities (down from several hundred), a major U.S. bank may operate dozens of largely redundant payments operations and technology platforms, each with its own dedicated applications, staffs, rules, and business processes.

7 *The Future of Retail Electronic Payments Systems: Industry Interviews and Analysis,* by Federal Reserve Staff for the Payments Development Committee, Federal Reserve System, December 2002.

8 European Central Bank, *Improving Cross-Border Retail Payment Services: The Eurosystem's View,* September 1999, p. 10.

2. Lack of common message standards

Businesses also face the challenge of removing paper and manual processes by introducing straight-through processing (STP) as much as possible. This requires payment instructions to be generated electronically as part of the business process, passed securely, efficiently and cost-effectively to their banks, and matched and reconciled automatically via a universal reference number within invoicing, accounts payable, accounts receivable and other systems. However, according to a recent wire transfer survey only 15 percent of respondents report that their wires always come with sufficient remittance information (for example, customer account number and invoice number, to apply the payment correctly). The typical business must research 17 percent of the wires that it receives at the average cost of $35 per wire and 30 minutes of time.[9] Resistance to the adoption of standards arises from the large costs associated with enhancing internal systems and procedures relative to the small volume of international payments. Unlike domestic standards, cross-border message standards have to support multiple domestic rules and regulations before they can be adopted within a market. In addition the value of a standard is realized only when the specification is widely accepted. As a result, banks may be reluctant to make sizable investments to support such standards if they are uncertain that other banks are making similar investments to upgrade their systems.

3. Impact of regulatory requirements

The complex governance structures of these disparate payment systems – some public, some private, some operated as industry associations – only add to the challenge. Achieving coordinated change at an industry level is nearly impossible without government mandates. However, when government mandates occur, they tend to focus more on responding to crises (or preventing crises) than on promoting efficiency. The Patriot Act, Know Your Customer (KYC), Basel II, Sarbanes-Oxley, and Federal Financial Institutions Examination Council (FFIEC) rules governing credit card business practices – to name just a few recent regulations – have cost billions of dollars for banks, but produce little, if any, incremental revenues.

> *"We strive to adopt the most efficient and cost-effective practices in cross-border payments, but sometimes government regulations tend to stifle initiatives over safety and other regulatory issues."*
>
> *Senior Manager, Treasury Team, Samsung Corporation*

9 Association for Financial Professionals, AFP Wire Transfer Survey: Receipt of Remittance Information, October 2005.

Corporate perspective on cross-border payment inefficiencies

The inefficiencies that a bank experiences trickle down to corporates, resulting in higher direct and indirect costs. Often the indirect costs resulting from overall process inefficiencies can be more significant than the direct cost associated with the payment. In 2003 and 2004, the Federal Reserve Bank of New York conducted a survey of large non-financial U.S. businesses in order to identify the *most important* and the *least well-met* areas of payments processing.[10]

About 40 percent of the survey respondents noted that reducing the time needed to detect and resolve unauthorized debits, as well as reducing their frequency and associated financial losses, were very important or critically important to their firms and that current services were less than satisfactory. In addition, the respondents put high priority on reducing the time required to identify insufficiently funded debit transactions, receiving credit for overseas payments, and obtaining sufficient information to process an incoming payment. Companies also saw 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.[11]

The Federal Reserve study "Opportunities to Improve Payments Services" identifies the following five areas as very or critically urgent but still largely unmet by the existing payments systems:

- *Risk reduction: decrease or eliminate losses due to fraud, security lapses, or unrecoverable misdirected payments;*
- *Liquidity: collect revenues faster or time payments more precisely to increase access to funds and the amount of time a firm can use the funds;*
- *Processing efficiency: develop improvements to reduce the amount of time required to finish a task or the number of steps needed to complete a process, such as obtaining information or responding to inquiries;*
- *Explicit costs: minimize the out-of-pocket fees or investment expenses associated with a process; and*
- *Governance and infrastructure: establish fundamental building blocks of a well-functioning payments system, such as legal basis and operation by trusted parties.*

Inefficiencies of cross-border payments drive costs

Costs associated with cross-border transactions are related to various factors. Businesses tend to pay fees not only for international payments but also other explicit or implicit fees such as foreign exchange conversion. Moreover, various intermediaries are involved in the payment process, particularly through the widespread use of correspondent relationships. Consequently, the execution time for cross-border payments is substantially longer than for domestic payments, which increases the float cost (in the absence of value dating).

10 Sandy Krieger and Michele Braun, Opportunities to Improve Payments Services: Results from a Survey of Large Corporations, Federal Reserve Bank of New York, July 2004. The study asked businesses what they seek to achieve in each step of the process of making and receiving payments. The questions were intended to help corporates identify their priorities for improvements. The survey encompassed 733 U.S. nonfinancial firms with at least 10,000 employees, selected from a Dunn and Bradstreet database. The researchers then 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 the Federal Reserve Bank's online survey.

11 Sandy Krieger and Michele Braun, "Improving Business Payments by Asking What Corporations Really Want, " Current Issues in Economics and Finance, Federal Reserve Bank of New York, May 2005.

Payment Trends and Impact on Cross-Border Payments

The cross-border payments process is undergoing a period of profound change. Where transaction services provided by banks were value-added, they are now increasingly commoditized. Third-party services, such as Shared Service Centers (SSC), ERP systems, etc., are now providing value-added data that was provided by banks in the past.[12] Within companies, the treasury, liquidity management and risk management functions are integrated more closely to take advantage of new knowledge management technology as part of their drive for greater efficiency in an increasingly global environment.

Key trends impacting cross-border payments are:

1. *Transnational payment systems are growing*
2. *Government-led initiatives and mandates are increasing*
3. *Risk and liquidity usage are being closely managed*
4. *Multinational banks and corporations are expanding*
5. *Operational efficiencies are being sought through outsourcing*

12 Current Issues in Economics and Finance, Federal Reserve Bank of New York, May 2005.

Trend 1: Transnational payment systems are growing

While once there were only domestic payment channels in each country, we have witnessed the emergence of transnational systems such as TARGET, CLS (Continuous Linked Settlement), the Federal Reserve's International ACH Project, known as FedACH International and the proposed pan-European automated clearinghouse known as PE-ACH. On the other end of the spectrum, card systems such as those operated by Visa and MasterCard are truly global in scope and have been expanding from consumer based transactions into commercial payments for more than a decade.

Transnational systems have traditionally focused on providing payments within a region or to a small number of countries and usually support a single currency. Although none of these systems are yet global in scope, it is likely they will continue to expand their coverage to additional countries and currencies. Networks such as Visa and MasterCard are examples of global payment systems that also support multiple currencies, though they are primarily used for retail payments and ad hoc/T&E commercial transactions.

Recently, in countries like Switzerland and Hong Kong[13], new arrangements have been developed for the settlement of local payments in foreign currency. These arrangements neither fit perfectly in the traditional category of "correspondent banking" or in that of "payment systems". The main common characteristic of these arrangements or systems is that they do not settle in central bank money but across accounts held with a commercial bank and that they are based on clearly defined and transparent rules for payment activities. Compared to traditional correspondent banking, these new solutions are standardized and settle payments in real time with continuous finality.

In 1999, Swiss financial institutions established a cross-border solution in order to facilitate their cash management in euros. This solution involves a fully licensed bank in Germany, Swiss Euro Clearing Bank (SECB). To process euro transactions, SECB uses the euroSIC platform in Switzerland, which is often referred to as the euro payment system of Switzerland. EuroSIC is a replication of the Swiss franc RTGS system, Swiss Interbank Clearing (SIC). SIC and euroSIC are operated by Swiss Interbank Clearing AG. SECB is the settlement institution and shares the role of settlement agent with the operator SIC AG. SECB is also the liquidity provider in euroSIC. It extends intraday and overnight credit to the participants of euroSIC against collateral. SECB provides a link to the euro area, as it is a direct participant in RTGS^{PLUS} through which access to TARGET is established.

In Hong Kong, the U.S. dollar and euro clearing systems, USD CHATS (Clearing House Automated Transfer System) and Euro CHATS, were introduced in 2000 and 2003, respectively. They enhance the safety and efficiency of settling these foreign currencies in the local time zone. These systems are almost exact replicas of the Hong Kong dollar RTGS system (HKD CHATS). The key functions of both systems are to enable settlement of foreign exchange transactions between HK dollars, US dollars and euros in their respective currencies through a linkage with the Central Moneymarkets Unit (CMU) in Hong Kong.

13 Since July 1, 1997, Hong Kong has been a Special Administrative Region of The Peoples Republic of China. Under the "One Country, Two Systems" policy, Hong Kong retains its own currency.

The Hong Kong Monetary Authority has appointed the Hong Kong and Shanghai Banking Corporation as the settlement institution for USD CHATS and Standard Chartered Bank (Hong Kong) Limited as the settlement institution for Euro CHATS. Both institutions provide intraday liquidity to the direct participating banks by means of repos as well as overdraft facilities. One of the key benefits of both the US dollar and euro systems is the same day clearing of transactions.

Also driving transnational systems is the implementation of "straight through processing (STP)" standards for transfers between banks as well as between banks and customers. To ensure simultaneous and dependable deliveries, payment-versus-payment (PVP), delivery-versus-payment (DVP), and delivery-versus-delivery (DVD) processes have also been established.

The growth in transnational systems can improve the efficiency of cross-border payments by reducing clearing and settlement times, minimizing float. Better visibility of funds flows supports improved cash forecasting. Finally, standardized formats will reduce costly errors and repairs.

Case Study: Continuous Linked Settlement

A good example of a transnational system is Continuous Linked Settlement (CLS), created by a number of global banks for the simultaneous settlement of foreign exchange transactions. CLS eliminates the settlement risk in cross-currency payment instruction settlement through CLS Bank by linking central bank Real Time Gross Settlement (RTGS) systems. Settlement instructions for a particular date are exchanged and funds are requested to be transferred by CLS Bank during a five-hour window of overlapping business hours. Although CLS is a specialized system only for foreign exchange settlement and not corporate cross-border payments, it demonstrates the benefits of transnational systems.

Trend 2: Government-led initiatives and mandates are increasing

Cross-border payments are being subject to new requirements. Due to the recent drive towards anti-money laundering (AML) and combating financing of terrorism (CFT), the importance of cross-border payments has increased the role of such governmental agencies as the U.S. Treasury Department's Office of Foreign Assets Control (OFAC) as well as such multilateral efforts as the Financial Action Task Force (FATF), the Egmont Group of national financial intelligence units (FIUs), and the Wolfsberg Group formed by private financial institutions to combat money laundering and terrorist financing. These initiatives and mandates are impacting the way payments are being made. The costs of compliance can be significant for banks, especially because there may not be an offsetting revenue opportunity with corporates.

SEPA is a government-led initiative as defined by the European Payments Council that is having a significant impact on both banks and corporations that make euro-zone payments. Banks in Europe now have to invest significantly to adapt their payment infrastructures in order to achieve SEPA-compliance while developing a cogent strategy to take advantage of the new opportunities open to them through an integrated SEPA system throughout the euro area.

Government-led initiatives are focusing on the reduction of costs to the end-users, adoption of common payment standards, and reducing the ability of payment systems to be used for illegal means. Ultimately, this will translate into higher costs for banks that provide cross-border services. However, this leads to revenue opportunities for those banks that provide services to other banks.

Case Study: Single Euro Payments Area (SEPA)

SEPA supports the creation of a euro area where the differentiation between domestic and cross-border payments no longer exists. Today there are more than 15 retail payments systems in the euro area for the clearing and settlement of credit transfers and direct debits. Most of them have their own specific operating rules and technical standards. Industry estimates put the investment on the participating infrastructures at more than €8 billion over the next six years and revenue losses from falling fees for payment services at between €13 billion and €29 billion; however, market savings could range from €50 billion to €100 billion.[14] Substantial investments coupled with plummeting revenues should encourage banks to look for the maximum economies of scale and scope that the SEPA can offer. They should particularly focus on payments highways and on leveraging any investment they have already made in open and global platforms and solutions. This will mean rationalizing infrastructure and consolidating clearing and settlement mechanisms.

Trend 3: Risk and liquidity usage are being closely managed

Payment systems are subject to many risks, the most important of which are credit and settlement. Credit risk is the possibility that a party within the system will be unable to fully meet its financial obligations. Settlement risk is that a party will have insufficient funds to meet a financial obligation as and when expected, although it may be able to do so at some time in the future.

14 Peter Norman, "European Banking Reform Comes under Fire: Both Industry and Regulators Are Dissatisfied with Plans to Facilitate Cross-border Payments," *The Financial Times*, November 28, 2005.

In payment systems where payments are processed in real-time or in batches during the day, liquidity not only has end-of-day value but also intraday value. In both gross and net settlement systems, there is a clear relationship between liquidity usage and settlement delay. Typically, the more liquidity that is used, the speedier final settlement will be. If the costs of liquidity and delay are equal, the cost-optimal level of liquidity is likely to be that for which no payments are delayed. A delay in settlement reduces the sender's liquidity costs, but increases both its delay costs and the receiver's liquidity costs. Therefore, payment systems have to strike a balance between minimizing the liquidity cost and keeping settlement risk under control.

The mechanisms to balance risk and liquidity needs vary by system. Various stakeholders exert ongoing pressure to minimize settlement delay without fully impacting liquidity needs and vice versa. Improvements in both risk and liquidity management help drive down overall costs by reducing losses and freeing up excess capital used during settlement.

Case Study:
Two approaches to managing risk and liquidity

Liquidity usage and settlement risk management is significant to RTGS systems. The world's two premier RTGS systems, Fedwire and TARGET, have addressed the issues quite differently. Despite their differences, each system provides a similar trade-off between liquidity and settlement risk.

Starting in the mid-1980s, the Federal Reserve instituted important reforms aimed at controlling the use of Federal Reserve intraday credit by depository institutions seeking an inexpensive source of liquidity. The Federal Reserve Board of Governors imposed quantitative limits – or caps - on account overdrafts at Federal Reserve Banks in 1986 and a small fee on intraday credit in 1994. As a general matter, the majority of account overdrafts at Federal Reserve Banks are uncollateralized. Caps protect the Federal Reserve by limiting the settlement risk posed by any given institution.

TARGET takes a different approach to controlling settlement risk. It is a decentralized RTGS system consisting of the "interlink" of 15 national payment systems, together with the European Central Bank. The solution that was adopted allows system participants to borrow intraday funds at a zero interest rate. In the TARGET system, liquidity is provided by the individual central banks within the European System of Central Banks (ESCB). To protect the central banks from settlement risk, all intraday credit must be collateralized. This requirement raised the fear that the system would be too demanding in terms of collateral. To remedy this potential, a wide range of assets is eligible for collateral. The design of TARGET appears to work well. Access to liquidity has turned out not to be an issue and the ESCB is protected by the required collateral.

Trend 4: Multinational banks and corporations are expanding

Mergers and acquisitions have been the single biggest force reshaping the global payments landscape over the past two decades. The most recent round of consolidation has left a disparity between large and small never before seen. For example, we have witnessed the emergence of mega banks such as the combining of Bank of America and Nations Bank, as well as JP Morgan Chase combining Chase Manhattan Bank, Manufacturers Hanover Bank, Morgan Guaranty Trust and Bank One. In a scale-driven, technology-intensive business like payments, the emergence of true mega-players may lead to markedly different competitive dynamics.

Acting as their own transnational systems, large international banks such as JP Morgan Chase, Citibank, Bank of America, and Hongkong Shanghai Banking Corporation operate their own internal global payments networks. Through these, they can route payments to destinations in different countries. Such internal networks do not necessarily differentiate between domestic and cross-border payments as these flows are all within the bank.

The trend toward consolidation in the banking sector, both globally and in domestic markets, exerts influence on payment systems. Increased concentration of payment flows may have important credit, liquidity and operational risk implications. For example, the credit exposures that arise within a payments system that does not achieve intraday finality are likely to become concentrated on a smaller number of banks. Operational problems experienced by a single large bank could have significant repercussions for other participants in the system. A concentration of payment flows in commercial banks has emerged to reflect the increasing role that modern commercial banks, especially large global banks, have played in the payment systems around the world. The volumes and values settling across their books are, in some countries, quite substantial. Such traffic has often been accompanied by increased formalization of the correspondent relations within, as well as across, national boundaries.

Banks that achieve global economies of scale can further drive down per transaction costs and derive higher revenues by keeping payments within their own networks. For global corporations, it has allowed them to match their global needs with a handful of banks rather than managing a large number of local relationships.

Trend 5: Operational efficiencies are being sought through outsourcing

Traditional financial institutions, such as banks, are increasingly expected to focus on marketing existing and new products that are in line with their core competencies rather than expending efforts on conquering more repetitive back office tasks. The search for operational efficiency has led to the outsourcing of payment services clearing to third parties, which may be bank or non-bank entities. Banks have increasing recourse to such entities, allowing banks to specialize in the "sales function" (covering direct relations with clients, including account holding) while outsourcing "production function" such as the processing of payments and securities. Some experts worry about the regulatory vacuum in this area as some of these service firms are not banks and may not be regulated or supervised by government agencies.

Internal consolidation in payment functions within an individual financial institution also leads to the concentration of payment services to third parties. This evolution is in contrast with the traditional organization of major international banks, where payments business is distributed among their branches and subsidiaries abroad, each of them having responsibility for settlements in the local currencies. Large international banks now tend to concentrate most of their worldwide payments activities in one or a few processing centers.

Gaining operational efficiencies through outsourcing of non-core activities will improve the overall payments process. Outsourcing will allow many banks to reduce operational costs as well as offer additional products that could not otherwise be provided. The downside of outsourcing may be that a bank loses the ability to rapidly change product offerings that they do not develop and manage.

Conclusion:

As markets become increasingly global, pressure mounts to fulfill the funds transfer requirements of corporates, the financial institutions that serve them, and the payment systems that enable the payments. The volume and velocity of cross-border payments is made all the more complex by the differing standards of domestic payment systems, increase of international regulations and the changing landscape of emerging transnational and global systems. Market pressures and the expansion of multinational banks and businesses are driving the search for operational efficiencies. Improvement in the efficiency and effectiveness of cross-border payments is likely, but all stakeholders are being required to increase investments to change the processes and systems of corporates, banks and payment systems.

Questions for Management

As cross-border payment volume increases, and corporations and governments demand process improvements, banks will face increasing pressure to address the remaining inefficiencies of cross-border payments. In order to begin this process, banks should consider the following:

What is the size and scope of your cross-border payment operations?

The cost of establishing an efficient cross-border payment process from the ground up may be cost-prohibitive for all but the largest banks. Banks need to fully understand the costs associated with cross-border payments.

Are you maximizing your investments in existing payment systems?

There may be an opportunity to harness well-established international payment systems to increase the efficiency and reduce the cost of cross-border payments for you and your customers.

Does your bank have a strategy for determining what products and services should be kept in-house and what should be outsourced?

When deciding how to support a breadth of products and services, decisions should be based on a number of factors including strategic importance, revenue projections and cost considerations.

Are there hidden costs in your bank's payment process?

Banks should consider analyzing all payments across the various instruments, with a special focus on the cross-subsidies that characterize the current payments landscape.

Do revenues reflect the true market value of your products?

Banks may benefit from a better understanding of what their clients need and how they value the services provided to them.

How can your bank integrate throughout the supply chain process to avoid commoditization of payment?

Banks may benefit from working more closely with payment systems and key alliances by providing value-added services to clients that are being delivered by non-bank solution providers today.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Appendix

Payment system types

To date international payments have been, to a large extent, based on correspondent bank operations. The traditional approach to processing payments was end-of-day net batch processing. Today, batch systems operate with settlement cycles as short as every 30 minutes, known as deferred net settlement systems (DNS). Thanks to real-time processing capabilities, however, payments can now be processed individually and immediately, with such a trend expanding from large-value transfers to retail payments in response to customer service requirements and the growth of e-commerce. Real-time payment systems fall into two groups: the real-time gross settlement systems (RTGS) of central banks and continuous net settlement systems (CNS).

RTGS: volume is growing but it is difficult to implement for all cross-border payments. RTGS has certain characteristics that made it challenging to implement for cross-border payments:

- Run by central banks
- High liquidity needs

	Value Transfer	Funds Settlement Timing	Liquidity Needs
RTGS	Immediate	Immediate	High
CNS	Immediate	End of day	Variable
DNS	End of cycle	End of cycle	Low
Hybrid	Varies by system	Varies by system	Varies by system

RTGS systems eliminate the counterparty credit risk present in DNS systems by requiring participants to settle all individual payments instantaneously on a gross basis in real-time. However, this credit risk reduction comes at the cost of a requirement for potentially expensive intraday liquidity. Central banks have sought to reduce liquidity costs for settlement banks, for example by providing collateralized intraday liquidity and good system design. Even so, intraday liquidity in RTGS systems is not free and unlimited.

An important determinant of the liquidity efficiency of an RTGS payment system is the extent to which the system design gives settlement banks an incentive to manage their payments in an efficient way. In an RTGS system, one bank's payments are a source of intraday liquidity for the recipient bank, which it may then subsequently use to make its own payments. With payments settled on a real-time gross basis, banks' liquidity needs under RTGS are greater than those under DNS. If banks recycle liquidity sufficiently quickly, however, the aggregate requirement for intraday liquidity under RTGS can be similarly reduced.

CNS: CNS systems can be considered private RTGS systems that normally settle at end of day in RTGS systems. However, these systems often use various kinds of swap or liquidity injection methods to reduce their internal risk positions. Sometimes private systems can autonomously settle using central bank RTGS systems. In such cases, the private system transfers central bank liquidity into a separate account held by the central bank or the system itself on behalf of the clearing parties. All transactions are then booked on these accounts. Examples of CNS systems with RTGS interfaces are the CLS used for real-time settlement of foreign exchange trades and CHIPS in the U.S. and France's PNS (Paris Net Settlement System).

DNS: In a deferred net settlement system, fund transfers are settled on a net basis according to the rules and procedures of the system. A participating bank's net settlement position, which is calculated on either a bilateral or multilateral basis, is the difference between (1) all the transfers that it has received up to a particular point in time, and (2) all the transfers that it has sent. The position can be either a net debit or a net credit. Most net settlement systems are now primarily multilateral in nature. Settlement occurs at one or more pre-specified settlement times during the day. Examples of DNS systems are BACS in the U.K., ACH in the U.S.A. and Visa.

Hybrid Systems: In true real-time processing, the liquidity need is fixed by the processed payment flow so it cannot be influenced. In fact, the liquidity need can be smoothed by deferring payments through a queue system and by netting queued payments between banks with opposing queued payment flows. This situation also gives the possibility to save interbank settlement liquidity when all payments do not require immediate processing. This has resulted in the emergence of a third group of systems, hybrid systems, which combine features from real-time and deferred net settlement systems. Most large-value payment systems currently operated by central banks such as Fedwire and TARGET are RTGS systems, but they continually acquire an increasing number of hybrid features for preserving liquidity, optimizing the use of liquidity and resolution of gridlock situations.

A survey of major systems facilitating cross-border payments

American Express: is a publicly traded company that issues charge and credit card products both directly and through nearly 100 financial institutions around the world. American Express had $484 billion in global sales in 2005.[15]

CHAPS (Clearing House Automated Payment System): CHAPS, established in 1984, is the United Kingdom's high-value payment system, consisting of two systems: CHAPS Sterling and CHAPS Euro, which provide settlement facilities for sterling and euro payments, respectively. Over a dozen large banks and building societies are "direct" or settlement members, while there are also over 400 "indirect" members – typically smaller banks and building societies – who have access to the system through a settlement member.

CHIPS (Clearing House Interbank Payment System): CHIPS is a bank-owned, privately operated, real-time, multilateral electronic payments system that transfers funds and settles transactions in U.S. dollars. CHIPS began operations in 1970 with 9 participating banks and, as of mid 2006, it processes about 300,000 payments a day with an average daily amount of $1.5 trillion. It currently has 46 participants from 19 countries around the world, including large U.S. banks and U.S. branches of foreign banks. The payments transferred over CHIPS are often related to international interbank transactions, including the payments resulting from foreign currency transactions (such as spot and currency swap contracts) and Euro placements and returns.

CLS (Continuous Linked Settlement): The CLS system is the private sector response to a G-10 strategy to reduce foreign exchange settlement risk. CLS was founded in 1997 to create the first global settlement system, eliminating settlement risk in the foreign exchange market. Formed in response to regulatory concern related to the temporal and systemic risks (Herstatt risk) associated with foreign exchange transactions, CLS simultaneously settles both sides of foreign exchange trades using a multi-currency payment-versus-payment (PVP) mechanism. CLS is a unique real-time process enabling simultaneous foreign exchange settlement across the globe, eliminating the settlement risk caused by delays arising from time-zone differences. CLS settles well over $1 trillion per day, accounting for a substantial majority of cross-currency transactions across the globe.

15 http://ir.americanexpress.com/phoenix.zhtml?c=64467&p=irol-reportsAnnual

Eurogiro: owned by 16 banks/postal financial service companies, is an electronic payment network for postal and giro (postbank) organizations that exchange cross-border credit transfers and cash-on-delivery orders. Established in 1989, Eurogiro has more than 40 participants from 37 countries in Europe, Asia, Africa, South America and the U.S. Members act as correspondents for one another and hold reciprocal accounts with each other to execute payments.

EURO1: a private sector-owned high-value payment system, operated by the EBA Clearing Company for cross-border and domestic transactions in euro between banks operating in the European Union, and it is the largest of Europe's four large-value, net settlement systems, processing on average 170,000 payments a day with a total value of about €170 billion. Launched in 1998, EURO1 was developed to provide an efficient, secure and cost-effective infrastructure for large-value payments in the new single currency environment of the EU. EURO1 is based on state-of-art messaging infrastructure and computing facilities supplied by SWIFT.

FedACH International Services: This international gateway arrangement service is owned and operated by the Federal Reserve System. Currently, the Federal Reserve Banks offer a suite of FedACH International Services as part of FedACH Services and provide U.S.-originating depository financial institutions with the ability to send international non-time-critical payments via the same process used to send domestic transactions for many decades. FedACH International Services offer an integrated, uncomplicated method to ensure straight-through processing (STP) of cross-border transactions, using NACHA formats that are supported by most software vendors.

Fedwire (Federal Reserve Wire Network): This is a high-speed electronic network through which the U.S. Federal Reserve provides the Fedwire Funds Service, the Fedwire Securities Service, and the National Settlement Service. The Fedwire Funds Service provides an RTGS system in which more than 9,500 participants initiate funds transfers that are immediate, final, and irrevocable when processed.

LVTS (Large Value Transfer System): The fully electronic LVTS, Canada's real-time gross settlement system, became operational in early 1999. As Canada's wire payment mechanism, it facilitates the electronic transfer of Canadian dollar payments across the country in real-time. Canada's national payments system has been operated by the Canadian Payments Association (CPA) since 1980.

MasterCard: is a publicly-traded company that operates a global payment system. In addition to the MasterCard brand, the Maestro and Cirrus brands are also part of the company. MasterCard branded cards generated $1.7 trillion in global sales in 2005.[16]

RTGS^{PLUS}: is the German Bundesbank's new liquidity-saving RTGS, which became operational in November 2001. It combines the risk-reducing benefits of gross settlement of the former German RTGS system known as the Euro Link System (ELS) with the advantages of liquidity-saving processing of the former hybrid system known as Euro Access Frankfurt (EAF).

SWIFT (Society for Worldwide Interbank Financial Telecommunications): SWIFT is an industry-owned limited liability cooperative that supplies secure messaging services and interface software for financial transactions to more than 7,650 banks, securities brokers and investment managers in more than 200 countries.

SWIFT payment messages are processed by the Financial Information Network (FIN), which operates on a secure IP network called SWIFTNet. SWIFT is integrating into the ACH market segment as a payment service provider via its FileAct messaging service. ACH networks such as the EBA Clearing Company and the South African Automated Clearing Bureau are already using SWIFT's messaging platform.

16 http://www.mastercard.com/us/company/en/docs/Corporate%20Overview.pdf

STEPS (Straight Through Euro Payment System): The STEPS program was launched by the Euro Banking Association (EBA) to offer a full range of euro payments across Europe. STEPS has evolved into two systems aimed at accommodating a broad base of processing needs within the European Union: STEP1 (a pan-European system designed to process single cross-border, low-value retail payments) and STEP2 (a pan-European ACH for bulk/high volume, low-value, cross-border and domestic interbank payments).

STEP2: a pan-European ACH solution, is a joint venture between the EBA and Italy's ACH operator SIA. STEP2 processes high-volume, commercial and retail payment orders sent to the system via files through a secure network. Characteristics of payment orders that are processed via STEP2 are commercial and retail transfers in euro that are formatted to agreed technical standards. Accessible through SWIFTNet, STEP2 offers payment processing and settlement in euro.

TARGET (Trans-European Automated Real-time Gross Settlement Express Transfer): The Eurosystem, which comprises the European Central Bank (ECB) and the national central banks (NCBs) of the 12 EU member states which have adopted the euro, has created TARGET for large-value payments in euro. The TARGET system is a "system of systems" composed of the national payment systems of 16 of 25 countries that are currently members of the EU, the ECB payment mechanism (EPM) and an interlinking mechanism that enables the processing of payments between the linked systems.

TARGET2: The current structure of TARGET was decided on in 1994 and was based on the principles of minimum harmonization and interconnection of existing infrastructures. This was the best way of ensuring that the system would be operational from the very start of the European Economic and Monetary Union (EMU) in 1999. TARGET2 is an enhanced version of the current TARGET incorporating technical consolidation, a single system-wide pricing structure for domestic and cross-border payments, a harmonized service level, and the system-wide pooling of available intraday liquidity. The go-live date for TARGET2 is set for November 19, 2007, with gradual migration to the new system by the member states in four waves. All central banks participating in TARGET2, together with their national banking communities, are expected to be using the new system by May 2008.

Visa: is a private, membership association jointly owned by more than 20,000 member financial institutions around the world. Visa develops common standards and specifications to facilitate commerce and provide member financial institutions with the global payment platform to support transactions on 1.46 billion cards that generate more than $4.3 trillion in global transactions in over 160 countries.[17]

Voca: was formed in 1968 and was known as the "Bankers Automated Clearing System" or BACS which is similar to ACH in the US. BACS changed its name to Voca in 2004. Voca is one of a number of domestic ACH-type systems in Europe and owns the BACS infrastructure that processes the majority of non-RTGS, non-card, electronic credit and debit payments for B2C, C2B and B2B in the UK. VOCA performed 5 billion transactions in 2005.

17 www.visa.com

Selected government entities influencing cross-border payments

Bank for International Settlements: Based in Basel, Switzerland, the Bank for International Settlements was established by the Hague agreement of 1930 as an international organization of central banks. The Bank for International Settlements seeks to make monetary policy more predictable and transparent among its 55 member central banks. While monetary policy is determined by each sovereign nation, it is subject to central and private banking scrutiny and potentially to speculation that affects foreign exchange rates and especially the fate of export economies. Banking services are provided, but only to central banks or to international organizations like itself. Basel II which began in 2001 focuses on minimum capital requirements, supervisory review and market discipline to promote greater stability in the financial system.

FATF (Financial Action Task Force): FATF on Money Laundering is a 33-member organization established by the G-7 Summit in Paris in 1989 with primary responsibility for developing worldwide standards for AML and CFT. It works in close cooperation with other key international organizations, including the IMF, the World Bank, the United Nations, Bank for International Settlements, and FATF-style regional bodies (FSRBs), most of which participate in its meetings as observers. FSRBs include the Asia Pacific Group on Money Laundering (APG), the Caribbean Financial Action Task Force, the Offshore Group of Banking Supervisors, and the Organization of American States.

FinCEN (Financial Crimes Enforcement Network): FinCEN's mission is to safeguard the financial system from the abuses of financial crime, including terrorist financing, money laundering, and other illicit activities. It administers the Bank Secrecy Act of 1970, which authorizes the reporting and recordkeeping obligations with respect to financial transactions for law enforcement purposes. Since its creation in 1990, FinCEN has worked to maximize information sharing among law enforcement agencies and its other partners in the regulatory and financial communities to combat illicit finance. As the United States' financial intelligence unit (FIU), FinCEN links to a network of over a hundred similar FIUs around the world, sharing information to pursue investigations.

OFAC (Office of Foreign Assts Control): is charged with administering and enforcing U.S. economic and trade sanctions based on foreign policy and national security goals. OFAC currently administers roughly 30 programs that target terrorists, rogue countries and regimes, narcotics traffickers, WMD proliferators, and other illicit economic and national security threats. OFAC is the successor to the Office of Foreign Funds Control, which was established at the advent of World War II. OFAC's expertise in administering sanctions has made it a model for other countries throughout the world.

SEPA: The Eurosystem has a vision for the SEPA – a euro area in which all payments are domestic, where the current differentiation between national and cross-border payments no longer exists. This means that the SEPA project not only aims to improve the efficiency of cross-border payments, but also aims to develop common instruments, standards, procedures and infrastructures in order to foster substantial economies of scale. Within the SEPA, customers will be able to make payments throughout the whole euro area as efficiently and safely as in the national context today. The SEPA is a natural consequence of the introduction of the euro. The ultimate objective with regard to direct debits is that all euro area direct debit transactions be processed in accordance with the SEPA scheme.

TFFC (Terrorist Financing and Financial Crime): acting as the policy development and outreach office for TFI, TFFC collaborates with the other elements of TFI to develop policy and initiatives for combating money laundering, terrorist financing, WMD proliferation, and other criminal activities both at home and abroad. TFFC works across the law enforcement, regulatory and intelligence communities and with the private sector and its counterparts abroad to identify and address the threats presented by all forms of illicit finance to the international financial system. TFFC advances this mission by promoting transparency in the financial system and the global implementation of targeted financial authorities.

TFI (Office of Terrorism and Financial Intelligence): The United States established TFI in April 2004 as part of the U.S. Treasury Department in order to marshal the Treasury Department's intelligence and enforcement functions with the twin aims of safeguarding the financial system against illicit use and combating rogue nations, terrorist facilitators, WMD (weapons of mass destruction) proliferators, money launderers, drug kingpins, and other national security threats. TFI comprises the Office of Terrorist Financing and Financial Crimes (TFFC), Office of Foreign Assets Control (OFAC), and Financial Crimes Enforcement Network (FinCEN), among others.

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