

**GLOBAL ELECTRONIC FUNDS TRANSFER BETWEEN SMALL AND
MEDIUM SIZED COMPANIES**

by

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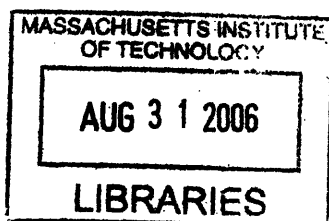
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Global Funds Transfer Between Small and Medium Sized Companies

By Shawn Eric Stovall

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Abstract

Cross-border electronic funds transfer is a rapidly expanding field for business and consumer payments. Large multi-national corporations have been able to invest the capital necessary to create infrastructures or work with banking institutions to facilitate payments in the past, but small and medium sized companies were limited in their ability to utilize electronic payment systems. The growth of global business has created a need for effective payment systems for the many small and medium sized companies. The evolution of the industry is dependent on the convergence of business, technology and government regulation in order to succeed. This paper provides an overview of global funds transfer and future trends in the context of both business and consumer payments.

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Introduction

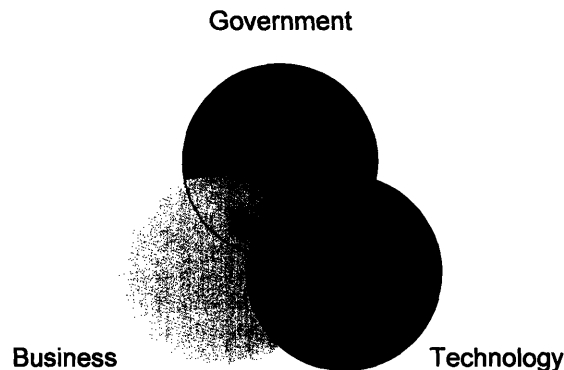
The growth of electronic funds transfer (EFT) or electronic payments across borders is a rapidly expanding segment of the financial industry. The universe of payments encompasses everything from consumer-to-business micro-payments or credit/debit card enabled payments to business-to-business invoice presentment and payment. Additionally, there has been tremendous growth in consumer-to-consumer payments in the form of remittances. According to the Federal Reserve Bank of the United States, “electronic payments are on the increase in the consumer-to-business sector and they are predicted to become more commonplace in the business-to-business sector over the next decade.”¹

In many countries, small and medium size companies or enterprises (SMEs) compose a significant component of the economy. In the U.S., SMEs “account for almost 97 percent of U.S. exporters, but still represent only about 30 percent of the total export value of U.S. goods (\$1.1 trillion in 2005)...and nearly two-thirds of small and medium-sized exporters only sell to one foreign market,” leaving room for substantial growth.² The growth is dependent on user’s access to and use of systems for electronic payments. As the world becomes more connected through the internet and more business takes place across borders, the capability of these systems to operate seamlessly across borders becomes critical for competing in a global economy.

¹ Federal Reserve Bank. Payments Report, 2004

² http://www.export.gov/comm_svc/press_room/fact_sheet.html, U.S. Commercial Service

This research paper examines the current and future market of EFT's and related services through the identification of needs and solutions among users and payment systems to forecast what trends may be emerging. The methodology will include primary research consisting of interviews with industry experts and secondary research for the latest information available from SEC filings, on-line periodicals and databases. A framework for payment systems and users will be introduced in Chapter 1. In Chapter 2, issues related to technology are brought forth. Chapter 3 deals with government and regulatory concerns. And, Chapter 4 proposes some future trends in the evolving market for payments.

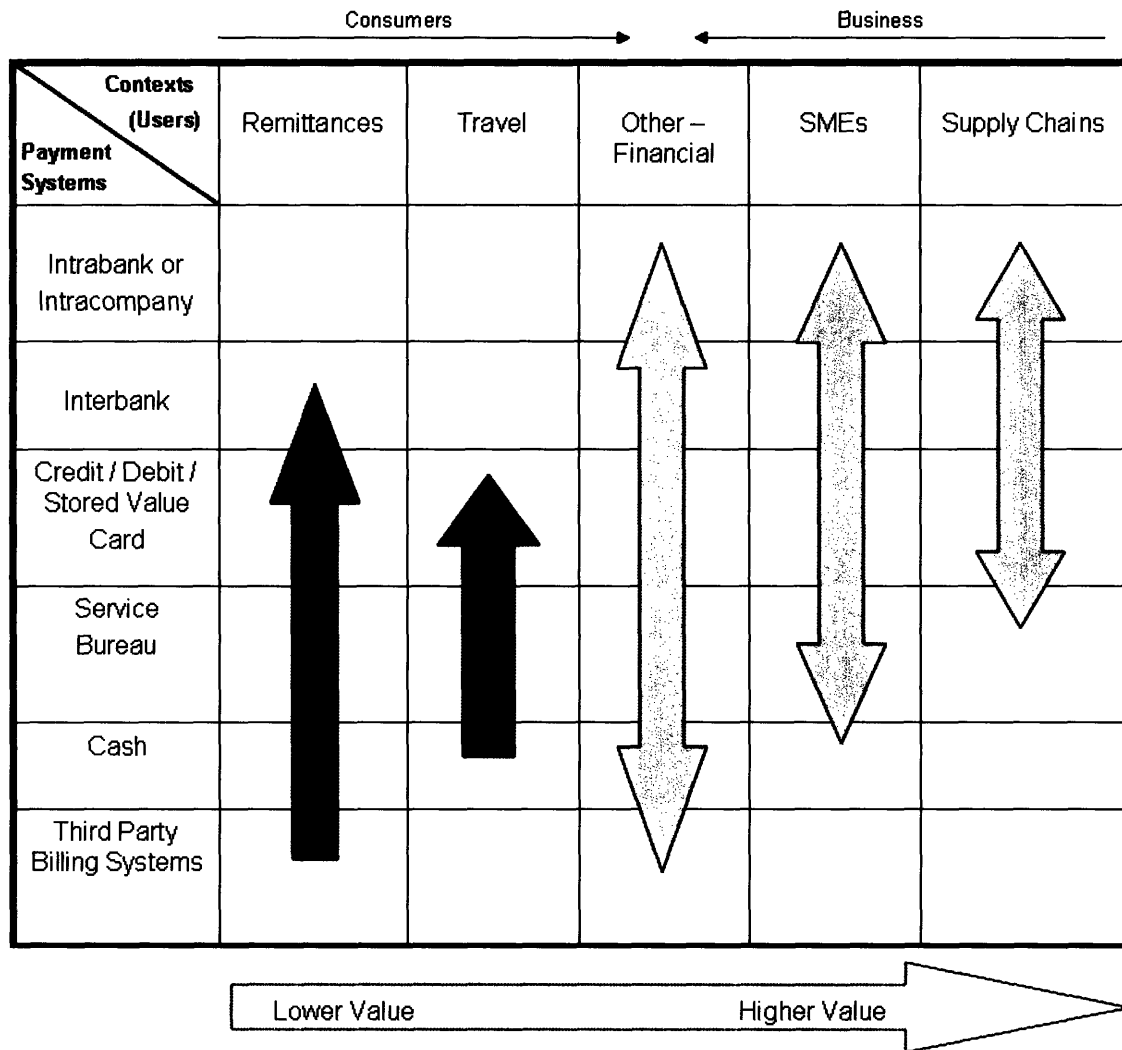


The landscape for EFT is rapidly changing due to dynamics in business, technology, and government regulation. A closer look at these three components demonstrates the needs and solutions of businesses and consumers, the drivers of change, and the opportunities that are being created. However, it is the convergence of all three parts that will ultimately advance the field of EFT and payment transactions over the next 5-10 years.

Chapter One - Business

The business of payments consists of payment systems and the contexts in which they are used. The following framework provides an overview of users and the payment systems that are usually affiliated with them (Figure 1).

Figure 1. Payment Systems and Users



Contexts or Users are listed across the top of the table, from consumer oriented to business oriented and down the left side of the table are categories of payment systems. For the consumer end of the table the payments would likely be low value and moving to the right towards business users, the high value payments emerge. In the U.S., there is no formal definition of the dollar amounts of low value vs. high value, but in the EU, low value payments are below \$5,000 Euro. The vertical arrows provide general idea of the payment systems that users will typically utilize. Users of remittance, travel and other financial services may tend to migrate toward a fewer number of payment systems, whereas users such as SMEs and supply chains utilize more variety in payment systems.

Payment Systems

Payment systems are infrastructures by which the conveyance of value or currency is facilitated. In the 1980's, large companies began implementation of proprietary electronic data interface (EDI) payment systems. These large mainframe systems had narrow capabilities and were limited to the use of companies and their affiliated vendors that could afford them. During the internet boom of the late 1990's, there were abundant predictions about which technology or payment platform would immediately displace the use of legacy EDI systems and paper checks. Indeed, those forecasts appear to have been an optimistic view of the rate of change and the desire to change for which the world was capable. Many companies were created to capitalize on the electronic payments space during that time, only to have their business model abandoned or drastically modified when the technology markets faltered in 2000. A few companies remain and some have merged or have been acquired, yet others have

morphed into very different businesses. Conceptually, some of the ideas were good, but were simply ahead of their time. In today's business climate, a healthy mix of optimism and caution prevails.

Investing in new technologies and infrastructures is an expensive endeavor for payment system providers and the companies that use them. Post-dotcom boom, financial institutions and companies found themselves playing a waiting game for a dominant platform to arrive. Thus, they placed themselves into a permanent holding pattern. An unwillingness to make long term commitments to a particular system or set of proprietary standards stifled progress. The result of the dotcom failures and subsequent wait-and-see attitude is a fragmented market fraught with inefficiency. It is the inefficiency that does present new opportunities in the EFT and payments space.

Banks

Banks have provided EFT services for years, but for large corporate customers, large dollar transactions and high fees. Services were inaccessible or impractical for SMEs. The banks had access to external networks such as ACH or SWIFT, to be discussed in Chapter 2.

Some of the large, multi-national banks conduct many of their global transfers on their internal system, known as "clearing on their own books," which minimizes exposure to exchange and settlement risks, provides a clear transaction history for their auditing and compliance needs and helps provide better service to retain their customers.³ Also, when banks utilize external EFT networks, they receive a smaller share of the fee

³ Interview, Moti Porath, Fundtech, December 2005

revenue. Changes in the banking industry are forcing banks to look to new sources of revenue. Banks are attempting to provide solutions to their SME customers through portals that are now coming on-line and paving the way for simpler initiation and verification of EFTs. Wachovia Bank of North Carolina has introduced their portal, which consists of software from Fundtech.⁴ Citibank launched a portal in 2004 and ABN Amro Bank completed beta testing of its portal for global payments in 2005.

Large multi-national corporations, whenever possible, also utilize some form of internal or intra-company method of transferring funds between business units operating in separate countries that allows them more flexibility in their treasury and cash management operations. Unfortunately, most SMEs don't have this capability, so they have to look for solutions from payment system providers.

More companies are making bank acquisitions or taking on "bank-like" roles by utilizing in-house payment systems or by partnering with providers through business-to-business gateways. The payments industry is going beyond the capabilities of traditional banking. Wal-Mart's recent attempt to acquire a bank to process its own credit card payments is a good example.⁵ Wal-Mart had tried two times previously to make a bank acquisition in other states. Although banking laws have been relaxed, Wal-Mart has not yet been successful in their attempts. Generally, the public is skeptical about Wal-Mart's intentions, afraid that it may gain too much purchasing influence for customers seeking/using credit. Wal-Mart asserts that it is simply a move to help them integrate credit card processing into their already powerful information technology system.

⁴ Sibos Conference Proceedings, Copenhagen, Denmark, September 2005

⁵ Leonhardt, David, Banking at Wal-Mart – The History of the Issue, New York Times, March 14, 2006

A slightly different scenario involves United Parcel Service (UPS) setting up a new division called UPS Capital Corp. to provide financial services such as receivables purchasing (trade finance) and equipment leasing to its global clientele. UPS Capital, however, was successful in acquiring a bank. When asked why they acquired the bank, they responded that, “it was to have faster, better information about SME customers that they were lending to.”⁶ UPS has extensive IT infrastructure in place and they identified several ways to leverage off their capabilities, which included a customer information database that contained detailed information on shipping habits.⁷ As relationships with customers developed, UPS discovered additional services it could provide its customers.

Credit/Debit/Stored Value Cards

Credit, debit and stored value cards are almost synonymous with cash and their use has increased dramatically. For example, in the UK, debit card use was up 14% in 2005 to £171 billion and consumer spent £295 billion on credit cards compared to £272 billion in cash.⁸ These products offer users the safety of carrying less cash and relinquish them from needing to carry a checkbook. As the traditional credit card business in many developed countries has become a slow growth, highly competitive industry, issuers are looking for new opportunities for expanding market share. Both Mastercard and Visa have succeeded in utilizing their existing credit card and debit payment networks for international consumer transactions and are now competing to command serious market percentages of the business-to-business space with Visa Commercial Solutions and

⁶ UPS Presentation and Discussion with UPS Director of Strategy, MIT Sloan, September 2005

⁷ Ross, Jeanne. Case Study - United Parcel Services: Delivering Package and E-Commerce Solutions., Center for Information Systems Research, Sloan School of Management, MIT. August 2001. p. 6.

⁸ Blakely, Rhys. Debit Cards Overtake Cash on the High Street, The Times, April 18, 2006

MasterCard's Multinational Corporate Program.⁹ American Express has gradually increased its presence in the business-to-business sector with OPEN, its platform for SMEs and now they are increasing their reach to consumers by offering a service that allows consumers to pay all of their bills with the card.

Service Bureaus

Examples of consumer oriented service bureaus, often focused on low value payments, include Western Union and PayPal. PayPal, the payments division of eBay, Inc., facilitates commerce between buyers and sellers on the eBay auction internet site and beyond. PayPal uniquely blends payment methods by facilitating credit card and bank account draft transactions. Paypal offers payment customers the ability to draft from their bank account or through, as the majority do, credit card transactions. The latter option presents two problems – reliance on the credit card company and limited credit card use/acceptance in emerging countries. Visa, for example, can perform the same basic transaction, thus they are in the position of being both facilitator and competitor. The card companies can charge fees that can get expensive for merchants or SMEs who utilize PayPal for money transfer. However, when the additional risks of cross-border transactions are taken into consideration, the fees may be justified up to a point. Credit cards are non-existent or used infrequently in some emerging countries and perhaps curtail first mover advantages for credit card based payment systems. The bank draft option may help in this regard, but in all likelihood, banking services in emerging countries may be limited due to lack of connectivity to an EFT network.

⁹ Visa Commercial Solutions from <http://corporate.visa.com/md/fs/commercial/commercial.jsp> and MasterCard Multinational Corporate Program from http://www.mastercardbusiness.com/mcbizdocs/corporate/multinational/multinational_program.html

The reach of PayPal is tremendous, customers can send or receive payments denominated in U.S. dollars, British pounds, Euros, Canadian dollars, Japanese yen, Australian dollars, and within the People's Republic of China for residents in renminbi.¹⁰ Credit card customers can send payments to 55 markets, and to receive payments in 42 of those markets. In 25 of these 42 markets, customers can withdraw funds to local bank accounts, and in 8 of these markets customers can withdraw funds by receiving a bank draft in the mail.¹¹ In April 2006, PayPal introduced a mobile payment option, Text to Buy, that provides users the option of sending a text message to PayPal requesting an electronic payment for the purchase of a product or send money to a friend. PayPal then calls back with a confirmation and users enter a PIN number to complete the transaction. The content of the text message for purchases requires a product code which may pose a difficulty for users to locate or enter if the code is a long, combo alpha-numeric or small print code. As new phone technology enters the market, the phone may be able to scan a bar code or an RFID tag. An important aspect of the PayPal system stated in the press release announcement is that their, "customers have already entrusted their personal and financial information to PayPal," and this type of relationship with customers instills confidence and may help accelerate adoption.¹²

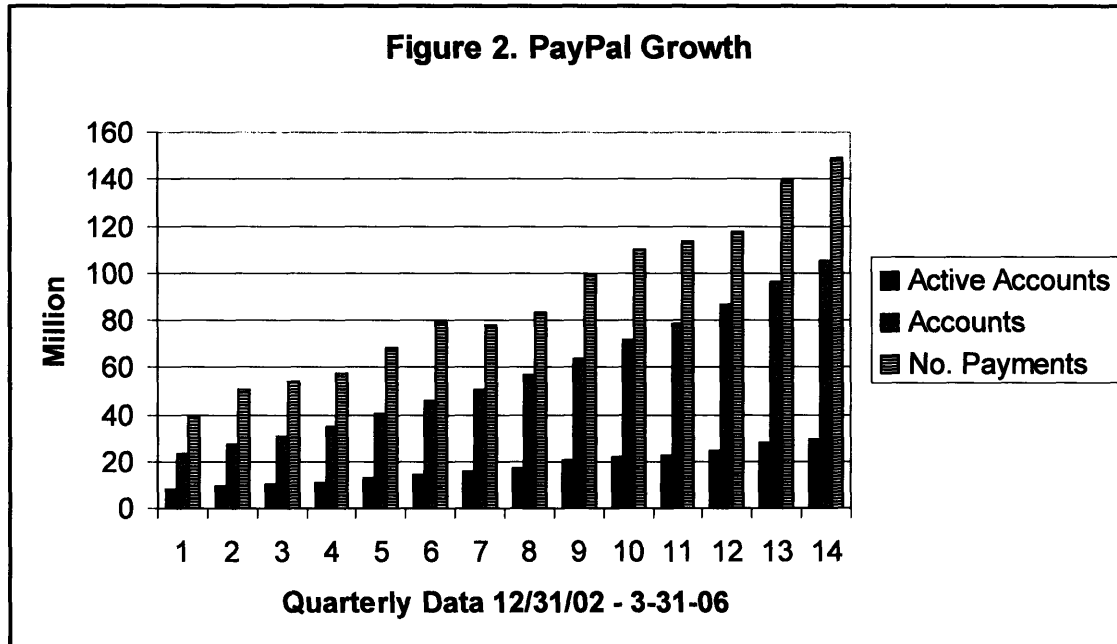
PayPal is experiencing substantial growth both internationally and domestically. The data for the 3 months ending March 31, 2006 indicates that the number of active accounts that sent or received at least one payment was 29 million and that PayPal had a total of 105 registered accounts. Net revenues from payment transactions in 2005 were

¹⁰ eBay, Inc. 10-K for the fiscal year ending 12/31/2005

¹¹ eBay, Inc. 10-K for the fiscal year ending 12/31/2005

¹² <http://www.shareholder.com/paypal/releaseDetail.cfm?ReleaseID=192226&Category=US>

\$1.03 billion, a 47% increase over 2004. In 2005, PayPal processed 481 million transactions with a total payment volume of \$27.5 billion.¹³ At the end of March, 2002, their average transaction amount was \$52.04 and at the end of March 2006 it had increased to \$58.77. The following chart indicates the growth in their payments business.



Contrasting the growth in revenues of the payment sector of PayPal, is the growth in risks associated with money transfer which include fraud, foreign exchange rate exposure, and regulation. These concerns are not trivial and require careful management by PayPal staff. Credit card companies monitor fraudulent payment transactions and can adjust fees or refuse to honor payments if losses from fraud become excessive.

Service bureaus for business-to-business users include companies such as Fundtech, PaymentTech, and First Data who white-label services on contract or provide software or consulting services. Fundtech operates by connecting networks, pooling or

¹³ eBay, Inc. 10-Q dated 4-2006

aggregating payments and offering a wide variety of services including consulting and software for cash management, securities transfer, and payments. These companies may offer ‘branded’ services to large and medium sized banks and financial institutions for which they provide treasury services, back office processing, and compliance management. The need for compliance management services by business users is growing and more details are in Chapter 3.

Other service bureaus have carved out a niche for themselves as EFT providers. An example is [fintech.net](http://www.fintech.net), a company that provides payment solutions for convenience stores, restaurants and grocery stores who handle regulated goods such as alcohol, fuel and cigarettes that require additional record-keeping and compliance with local, state, and federal regulations.¹⁴

Third Party Billing Systems are worth mentioning because they consist large scale, high capacity billing platforms already in existence that have the potential to provide an almost instant billing infrastructure for payment systems. Telephone and electric utility companies seeking to utilize their billing capabilities for consumer payment transactions fall into this category. Cash cannot be forgotten as a payment system, but it has limitations in cross-border SME transactions. The cost of cash handling, risk of counterfeiting, and theft all increase with cash economies.

Greater accessibility, more participants and an increase in payment options are fueling the growth of the EFT market. The historical fee-based structures are becoming commoditized, competition among providers to meet the needs of users is intensifying

¹⁴ <http://www.fintech.net/corp/company.asp>

and non-bank intermediaries are entering the market with hopes of becoming a dominant player.

Why Have Some Payment Systems Failed?

During the 1998-2000 timeframe, entrants into the payments space tried to be everything to every company. Ebullient optimism fueled substantial investment into many payment systems, all with a vision of being the ultimate payment platform. In the early stage, visionaries depicted a world of electronic payments floating seamlessly across the internet between consumers, businesses and governments. Many of these companies disappeared with the technology bubble that deflated in 2000. It became apparent that the needs of the business-to-consumer market differed greatly from the needs of the business-to-business market. The few companies that survived have morphed their start-up business model into something different, focused on niche markets or have drastically reduced the number of services they provide.

Merged, Acquired, or Defunct

Dotcom vintage companies such as Cybercash and Billpoint were acquired by other companies. Cybercash was sold to Verisign for \$20.4M in 2001 and in November 2005, Verisign sold their entire payment gateway, including Cybercash, to eBay. Billpoint was eBay's first attempt at streamlining its on-line payment system. eBay purchased Billpoint in May 1999 and subsequently developed partnerships with Wells

Fargo Bank and Visa, but the payment system never caught on with eBay users.¹⁵ In late 2002, when eBay acquired PayPal for \$1.5B in stock, it agreed to shut down Billpoint.

Peppercoin, a company focused on micro-payments, has raised a large amount of capital over its five year history and recently saw its CEO-Founder leave. Citibank's c2it service, similar to PayPal, was closed on November 9, 2003. Checkfree ceased taking payments for auction on October 20, 2005. Yahoo!'s PayDirect ceased operations on May 15, 2005. In June 2005, it was rumored that a Google payment service was in development that would rival PayPal.¹⁶ In February, 2006, Google officially disclosed that it was working on a payment system for its users, but it was unclear whether or not the system would only offer transfer services for advertisers and users or would allow users to send payments outside of Google.¹⁷

Why Have Some Payment Systems Worked?

Success in the payments field appears to be achieved through experimentation based on customer needs. eBay realized their Billpoint system was not working and instead of trying to fix Billpoint, they abandoned it and bought PayPal. Companies in the payments market that continue to test and modify their payment system structures could emerge as leaders in the field. John Deere Credit Corp. is another example of a company that started down one path and changed course based on information learned from its customers. Fortunately, personnel at Deere and at their bank consultant were paying attention and had the resolve to make a modification to the program.

¹⁵ Wolverton, Troy, Billpoint failure a lesson for ebay?, CNET, <http://News.com>

¹⁶ Wall Street Journal, June 20, 2005

¹⁷ http://googleblog.blogspot.com/2006/02/update-on-payments_24.html

In 2003-2004, John Deere Credit Corp. managed \$14.6 Billion in installment loans, all managed by paper invoices, checks and money orders, all manually inputted. Bank One, their primary banker, worked with them to plan a system to handle all outgoing invoices and incoming payments electronically. John Deere Credit was ready to invest a substantial amount of money into that perfect system, meeting all of their needs. Fortunately, they conducted a survey among their commercial customers and the results were overwhelmingly against (94%) making electronic payments. And surprisingly, only 10% of their customers made electronic payments to their suppliers. Therefore, John Deere Credit could not make an investment in a system that would not be utilized. They spent some time considering their customer responses and needs and came up with an interim solution. The approach they adopted was, “less revolutionary, and... more evolutionary.” It involved lockbox imaging, MICR and data capture. Under this scenario, checks would arrive at a lockbox and then be processed. Eventually, the system can be transitioned to an electronic invoice presentment and payment based solution. However, the issue of customers using many different kinds of software still makes this a difficult implementation project.

SMEs that cannot afford to conduct their own internal testing could possibly benchmark systems of larger companies to evaluate service offerings from payment system providers.

Contexts

Remittances and Travel

Remittances are cross-border payments, from foreign nationals residing in a host country, sent to their home country. These two segments of users are included in this paper for two purposes. The growth in remittance transactions is significant and demonstrates the mobility of people worldwide as they migrate to employment centers in various countries, yet re-distribute currency to another country. These trends underscore the shift in globalization of the world's workforce. Part of the shift could be attributed to the knowledge empowerment of the internet to a much larger segment of the worldwide population.

Remittances have seen explosive growth in the past few years as more and more migrant workers utilize providers such as ICICI Bank and Western Union for these services. Migrant workers typically do not have a bank account in their host country and in many cases, do not have a bank in their home country. They need a means to cash paychecks and wire money (banking without a traditional bank). On average, the size of these transactions range from a couple hundred dollars to several hundred per month. Quite a few check cashing outlets or storefronts, located primarily in lower income neighborhoods, consisting of sole proprietor establishments to small regional chains also facilitate the remittance market.

One of the first banks that cashed in on the remittance phenomenon is ICICI Bank of India which now has branches outside of India which allows them to clear transactions

intra-bank. In countries where they decided not to open branches, they have partnered with local banks to provide remittance services. A conversation with Lalita Gupte, Joint Managing Director, revealed that remittances are ICICI's largest growth area and the success has greatly surpassed original estimates.¹⁸ She added that they look to service markets where savings rates are high, which usually indicates prudent monetary handling and can lead to small loans and other services. In this low value payments category, large banks historically had little or no interest in facilitating remittance payments. However, the high growth attracted the attention of Citibank who introduced Global Transfers (\$5 service fee) in 2003 and the Bank of New York who has developed a global remittance program with correspondent banks in 2005.¹⁹

Now that the growth in the remittance market has gained international awareness, it has become subject to scrutiny and criticism. There is currently a debate on whether or not the monies, upon arrival in a home country, spur economic growth, only increase consumption or somehow do both.²⁰ No matter the outcome of discussions on the merits of remittances, they represent a valid segment of the market and are here to stay.

The Travel category broadly includes business and tourist travel plus related applications in transportation. There exists a need for conducting seemingly routine transactions such as travel expenses such as meals, lodging and fuel. But, it goes beyond that. Typically, employees charge expenses on their own credit cards and submit expense reports for reimbursement. In many cases, companies are shifting to stored value cards or

¹⁸ Interview and Discussion, Lalita Gupte, Joint Managing Director, ICICI Bank, April 2005

¹⁹ http://www.occ.treas.gov/cdd/bank_borders.html and Electronic Payment Showing Good Signs in B-to-B Market, American Banker, 170 (47): 12, March 10, 2005

²⁰ Remittances, Financial Development, and Growth, December 2005, Paolo Giuliano and Marta Ruiz-Arranz, IMF Working Paper WP/05/234.

smart cards that help better control and keep track of travel related expenses. One such U.S. company that initially targeted the trucking industry is Concord EFS, now a unit of First Data Corporation. Imagine a traveler who regular visits Boston, New York and Washington DC and they use public transportation in each place. They currently must have three different cards to access public transportation. Business travelers don't want any hassle – so their needs are centered around convenience.

Other Financial

Apart from consumer-to-business and business-to-business for products and services, there are substantial electronic payment networks affiliated with securities and commodities exchanges, healthcare payments, and electronic bill presentment, payment and reconciliation. With regard to these industries, payments or transactions originate in a variety of worldwide locations in different time zones and must be settled within time limits, with extreme accuracy, with quick resolution of disputed transactions or exceptions, and finality while managing liquidity. Two leaders in the field are Fiserv²¹ and Metavante Corporation.²² Both companies claim that they are technology companies that enable electronic payments and related transactions.

SMEs

Small and medium sized enterprises (SME) participation in global business is growing. As they conduct more and more business on a global level, they demand efficient, reliable, and affordable systems that will allow them to participate and remain

²¹ <http://www.fiserv.com/>

²² <http://www.metavante.com/mvnt/corp/static/about/index.jsp>

competitive in their industries. The ability and willingness of payment providers to serve the SME customer segment effectively presents those providers with opportunities for business growth.

Simple cross-border payment methods that can be utilized by SME's will be a great enabler. Companies that were once constrained to doing business locally, regionally or domestically, can participate in a much broader international market provided they have access to a reliable, efficient cross-border payment provider. Alternatively, payment service providers should look to servicing SMEs as a growth area creating new opportunities for additional business – not only in the basic service of payment transfer, but all of the ancillary services that can be marketed to SMEs as they reach out globally.

The needs of SMEs range from receivables factoring to short term working capital loans, from currency exchange to risk management, and from participating in cross-border business and supply chains. Short term trade finance – UPS has entered this market while GE has exited. GE's customers were mostly auto parts manufacturers, a troubled industry. As they saw the risks increasing, GE determined that the business was no longer viable in the long term. UPS, on the other hand, is growing its trade finance business. It's customers are primarily small and medium sized companies in a variety of industries. UPS recently acquired a bank to help it facilitate transactions, but for the

primary reason of gathering data on its clients to make better informed credit decisions on their clients.²³

Supply Chains

The payment industry recognizes the opportunities of financial and supply chain integration, but capturing the value is difficult. Supply chain management, the movement of physical goods and data from suppliers to manufacturers to end users is evolving to include payments synchronized with each part of the process – the financial supply chain. An analysis of supply chains reveals that, “invoicing and payments systems are emerging as a crucial missing link for all concerned -- whether they are manufacturers or media companies, health-care providers or financial institutions.”²⁴ Needs of supply chains include transparency of information, networks, and compatible systems.

Company supply chains are being transformed as operations are streamlined across multiple geographic locations which is less of an obstacle than it ever has been. Parts may come from several worldwide locations, hard goods can be manufactured in a central place, and the completed items are then shipped to the customer. Raw materials and inventories are better managed and the old buy, ship, inventory, distribution center, re-ship method that required much time for each step, is therefore disappearing from successful operations. The missing component is now management of the financial transactions associated with supply chains.

²³ UPS Presentation and Discussion with UPS Director of Strategy, MIT Sloan, September 2005

²⁴ Outlook 2005: Few Tangible Technological Changes In Payments, But Some Regulatory Updates and Big Mergers Expected. *Electronic Payments Week*, January 4, 2005, Vol. 2, Issue 1.

Financial institutions and companies have not previously embraced this fact, citing, “risk management concerns, markets that are fearful of fees, and constituencies that see no incentive to invest in necessary infrastructure.”²⁵ It can also be inferred that it has taken companies time to get comfortable with sharing information to make supply chains work and that they will have to become comfortable sharing financial information in order for the integration of payments into the supply chain.

Currently, there are many payment system vendors focused on servicing supply chains. If a vendor is successful at procuring a large client, they not only have that client but will likely be able to accumulate additional clients from the vendors that serve the larger client. Payments can be integrated into supply chains as central purchasers seek to streamline their payables operations, as individual suppliers or vendors that look to factor their receivables to improve cash flow, or as service providers want to enter into new markets. Supply chains can be intra-company, domestic, domestic and international, between many companies and vendors, and may involve manufacturing, sales and service components. When payment management is built into supply chains, there are fewer uncertainties. The ability to schedule and predict payments and cash flows is of great value for treasury managers.

Gartner Inc.'s Avivah Litan reiterates what is widely known, that there are no profits in fees for electronic transfers. Instead, Litan asserts that everything rests on the payment itself, which is a process operation and not a finance operation, connected thereby, “with workflow, approval of the payment, the invoicing and linked to a supply

²⁵ Outlook 2005: Few Tangible Technological Changes In Payments, But Some Regulatory Updates and Big Mergers Expected. *Electronic Payments Week*, January 4, 2005, Vol. 2, Issue 1.

chain, none of which is the business of banking.”²⁶ If the banking wants to participate in the supply chain, they will need to adapt to the needs of the supply chain to maintain customers as business is changing.

At a recent conference, the following case for urgency was made, “Banks are especially well positioned to succeed in the medium-to-large corporate-customer segment, as opposed to the small-business space, he [Richard Winston, an Accenture partner] said. But they should "leap" now, "aligning with their solution partners," because Accenture predicts that all the major players will have locked in such relationships by 2010.”²⁷ Rick Langer, Senior Vice President of U.S. Bank's PowerTrack, “...claims success with his efforts to market what the company describes as "an automated, electronic B-to-B system that empowers global companies to link physical and financial *supply chain* processes.”²⁸

Inefficient reconciliation of invoices, shipping receipts and purchase orders results in delayed payments and receivables, labor intensive ‘clean-up’ activities, all leading to inefficiencies in working capital deployment and creating a need for increased working capital.

Large entities that purchase and distribute large amounts of goods from numerous vendors often seek ways to improve their profitability since they typically operate on low margins. There are advantages and disadvantages to each party, but advantages probably

²⁶ Outlook 2005: Few Tangible Technological Changes In Payments, But Some Regulatory Updates and Big Mergers Expected. *Electronic Payments Week*, January 4, 2005, Vol. 2, Issue 1.

²⁷ The B-to-B Conundrum Vexes Fed's Payments Conference. Longobardi, David, *American Banker*, 6/4/2004, Vol. 169, Issue 107.

²⁸ The B-to-B Conundrum Vexes Fed's Payments Conference. Longobardi, David, *American Banker*, 6/4/2004, Vol. 169, Issue 107.

favor the larger company. The large company can exert its power through automated payment systems by dictating the terms for which they pay – vendors may be required to use specific software to receive payments or account for shipping and inventory control, companies may dictate exact payment dates standard across its vendors, or make other requirements that may prove to be a burden to SMEs.

As Enterprise Resource Planning (ERP) systems have improved the ordering, manufacturing and movement of products or services, companies continue to look for other means to improve overall operating efficiencies, including cash management and treasury operations. Integration of supply chains with the movement of payments is a logical place to start. Nonetheless, it is difficult to discuss supply chains without considering business architectures.

Business Architectures

Despite the exuberant entry into and subsequent downfall of all things internet during the 1998-2000 timeframe, users are now beginning to recognize the real power of global access. An area of change is Business Process Outsourcing (BPO), a growing area for companies needing payment processing, compliance management and other transaction based financial services.²⁹ BPOs are outsource or offshore solutions for managing transaction based and slightly more sophisticated operations that can be well characterized, scaled up, and quality controlled.

Strategies for global SMEs include smarter business models that allow them to conduct business cross-border, in different time zones and in geographic areas of

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<http://www.epaynews.com/index.cgi?survey=&ref=browse&f=view&id=1147428224861413176&block=>

expertise, while taking advantage of competitive pricing. In the quest for efficiency, companies are looking to shoring up any process that touches the supply chain. The world of business has been the reluctant to embrace electronic transfers for paying invoices. They have done this because old habits such as “floating” checks are hard to give up, they have resisted making the investment into new systems capable of integrating electronic transfers, their vendors and suppliers lacked systems or used a variety of systems that were incompatible, and they weren’t willing to pay banks transfer fees that were higher than generating a paper check.

Business architectures are moving toward greater transparency – starting with supply chain suppliers and vendors, where all parties can have access to information and act upon it.³⁰ The way in which business is conducted changes as new technologies emerge. For example, a company may forecast its needs for inventory of a certain product and place orders from time to time. Informal communication between purchasing agents and sales representatives would take place and problems would get resolved with a lot of human intervention, all very inefficient in a connected economy. One can envision that new systems allow vendors to see when inventory levels get low and restock. The new job for the purchasing company is to complete its forecasting, enter into a computer, set limits or generate authorization alerts for new replenishment orders, all of which may allow for a smoother flow of goods, services and thus, make cash flow more predictable.

Payment system providers realize the advantages of connecting – faster, more efficient receivables and payables processing and are now marketing to companies to

³⁰ Financial Flows & Supply Chain Efficiency, Warren H. Hausman, Visa Commercial Solutions

change their perception of payments management. Today, the source of profits resides in the spread between exchange rates, not basic transaction fees, so additional service offerings must be sold along with the basics.³¹

Business architectures are focused on operating lean and as fast as possible to save money and compete globally. Large companies require systems for procurement and transfer of funds for business purposes, with multiple vendors and suppliers that may provide raw materials, partially finished goods, finished goods, and or services in an ever expanding international supply chain that is increasing in complexity and is requiring faster and faster timelines. These complex systems are sold and serviced by large enterprise software vendors such as SAP or Ariba. The systems typically have the ability to interconnect with a large, sometimes multi-national bank system to facilitate the cross-border electronic transfer of payments.

Large scale operations such as Wal-Mart and Li & Fung rely heavily on efficiencies in their supply chains to contribute to their bottom line. Therefore, they invest heavily in systems and because of their size and impact, can require that vendors conform with their shipment and payment systems. Li & Fung, for example, rates its vendors on such things as lost goods and accuracy of orders.³² Too many bad scores and vendors are terminated.

Although the payment systems, supply chains of today have some degree of connectivity, they are still largely fragmented. At some point they will consolidate into networks of the future and new, adapted business architectures will evolve. In order to

³¹ Interview with Moti Porath at Fundtech, December 2005

³² UPS Presentation and Discussion with UPS Director of Strategy, MIT Sloan, September 2005

facilitate new ways of conducting business, networks will develop through technology, a critical component of growth in payments that is the topic of the next Chapter.

Chapter Two - Technology

At a basic level, EFT is information traveling over networks that may pass between countries, among satellites or through other conduits and the integrity and protection of this information is crucial to the expansion of EFT use. Security and reliability are key factors that enable the trust and adoption of new methods of transferring money. The creation of digital trails, made possible by technology, will enhance both the security aspect as well as facilitate information flow alongside transactions as they make their way through systems and networks.

Financial institutions including banks, insurance companies and securities brokerage firms move significant amounts of cash and securities on a regular basis through technology enabled EFT means. These transactions may be made within their own intra-company networks or through external networks and may be cross-border or international.

The banking system in the U.S. versus Europe for example, provides insight into how payment systems developed.³³ In the 1930s, in the U.S., there were 36,000 independent banks which, through mergers and acquisitions, have become 18,000 banks and the consolidation trend continues. In contrast, Europe has about a dozen dominant banks. The U.S. system required a different type of network to connect banks than did the European system.

Traditionally, U.S. banks and financial institutions utilized a domestic network (ACH or Fedwire) to clear transactions among themselves and as international business

³³ Interview and Discussion, Barry Thomson, Ingenico, July 2005

grew, they became members in international networks (CHIPS or SWIFT) that often clear through the both countries' Central Banks.³⁴

The following table summarizes the payment networks and where they operate.

ACH	Automated Clearing House for U.S. domestic payments
PEACH	In Europe, a new network is being created called Pan European ACH.
CHIPS	Clearing House for Interbank Payments in U.S. Dollars, large value payments for domestic and international transfer
Fedwire Securities Service	Real time securities transfer system operated by the Federal Reserve Bank of the U.S.
FEDPAY	Internet based invoice and payment system for government contractors operated by the U.S. Government
CLS	Continuous Link Settlement; service from the Federal Reserve Bank that clears international transactions between banks
SWIFT	Society for Worldwide Interbank Financial Telecommunication; financial industry owned worldwide network

Payment systems and their capabilities are an inter-related and compatibility among systems is emerging as a critical need. According to payments industry consultants, The Tower Group, "Banks have built a rather complex set of middleware to

³⁴ Processing: BB&T Cashes In Its CHIPS For a Better Backstop: Concerns over disaster recovery spell a need for a second STP location, Bank Technology News, 18 (1): 10, January 2005

overcome the limitations [of their core systems]. [This] has gotten them a lot of extra years, but at some point they just won't be able to keep this up [and] will absolutely have to replace [their systems]. It may not happen now or next year, but it will need to happen soon.”³⁵

Many systems that have been implemented were proprietary systems that had limited internal flexibility and did not integrate well with other systems of vendors, banks or service bureaus. Investments in such legacy systems are sunk costs, however companies are resistant to abandon them. Companies have also been reluctant to invest in non-revenue, or apparently non-revenue generating projects. Uncertainties about the co-implementation of new and old systems, data integrity, training of personnel, all valid issues put up barriers to adoption of new and better systems and methods. In general, change is difficult when there is no sense of urgency. And finally, during the dotcom-boom, substantial amounts of capital were invested into companies touting new technology, new business models and unrealistic solutions.

Existing Networks

Proprietary payment systems have historically been favored, for competitive purposes, over open source and this is now changing. Only recently, the SWIFT network endorsed and encouraged open source, having changed their stance.³⁶ The result is that most large financial institutions offer a variety of payment methods in order to attract the

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www.epaynews.com/index.cgi?survey=&keywords=BPO&optional=&subject=&location=&ref=keyword&f=view&id=114682973586215586&block, TowerGroup Senior Analyst Robert Hunt

³⁶ www.swift.com

most corporate customers.³⁷ If SWIFT did not start making the transition to open source payment systems, then they may start losing market share. VisaNet Systems is the official network for Visa transactions and competes with SWIFT and ACH and according to their website, their payment system is compatible with a variety of accounting platforms.³⁸

Availability of a more developed network and widespread adoption and use is more common in Europe, where the banking industry is dominated by a few large banks with a presence in many countries. As the EU implements its PEACH network, there are changes that will affect EFT vendors significantly. In the United States, however, the banking system includes several first tier, large banking institutions with multiple branches; but also includes of thousands of independent or community banks. These second or third tier banks are regional national banks and in some cases, state banks.

Most of the second and third tier banks refer their clients with international payment needs to a large, first tier bank which has the capability to handle cross-border transfers. However, the large banks are unlikely to facilitate or be able to accommodate single transactions or non-recurring transactions and transactions below a certain US dollar amount threshold.

Real Time Gross Settlement (RTGS) is a relatively new offering that allows for transactions to clear simultaneously through Central Banks located in separate countries despite time zone differences. RTGS is only available between Central Banks in certain cities of developed countries. Liquidity is also an issue that grows in proportion to the

³⁷ Why Yesterday's Mundane is Now a Hot Topic. Kingson, Jennifer. American Banker, 3/23/2004, Vol. 169, Issue 56, p. 3A.

³⁸ <http://corporate.visa.com/md/fs/corporate/visanet.jsp>

amount of money transferred via RTGS increases. An alternative real time settlement option is Continuous Link Settlement (CLS). CLS is a technically a bank owned by the Federal Reserve Bank of the U.S., but the service it offers is international interbank transfer. Exchange rate risk is eliminated at the moment of exchange, but it is not completely gone. Imagine that a contract for raw materials is entered into with a supplier in another country and obligates them to supply over a period of time. If the currency in that country fluctuates against the dollar, both sides encounter an exchange rate risk until the moment the money changes hands electronically. Although these types of risks are often managed by derivative instruments such as swaps and forwards, they don't completely disappear.

The advance of technology in payments has made currency exchange and mitigation of settlement risk more ubiquitous. For example, RTGS and CLS has eased the settlement risk problem by providing a means for instantaneous clearance on both sides of a transaction. Networks are critical and to a large degree, they dictate the flow of funds. The control of funds flow needs to be maintained to assure liquidity and to avoid a payment deadlock whereby one party waits for the other party to act, creating a "choke" in the system.³⁹

The Move Toward Open Source Software

In the overall EFT value chain, the networks held most of the cards in the past. These include SWIFT and CHIPS for international transactions and myriad smaller intra-country clearinghouses within small and or emerging countries. These formal networks

³⁹ Interview with Moti Porath at Fundtech, December 2005

are seeing an encroachment into their business by new entrants and SWIFT, as a result, is now advocating a move from proprietary to open systems.

The switch to open source is a fundamental change for SWIFT, most likely the result of strategic analysis of the industry. Why the change? Well, SWIFT realized there are many new entrants into the market, such as open source systems from small payments providers or like system substitutes such as PayPal, MasterCard, and VisaNet. These companies are all making a push towards business-to-business payments and that threatens any proprietary system. If companies begin to embrace the open source concept, then standards should emerge and a strong network should follow.

Software – Addressing Fraud, Efficiency

Faster operating systems that can run more complex software programs can sift through millions of bits of information in real time to detect data problems and in some case, resolve them, and if determined to be unclean, then route the transaction to a human operator to address. Sophisticated software platforms have the capability to function or translate into more than one language for cross-border transactions, automatically compute foreign exchange, and can help with managing transaction flow. These functionalities combine to make the entire process better by limiting the number of problematic transactions, known as exceptions or disputed transactions that have to be dealt with by someone which is time consuming, can lead to processing delays and is expensive.

A major issue with the ease and accuracy of transaction processing is that,
“...Corporate accounts receivable departments must deal with lots of incoming payments,

and many customers pay several invoices with a single payment. As a result, receiving detailed billing information is just as important for the accounts receivable department as receiving the funds. That information can easily be submitted in paper format with a check, but submitting multiple invoices with an electronic remittance can be harder.”⁴⁰

Types of Risk, Fraud

Fraudulent payments may or may not be detected earlier in an electronic format, but advanced software systems that can monitor transactions for inconsistencies (order problems/mistakes) and fraud could create competitive advantages for companies that offer services along with the basic transfers.

Risk can be mitigated, but not eliminated entirely by technology. Counterparty risk, the risk that one side of a payment transaction does not complete the transaction is less of an issue these days due to RTGS and CLS, but if it happens, it is detected faster with software. In the event of aggregation and disaggregation of payments, there are risks that must be borne by one or more counterparties. A recent example of how problem situations can occur is the Refco, Inc. situation. Refco, a commodity trading company with many other closely related operating subsidiaries, both regulated and unregulated, experienced a crisis of confidence when it revealed an accounting problem caused by alleged management fraud which was followed by a liquidity crisis. A non-regulated subsidiary was shut down, however, funds that were supposed to remain separate appear to have been intermingled with funds of an entity that filed for

⁴⁰ Making Electronic B-to-B Payments User-Friendly. American Banker; 11/4/2004, Vol. 169, Issue 213, p. 1.

bankruptcy. At issue is the whether or not that money was aggregated when it was electronically transferred into off-shore, overnight deposit accounts.

IT departments of payment system providers also contribute knowledge to the monitoring and performance of compliance and risk management activities. They can help create metrics that could include the number of transactions compared to the names watch-list per period of time, how many were anomalies that required reporting to authorities, the frequency of false positives, and validation that updates were installed and any new divisions or product lines were brought on-line. Watch-lists are lists of people or entities, generated by governments, known to be or strongly suspected of illegal activities. Devising the parameters for detecting suspicious patterns is an art that has to be combined with maintaining the integrity of a system. Company IT departments with proprietary knowledge can still find this task difficult and it, “often requires months of fine-tuning transaction filters before a reasonable level of risk sensitivity is set.”⁴¹ IT can also identify and implement best practices with regard to transaction monitoring according to industry benchmarks, whether or not compliance management systems are internal or outsourced.

Prevention of hijacking a website has become an issue for sites that would provide an intruder with private information or access to control a system operation. A real life, real time example occurred in February, 2006. A fraudulent, duplicate website of The Clearing House Payments Company appeared on the worldwide web with a

⁴¹ <http://www-03.ibm.com/industries/financialservices/doc/content/news/newsletter/999392103.html>, McCabe, M., Addressing anti-money laundering compliance in financial markets, IBM Business Consulting Services.

slightly different URL address.⁴² Depending on the sophistication of the perpetrators, this can happen often and people who are prone to word searching in lieu of relying on their address history list may have landed on the impostor site instead of the real site. Very savvy perpetrators can even temporarily disable the real website or redirect users to a fraudulent site. When something like this happens, account data can be compromised and fraudulent transfers can occur. Were the perpetrators trying to get info about who viewed the site, accessed the site for account usernames, password and account information or initiate bogus transfers? An alert that detects fraudulent websites through some secure verification method could alleviate this problem for users.

An increase in the use of electronic payments will lead to new types of theft. Internal and external fraud is possible and detection methods will have to increase in complexity. Where did the payment go, was the payment real? These questions may be less of an issue for low value or micropayment transactions because the cost to investigate is high. However, as such events happen more and more often, technology will step in and intervene to monitor transfers and detect potentially suspect transactions and verify them with historical customer account information before the transaction is consummated.

Security

Within Security there is physical security of network, fraud, encryption, account data, access, etc. The definition of security is broad and dynamic in the information age. Physical security, or the matter of protecting a place or a tangible item is a concept that is

⁴² www.clearinghouse.com, February 2006

easily understandable. However, the protection of less tangible items, such as an electronic payment or data, since an electronic transfer is data, is a much more different activity than protecting physical money. Security at all levels is a concern. With more transactions taking place over the internet rather than proprietary networks, security issues have increased exponentially. From phishing, the pilfering of account information that can occur on individual computers, LANs, or wans to outright bogus transactions that can make their way through sophisticated networks, the industry is quietly responding. Without solutions, providers will incur additional costs, lose the trust of customers and expose themselves to potentially unmanageable liability. Ways to address security issues include technology, standards and regulations.

Of primary importance is the protection of account data. Without such ability, users will not adopt any future technology. There have been several well publicized breaches of account data within the credit card industry. This has not prevented people from using credit cards, but results in distrust of credit card issuers, higher costs for credit card issuers, and could cause users of B2B transactions to think more carefully since they may have more at stake with high value transactions and work with accounts that have

This places an additional burden on companies to have internal controls to monitor transactions that could be redundant (easy to accidentally process twice) or to monitor for internal theft (employee dishonesty). Therefore, the transactions must have adequate information attached to them to provide a solid audit trail.

Protecting the transfer or transaction is the next most important area of security, especially for consumer payments that go through the Automated Clearinghouse system

(ACH), a low value payment network. The information generated for payments can go in either direction. Software developed by the Electronic Payments Network, a division of the Clearing House Payments Company, can provide users, originating depository financial institutions (ODFIs), with reports or alerts on questionable payments so that they can be investigated. The Federal Reserve Bank system is also working on software that can help its member institutions detect fraud, which is sure to grow as the use of electronic payments increases. The ability to also alert receiving depository financial institutions (RDFIs) in advance that a payments originating from certain customers is a proactive step in risk management.⁴³

Imagine a system that is ransacked by an intruder, an “electronic suicide bomber.” One can imagine a hijacked payment and a fake one replaced it, to give the hijackers time to erase the electronic trail. Levels of monitoring include sweeping the networks to detect intruders, or evaluating transactions. In evaluating transactions, sophisticated software systems have been developed to detect unauthorized or questionable activities.

Standards

There is widespread awareness that standards are needed, they are, however, an evolutionary process. The financial supply chain needs accurate information to function properly and the lack of standards across the industry has proven to be a major hindrance to progress. Without standards, systems don’t operate efficiently, costly mistakes are prevalent and expectations don’t meet reality. Change is on the way as people

⁴³ Will, Wade, “Fed, EPN Develop Tools to Detect, Report ACH Fraud,” American Banker, 4/15/2005, Vol. 170, Issue 72

acknowledge the deficiency and try to move toward a unified set of guidelines that can facilitate cross-border transactions.⁴⁴

One of the recent advancements was the introduction of XML technology. XML allows files of information in standardized fields to accompany an electronic transfer. Users can therefore include data relevant to the payment such as what invoice(s) are being paid, special shipping or handling instructions, or other information perhaps to a third party vendor. XML is critical for reducing the time spent on dispute resolution and exception processing.

There are many exposures to risk across the system. Disputed transactions or exceptions can cause delays for SME users who may not have provided accurate information with regard to invoices being paid or confirmation that goods were actually received. On the consumer side, when a user presents a card and does not sign, then the merchant assumes more liability for fraud than if the user signed their name. A PIN number under the EMV standards is now in effect and entry of the PIN is a substitute for the signature. Payment systems must identify their risks, determine how much risk they can tolerate, and then implement ways to eliminate, minimize, or shift those risks.

Implementation of technology remains a challenge. Running the systems involves high fixed costs as well. Many technology industry people, especially the system vendors, insist that the key to staying in the market is to invest in these systems, and work on gaining more market share. However, this plan doesn't work in the long term if transaction fees are the only source of revenue.

⁴⁴ Giovannini Paper, 2001

There are state laws, but Federal laws may be not speak clearly to some of the issues that companies now face with regard to account information storage, location, access and backup. The financial industry, as it expands globally across borders, is facing a variety of host country regulations that aim to keep and protect information within the country. Privacy laws can also provide another layer of complex rules to abide by in each jurisdiction.

Chapter Three – Government and Regulation

Financial institutions and SMEs involved in EFT are faced with an ever increasing burden of compliance with regulations. Understanding the regulations in each country and how they impact funds transfer is critical for success. Key operational challenges facing cross-border payment systems and users are jurisdiction, laws – local, state, and or federal, and the ambiguities surrounding each of these issues. The impact of changing regulation and its outcome, or lack thereof, in different countries is one of the most unpredictable aspects of EFT. Payment system providers must remain vigilant in the evolving regulatory environment to reduce risk and ensure confidence with both its consumer and business customers. Central Banks have played a role in payment processing, primarily for checks, but they must now look to electronic payments as an area of focus, especially in cross-border transactions. Governmental intervention is not always unfavorable, however, it can sometimes act as a catalyst for positive change and several examples are provided at the end of this Chapter.

Both U.S. domestic and foreign governments and regulatory bodies are constantly being presented with numerous challenges and they are expected to respond appropriately and timely to innovation in the payments industry. In many cases, there is no response because local laws do not cover the subject at hand or the responses create burdensome requirements for the banking industry and companies. The amount of change in global markets, the rapidity of this change and the effects of change are clearly challenging existing laws and regulations that were drafted and enacted prior to the proliferation of

the internet. Legislators could not have foreseen the changes that have taken place or devised ways to effectively deal with the changes.

Regulation can go beyond what is considered reasonable in the western world. Consider the case of Google facing censorship in the People's Republic of China (PRC). The PRC required Google to limit access of PRC citizens to information related to freedom or democracy. Google, despite outcries from human rights activists, complied and created a modified search site.

Jurisdiction

When analyzing the path of a cross-border electronic payment, it can pass through multiple jurisdictions as it has a journey of initiation or origination, cyberspace travel, and destination. When and where the transaction could lead to an answer, but that requires clear definition of and agreement on terms among all of the jurisdictions in the path. Once a jurisdiction is clear, there is yet another layer to deal with and that is who has authority over the transaction. In the case of the U.S., it could be the Treasury Department, SEC, other agency, or a combination.

Here's one of the gaps in the system. Take the case of Calvin Ayre. His on-line gaming empire, based in Costa Rica, draws \$7.3 billion in wagers and provides Ayre with sales revenue of \$210 million and profit of dollars from the U.S. each year.⁴⁵ However, he pays no taxes to the U.S. because his operation is headquartered offshore in a country that is a tax haven. The U.S. Department of Justice is limited in what it can do because the law is not well developed. He has no assets in the U.S., it is unclear where the

⁴⁵ Miller, Matthew. *Catch Me If You Can*. Forbes, March 27, 2006. pp. 113-116.

transactions are consummated. Could the credit card companies bear the risk of responsibility of taxation?

Finally, as more payments originate in one country, cross borders, and then are received in another country, questions arise that include what laws are applicable, what protections (both security and governmental insurance) are in place, who has jurisdiction, where is the transaction consummated and are there any taxation benefits or consequences. These regulatory issues demonstrate the immense changes our world faces as a result of globalization.

Part of the dynamics of the transfer industry center around favorable and unfavorable transaction jurisdictions, whether or not there are tax issues where the transaction is initiated, consummated, settled or even passes through.

“In July 2003, in compliance with the changes brought about by the European Union (EU) VAT directive on “electronically supplied services,” eBay began collecting VAT on the fees charged to EU sellers on eBay sites catering to EU residents. eBay also pays input VAT to suppliers within the various countries the company operates. In most cases, eBay is entitled to reclaim input VAT from the various countries with regard to our own payments to suppliers or vendors. However, because of our unique business model, the application of the laws and rules that allow such reclamation is sometimes uncertain. A successful assertion by one or more countries that eBay is not entitled to reclaim VAT would harm our business.”⁴⁶

⁴⁶ eBay, Inc. 10-Q for the period ending 9/30/2005

The Regulations

Once a jurisdiction is determined for purposes of compliance, the national and local regulation has to be addressed. For cross-border electronic payments this can be non-existent, complicated, evolving or ambiguous. It is often difficult to determine, at the country level, what laws apply to EFT transactions, payment system providers, and users. For example, PayPal is considered, at this point in time, a payment processor not subject to banking laws in the U.S., however, it is subject to money transmitter licensure, bonding requirements, restrictions on customer fund investments, inspection, and reporting requirements in as many as 33 states. In the UK, PayPal is licensed in the UK as an Electronic Money Institution and requires both licensure and oversight.⁴⁷ PayPal may be required to obtain banking licenses, to pay fines for violations of laws, or to cease business with residents of certain states or countries as a result. These regulatory uncertainties will likely resolve over time, but do pose a current risk for PayPal. PayPal maintains that it is not a banking institution under U.S. law, but has, “assumed that its service is subject to the Electronic Fund Transfer Act and Regulation E of the Federal Reserve Board.”⁴⁸

Some of the U.S. regulations that require compliance are the Sarbanes-Oxley Act of 2002 (SOX) enforced by the U.S. Securities and Exchange Commission (SEC), The Privacy Act of 1974, enforced by the Department of Justice, the Bank Secrecy Act (BSA) and the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act (USA PATRIOT) both enforced by the Department

⁴⁷ eBay, Inc. 10-K for the fiscal year ending 12/31/2005

⁴⁸ eBay, Inc. 10-K for the fiscal year ending 12/31/2005

of Treasury. The PATRIOT Act was enacted post 9/11/2001 to detect and prevent terrorist activities. Within the PATRIOT Act, existing rules were added that include Anti-Money Laundering (AML) and Financial Crimes Enforcement Network (FinCEN).

Under the FinCEN rules, users and payment system providers are required to screen all transactions over \$10,000 against of names watch-list provided by the Office of Foreign Assets Control (OFAC) and AML overseers. OFAC is part of the U.S. Department of the Treasury and their duty is defined as, “administers and enforces economic and trade sanctions based on US foreign policy and national security goals against targeted foreign countries, terrorists, international narcotics traffickers, and those engaged in activities related to the proliferation of weapons of mass destruction...Many of the sanctions are based on United Nations and other international mandates, are multilateral in scope, and involve close cooperation with allied governments.”⁴⁹

In the case of AML, a new names watch-list is created on a regular basis and must be integrated into payment monitoring systems as a regular update. Under AML regulations, the SEC has mandated that financial institutions are required to have:

- 1) anti-money laundering internal policies, procedures, and controls;
- 2) a designated compliance officer;
- 3) an ongoing employee training program; and
- 4) an independent audit function to test the firm's programs.⁵⁰

Although these types of policies and regulations are designed to protect and safeguard the American public at large, they present a real compliance challenge to the majority of

⁴⁹ <http://www.treas.gov/offices/enforcement/ofac/>

⁵⁰ <http://www.sec.gov/iard>

SMEs who cannot possibly manage these things on their own. Therefore, they must outsource these tasks and that is often in conjunction with or as a part of the payment system they use.

Under U.S. privacy laws, PayPal is subject limitations on use and disclosure of information about its customers. They admit that they do not have significant experience in compliance with these laws which can carry fines of up to \$1,000 per transaction if violated. PayPal is exposed to substantial liability, for example with the 1.32 million transactions per day that they processed in 2005, in the event of violations.⁵¹

Sarbanes-Oxley has presented an additional layer of complexity to corporate governance by requiring more detailed reporting and audit of company procedures and processes as close to real-time as possible. When accounting and treasury functions are well integrated, there is transparency of activities, operations are more efficient.

Credit card companies as an industry group have also bonded together to formulate guidelines and standards. The strongest of these is EMV which is comprised of Europay, Mastercard, and Visa.

The Basel Committee on Banking Supervision is an organization that promotes global cooperation, guidance for supervisory activities, and standard setting related to the banking industry.⁵² The Committee is composed of Central Bank representatives from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom and the United States.

⁵¹ eBay, Inc. 10-K for the fiscal year ending 12/31/2005

⁵² <http://www.bis.org/bcbs/index.htm>

Additionally, a Committee on Payment and Settlement Systems (CPSS), within the Basel framework bank – The Bank for International Settlements, has been set up to address efficiency and settlement issues related to payment system infrastructures, with the goal of providing guidance on establishing best practices in order to strengthen the global financial architecture. The CPSS is involved in monitoring and analyzing developments in domestic payment, settlement and clearing systems as well as in cross-border and multicurrency settlement schemes and they prepare an extensive set of statistics and data about payment systems in Basel Committee member countries called the “Red Book,” some of which is available only by limited distribution.⁵³

The Basel Committee does not have authority over any banking system or any ability to enforce actions, therefore its mandate is simply to provide a forum for cooperation and communication as related to banking system convergence of member countries. Their most recent high profile work has been the creation of the Basel II regulatory capital framework which, “sets forth capital requirements for banks' exposures to certain trading-related activities, including counterparty credit risk, and for the treatment of double default effects, or the risk that both a borrower and guarantor default on the same obligation.”⁵⁴ The issues and guidance addressed in this report are part of an ongoing review of the financial flow aspects of the securities industry.

With the introduction of the Euro, it became necessary to simplify cross-border payments between European Union countries. A European Payments Council (EPC) was set up by European banks to support initiatives for a “single Euro payments area

⁵³ <http://www.bis.org/cpss/index.htm>

⁵⁴ <http://www.bis.org/publ/bcbsca.htm>

(SEPA),” to be completed by 2010.⁵⁵ The group’s task is to facilitate discussion and consensus among countries in establishing efficient payment system parameters. SEPA is the framework by which payment terms are developed, including the low value/high value definitions. The implication of the recent increase to \$5,000 Euro as the limit of a low value payment is the amount that a payment system provider can charge for fees.

Compliance management is typically a, “narrowly defined, repeatable process,... [with] economies of scale,” that is transaction based, so outsourcing should be considered an option.⁵⁶ Under an outsourced scheme, client needs and expectations, and vendor competencies and practices are clearly defined. Additionally, the arms-length nature of the client vendor relationship may satisfy one or more of the AML rules. For small and medium sized companies or financial institutions managing a number of individual funds, outsourcing may be the most effective from both the operational and economic standpoint.

There are numerous other regulations, both local and regional, for foreign jurisdictions that companies with cross-border operations are responsible to abide by. Additionally, compliance management is not static once it is put into place. In some cases, laws or regulations are subject to interpretation by local authorities, resulting in uncertain outcomes.

⁵⁵ <http://www.ecb.int/paym/pol/sepa/html/index.en.html>

⁵⁶ Ross, J., Stages of Enterprise Architecture Maturity, 15.571 Lecture, Spring 2006, Session 17

Central Banks

Central Banks around the world are primarily focused on monetary policy, but they also act as an intermediary for check processing and EFTs. In our new, highly automated, globally focused business environment, the intermediary function is changing. The growth of alternative payment systems such as credit cards, some with their own networks, and PayPal has changed the landscape. The Federal Reserve Bank of the U.S. has already experienced a decrease in check processing, so they are now looking for new revenue generators.⁵⁷ The ability of the Federal Reserve Bank to measure money flows in and out of the country and between sectors of industry and economy is changing due to the introduction of alternative networks.

Government as a Driver of Change

The terrorist attacks of September 11, 2001 demonstrated the vulnerability of electronic financial systems. As a result, the Check Clearing for the 21st Century Act (Check 21) was implemented and this legislation is having a profound influence on payment transactions.⁵⁸ The Act was designed to encourage innovation in check processing with the thought that if checks were truncated or converted to electronic format, they could be stored on a redundant system in case of an adverse event. Check 21 provides for accounts receivable check conversion (ARC) in the form of substitute consumer checks in electronic format to be created at the merchant and routed through a

⁵⁷ Minehan, Cathy. President, Federal Reserve Bank of Boston. Presentation and Discussion, MIT Sloan, November 2004.

⁵⁸ <http://www.federalreserve.gov/paymentsystems/truncation/>

payments system similar to an EFT.⁵⁹ This format caught on fast with merchants because it reduces or eliminates float and they receive their funds faster. Initially, NACHA rules prohibited business-to-business conversions because of problems with account reconciliation and returned items.⁶⁰ NACHA, an electronic payments association focused on the U.S. domestic market, sets standards that U.S. payment system providers using the ACH must abide by. NACHA has recently amended the rules and conversion of business-to-business checks, referred to as back-office conversion (BOC) will be allowed starting in March 2007.⁶¹ This is an important step in transitioning business paper checks to electronic transactions.

An example of how the U.S. government is facilitating the use of EFT systems is the "FEDPAY Internet Invoicing System [which] is designed to allow Federal Supply Service (FSS) contractors to submit invoices quickly and efficiently through the Internet. FEDPAY Internet Invoicing eliminates mail delivery time and allows full-cycle electronic commerce Contractors to receive payments within ten days. A full-cycle electronic commerce Contractor submits invoices via Electronic Data Interchange (EDI) or Internet and receives payment via Electronic Fund Transfer (EFT). And best of all, it is FREE."⁶²

The trend of EFT adoption is a slow one, but the United States Federal and state government requirements have, "forced companies into the electronic arena through tax payments," said Marcie Haitema, a senior vice president and the global ACH business

⁵⁹ Check 21 Resource Document, March 2004, NACHA

⁶⁰ Costanzo, Chris. Why Retailers Cock a Cold Eye at Check Imaging,

⁶¹ <http://www.nacha.org/News/news/pressreleases/2006/Pr050806-2/pr050806-2.htm>

⁶² <http://fedpay.gsa.gov/>

executive at New York's J.P. Morgan Chase & Co. "Today probably most of the payments are made with electronic debit, because it's cleaner and more efficient. I see the same thing happening" elsewhere in the payments business."⁶³ The U.S. government has taken a giant step forward in requiring many government employees to submit their expense reimbursement reports on-line and receive funds via an electronic payment.

⁶³ Why Yesterday's Mundane is Now a Hot Topic. Kingson, Jennifer. *American Banker*, 3/23/2004, Vol. 169, Issue 56, p. 3A.

Chapter Four - Evolution and Trends

Fortunately, innovation and investment in the area of payments is on the rise again thanks to the Web 2.0 phenomenon. The internet provides a boundless communication venue and enables massive information exchange. Therefore, the future, as visualized by some of the companies that failed in the 1998-2000 timeframe is now happening. Today's global business environment demands network connectivity, real-time processing and security in order to stay ahead of the competition. In the past, large companies and banking institutions had cobbled together networks that served their individual needs in international transactions. Now, significant change is underway and outdated systems are being replaced by newer, easier to use, internet based systems that are more interdependent, interactive, accessible and user friendly.

The Clearing House Association, an industry group focused on EFT, states that, "only 14% of roughly 3.9 billion annual B-to-B payments are submitted electronically and just 32% of those e-payments contain enough billing data for the transactions to be posted automatically. For the rest "remittance information must be entered manually" into the payment system and doing so dramatically reduces the efficiency of receiving funds digitally."⁶⁴ This is a technology problem that quickly develops into a cost problem if financial institutions or companies must hire personnel for data input and for solving problem transactions. As such, the costs of basic processing of transactions are facing downward pressure as this segment of the industry becomes commoditized. The Boston

⁶⁴ Making Electronic B-to-B Payments User-Friendly. American Banker; 11/4/2004, Vol. 169 Issue 213, p. 1.

Consulting Group estimates that revenues for cross-border transactions to fall from \$12.00 to \$5.20 during the 2001-2011 period.⁶⁵ However, where there is inefficiency, there is opportunity. New service offerings and innovative business models are needed to move electronic payments and related products forward.

The Credit Card Generation: a segment of the population who are comfortable with alternative forms of money. They receive and redeem pre-paid cards as gifts and they purchase items from the internet such as downloaded songs. Their comfort level will only increase for small consumer payments.

Will governments attempt to try and establish electronic borders to control the flow of information, money, services and goods? Who are the stakeholders in the business-to-business electronic payments industry? What does the value chain look like and what types of data are needed to evaluate the industry? How is business architecture changing with respect to supply chains and how do payments fit into the larger scheme? What are customers willing to pay for and not pay for? Why do customers choose one method over another?

Business

Historically, serious interest in cash flow management hit a peak when interest rates were in the vicinity of 20% in the early-1980's. Maybe the cost of money correlates to increased activity to improve cash flow. Nonetheless, business is seeking efficiency beyond ERP and treasury services are fair game.

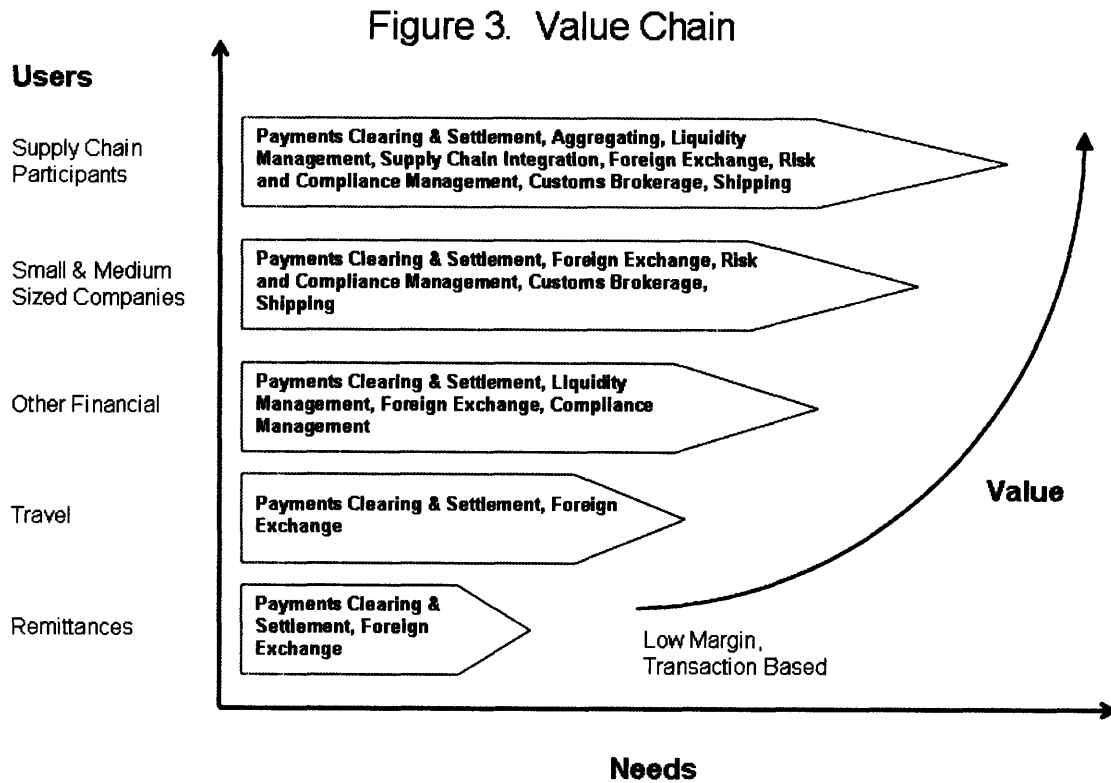
⁶⁵ Outlook 2005: Few Tangible Technological Changes In Payments, But Some Regulatory Updates and Big Mergers Expected. Electronic Payments Week, January 4, 2005, Vol. 2, Issue 1.

Insights gained from a look at the consumer payments market can provide the basis for trends in the B2B market. Scenarios 2010, financial flows will be linked or accompanied with information. The financial supply chain of the future will be coupled with material supply chains so prevalent today. The result is more reliable and predictable cash flows. EFT customers will choose one method or service provider over another because of service.

Non-banks such as check cashing services are intermediaries that provide services and these will likely experience modest growth. The ancillary services that can be sold along side will grow at a faster rate as users become more sophisticated.

For remittances, the future needs are quite simple – the ability to quickly and securely move money from a point in a host country to a point in the home country. A low value, low fee type business, but nevertheless important. In combination with paycheck cashing and money transfer, the service bureaus or banks can cross-sell other products such as insurance, travel, stored value cards, telephone services, money orders for utility and rent payments. The service bureaus can accumulate credit information based on these transactions and provide micro-loans, auto loans, or stored value credit/telephone cards for both the migrant workers sending money home and the recipients of funds on the other end. In Figure 3. Value Chain, below, the needs of users and the increase in value as those needs increase in complexity are indicated. Although services such as remittances may be low margin on a transaction basis for the payment transfer, there may be sufficient volume of transactions and opportunities to sell other products that make it an attractive industry. On the upper end of the value chain, the

needs are much more complex, the transaction volume may be less, but the currency value per transaction is much higher and there is the opportunity to bundle additional revenue generating services.



Inefficiencies will continue to exist in the SME space and remain a fragmented market for some time because of their diverse needs. They are the least likely group to get involved in managing risks of currency exchange or settlement. PayPal, Visa, MasterCard or their equivalents can provide value added services bundled together for their SME clients.

Large corporations will most likely work with large banks to develop custom systems that reflect their specific needs. These may include specially tailored risk management programs that are industry or company specific.

Consolidation will increase. Commoditization of related services will occur. The loss leader is the basic money transfer. If the company, bank or service bureau can break even, then they have their overhead covered. If the transaction involves currency exchange, then they will make their profit there. An example is Western Union entering the hypercompetitive payroll processing business charging only 1% for fees. They plan to offer additional services such as intra-country and cross-border remittances.

If a company requires its vendors to use their payment system, they may have the upper hand on terms, they may choose to pay in local currencies, if that primary company has revenue generation in the vendor's country. Otherwise, the primary company will want to pay, say in U.S. dollars, but the vendor will likely need to exchange into their local currency which could put them at a disadvantage. Money transactions could eventually be "triaged" at the merchant or business – debits could go directly to the bank, without going through a VISA intermediary.

A downside to the integration of supply chains and SMEs is the power and control over payment flow relationships with SME vendors for large companies such as Wal-Mart who are able can dictate the terms on which it transfers money.

For accounting and financial purposes for users, predictable cash flows are highly desirable. Some companies view progress in EFT for treasury operations cite the need for immediate or timed payments and whether or not early payment discounts (EPD) will disappear. The result is likely to be that EPDs will be pre-negotiated between vendors and suppliers as part of the overall payment discussion.

As far as the payment system providers are concerned, there will likely be a healthy amount of merger and acquisition activity and consolidation at some point in the future. The cost of building infrastructure is expensive, so it makes sense for a buy to build strategy rather than build a network from scratch. Profitability models for electronic payments in the future will likely involve value added services such as settlement risk management, currency rate fluctuation risk management. Existing networks such as utilities should be considered if they can also provide the additional services that will differentiate payment system providers.

Technology

Electronic Payment Processing will replace paper check processing, will involve new services. BPO will dramatically change the BOC portion of banks, financial institutions and payment system providers.

Competition will manifest itself at the network level. Efficiencies, connectivity, capabilities, and price will be defining characteristics of payment networks. Imagine that a cell phone network could pit itself against a financial network such as MasterCard or Visa. The end user usually will not know or care about the network, but about the functionality, offerings, and price.

Value Chain, as payment modalities evolve, risks could shift from payment system provider to user. Smart software systems will “learn” the patterns of customers.

Companies want faster, better control over employee expenses and real-time monitoring systems, accepting or denying approval of a transaction, are possible. Firmwide cash flow patterns that may be helpful for company treasury operations in

predicting liquidity needs, reducing insurance costs, and of course, eliminating or significantly reducing financial risks.

Government and Regulation

Taxation of payment transactions is likely. Recent proposals have included a 5% illegal immigrant tax on outgoing remittance money transfers. Maybe the U.S. will need to enact a value added tax (VAT) similar to Europe. There will be considerable debate on these matters as EFT moves into the mainstream of users and payment providers.

Management of compliance itself has evolved into a substantial support industry, especially post SOX and payment systems have developed capabilities to manage this function as part of additional revenue generating services.

Central Banks in the future will look different as they respond to new needs of users and payment providers. Depending on the performance of the Euro over the few years, it is possible that smaller countries will see an economic advantage to combining, consolidating their currencies into a common, larger, hard currency that will allow them to participate in world markets on a different scale. In fact, a common currency for the Gulf region is expected in 2010.⁶⁶ The Federal Reserve Bank's job of accurately measuring international money flow could become more difficult as more payments take place on networks which bypass the Federal Reserve. They have initiated discussions with industry to identify issues and possible solutions.⁶⁷

⁶⁶ http://www.swift.com/index.cfm?item_id=59739, Monetary Union puts focus on market infrastructures

⁶⁷ Matthews, Anna Wilde. U.S. Turns to Finance Industry on Tracking Global Money Flow. The Wall Street Journal, April 11, 2005, p. A4.

Aggregation of regulated and unregulated funds in sweep type accounts is a tremendous issue that regulators will increasingly have to consider. Will governments attempt to try and establish electronic borders to control the flow of information, money, services and goods? Governments will have to enact treaties or agreements to govern cross-border payment transactions. Especially since the transactions may decrease tax receipts from traditional business and governments will need to collect taxes on new business models. Governments have been and will continue to be important drivers of change in the field of electronic payments and will seek efficiencies for their operations and will require more and more users to interact with EFTs.

New Entrants

New entrants will include large banks looking to utilize existing IT infrastructure. They may also want to entrench themselves in major supply chains and will have to work with large corporations and SMEs to be successful. Small, innovative companies will develop new capabilities as they are needed. Most will have specialized competencies in compliance management, security, and system sales, development and integration. The large banks include JPMorgan, Bank of New York, Wells Fargo, and others. The smaller companies include Fundtech, Logica, Persutte, Global F.A.S.T., DirectPay, and as rumored, Google. There will have to be some consolidation of mobile payment companies and the survivors may merge or integrate with any number of possible companies that can provide attractive cross-selling opportunities.

Accessibility

Major disconnects exist such as the ability for a small country to tap into an EFT network or get access to hard currency. Foreign exchange brokers only deal in limited currencies. It will take time to solve these problems and the countries facing hardships will certainly be at a disadvantage in the global economy. Despite where a system is planned, the question remains as to who pays.

We'll know the future is here when the networks have been thoroughly developed as platforms for payments and that they facilitate payments of all kinds. The future will be clear when the predominant technologies and protocols have evolved and emerged to become standards by which payment systems follow. Finally, the arrival of a wave of consolidation of payment system providers will signal that the market has matured.

Conclusion

There is one thing that is certain in the future of global electronic funds transfer and that is rapid change. The field presents both challenges and opportunities and during the next 10 years, the EFT industry will evolve into a much different industry from what it is today. Efficiencies are to be found when goods and money move simultaneously and even better if they are predictable. The framework introduced in Chapter 1 is a good basis for discussion of the development of the field.

The risks, issues and uncertainties surrounding EFT are difficult to overcome. Nonetheless, there are financial institutions, companies, and governments that are forging ahead, facilitating change and developing innovative solutions to make electronic payment systems available and affordable. Looking at the market for global electronic funds transfer or payment transactions, there is a convergence of IT, banking and trade that will create new, improved and unique opportunities and ancillary markets for new business-to-business payment products and services.

Challenges remain and there are difficulties surrounding their resolution, but the industry is moving forward and the “old complexities” of transferring money electronically are being replaced with emerging “new complexities.”

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