



TCS BαNCS

TCS BαNCS

Research Journal

Issue 4

A photograph showing four hands of different skin tones reaching from the edges of the frame to hold a circular ring of water. The water is splashing and has a dynamic, flowing appearance, forming a perfect circle in the center.

Enterprise-wide Payments

A Collaborative Approach

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Enabling Link Up Markets to
reduce complexity in European
cross-border securities transaction
processing in eight months.

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From the time people traded potatoes for livestock and, subsequently, began using commodity money such as gold and paper currency, to the present day transactions over the Internet, including, e-money, cards, and electronic transfers on mobile phones, the payments business has come a long way.

Consolidation—and collaboration—is the name of the game in payments today. Globally, electronic payments are growing at 13%, with Asia-Pacific recording the highest growth rate of 20% over the past five years. It is also opined that by 2015, about 30% of all financial transactions in the world will either originate or terminate in India or China. With greater free trade, adoption of globally distributed work paradigms, increase in cross-border transactions, and similar demands on payments, systems within and outside of enterprises have grown complex. Electronic payment systems, global standards for payment messages, alternate channels of payments such as internet, mobile, etc., has resulted in better liquidity in the market place. All these have necessitated banks to evolve unified as well as alternative strategies for domestic and cross border payments, while, on another dimension also for retail, corporate, institutional and high value payments. More importantly, there exists a complex need for monitoring including compliance, auto enrichment, exception management and shrinking value date deadlines. Further, the payments infrastructure is continuously being reviewed for greater efficiencies.

The cards market continues to see double digit growth in transactions and showcases immense untapped potential for more growth – for instance, the importance of cards in the receivables management chain continues to evolve. Despite increasing trends towards commoditization and margin compression, the market has a fast growing fee pool. Latin America and China are examples of areas that are witnessing enhanced credit card activity, while the US markets are onto a maturing credit card model, with increasing development in prepaid and debit cards. At the same time, consumers are moving to online, mobile and contactless banking and payments with rigor, a case in point being Africa's Capitec that issues microcredit via the mobile channel in 90 seconds.

Specifically, in Europe, banks face the challenge of migrating customers to new SEPA instruments, the Payments Services Directive (PSD), and in achieving readiness to send and receive SEPA direct debits and SEPA credit transfers. According to recent industry analyst estimates, India, China, Africa and Latin America represent mobile financial services potential, although NFC (Near Field Communications) payments hasn't picked up the way it should.

Recent economic conditions have made most banks invest in their transaction banking businesses to expand product and service offerings and thereby leverage an alternate business model. Non-traditional competition from telecom service providers or other intermediaries such as PayPal (e-bay) and Intuit are fast becoming relevant. Adopting the concept of the 'many-to-many' paradigm and riding the wave of social online networking, the B2C payment institution



has fast become main-stream. Facebook Credits and Twit Pay are payments platforms spawned by popular social media networking sites that are now shaping the emerging payments space. B2B payments are not lagging far behind, with e-commerce sites such as Rakuten (Japan) and mobile payment providers leveraging this transformation to offer innovative services.

Building on this extensive reach of mobile networks in emerging markets was the revolution in financial inclusion (Obopay in Senegal, State Bank of India) taking financial services to the unbanked. This also marked the foray of a new player in payments, telecom operators, such as M-Pesa and Orange Money, and the mobile phone as a replacement for cards. Do we see the emergence of an international mobile payment network soon? What else is new on the horizon? Payments are now proving to be the springboard for the launch of progressive initiatives in financial services in many ways.

So, amidst this hub of activity, where are the banks, the traditional payments providers? And, how are they faring? How do they counter services offered by nimble, more customer-focused payment providers who now use the same infrastructure created by banks to develop new products and services such as real-time clearing and other on-demand services?

The challenge for payments players, and mainly, banks, is how to respond to these new changes and repurpose existing technology architecture accordingly. Banks are looking for that all-important efficiency not merely in the form of cost reduction but also in strategic alternatives such as outsourcing in the ACH space. Further, as payment types transform, the opportunity for fraud increases drastically causing the need for the intelligent capabilities of analytics to track and minimize fraud.

ISO 20022, which is mandatory in Europe under the Single Euro Payments Area (SEPA), is fast facilitating interoperability with third-party payments services. Therefore, IT support of ISO 20022 is a key service element for payments firms doing business in the SEPA zone. Notable exceptions are the USA where there is a movement to align to broader standards such as the International Payments Framework (IPF) seeking to map US payment formats to ISO 20022.

Payments services hubs and payments convergence are buzzwords today. This modernization has begun with the need for banks to defend and enhance their market share, launch client specific products, improve risk management and offer value-added services such as cash management, cash flow forecasting and cash concentration services efficiently. This exercise necessitates that banks recognize payments as a separate business and at the same time ensure that there is no single point of failure. There is no single approach to this transformation as there are multiple points of entry, and banks can choose to undertake modernization of retail or corporate payments, or both. Leading analyst, Gartner, defines a payments services hub as a “middle-aware financial IT orchestrator”.



The good news is that proven technology platforms are available today, supporting such modernity and focus. They help to conceptualize payments as a 'product' within an institution and enable a whole lot of personalization, pricing determinants, messaging and interoperable adapters. This business will transform to be structured around STP, transaction enrichment, real-time decision making and provide enough opportunities for rationalizing the business processes in the middle and back-office. All these factors act as catalysts for business growth and opportunities for customer behavior analytics and business intelligence.

This edition of TCS BaNCS Research Journal, focused on trends in payments, delves deeper into each of these developments and the journey ahead.



NG Subramaniam

President – TCS Financial Solutions
Tata Consultancy Services



Dear Reader,

The staggering potential of risk-free, collaborative thinking from the time of Socrates and Einstein is well-known. Eminent thinkers and scientists, they often shared ideas with each other and debated on ways to crystallize an innovative thought. This collaboration is what we see in the collective intelligence networks of today.

The payments space is witnessing a similar experience in consolidation. In this edition of TCS BaNCS Research Journal, TCS BaNCS brings you perspectives on the new generation of payments, tracking how it survived the credit crunch, to then heralding a model of innovation, be it through resilience, or mobile and digital technology.

These set of articles delve into all these areas and some more. From exploring a BPO story to payments processing, and an enterprise-wide payments hub strategy. Enthusiasm for the latter is fast growing. A consolidated payments hub is flexible enough to support changes in the future, improve response times, reduce processing costs alongside offering superior functionality and reusable components. All built on a shared system that collaborates as it evolves.

Happy Reading!



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The European Payments Industry: Moving from Survival to the Future

Every bank is facing a similar challenge — how to respond to an economy that is very different from the economy prior to 2008. A 'return to normal' is not likely in the short term if ever, and so, the ability to respond to the emerging "new" normal in an agile way is paramount. The financial crisis highlighted problems that existed before the events of 2008, forcing a re-evaluation of many of the business models around payments, also increasing the likelihood of even greater levels of regulatory activity. The way the banks' payments business responds in 2010 will define what may happen in subsequent years.

Most of the challenges financial institutions are facing today, are perhaps, the result of under investments made in the past. Much of the spending on payments processing in recent years was to make the payments business as lean as possible, while making only those changes that were absolutely necessary. As a result, the levels of spending required to meet the mandated changes have been perhaps larger than expected by some. This, however, needs to be coupled with the increasing importance of payments within a bank, as we should not forget that for many banks, payments were one of the few businesses to actually show revenue increase in the last 2 years. Yet at the same time, the payments industry is becoming, in the eyes of many, more and more commoditized, with falling prices and increasing customer expectations.

This sets the scene for a very interesting year with an uncertain economy

and with budgets more than ever under scrutiny. As a result, many banks seem to be repeating at least some of the same mistakes, and are again looking at lean approaches as a result of short-term strategies/requirements despite this approach previously having long-term implications. The changes required, especially by SEPA, are long term, if not permanent, changes. Banks investing today should be paying heed to those lessons that should have already been learnt, and be investing for the long term.

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Regulation and compliance continue to be a driving force for change in Europe, but it is unclear as to how many banks see this as an opportunity for change, rather than a task that has been set and has to be checked off the list. "Regulation" is used here in a broad sense, meaning government intervention, both national and regional. This business driver includes not only regulation that is under way, such as SEPA, but also regulation that is looming large on the horizon.

Until now, many banks have treated SEPA as something that they "just"

have to comply with rather than adopt. Recent indications from the European Commission are that SEPA will become mandatory (TowerGroup in late 2007 predicted an end date by 2014 at the very latest). Deutsche Bank at Sibos 2009 called for an end date no later than 2013. But the deadline has yet to be set, despite repeated calls. The impending status of the deadline, however, does highlight a very real gap in SEPA readiness for many banks that has become imperative to address. With budgets unlikely to increase at the pace that the rate of change is dictating (or indeed at all), the remainder of 2010 will pose some real challenges for banks. Many banks are of the opinion that the business case for SEPA is poor and that SEPA will result in loss of revenue, as discussed in many previous TowerGroup Research Notes. As a result, there are very different approaches being taken. On one hand, a recent TowerGroup survey shows that there were more RFIs for payments hubs issued in the first quarter of 2010 than in total through 2009. But at the same time, there have been more RFIs for payments outsourcing than ever before.

As a consequence, developing an enterprise vision of the importance of payments and the role the bank wishes to play is a fundamental first step for banks. In reality, few bankers with whom TowerGroup speaks indicate that their institutions have a clear strategic view on payments, certainly not one with a horizon of five years or more. Many perceive the medium term



to be less than a year. The vision varies from bank to bank. SEPA is all about creating a competitive market for payments, but not every bank will be able (or want) to compete. The question is why invest now in becoming SEPA compliant when at some point the vision of unified European market will mean that they are actively removed from the market.

But regulation takes many forms, including the ongoing ownership and support from national governments, and will play a large role in defining the developments of the financial services market in the coming years. In many countries, banks among the top 3 for the country are now at least partially state owned and are being broken up. Breaking up banks creates all sorts of challenges for payments, including determining how to separate the entities from the existing systems, which in some cases were in the midst of integration projects. It is uncertain how the separation of one entity into many will affect the ownership of the payment infrastructures (currently based on the percentage of volumes processed in many cases). Also unknown is which organizations will buy those new entities, both bank and nonbanks being mooted as potential buyers, and which parts of the business will be included in the sale and how that will be decided. The result will be an emerging competitive landscape as the status quo begins to change. In some of these markets, most notably, there are new entrants to the banking market as well. The UK is a good example. Not only are Santander a significantly larger player since their recent acquisitions, and Tesco continuing to expand their financial services business, but also Metro Bank which opens its doors on July 29th,

with others such as Virgin, looking to follow suit. Change is perhaps the only certainty!

Therefore, the need to improve agility to respond quickly to market changes will be (if not already!) critical going forward, and will become a competitive advantage for those institutions able to achieve it. TowerGroup believes that a period of flux will ensue over the coming years, and create opportunities for institutions that can respond quickly and effectively. Responding strategically also requires more fundamental capabilities. Product development is often slow and costly today and requires extensive testing — a requirement hardly supportive of innovation. This is as a result of ageing technology in the payment systems, making just testing new products complex and costly. Being able to develop new product offerings in a timely and cost-effective manner will allow banks to be more creative and innovative in both products and processing. This ability of course requires the technology initiative of service-oriented architecture (SOA). This creates the ability to re-use existing pieces of the value chain, in essence compiling a new product. But before improving product development capabilities, banks need to review infrastructure for greater efficiencies. It is likely that a significant step change in efficiency will be required going forward. The banks fundamentally, then have to decide whether that is something to pursue. Only then will they be able to decide whether they can achieve the necessary efficiencies or need to consider alternative options. Should they invest in payments, and buy a payments hub; or should they consider outsourcing, and finding a different value-add to the customer?

The last two years have been very difficult for financial services with large parts of the bank suffering large losses, or indeed, the bank disappearing altogether. The worst seems to have passed, with thoughts now moving from survival to the future. How banks move forward will be critical in determining their future success. Have they learnt from recent experiences? Does your bank have a clear vision about where they are going, and the importance of payments to that vision? 2010 will be the year that many of the answers to these questions start to emerge.

TowerGroup write a series of notes outlining the top 10 issues for each of the segments of financial services that it covers. These set out what TowerGroup believe should be at the top of the agenda for the head of line of business, with the required strategic responses, and how these will translate into specific IT initiatives. This article gives an overview of some of these drivers that are pertinent to the European Payments industry as we enter the second half of 2010.



Gareth Lodge

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Remittance Information for U.S. Wire Transfers: A Costly Endeavor with Limited Benefits

Today, U.S. wire transfers provide limited remittance information along with a payment. The information is provided free-form, meaning that it is not machine-readable and, therefore, cannot be automatically applied to recipients' receivables, credit management, and treasury systems. Payments that flow from payers' accounts payables systems through the banking systems to recipients' accounts receivables systems without manual intervention are considered Straight Through Processing (STP). All companies strive to achieve STP because it reduces processing costs, improves accuracy of posting, and speeds funds collection.

Especially, for business-to-business transactions, remittance data is as important as receiving funds owed in response to invoices. Cash on-hand is always important for companies, and today's economy elevates its importance. Knowing invoice details, the amount paid, and the details regarding any discounts or concessions taken, is necessary for updating the receiving company's accounts receivables and credit management systems. Even the treasury staff relies on remittance details to forecast cash flows. As a result, Aite Group believes that the provision of standardized remittance data along with the payment is, in theory, generally a good thing. Adding remittance information is made mandatory for banks, however, Aite Group thinks that the costs to add remittance information to wire transfers should be weighed against the benefits of adding

that information for that particular payments method.

In October 2006, the Fed and The Clearing House published the results of a jointly sponsored survey of 381 U.S. corporations to determine their desire for the inclusion of structured remittance data in wire transfers. The Association of Financial Professionals (AFP) conducted a survey of 331 business members in May 2009 to ask organizations about the value of receiving remittance information with wire transfers, and, the systems and software they currently use to send and receive wires. While the findings are useful, each survey must be viewed as having a particular agenda and benefit to the conducting organizations. In April 2010, the Fed and The Clearing House announced the addition of structured remittance data to Fedwire and CHIPS payments, effective November 2011.

Especially, for business-to-business transactions, remittance data is as important as receiving funds owed in response to invoices

Aite Group has reviewed the findings from both the surveys, as well as Aite Group findings from qualitative discussions with several banks and technology vendors that support wire transfers. Aite Group has considered the

potential benefits from introducing structured remittance information to wire transfers, evaluated the expected market adoption, and considered the challenges for banks and vendors seeking to implement the solution.

Fed/Clearing House Survey

Results from the Fed and The Clearing House's 2006 survey indicate that corporations desire remittance information in a structured format for wire transfers. Wire transfers currently provide a free-form field of limited characters, in which, any additional information that fits may be inserted. The free-form nature of the field means that it is nearly impossible to create programs that pull specific data from the field to pass to other systems, such as companies' accounts receivables. Ninety-four percent of respondents to this survey said it is "valuable" for wire transfer payments to include remittance information with the payment, and 58% of the respondents said they are willing to pay an additional amount for wires that include remittance information. On an average, respondents indicated that they would be willing to pay an additional US\$1.67 per payment for wire payments that include remittance information; 32% of these respondents would be willing to pay at least an additional US\$3.00 per payment.

One motivation for the Fed and The Clearing House to add structured remittance information to wire transfers is their desire to increase wire transfer volumes in order to ensure each



organization's continued business viability. In the 2006 survey report, the sponsors (the Fed and The Clearing House) hypothesized that moving just 2% of existing check payments to wire transfers would lead to a 47% increase in wire transfer volumes. This volume increase would translate to an additional US\$1.9 billion in wire transfer revenue for U.S. banks as a whole, based on Aite Group's estimate of an average charge of US\$20 per wire.

AFP Survey

Overall, findings from the AFP survey were encouraging for the Fed and The Clearing House. Of the total survey population, 47% said that remittance information would be "extremely valuable" to their organizations if it were made available in the wire transfer message, while 48% of respondents said it would be "valuable" to their organizations. Ninety-one percent of wire recipients said they will use the data for posting their receivables if it is provided, and 61% said that their organizations will send the data with wire transfers that they initiate.

The AFP is using these findings by encouraging their business members to increase pressure on banks and vendors in order to add structured remittance information to wire transfers. As reported to Aite Group by several bankers, the pressure is being felt by banks because of its inclusion in requests for proposals (RFPs), mostly from very large corporations. These companies are key clients for banks; they're companies with which banks want to maintain and build relationships.

Aite Group Perspective

Although these statistics appear to strongly support commercial client demand for remittance information

with wire transfers, Aite Group remains somewhat skeptical. As described by one banker, the way the survey questions were framed, they "couldn't have been more Pollyanna-ish if they tried." Basically, survey respondents were asked these questions with no reference to fees or other charges from banks or their vendors in order to support such offerings. Almost every company would like to receive formatted remittance information with a payment — especially lacking consequences such as cost.

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Further, although the largest companies are beginning to include the provision of remittance information with their wire transfers as a requirement in their bank RFPs, medium-sized companies are mostly unsure of what the new wire formats mean; most of the banks with whom Aite Group spoke have received a few questions from clients generally asking what adding remittance information to wires is about. Regardless, banks will at least need to be able to receive the wire transfer data — that capability will be a Fed requirement.

Benefits for Companies Receiving/Making Payments

The benefits for recipient companies are quite clear: Receiving standardized remittance data removes the remaining hurdle for automating the posting of wire transfers. So long as banks' wire systems communicate the remittance data to their reporting systems and enterprise resource planning (ERP) systems, and provided those systems deliver an automated feed to companies' accounts receivables, credit management and treasury systems, wire recipients will be able to accept such payments as straight-through processing almost for the first time. As a result, receiving companies will be able to save some processing and research time, leading to cost savings. Given the relatively small number of wires received today, the cost savings will be negligible.

Paying companies have a slightly increased burden due to a previously non-existent need to add data to wire transfers. Still, the inclusion of that remittance data can help the recipient more quickly close open invoices for the payer, thereby freeing up more credit for greater purchasing power and a potentially faster shipment of goods. Further, more accurate posting will prevent multiple communications between the buyer and seller regarding discrepancies, lessening research time for both parties.

Requirements of Banks, Technology Vendors, and Companies

The new Fedwire and CHIPS message format can support details from as many invoices as will fit in 9,000 characters of space. The exact number of invoices that can be supported will depend upon the length of text entered



into each of the structured data elements, but the Fed and The Clearing House expect it to cover 30 invoices or more.

The structured wire transfer remittance information format will be compatible with both the EDI-based STP 820 standard and the XML-based ISO 20022 remittance information data elements. STP 820 supports only 10 critical data elements, so contains less information than ISO 20022-formatted messages. A challenge for vendors is to decide what to do with the extra data elements if a system to which they pass information supports STP 820.

Most banks of all sizes are relying on their wire transfer system vendor to make the necessary changes to the wire transfer system itself. Making these changes to wire transfer systems is just the beginning; other systems than the wire transfer system need to be altered as well. The effort to ensure that any relevant system can interface with wire transfers (both customer-facing and back-end clearing, settlement, and bank accounting) is the bigger challenge.

At the receiving end of the wire, banks need to ensure that their reporting systems, such as online cash management/banking, Bank Administration Institute (BAI)-formatted consolidated receivables, and electronic data interchange (EDI) files all have the capability to capture the additional remittance information and pass it along to the recipient, preferably, in an automated interface. Finally, companies receiving wire transfers with remittance details need to update their accounts receivables, general ledger, credit management, and treasury systems to accept and utilize the data.

Costs and Benefits

For many banks, project plans are underway, but costs have only been determined for their wire transfer system changes. Estimates of costs for these changes range from several hundred thousand dollars to multiple millions of dollars per bank. Aite Group estimates that the total cost to the U.S. payments industry (banks, software vendors, core system providers, industry utilities, and companies) will be about US\$3 billion to implement the full complement of wire transfers with remittance information.

The benefits for recipient companies are quite clear: Receiving standardized remittance data removes the remaining hurdle for automating the posting of wire transfers

The general consensus of banks and vendors is that the introduction of structured wire remittance information will prove moderately beneficial for the industry as a whole. This assessment is in comparison to two other choices: a great benefit, and a waste of time and money. Players in the industry expect little positive impact on wire transfer volumes as a direct result of the addition of structured remittance data, however. Those companies that receive the data with the wire will be able to apply the funds automatically and experience timing and accuracy benefits as a result.

Banks perceive a revenue opportunity from their reporting capabilities, but not directly from wire transfers. Adding

the ability to capture remittance information with wire transfers and pass it through to the recipient is mainly considered client relationship building by banks.

Aite Group's Conclusion

The transmission of remittance information along with a payment is usually considered a virtue in the United States. In other parts of the world, notably Europe, the combination is less valued; remittance information is critical, but may be provided through a different and parallel channel. In the United States, wire transfers are the major payments type that does not support the provision of B2B remittance information along with the movement of funds; a circumstance being remedied by the Fed and The Clearing House's initiative to add structured remittance data to wire transfers. Unfortunately, while there are benefits to the industry, the cost and effort associated with meeting requirements will be high in relationship to those benefits for the relatively low volumes of wire transfers processed.



Nancy Atkinson

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Straight-Through Processing (STP) - The Road Ahead

STP has been defined as automation of a business transaction without any manual intervention, starting from its initiation till the settlement. The importance of STP was realized in mid 90's when the settlement of trades used to happen six days after the initiation. With a concerted effort from the financial community, the settlement cycle was reduced to T+3, but a real time settlement still remains a big challenge for most of the financial institutions. While the relevant players in payment processing have been collaborating (Clearing Houses, Central Banks, Banks and Service Providers like SWIFT) to enable higher STP rates, STP for payment transactions still remains an issue due to the complex nature of a payment processing chain.

For most of the financial institutions in the world, this has become one of the most critical business imperatives, considering that most of them are still struggling to rationalize the existing complex web of myriad sub-systems in the payments infrastructure. It involves manual interventions and latency at various stages before data can flow from one system to another till final settlement happens. Various departments in a bank, and the associated conventional business processes demand manual due diligence as part of the workflow, which comes in the way of realizing full STP of transactions.

Some of the regulations, which allow banks to charge non-STP fees to each other if the transactions do not comply with inter-bank convention on payments, have become a cause of

concern for financial institutions that are yet to completely implement STP in their Payments Processing departments. Financial impact of non-STP transactions can be significant for institutions that handle large volumes.

Mentioned below are some of the main drivers for financial institutions to adopt STP:

- Minimizing the operations cost
- Decreasing human errors in transactions and mitigating reputational risk
- Reducing settlement risks on payments and achieving greater predictability on liquidity
- Reducing working capital life cycle
- Availability of real time cash positions, thereby enabling optimal deployment of funds
- Enhancing customer experience on payment products and services
- Reducing the fee paid to other financial institutions by improving the quality of outbound messages

STP Implementation

The STP implementation does not just end by adapting a good technical solution; it also depends a lot on improving the overall surrounding ecosystem. The dependency on legacy systems and the reluctance to change the existing business process becomes a bottleneck in achieving a seamless STP system.

The adoption to market standards such as SWIFT, SEPA, compliance to ISO

standards, SWIFT SCORE, among others, must be evaluated for not just technical implementation but also the relevant business practices, operational needs and regulatory compliance issues. The coalition of various business processes, systems and customer needs becomes an important consideration while implementing STP related improvements. Real benefit of STP can only be realized if the entire eco-system, including processes and systems, is aligned.

The definition of STP has been changing and widening over the years. Financial institutions cannot rely upon automating just their internal IT systems and processes but they also now need to focus on integrating their systems with those of the corporate customers in a seamless manner. The enterprise-wide system architecture must enable external ERP and AP/AR applications to integrate seamlessly to in-house systems, thus automating the end-to-end process of initiation and reconciliation for their corporate customers.

Adoption of SWIFT SCORE can play an important role in this area. However, its strict eligibility guidelines restrict easy adoption. ISO 20022 standards can be an alternative but this also has its own set of problems, the prominent one being, over hundred fields in a single message format thus increasing complexity.

It is up to the financial institutions to provide alternatives for integrating corporate systems. Continuing with the proprietary formats may be



unsustainable considering the complexities involved in integrating it with multiple corporate systems, although the industry is also responding to these issues with alternatives, one of them being CGI (Common global implementation), which is based on ISO 20022 format. The reality, however, is that the financial services industry still has not come up with any concrete standards that are easy to adopt. Most of the work done until now is only an assortment of various message standards, and there is a definite need for rationalization.

The Road Ahead

With the evolving landscape of the payments industry, the need of the hour is to have a payments processing ecosystem or in more relevant terms - a payments hub that can enable end-to-end Straight-Through Processing, from acquisition to settlement and reporting. To achieve such levels of STP, the payments hub should be capable of:

- Providing an integration layer that can seamlessly integrate internal and external systems and interfaces
- Automatic repair capabilities, fixing commonly identified issues without manual intervention
- Managing and utilizing reference data extensively – e.g. various participant directories
- Managing business rules based processing to optimize the solution to new challenges as far as STP is concerned
- Managing channel agnostic processing on the reuse of standard services – to have similar STP experience across channels
- Providing real-time feeds of payment status and related information

There are additional challenges, which a payments hub should manage as far as STP is concerned. Some of them notably are:

- Management of service levels and availability of payment services for initiating channels
- Managing exceptions on customer limits and authorizations and bringing a payment back into the STP route as soon as an exception is resolved
- Increased focus on compliance checks on payment instructions
- Automation of risk controls on foreign exchange and bank's own liquidity
- Dynamism of routing and prioritization of payments - such as late decisions on routing and forwarding

These barriers to STP pan different applications, and SOA plays a crucial role in enabling a payments hub to meet these challenges. The approach to creating a true STP system is a transformational journey for banks and it needs a focused approach with the following considerations:

- Construction of an STP system should be based on modular or component-driven design, with a clear vision on the final landscape
- Adopting a phased approach for a transformation program and avoidance of any big bang situations to manage and mitigate associated risks at an acceptable level
- Any short-term changes should be aligned to the longer term goal or vision of the STP transformation program
- Creating key performance indicators which can be measured during this transformation

- Leveraging any existing payments services, processes or infrastructure and stressing on reusability of functionality to avoid creating new silos during this process
- Creating a strong governance model around the payment operations to be supported, and clearly differentiating between core and localization needs

Conclusion

The payments landscape is changing and banks will have to learn to adapt to these changes swiftly. Customers expect better and transparent services from their banks, and banks must respond by finding out ways to iron out bottlenecks in a seamlessly integrated STP system.

Financial institutions need to choose a solution, which offers improved business agility, flexible and efficient integration capabilities, seamless automation, support for multiple format and standards, and visibility and access to information across all IT and business processes.

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Vishal Saxena

As Implementations Head, TCS BaNCS Payments, Vishal Saxena leads global implementations and release of payments solutions for customers. Vishal Saxena comes with 17 years of experience in software design, development and product management primarily for the banking sector.



The Payments Paradox

The Importance and Challenges of Payments and Transaction Banking

Calls to treat payments (a core product and capability offering within any transaction bank) as a strategic asset have historically gone unheeded as banks have clamored to invest capital elsewhere. Since the credit crisis, this area has received new focus at board level with discussions about how to best leverage an asset that is the closest thing many of the big European banks and universal banks have to an annuity business. The conversation at CEO level is about maximizing cross sell, understanding product and client profitability and ultimately stemming the tide of margin erosion and revenue leakage. Banks are now seeking ever more innovative solutions to address these challenges, built on using the correspondent bank network fully and building strong strategic partnerships.

Payments and transaction banking are not only core to the banking business but also key to corporate relationships

Revenues are Great... But Where is the Profit?

Payments and transaction banking can be an area of revenue leakage. This can be due to fee waivers, under or inaccurate-billing and deficiencies in a

bank's infrastructure to effectively bill in more complex tier pricing arrangements. While the first is often due to practices based on the perception that payments revenue can be waived as a discount incentive to support other products, the second challenge is often due to the fragmented nature of payments operations and the gaps and disconnection in cross business unit data management, often as a result of minimal integration of operations and technology acquired across multiple jurisdictions.

Three Payments and Transaction Banking Strategic Challenges

Payments and transaction banking are not only core to the banking business but also key to corporate relationships. Focusing just on short-term profitability will not be sufficient in itself to realize the full potential of Payments and transaction banking as there are three strategic challenges to be addressed so to exploit the transaction banking potential:

1) **Identify the Opportunity and Customer Needs** – Whether a bank sees itself as a niche player, specializing in a particular area of the transaction bank value chain, or a provider of insource solutions for SEPA or as a full product range, Global Transaction Bank, it must stay close to the business of its customers. Banking regulatory jurisdictions and domestic branch networks as well as commercial opportunities

regardless of geographical borders and time-zones must be recognized and supported seamlessly. This requires a fundamental shift from the typical product/market focus of the banking mindset into a much more fluid international set-up across different products and regulatory requirements. Different industry and national standards have to be taken into consideration together with the different needs and ability and willingness to open and integrate treasury functions.

- 2) **Right-Position Payments and Transaction Banking within the Bank** – Payments and transaction banking are typically categorized as a utility, shared center or factory-like business. Scale and automation are crucial to the business as it is the recognition of the value (revenues) it generates for the individual product and strategic business units within the bank. This requires the set-up of internal transfer prices without which a Transaction Banking P&L could not be calculated. The transparent setting of internal pricing is also required for keeping the cost of fee waivers and billing leakage to customers to the bank under control and to ensure the due returns and value to shareholders are generated by the Transaction Banking business.
- 3) **Operationalizing the Regulatory Regime** – Successful payments businesses and Transaction Banks have taken a holistic view of payments, aiming to operationalize



responses to any regulatory change as soon as possible, rather than responding with short term, expensive and risk laden tactical solutions.

The Payments Hub as a Potential Response to these Challenges

An enterprise payments strategy is often driven by revenue growth objectives, although risk mitigation and cost savings are keys that open the door to funding in a successful business case. For those banks keen to progress an enterprise payments strategy, there are 4 key drivers:

An enterprise payments strategy is often driven by revenue growth objectives, although risk mitigation and cost savings are keys that open the door to funding in a successful business case

1. Risk Management

This involves transparency around risk across the whole Payments and transaction banking value chain and understanding how to leverage risk management products and technology to enhance revenue opportunities. Impact of the continued migration from paper to electronic payments is managed across the hub or utility.

2. Cost Reduction

Fundamental to any successful business case is the recognition and identification of cost reduction

opportunities. The rationale for a Payments Hub is often predicated on the assumption that it will lead to operational and technical synergies.

3. Revenue Generation

The hub must enable and support revenue generation whether this is through greater parameterization, supporting multiple product sets for clients or new channel expansion e.g. mobile payments. Additionally the hub can enable a more complete customer view, thus supporting cross-sell opportunities between Payments and Transaction Bank products.

4. Streamlined Governance and Agility

The hub can support greater cross-business unit collaboration, by creating a single payments utility, thus breaking down the classic retail/wholesale split. As well as supporting a cost reduction agenda, this single governance approach can also enable far better control and transparency across the payments value chain.

Designing the Payments Hub Operating Model

Payments, cash management and trade finance are volume dependent businesses whose profitability is heavily dependent on economies of scale, low latency and automation. These three concepts have to be taken into consideration within the context of the overall strategy for the Transaction Bank and the associated Target Operating Model (TOM). A suitably tailored TOM has to be designed around the commercial and delivery requirements of the business, and this is very much the case

for Transaction Banking. It is not only a matter of recognizing the “strategic” vs. “commodity” product features and functionalities based on the bank positioning and on the nature of its commercial relationships. The grid of “core” and “not-core” functional requirements, in the majority of cases, includes an optimized patchwork of in-house, outsourced and white-labelled activities, the Payments hub, often ending up being a repurposed point solution. These have implications on the complexity of the regulatory compliance, business continuity, assurance and controls functions that have to be put in place to manage a complex set of risks and ensure smooth performance.

Economies of scale, low latency and automation. These three concepts have to be taken into consideration within the context of the overall strategy for the Transaction Bank and the associated Target Operating Model (TOM)

In the short- and medium-term, the opportunities for reducing costs lie in the fragmented and duplicated nature of payment operations that are typically located in different business units and service centers. This sub-optimal setting is often the consequence of how payments operations have been set-up and developed by multiple business units of a bank over time. The matter can reach further degrees of complexity



Figure 1: Key Takeaways and Considerations for the Payments Hub Case

Takeaway	Examples/Detail
Payments strategy mandate must start at the top	- Any enterprise payments strategy must first have the buy-in and guidance from the executive team - When the strategy/mandate comes from within and from above, there can be a lack of perceived value and hence a painful educational process ensues that slows down the implementation
Proper governance bodies and cross-LOB buy-in are critical	- The payments council, the appointment of a payments czar, or another governance body/mechanism are keys to success - Ensure that LOBs or other groups have the opportunity to voice objections. Understand those objections and how they impact implementation - Ensure that objecting groups have the proper incentive - Reconcile internal governance challenges between the retail and wholesale businesses, potentially through the creation of a shared services

whenever mergers and integration between banks have bought together under the same banking brand twin sets of infrastructure and operations.

Moving towards a Custody Type Model

Increasingly, we will see the polarization of Payments and transaction banking providers along the following lines.

Global Universal Providers

True, full-service transaction banking will be provided by a limited number of big universal banks. These organizations will typically be the insourcers of third-party business with stable, scalable and new technology with the ability to provide services to financial institutions and corporates across the complete range of Transaction Banking products and capability.

Specific Market Operators

Banks that have the scale and capability to offer services to a specific region or market e.g. SEPA capability

in Europe or specific market penetration in Asia

Niche Providers

Small providers who operate in distinct market or product lines e.g. trade and supply chain in Eastern or Southern Europe and Africa, remittance Service providers in South America etc.

But many will simply exit the Payments and transaction banking market all together, through being sub-scale or having significant structural problems that means that making the transformation business case will never quite stack-up. Specifically players which have a large branch infrastructure in a single country will ask themselves whether payments and technology can ever be a differentiator and core competency, if not then they will look to outsource or partner.

Additionally, the rise of regional players will become increasingly important. The big SEPA banks in Europe will find themselves competing with well capitalized new entrants. In Asia and the

Middle East, competition will come down to four to five bigger full service players with a proliferation of smaller transaction banks in countries such as India. Africa will continue to be the proving ground for mobile commerce, where together with South America banks with the requisite appetite will continue to attempt to formalize the informal global grey remittance market.



Ben Matthews

Ben Matthews leads the Transaction Banking capability in Deloitte having spent the majority of his career working in the Payments, Cash Management and Trade arena. Ben specialises in helping organizations to transform their business using Operating Model design.



Trends in the Payment Sector - An IBS Intelligence Perspective

A clear theme while talking to payment sector participants is that there is lots of discussion and analysis at present, as banks seek to lay down their strategies and the technology to underpin this. An event such as Swift's Sibos show, in Hong Kong on September 2009, brought just this sort of feedback. The conversations between banks and suppliers are tending to be more focused than in past years. This does not mean that there has been a rush of orders, with long decision cycles being the norm, but there does seem to be a serious intent to kick on and bring about change. This is linked to the renewed focus on transaction banking, with payments looking to be one of the most likely areas to be 'ring-fenced' when it comes to budgets.

It is still the case that payment investment is easier to get passed if there is a regulatory hook to hang it on, with plenty of these around at present, particularly in Europe. The interest in outsourcing comes partly from the perspective of banks looking to outsource to vendors, but more common is outsourcing to other banks, with this back in vogue particularly around problem areas such as SEPA Direct Debits (the likes of Deutsche Bank has set out its stall here, for instance). The traditionally domestic Clearing and Settlement Mechanisms/ACHs, such as Vocalink, Equens and SIA-SSB, are also interested in offering payments outsourcing, again with SEPA Direct Debits as a focus. Even SWIFT, which has been talking for several years about moving into 'shared services', has floated payments processing as potentially an area of

discussion as it firms up its 2015 strategy this year.

A larger number of banks are looking to put in place what might be described as intelligent middleware, which wraps the existing legacy structures

The solutions being discussed vary from the highly strategic to the tactical. A relatively small number of banks are ripping out and replacing much of their infrastructure. The few that started some time ago, if the projects have gone well, are starting to pull ahead. Indeed, it seems easier now than in the past to spot the banks that are able to offer truly innovative payments services, versus those that are in catch-up mode. After all, competition in transaction banking is a relatively level playing field and is to do with good old fashioned attributes such as efficiency and customer service. A larger number of banks are looking to put in place what might be described as intelligent middleware, which wraps the existing legacy structures.

With a hard launch date for SEPA Direct Debits of November 2010, by which time participating banks must have 'reachability', it was clear that software vendors have been anticipating at least a 'mini-rush. It is, after all, an imperative

for banks. Almost every vendor has made some type of response to the SEPA challenge, with a divide between offering tactical solutions, longer-term ones or a combination of both. Still, the actual decisions seem few. Ireland's EBS Building Society is outsourcing to Vocalink's web-based SEPA Accelerator for SEPA Direct Debits, for instance, but there have not been too many public pronouncements from would-be providers.

TCS is one of these, with both a tactical and strategic solution. A pre-existing module of TCS, called Service Integrator, is being pushed as the short-term option. This module already handled XML-based payments, according to one of the product directors of TCS. However, TCS has also invested heavily in a SEPA solution, providing functionality for both central banks and debtor banks. This is a completely new product, covering the 'whole suite' of all possibilities of payment instructions, regulations, and exceptions management. This was in pilot with a first adopter in late 2009.

However, many vendors appeared to have been underwhelmed by the attitude of banks towards SEPA. For example, Karsten Egetoft, SAP's business solutions architect, said that 'if you had asked me two years ago, I would have said I hope we can see some market momentum, with everybody talking about SEPA, and having to re-engineer their payment architectures. My expectation was that we would see more opportunity than we actually have. But what we have learned retrospectively



is that most banks have gone for a tactical solution to get SEPA-compliant'. One industry source, who declined to be named, felt in mid-2009 that 'tier two and tier three banks have their heads in the sand', with some not even having started to look at SEPA Direct Debits. He felt that they will 'lean on the big banks to help in the short-term'. They might have the idea of doing this for a few years while they get their act together, he said, but some will end up staying with this arrangement through inertia.

The sluggishness of the banking community is due to a number of factors. The first were the mixed signals sent by the authorities, particularly delays in transposition of the Payment Services Directive (PSD) into national law. This happened in France and Sweden, to name two countries. This led to French banks setting the deadline for implementation of SEPA Direct Debits back a year. Along with delays in transposition of the law and confusion of tariffs cited by banks earlier in the process, there is no strong business case for banks in a country such as Germany, where the electronic payments market works well, with high straight-through processing (STP) levels. Richard Spong, solutions marketing manager for financial services at Sterling Commerce, put it fairly succinctly: 'I don't think anybody from the banking side has been on the front foot for SEPA. It costs them money and reduces profits, and at the end of the day their revenues will be lower. Who would rush for that?'

Meanwhile, the financial crisis also seems to have slowed the process. A Product Director of TCS believed that 'if September 2008 had not happened, then definitely some of the SEPA programmes would have taken off in 2009. Some of the strategic programmes would have taken off. A number of

projects have been moved to lower priority, and more and more focus is to see if there is a bridge solution, with not even too many noises about this.'

Having said this, the expectation is still that SEPA will finally gain traction, with the corresponding increase in IT spend. The issue is more down to timing. There is a renewed focus on transaction banking, and tier one banks will be looking to leverage their investment. Another common belief is that the tactical solutions adopted in haste may be unsustainable once volumes increased, particularly as migration starts on the domestic level.

Aside from SEPA, the Payments Hub concept has been around for a long while but there does appear to be more momentum. Banks are looking for improved flexibility, a reduction in systems, and faster time to market for new products and services, hand-in-hand with the ability to readily meet new compliance needs. The concept had been helped by recognition from the likes of Gartner, which dubbed it the 'Payment Services Hub'. The analyst firm stated that, 'banks have a strong business rationale for reviewing their payment architectures. However, they must do so with the right architectural vision. The Payment Services Hub is that vision.' Bank consolidation might accelerate this trend, with the need to assimilate perhaps five or six different domestic ACH systems, with an attractive options being an enterprise-wide payment hub.'

Nevertheless, the challenges of moving to the new world should not be underestimated. The problem, as is so often the case, is not where you want to move to, it is where you are moving from. Plenty of banks would like to overhaul their payment architectures but the current situation is so fragmented,

with payments processing in so many silo systems and departments, that the projects become bogged down before they have really started.

The same issues also work against outsourcing. Banks need to have their own houses in order and a relatively clean architecture before they can delegate this to a third-party. Much of the payments outsourcing that is taking place is piecemeal, for particular niche areas. Nevertheless, ever more large banks are setting out their stalls and talking up the benefits. Aside from regulatory pressures such as the need to conform with SEPA, there is a widespread view that, as payments become commoditised, it makes no sense for every financial institution, no matter what its size, to process payments individually. 'There is no business case for thousands of banks in Europe to run their own payments shop. That's the long and short of it,' said Michael Mueller of Deutsche Bank.

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Martin Whybrow

Martin Whybrow, founding editor at core banking and operations specialist, IBS Intelligence, considers current trends in the payments sector. Among the identifiable shifts is growing enthusiasm for the concept of the 'payments hub'. Outsourcing is also receiving increased attention in the payments world, while regulatory issues, particularly SEPA, are not going away any time soon.



Digital and Physical Markets Drive Payment Innovations

A headline like this one usually gets bank executives to spend a moment contemplating the topic, starting with the meaning of “digital markets” compared to “physical markets.” Questions pop up – like, what is the “digital marketplace?” What parts of the banking business model, especially payments are “digitally transacted”, or soon will be? Will there be new payment alternatives that play a significant role in tomorrow’s digital market transactions compared to physical markets? How many payment transactions have already or will soon migrate to the digital environment?

A lot of attention over the past two years has focused on the role of payment innovations in a number of channels, including mobile, the internet, and even in the physical marketplace. Other payment innovations have focused on the payer and payee. Will payment innovations, such as mobile payments or P2P payments, be among the most promising innovations, capable of disrupting the retail banking market? Bank executives should be actively thinking about their future role in providing payment innovations in both digital and physical markets. It is important to keep innovations in the context of the battleground – the consumer’s financial wallet. This article reviews the mobile payments and P2P payment innovations.

Payments and the Consumer’s Financial Wallet

For the past 12 years, I have been tracking the size of and changes to the US

retail consumer’s aggregate financial wallet. Or, think of the answer this way: how much money comes out of the consumer’s wallet to pay for fees, interest expense, commissions, premiums and other charges that pay for all financial services used by all consumers each year. There are four fundamental dimensions to the consumer’s wallet: transaction and payment services (DDA, ATM/EFT/POS, etc.); investments (Time certificates, stocks, bonds, etc.); credit (mortgages, cards, other loans, etc.) and protection/planning (all insurance products, fee planners, etc.). In the US, consumers spent \$83 billion on transaction and payment services. The digital marketplace is here to stay on a 24x7x365 schedule for as long as I care to forecast (does anyone use forever in a forecast?). Payment innovation in the physical markets addresses the displacement of existing payment alternatives (e.g., cash, checks, debit/credit cards) by lowering costs and adding convenience.

The big banks, lead by B of A, Chase and Wells Fargo are committed to expanding their share of the retail payments marketplace. Other banks, such as US Bank, PNC, and USAA FSB, are committed to being competitive, making the impact of successful payment innovations crucial in the battle for market share (increasing the customer base) and expanding a bank’s share of the consumer’s wallet. This combination (market share, wallet share) is the battleground that will determine future growth for banks. The best performers will be better at doing both.

Mobile Payments Means What?

The headlines touting mobile payments continues to reinforce my opinion that technology-based innovation in financial services is often ahead of the business-based needs the technology solution addresses. Mobile payments means the use of a mobile phone is required to initiate and complete a payment transaction. The interest in mobile payments by bankers is obviously rising and is far stronger than five years ago. While mobile payments have achieved widespread adoption in several international markets/countries, a few leading US institutions have finally begun to realize a modest adoption rate for their mobile payments solution.

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A lot of attention over the past two years has focused on the role of payment innovations in a number of channels, including mobile, the internet, and even in the physical marketplace

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I consider the introduction of the iPhone as a “significant” change to the mobile platform which has become a game changer in the US. Other manufacturers have followed with their competing products. This multi-channel, multi-function handheld platform is the key to transforming the mobile



platform/channel into a meaningful venue for retail both banking and payment capabilities.

The introduction of the iPhone is a “significant” change to the mobile platform which has become a game changer in the USA

The big four US wireless providers (Verizon, AT&T, Sprint, T-Mobile USA) serve over 200 million mobile users in the US. Over 25% of mobile users now have a 3G device (e.g., Apple iPhone). Based on B of A’s mobile banking adoption curve (3.5 million users as of November 2009), I estimate over 10 million US consumers (or 5% of all US mobile customers) are actively using their mobile phones for banking related transactions and inquiries. My view is that mobile banking adoption is like a rapidly evolving customer experience R & D lab. The hardest part of R & D is figuring out the projected “real” benefits for the customers and the banks. For the banks, is it cost savings or more revenue? Does it contribute to organic growth (customer acquisition), reduce customer attrition, or both?

My analysis of mobile as a channel and payment device starts with this premise: new technologies can stimulate the marketplace by enhancing existing solutions or introducing disruptive capabilities that can expand market potential. Banks have to constantly evaluate their customer (segment) requirements, their channel delivery needs and existing investments, and their capacity to fund new technology

initiatives. Banks with large segments of Gen Y and younger Gen X customers should gain from their mobile banking/payment initiative. These consumers want integrated mobile banking and payments capabilities that are easy to use, and in some cases, are extensions of the bank’s online banking and bill pay capabilities. But, some banks are not focused on consumer wants and instead pitch technology.

An alternative mobile payment innovation uses the physical phone as the payment instrument which connects the consumer and local merchants through a payment transaction and settlement solution that sends text messages to the payer for authorization and confirmation. Bling, a small US startup vendor, has developed a mobile Point-of-Sale issuing and acquiring payments solution for community banks. Bling utilizes its closed loop payments network and ‘BlingTags’ that are affixed (like a postage stamp) to any carrier’s mobile phone as the payment device. The simplicity of this POS system appeals to both consumers and merchants, and displaces the Visa/MasterCard interchange fee with a lower cost alternative. Consumers tap their mobile/BlingTag on the merchant’s Bling-issued POS device to authorize payment. Bling’s solution sends a text message to the consumer’s mobile with the transaction summary. The community banks that have launched this solution view the initiative as a growth strategy to expand market share with consumers and local merchants.

Will P2P Payments Find a Market?

Point-to-Point (P2P can also be described as Peer-to-Peer) payment solutions are now into a second decade of trying to make a business case to

stimulate adoption by both banks and consumers. Unfortunately, some of the marketing spin has cast this opportunity as “person-to-person,” which is too limiting and misleads some bankers and consumers.

Most observers acknowledge that PayPal is the P2P market leader. But how many readers remember players like Tradesafe.com, eMoneyMail, Payme, BillPoint and C2IT? All of these solutions were trying to make a go of it in 2000 and none of them have survived as viable solutions for one reason or another. Of course PayPal has been very successful and new solutions have entered the market and the trade media has devoted meaningful coverage to the subject.

Any analysis of P2P payments needs to start with a working definition, which for this analysis involves a payment or money transfer between a payer and payee via an exclusively electronic payment transaction

Any analysis of P2P payments needs to start with a working definition, which for this analysis involves a payment or money transfer between a payer and payee via an exclusively electronic payment transaction. The market potential for P2P payment transactions could be as much as 25% of a consumer’s payment transactions. The largest banks have already pursued this opportunity by automating “on-us” transfers between payer and payee for online bill



payments. The joint venture between Wells Fargo and Bank of America to process their ACH transactions directly between the two banks and their clients expands this “on us” universe for the two biggest online bill pay banks.

Online bill payment’s adoption may be a predictor of P2P payments or transfers. Ironically, some banks have discovered that up to 20% of their online bill pay volume actually generates a paper check that is mailed to the payee. This type of payment is an obvious candidate for conversion to a P2P payment.

PayPal is now close to 100 million active accounts, offers free transfer of funds for non-commercial transactions, and permits parents to setup accounts for their sons and daughters in college to transfer money and provide the son or daughter with a PayPal debit card to use for purchases. Historically, most of PayPal’s transaction volume has been tied to a payer’s debit or credit card account.

Some banks, such as Bank of America, Wells Fargo, and Citibank, provide P2P transfers within their online banking portal. However, for transfers made outside a payer’s bank, the payer must enter the payee’s bank routing number and account number, which inhibits P2P payment adoption due to a payee’s privacy concerns. This payee data requirement has curtailed wider adoption of P2P payments.

PayPal has overcome this obstacle, eliminating the need to exchange credit or debit card data. New solutions that translate e-mail addresses and/or mobile phone numbers into bank account and routing numbers will be the dominant P2P solution in the future. Vendors such as CashEdge (POPmoney), Fiserv

(ZashPay), Jack Henry’s iPay Technologies (consumer payment solution), and Obopay all use a similar methodology. Large and small banks alike are using one of these solutions to launch P2P payment initiatives, most of which are directed at individual consumers or a single channel (e.g., mobile).

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One key to future success with P2P initiatives will be a bank’s ability to capture small business payee receipts, which is a many (the small business’ customers) to one (e.g., the local plumber, sole practitioners) opportunity

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One key to future success with P2P initiatives will be a bank’s ability to capture small business payee receipts, which is a many (the small business’ customers) to one (e.g., the local plumber, sole practitioners) opportunity. These payees can use the same methodology (their email address or mobile number) to enable their customers to make payments faster and cheaper. Those banks, both large and small, that figure out how to quickly convert their small business customers into P2P payees will gain both cost savings and the benefits of market leadership. Successful strategies may need to have a relationship based on multiple services (think share of wallet) that the small business wants or needs, such as small business online banking, remote deposit capture (for check receipts), and other transaction,

credit, investment, and planning/protection services.

Essential Guidance

Bankers should have a comprehensive view of how the digital and physical markets for banking services have been evolving over the past 15 years and be able to use that extended time frame as a guide for projecting the types of new capabilities that will have medium to high impact over the next three to five years. Bankers that let others take the lead will stay in the middle to back of the pack.

For those managers that are making innovation decisions, two key questions to ask are: will my innovation solution/vendor have a good chance of succeeding? Why (or why not)? Clear, affirmative answers to these two questions leads to a third one: How will this solution make a meaningful difference to my institution and its customers? Explain the tangible benefits for both customers and your institution. Successful payment innovation will make a difference for the bank’s customers, the institutions and some bank technology vendors.

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Bill Bradway

Bill Bradway, founder and managing director of Bradway Research LLC, analyzes the business strategies and IT investments of US banks and credit unions.



Adoption of ISO 20022 Messages by IFX Forum

A novel idea – a standards organization actually utilizing a standard which is the result of the organization's contribution to the definition of the message.

First, let's take a look at the IFX organization and then, secondly, see how ISO 20022 became an integral part of the IFX standard.

The Interactive Financial eXchange (IFX) Forum was formed in 1997 to create a messaging standard for financial services that would address the challenges faced with the network-based computing models. Based on the work previously done by the Open Financial eXchange (OFX) and IBM/Integrion GOLD standard, the Forum proceeded to re-invest all of the knowledge gained from those standards to design a new generation XML standard that would be usable in many types of environments, extensible to cover many types of financial transactions, and globally aware in recognition of the increased need to communicate around the world.

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IFX was the first of the four standards organizations to incorporate the ISO 20022 messages into the request/response architecture that is the heart of the IFX standard

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The Business Banking Work Group of IFX identified that financial institutions and their banking partners are looking to implement XML-based solutions to address the complexities of corporate banking needs while also taking advantage of all of the benefits that network environments offer. The messages are designed to be used across various types of applications – from internal systems of business banking data to data integration across many companies by automatically integrating data from trading partners into enterprise systems.

In 2003, banks and enterprise software vendors were in a quandary as to which XML standard should both organizations allocate project funding. The focus of a project would be on enabling integration between bank services and products and the functionality in enterprise software that customers are using for day-to-day transaction and cash management activities. As several XML standards already provided an end-to-end solution, a memorandum of understanding was executed between four organizations to bring their subject matter experts together to define common messages for payments and cash management reporting messages. This group was composed of representatives from IFX, SWIFT, TWIST and OAGi and it received the name of International Standards Team Harmonisation (ISTH).

In order to start the work of harmonizing, IFX prepared a comparison

between the messages supported by all four groups. Commonality was found extensively across all of the standards with some standards containing a more detailed data solution than others. The culmination of hundreds, maybe even thousands, of man-hours resulted in the XML messages known today as ISO 20022 Universal Financial Industry (UNIFI) message schemas for Payments and Cash Management. These messages are:

- Customer Credit Transfer Initiation
- Customer Payment Status Report
- Customer Direct Debit Initiation
- Bank-to-Customer Account Report
- Bank-to-Customer Statement
- Bank-to-Customer Debit Credit Notification

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The Business Banking Work Group of IFX identified that financial institutions and their banking partners are looking to implement XML-based solutions to address the complexities of corporate banking needs while also taking advantage of all of the benefits that network environments offer

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IFX was the first of the four standards organizations to incorporate the ISO 20022 messages into the request/response architecture that is the heart of the IFX standard. New IFX messages were defined that would allow the ISO 20022 message to sit inside of the IFX message architecture, irrespective of the version of the ISO 20022 message. As an example, a single message was created, Payment Batch Add Request, which could include either the Customer Credit Transfer Initiation or Customer Direct Debit Initiation. This was accomplished by including a name space that referenced the ISO 20022 schemas. As originators may desire to send detailed remittance information to their vendors, the message also accommodates the ability to include the IFX Remittance Information aggregate, where line item remittance details can be shown.

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The IFX flow control feature allows for very large, data intensive complex transactions to be communicated with greater reliability, thus, ensuring scalable performance of the system as the transactions grow

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This approach taken by IFX allows a request and response service to be

established, supporting either a batch or interactive style of communication. The IFX framework provides features and benefits such as:

- Scalable Transaction Support – The IFX flow control feature allows for very large, data intensive complex transactions to be communicated with greater reliability. This allows for scalable performance of the system as the transactions grow.
- Transport Independence – IFX is independent of the data communication protocol used to transport the messages between the client and server computers.
- Multiple Front-end Application Support – IFX supports a broad range of front-end applications, including Web-based applications, covering all types of financial activities running on all types of platforms.
- Multiple Client Support – The use of data synchronization to support multiple clients is a key innovation, allowing access to the same transactions while maintaining data integrity.
- Built in Security Features – IFX Security encompasses authentication of the parties involved, as well as secrecy and integrity of the information being exchanged. It is also security model independent.

With the inclusion of the ISO 20022 messages within the IFX framework, the data syntax and message structure

can be utilized across multiple environments within an organization – interactively when a request/response environment is necessary and in a push/pull infrastructure for automated message or file interfaces.

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Susan K. Colles

Susan K. Colles is a senior vice president and is a member of the eCommerce Automated Channel team, a division of Bank of America Merrill Lynch Global Product Solutions. Her main areas of focus include Enterprise Resource Planning (ERP) integration and XML standards, and she supports both strategic and tactical electronic commerce efforts across many levels in the organization.

About IFX Forum

Founded in 1997, the Interactive Financial eXchange (IFX) Forum is an international not-for-profit industry association whose mission is to develop and promote the adoption of its open, interoperable standard for financial data exchange, suitable for use by all sectors of the financial services industry.



The Expansion of BPO: Examples from Banking and Financial Services

Business Process Outsourcing (BPO) evolves from skill-based, low-value outsourcing to capabilities-based, strategic partnerships.

BPO is no longer limited to low-end data entry processing tasks, as it had been in the early 1990s. Now, leading BPO organizations support end-to-end processing across multiple product lines, ranging from the simplest data entry and account maintenance tasks to the most complex services including clearing, pension payments, remittances, funds transfer, SWIFT message monitoring, and transaction repairs. The growing expectation among financial institutions is that BPO firms should provide comprehensive service rather than simple, easily-defined deals.

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The evidence from global banks is clear: in recent years, major financial institutions have used BPO business units to undertake sizeable new projects. Where BPO providers once merely took over existing processes from businesses in other geographies, the BPO marketplace has evolved to encompass providers that offer integrated, consultative resources for innovative, strategy-driven institutions.

Development of New Products

In the past, new product development used to be handled by in-house IT professionals or, perhaps, by an IT outsourcing firm. Yet, the reality is that the BPO market has evolved to the point where BPO providers have the demonstrated capability to undertake de novo projects, manage line-of-business expansions and handle mergers affecting the underlying service.

Consider the case of a financial institution providing global remittance services. Person-to-person remittance payments play an increasingly large role in the global economy, with officially recorded international remittances to developing countries expected to reach \$335 billion dollars in 2010 and a record \$360 billion in 2011 (Source: World Bank). Although the market for remittance services is characterized by low margins and high fragmentation among providers, one of the largest global financial services firms recognized the market's huge potential, placing remittances among its top five initiatives.

Much of the fragmentation in the remittance business stems from the differences that exist in each "corridor" for sending payments between two countries. For example, sending a remittance from the U.S. to India requires a different process than sending a remittance to the Philippines, which in turn, differs greatly from what's required to send money from Saudi Arabia, Switzerland, or other high-income countries. Each corridor involves different sets of

regulation, modes of funds disbursement, and combinations of correspondent banking relationships and branch offices of the parent bank.

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Using BPO, banks have been able to address this kind of opportunity with a unique combination of technological resources and operational excellence. BPO providers now have both the infrastructure necessary to handle the diversity of financial products and services, and the ongoing staffing and compliance requirements to manage such a service. Even a product such as one involving multi-currency support across multiple remittance corridors spanning the most heavily-trafficked areas for person-to-person transfers can be handled as a BPO project rather than an in-house development effort. In contrast to the BPO market of just ten years ago, the current market for BPO services enables financial institutions to build such de novo capabilities.

The changing nature of BPO has moved from skills-based to capabilities-based outsourcing. BPO providers are now capable of building staff on an as-



needed basis to support new ventures, with cross-functional teams including personnel from operations, technology, business development and senior management, in order to design, develop and deploy new processes, service models and technologies.

The changing nature of BPO has moved from skills-based to capabilities-based outsourcing

On the project management side, BPO firms gain immense strategic and tactical experience in the preparation and review of business requirements documents, functional review documents, finalization of specifications, developing linkages and interfaces with existing systems, resource planning and scheduling, user acceptance testing and production verification testing. For subject-matter expertise, because the financial services industry has been using BPO firms for decades, the industry has developed depth of experience in areas ranging from operations and treasury to cash operations and compliance.

Public and Private Sector Benefits

The shift to full-service BPO impacts public sector as well as private sector entities. For example, governmental entities use BPO to process pension payments internationally, using much of the same infrastructure used to manage global remittances. Each new BPO client in these higher-level services leads to greater efficiency and higher levels of automation, creating a virtuous cycle of efficiency within the BPO industry and delivering recurring economic benefits to end users.

Compared to previous business models, BPO offers enhanced value, higher levels of uptime, and expanded capabilities across both service offerings. The pension processing example demonstrates how financial industry clients can draw upon the capabilities-based orientation of advanced BPO organizations to win new business in a highly competitive marketplace. Financial firms, by working with BPO partners combining technological skill, operational excellence and resource availability, gain the ability to enhance their potential to deliver value to clients with high levels of satisfaction in exceptional ways.

Flexibility with Changing Businesses

The benefits accrued through the use of BPO would be meaningless if it were not also able to keep up with the pace of mergers and acquisitions. When financial institutions and their clients depend upon BPO providers for key processes, they need to be sure that these processes can be extended and modified to meet the needs of evolving organizations.

Fortunately, BPO providers have shown the ability to integrate the operations of acquired companies onto existing platforms. Indeed, if the acquired platform has capabilities beyond what a BPO provider offers in the existing system, BPO providers have been able to create best-of-breed solutions in which the successful aspects of the acquired company are replicated throughout the entire organization. Management of business processes as part of M&A has become a core requirement for the modern BPO provider, and an essential element in pre-merger valuation and post-merger execution.

As banks around the world increasingly gain competitive advantage using

advanced core banking solutions, the strategy of “buy-now, integrate-later” is no longer a viable approach. In turn, BPO firms must be able to quickly and effectively support M&A activities by consolidating diverse systems and functions, providing financial institutions with the ability to go to market quickly with flexible systems, process, and tailor-made solutions, running on a single platform and capable of meeting or exceeding industry-standard efficiency ratios.

Today, BPO providers support global products with operations run 24x7 in multiple locations, global processing footprints and multi-channel operations. Activities span the entire project lifecycle, ranging from requirements, testing, implementation, operations and data maintenance.

More than ever before, financial services firms can rely upon BPO providers for much more than simply execution of defined processes, but rather the development and implementation of new services, new business models, and new organizational capabilities.



Sanjay Bohra

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Customer Experience 2.0 in Payments

Innovation in Customer Experience Management

Introduction

One cannot disagree that successful business hinges on delivering unique customer experience. The increasing prevalence of technology in day-to-day life has a bearing on customer experience, specially, the way customers perceive and react to brands. Across industries, short-lived brand retention is a concern and it is assumed that enhanced customer experience is the only way to garner customer loyalty. Organizations earlier used to

communicate their brand position through various channels such as call centers, e-mail campaigns among others. Service providers and customers today, interact through hosted services, web applications, social-networking sites, video-sharing sites, wikis, blogs and so on, to have a 360-degree view of each other. That's what is made possible by a modern day web-phenomenon, popularly known as Web 2.0. This technology-based traction in the customer experience is known as Customer Experience 2.0.

The New Paradigm

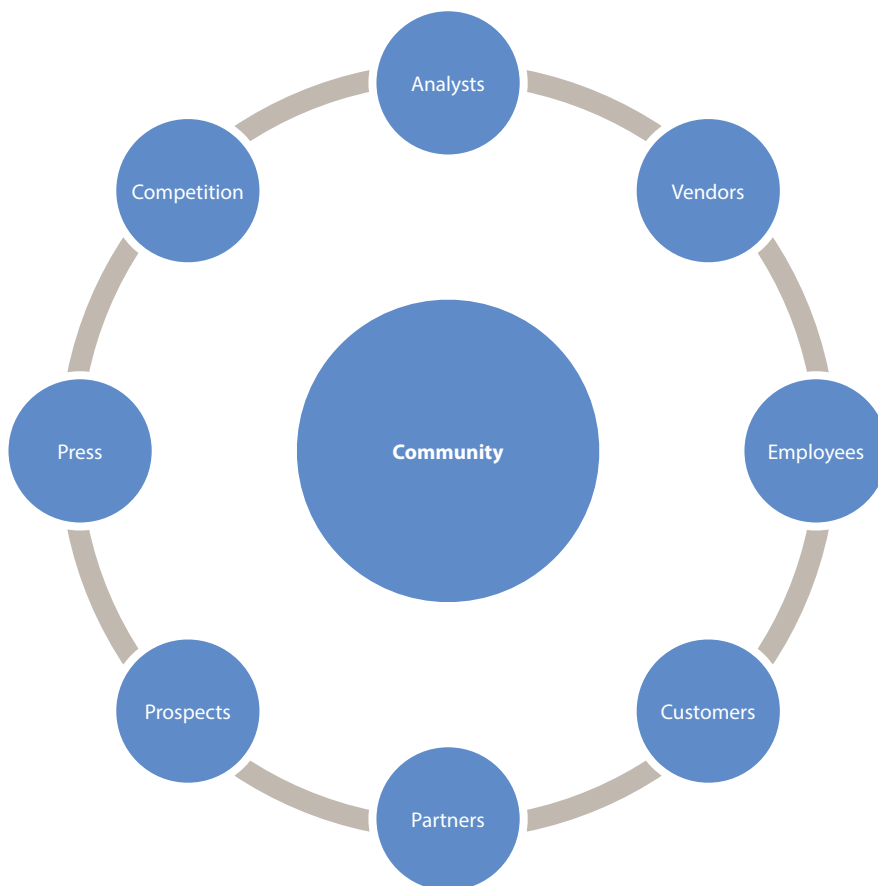
Analysts often compare the transition from Web 1.0 to 2.0 with the example of Netscape vis-à-vis the ever-evolving Google. It is often mentioned that in Web 2.0, we are in "the perpetual beta" environment. The websites transform into platforms for harnessing collective intelligence, specially designed to usher in rich user experience. Tim O'Reilly -- who conceptualized Web 2.0 -- describes it as "a set of economic, social, and technology trends that collectively forms the basis for the next generation of the Internet — a more mature, distinctive medium characterized by user participation, openness, and network effects." Web 2.0 has brought in great enablement to the customer service environment.

The increasing prevalence of technology in day-to-day life has a bearing on customer experience, specially, the way customers perceive and react to brands

In Web 2.0 we are in "the Perpetual Beta" Environment

The key focus area for organizations today is to try and transform the way their businesses operate. The customers now have the aptitude to decide

Figure 1: Customer Experience 2.0 – Community takes Control





for themselves; therefore, self-service and availability of options are the key differentiators. In the financial services domain too, the Web 2.0 era has unleashed a scramble among competitors to meet customer expectations through smart banking – P2P payments, talking ATMs, ATMs capable of video conferencing, self-service kiosks at bank branches, mobile banking, online banking, TV banking, social media marketing, risk-agnostic biometric authentication of cards and so on, to provide an interactive yet secure and social platform for all banking needs.

The key focus area for organizations today is to try and transform the way their businesses operate

Web 1.0-enabled Customer Experience 1.0 was delivered through call centers — an interaction engine between business and its customers through phones and agents. In the Payments world, Web 1.0 definitely offered the customers with faster service and dispute redressal. For example, credit cards were offered, serviced and delivered through a single telephone call or an e-mail. This was obviously ‘on request’ and the business had complete control over customer experience, which was determined and influenced completely by the nature of the engagement between the customer and the call center agents.

In a Web 2.0-enabled Customer Experience 2.0 environment, illustrated by Figure 1, customers are the key stakeholders having access to a range of information sources from which they may

choose to extract the relevant information and sift the rest. The customers are constantly following each product/offering from ‘inception’ to ‘beta’ to ‘alpha’. As customers take charge to define a successful brand, a fifth ‘P’ of marketing i.e. people came in the picture and took prevalence over the traditional four ‘Ps’ of marketing – product, place, price, and promotion! For example, in this new environment, organizations offered choice of cards to their customers. And, the customers had the discretion to opt for the best. This was obviously by ‘choice’ and the business had little control over customer experience. Customer needs and expectations are evolving beyond the “convenience” banking in the payments world as well. Customers today, need “empowerment” in order to simplify life, and bank anytime and anywhere, on the go. Real time access to information and immediate gratification provided by the internet has enabled competitors to optimally use each. The success mantra is to offer flexibility and features that appeal to customers.

The customer has evolved into a community, which spans across various stakeholders of the Industry ranging from customers, vendors, market analysts, employees, among others. This new community drives the business. Customer Experience 2.0 enables organizations to incorporate customer relationship strategies into their operations with applications to manage and understand customer interactions. This, in turn, gives customers the flexibility to do business with organizations on their terms anywhere, any time and on any device.

Therefore, it is all the more imperative for businesses to strive and implement

a Customer Experience Management Plan (CEM) to leverage the benefits of Customer Experience 2.0.

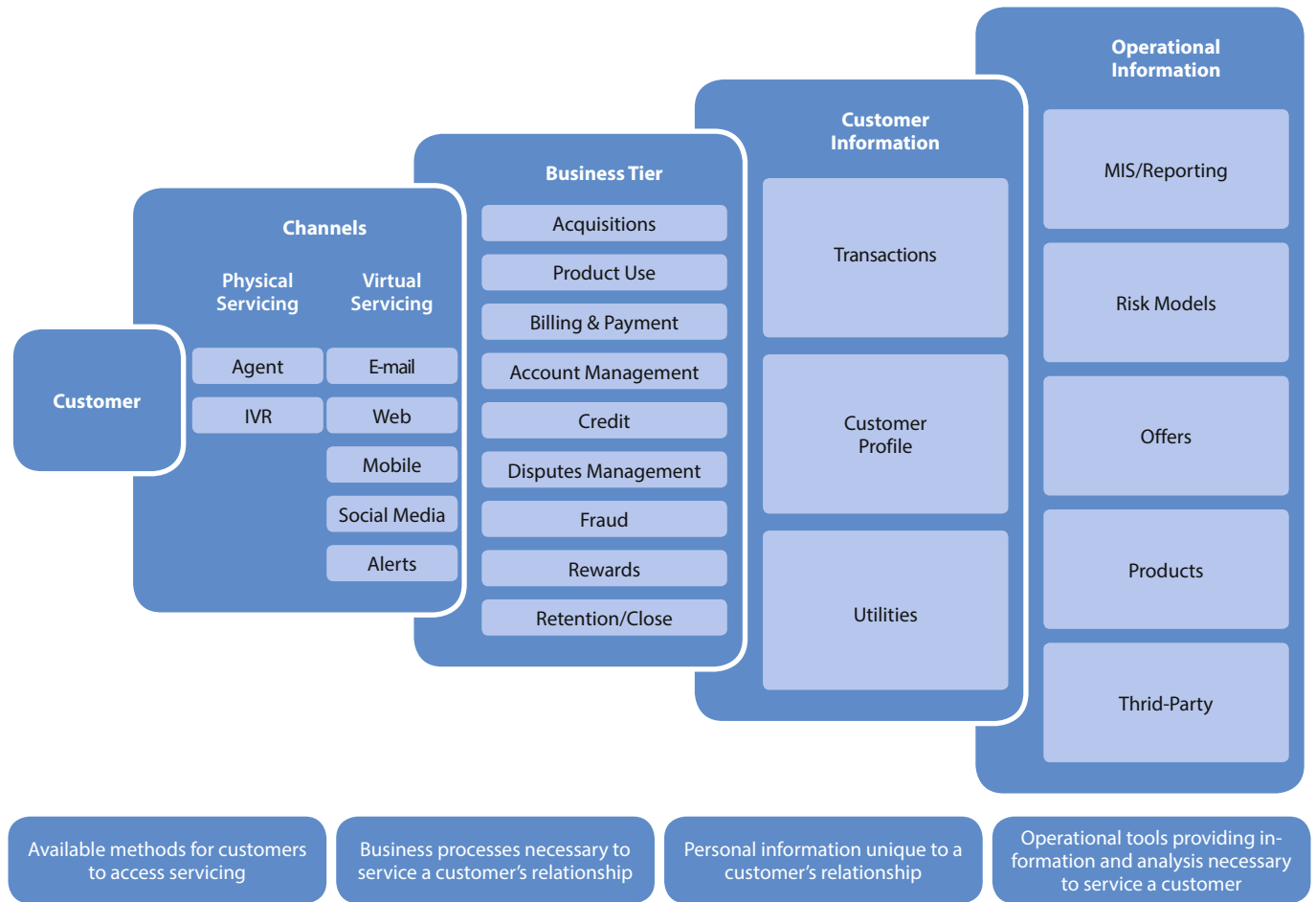
In a Web 2.0-enabled Customer Experience 2.0 environment, customers are the key stakeholders having access to a range of information sources from which they may choose to extract the relevant information and sift the rest

Customer Experience Management

Why do we need a CEM plan? Businesses invest billions in rolling out products and also on branding to attain market leadership. In the financial services sector, the stake is high as the products are knowledge-based and the key-differentiators are minimum. Therefore, customer retention in this sector is decisive in gaining market leadership. However, businesses are still grappling with understanding the root-cause of customer attrition. The trigger for such a decision is not always known. To gain a 360-degree view, “mash-up” of new and emerging models such as CEM are consistently being used. Organizations are changing the age-old approach of segmenting the customer support efforts for managing communication channels separately by an integrated next-generation customer relationship module. The initial and vital step is to form an information superstructure with a scalable SOA. The Web 2.0 enabled organization should be able to store, access, analyze, and manipulate



Figure 2: Customer Experience Management through Multi-Channel Customer Servicing



huge amount of customer data and have the capacity to interpret in a real-time environment.

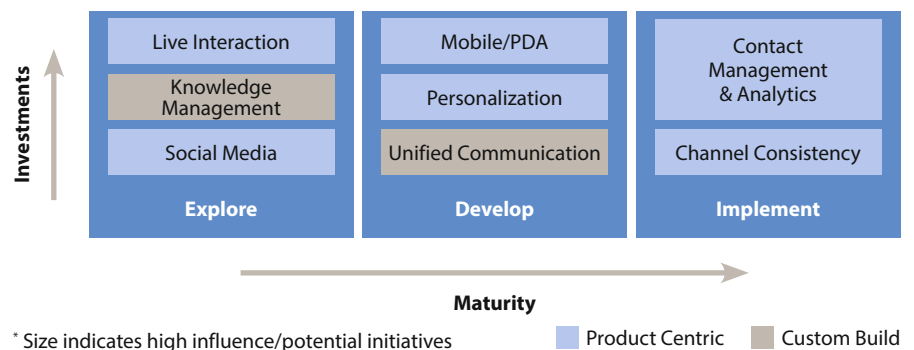
CEM is a process of managing customer's cross-channel interaction with an organization and its brand/product/service. Recent studies in the area of CEM have shown the need for organizations to plan, prioritize and pursue high influence/potential initiatives that have the ability to transform every customer interaction touch-point, from in-person or "physical" servicing to self-service channel-based "virtual" customer servicing. Increasingly, organizations are making rapid strides in these new yet lucrative investment domains. Figure 2 depicts a very high-level business

architecture that aids in enabling CEM through deployment of multi-channel customer servicing.

Global research across the payment industry has proved that cards and

mobile phones have significantly dominated the payment mode over the last decade and they continue to do so. Leaders in the payment industry are not unaware of this and, therefore, various initiatives and new programs

Figure 3: Investment Trends in the Payment Industry Towards Enabling Customer Experience 2.0





are being launched in partnership with IT service providers to bring to the customer the benefits of these new medium of payments with enhanced and enriched features.

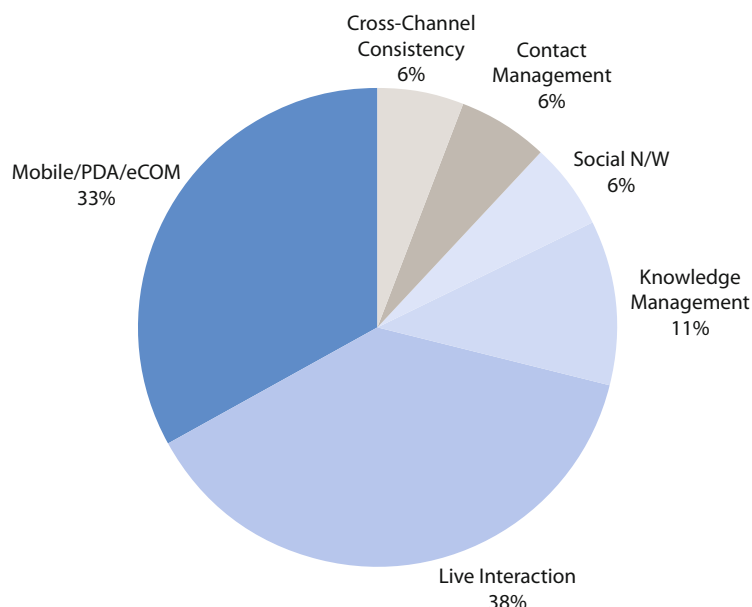
Figure 3 depicts a high-level sample of investment trends, types and phases for various CEM initiatives that have been observed across the payment industry. While some of the recent initiatives such as cross-channel integration, leveraging social media and click-to-chat have just taken off and are in the exploratory phase, other trends such as mobile payments, service personalization, contact management analytics and contact history by leading payments organizations are in various stages of development and implementation.

It is imperative for businesses to strive and implement a Customer Experience Management Plan (CEM) to leverage the benefits of Customer Experience 2.0

Innovation Across Touch-points

In the payments industry (and of course, across financial services), where the customer base is in multiple of a million, a combination of sophisticated technologies is required to implement a robust CEM plan. Cross-channel customer interaction in a Web 2.0 environment encompasses physical servicing, mobile-based virtual servicing and unified cross-channel servicing. However, the question of proportion along with priority, as illustrated in Figure 3, in implementing Customer Service 2.0

Figure 4: Proportion of Web 2.0 Components in Organization's CEM Plan



across channels will always be the key in deciding the outcome of the experience. Figure 4.0 provides a sample proportion of Web 2.0 components in a financial services organization's CEM plan. As observed, personal one-to-one instant contact (or live interaction) still holds the pole position - 38% of the spectrum. The proportion will vary across geographies and industries and also from product to product. However, in a mature environment, the priority may shift towards cross-channel consistency.

Call centers/contact centers continue to be drivers, and innovations are seen in the service delivery channel using Web 2.0 features. This metamorphosed data super structure liaised with modern Web 2.0 technology indulges in physical servicing, virtual servicing and also unified cross-channel servicing to deliver Customer Experience 2.0.

Live interaction is the key in *Physical Servicing*. This entails engaging Web 2.0 tools to check customer conversations on social media sites such as Twitter

and Facebook, and to proactively reach out to customers in two-way online conversations to address issues and also for context-based campaign management. The other innovative processes include organizational websites offering customers a choice of a chat session with a live agent, and even engaging external contact center subject matter experts to take calls for faster problem resolution. This requires software or a programmatic interface for collaboration and presence, and may even support multiparty conferencing for high-value customers.

Virtual Servicing is generally focused to deliver self-service to the customers where organizations proactively serve customers rather than react to them. Organizations provide services that give customers access to a number of functions using their mobile device and also websites. This includes activities such as making payments, accessing account information, purchasing tickets, performing contact management, and receiving text message responses. Customers can also install applications



directly on their Smartphones to contact banks, airlines, and other frequently visited sites. Customers must opt-in to receive promotional messages that are sent based on the specific customer profile.

Single access point communication through communications-as-a-service (CaaS), cloud services that bundle multiple contact center applications into a single suite and offer services is an excellent example for *Unified Cross-Channel Servicing*. The most common use of such unified interaction is organizations delivering breaking news through Twitter, LinkedIn and blogs, in mobile and Web-readable formats. In Europe, Middle East and Africa (EMEA), where video phones are common, organizations offer multi-channel video service - customers engage with agents through live call and agents provide video content to customer's Smartphone.

As illustrated in Figure 3, these can be achieved by a step-by-step mash-up 'perpetual beta' approach utilizing the existing infrastructure and adding on the new features to deliver the new services.

Leveraging Customer Experience 2.0

Who gains from this initiative? Is there a way to determine ROI? Such questions will always continue to hound the TCOs (Total Cost of Ownership) of various organizations. However, Web 2.0 technology has enabled organizations to read customers' mind and feel their pulse.

The most recent analytics software package comes bundled with Web 2.0 features, robustly integrated with blogs, wikis and other community based platforms. Predictive analytics can help the

payments Industry identify whether existing customers are keen to switch to other banks and decipher the triggers for such actions. An intervention at this stage with lucrative offers can minimize customer attrition.

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The tangible benefits that financial institutions could however derive by focusing on some of the Customer Experience 2.0 initiatives are: increased customer base, improved brand loyalty, reduced cost to serve, minimized complaints handling cost and time, reduced cost of infrastructure to service the customers, among others

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Also, how do you know that the baby (read product) is healthy at the marketplace? An analyst pointed out recently, "People are talking about your product, your service; your after-sales support, your advertising, your competition and your CEO. Listen to them, and respond. Because they expect you to". All organs of an organization such as R&D, innovation, product teams, customer service, PR and after-sales support can benefit enormously from insights generated from the opinions voiced on community portals. Leveraging the power of social networks requires that organizations work with social media tools to identify and continuously refine the "Listening Objectives". Recent

advancement in the Mobile App Analytics provides a wealth of metrics for organizations to understand and spot market trends and customize their applications accordingly.

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Making Organizations Customer Experience 2.0 Ready

A diversified global financial services company best known for its credit cards and payments capabilities wished to upgrade to the Customer Experience 2.0 realm. The company assigned this job to the leading technology service provider from India. Benchmarks were established by developing prototypes related to past experiences. The customer experience deployment journey focused on physical and virtual servicing. The process involved a long drawn-out schedule. Till this point, various modules have been implemented to cater to specific client requirements.

To enhance the *Physical Servicing* capabilities, the service provider's CTO Innovation team assessed the impact of the Web 2.0 media vis-a-vis the client's customer-servicing capabilities and presented a detailed business-specific study. The Service Provider's *Listening Platform*, an offering from its R & D Lab, was piloted and established for the client to scan conversations across millions of posts in social and traditional broadcast media. It also captured conversation from surveys, call center



records and other in-house conversation databases to produce actionable insights. Also, a next-generation *Agent Servicing Platform* was designed and implemented to ensure productive Agent–Card member interaction, thus improving the end-user experience significantly. This new Platform included new UI design concepts such as Dual Monitors, Flexible real estate with collapsible modules/menus, and intelligent workflows to enhance Agent touch points and improve productivity. The Service Provider is currently involved in developing proof-of-concepts for the next-generation platform in various technologies in order to decrease time-to-market and reduce TCO.

Virtual Servicing enhancements focus on *web-based* and *Mobile-based servicing*. The Service Provider conducted an assessment on the *Web Servicing* channel as per the Web Content Accessibility Guidelines and remediated existing applications across multiple markets, to enhance customer experience and ensure compliance to regulation for accessibility-based services. Continuous and additional enhancements to improve customer experience around online budgeting and expenditure reporting are being implemented as part of the roadmap. The future enhancements will empower the client's customers to view category-based transactions on the card activity page, graphical view of category-based spend, and self-service provisions to set the spend limits with provision for e-mail/SMS alerts. *Mobile-based servicing* was implemented leveraging the Service Provider's existing pool of Mobile Servicing Applications developed for various devices such as iPhone, BlackBerry, and Android-enabled devices.

The Client-specific enhancements to the Suite such as Location-based Servicing and Cross Sell, launched in April 2010 were probably the most exciting new service for all U.S. Proprietary Card members. The Service Provider helped the client deploy the Mobile *iPhone Native App* for its US Market, which helped attract customers to new products targeted towards Generation-Y. Available on the Apple iPhone® and iPod touch®, the App allows Card members to pay their bills, check account activity, and more. The Service Provider also enabled the Client to provide a user-centric *Mobile Community Forum* - a single collaboration point where the Card Member could interact with other customers on exciting business ventures.

The importance of a consistent customer experience irrespective of the channel used cannot be understated. Towards this, the Service Provider has been involved in a study to determine the next generation SOA-based common integration layer across the enterprise and now is involved in developing proof-of-concepts for the short-listed solutions. The Service Provider has also created new capabilities such as contact history so that a complete view of the customer is available across all customer interaction channels.

Conclusion

Organizations that are Web 2.0-enabled and poised to deliver Customer Experience 2.0 can be assured of superior brand-building, higher customer satisfaction, higher marketing ROI, and eventually meeting their revenue targets. To sum up, an organization that is Web 2.0/Customer Experience 2.0-enabled will have the capabilities to:

- measure today's experience

- predict tomorrow's experience
- design and model future experiences
- be ready to adopt next generation service modules

What's next in CEM?

With Web 2.0 technology, innovation has enabled us to understand customer experience by analyzing the customer characteristics, preferences, usage or purchase history and needs at each stage of the Customer Interaction Cycle. However, in the future we may expect the service orientations to be guided by the integrated web engines powered by high-end analytics propelled by Web 3.0 technology.



Debasis Thakur

Debasis Thakur is currently working with Tata Consultancy Services as a Senior Consultant, managing the delivery of projects spread across the Risk and B2B business lines for a large US-based Cards Services organization.

His key responsibilities include managing customer relationships, understanding their project needs, proactive recommendation of improvement initiatives, enhancing their application systems and managing the delivery and implementation of their business initiatives through a geographically diverse team of 600 associates in an onsite-offshore model.



Role of SFMS in shaping the Indian Payments Landscape

Indian Payments Infrastructure

Payments systems witnessed constant changes due to several factors such as market dynamics, increasing consumer demands, increase in the number of players in the financial arena and the payment crises of '90s in certain countries and regions. Technological advances and public policy have guided payment systems development and reforms with the underlying principles of protecting user rights, enhancing efficiency and competition, ensuring a safe, secure and sound payments architecture.

The economic reforms in the banking sector further catalyzed the change with de-regulation of the market, mergers and acquisitions throwing up newer challenges for managing complex technological divergence in a converging market. At the same time, demands of the well informed customer generation have also increased leading to introduction of anywhere, anytime banking by the banks for the benefit of customers. These developments necessitate a futuristic vision to realize the potential.

India's payments infrastructure vision was developed around four vital components viz., Safety, Security, Soundness and Efficiency (Triple-S and E):

- **Safety** in payment and settlement systems relate to the avoidance of risks in these systems. Sound designs, rules, and risk-management practices promote the safety of payments for financial institutions and

their users. Effective entry and exit criteria, regular monitoring, guaranteed settlements, risk mitigation measures are the standard ways to ensure safety of payment systems.

- **Security** pertains to the confidence among the users of the payments and settlement systems. Confidence in the integrity of the basic paper payment instruments and payments systems in India was established over a very long period of time. New systems based on modern technology are increasingly being implemented.
- **Soundness** in the payments systems relates to the well rooted foundation for the payments and settlement systems. All the systems are required to be on sound footing, with adequate legal backing, firm operational procedures and transparency.
- **Efficiency** is achieved by leveraging the benefits of technology so as to result in cost effective solutions, and optimal turn around timings for the systems.

Towards realizing this payments systems vision, RBI has established a Closed User Group (CUG) network, called INFINET as a first step, to share expensive IT resources and achieve the economies of scale. With physical networking infrastructure addressed, the next step was to develop a software solution that would act as the payments backbone for the country: Structured Financial Messaging System (SFMS) aptly filled this space.

Structured Financial Messaging System (SFMS): Beginning of a new Era in the Indian Payment Systems

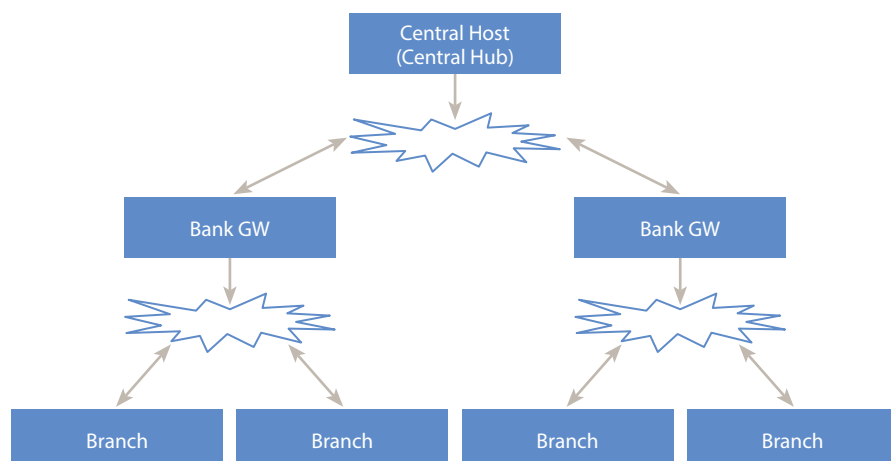
India's thrust into the payments system though much later than most other countries proved to be a vantage point as India now has the opportunity of building the next generation payments system a notch above the contemporary technology scene. The Structured Financial Messaging System (SFMS) was initially designed along the lines of a SWIFT-like messaging system for the Indian banking industry. SFMS went further beyond SWIFT, even while addressing the next generation needs of the country, by adopting PKI based security as early as in 2002.

Features of the first version of SFMS, released in 2002 by Deputy Governor of RBI, included:

- 3-tier (extendable to n-tier) architecture with Central Hub (Central Bank Level), Bank level and Branch level modules inter-connected to provide intra and inter-bank financial messaging.
- Establishing of a powerful, yet flexible and more importantly, user configurable payments infrastructure policy setting up the central hub level. Key capabilities included:
 - o template builder for creation of new message types and modification of existing message types allowing multiple message versions



Figure 1: SFMS Business Architecture



- o Automatic and centralized proliferation of changes to message versions, which is the first of its kind in the world
- o Centralized message syntax and rule engine
- o Centralized addition of new banks and branches and management of directory services
- o Interfacing with other payment infrastructure components such as Real Time Gross Settlement (RTGS) and Clearing Corporation of India Limited (CCIL) at the Central Bank level
- Bank level module with capabilities to interface with other payments infrastructure within the bank, such as intra-bank routing, inter-branch reconciliation, liquidity management, bank level MIS reporting.
- Branch level module with state-of-the-art message creation, search and communication capabilities apart from plug and play adopters to branch level external applications.
- Store and forward principle at each module with complete traceability of messages
- Multiple network connectivity options – PSTN, ISDN, VSAT, Leased Line
- End-to-end PKI based security encompassing, confidentiality, authentication, data integrity and non-repudiation
- Anytime, anywhere browser-based user access, either with Smart card or password

- Inter and Intra-bank secure file transfer
- Unique and first of its kind user-definable reports at message field and sub-field level

Impact of SFMS: Altered Payments Landscape of Indian Banking and Financial System

Apart from establishing the Indian Payments System at par with the International Payments system, SFMS also provided a new platform to launch new integrated products to meet the growing requirements in conformity with the rapidly changing market conditions, infrastructure and technological advancements.

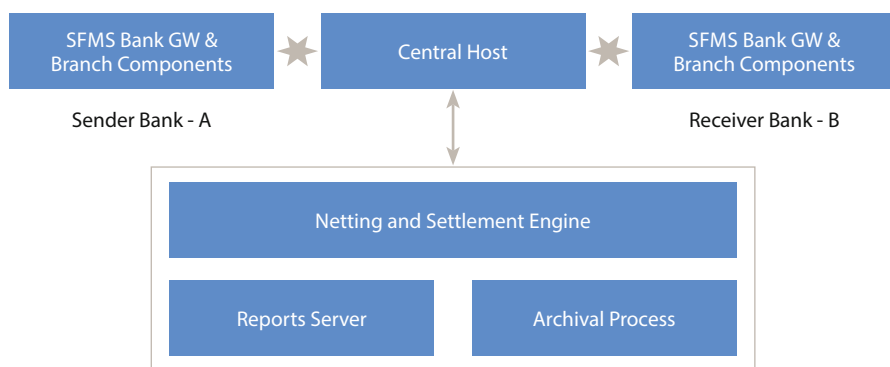
With SWIFT FIN messaging capabilities, SFMS has worked towards launching, National Electronic Funds Transfer (NEFT) transactions, Currency Chest Transactions, RTGS transactions, and government transactions within the country.

The following is a list of the message types developed and implemented in the SFMS application:

Message series	Description of Series
IFN 1XX	Customer payments & cheques
IFN 2XX	Financial Institution Transfers
IFN 3XX	Treasury Markets - Foreign Exchange, Money Markets and Derivatives
IFN 4XX	Collections and Cash Letters
IFN 5XX	Securities Markets
IFN 6XX	Precious Metals and Syndications
IFN 7XX	Documentary Credits and Guarantees
IFN 8XX	Travelers Cheques
IFN 9XX	Cash Management and Customer Status
IFN 298GXX	Government Account Transactions
IFN 298NXX	NEFT messages
IFN 298RXX	RTGS Messages
IFN 298MXX	Miscellaneous series
IFN 298CXX	Currency Chest Transfer



Figure 2: Business Architecture of NEFT



The fact that SFMS has already been implemented in 98 banks and enabled over 68000 branches in India is indicative of its reach and coverage in the Indian Payments landscape. Government Transactions and Currency Chest Transactions are the first set of proprietary messages added to SFMS in the year 2003-04. Similarly, high value inter-bank payments have been started with the introduction of RTGS in the year 2004-05. In 2006, EFT (Electronic Funds Transfer) and SEFT (Secured Electronic Funds Transfer) were incorporated in SFMS leading to the launch of NEFT (National Electronic Funds Transfer) which resulted in low-value, high-volume retail payments going through SFMS.

NEFT was introduced by the Reserve Bank of India (RBI) to help banks offer their customers the facility to transfer money from one bank account to another. Unlike the EFT system which provided settlement facility only at few centers, NEFT facilitates national coverage, with centralized clearing and settlement facility, while providing secure one-to-one funds transfer facility for customers. Further, to provide sound legal basis to the system, the system is provided with Public Key Infrastructure (PKI)-based security system. Currently, there are ten settlements during a day in this system, facilitating same day

settlement of funds for customers using this facility.

NEFT is currently operational across all branches of the public sector banks, scheduled commercial banks and co-operative banks. The target is to cover all branches with NEFT facility, initially and then, further expand it to all computerized bank branches as well as non-computerized rural branches in the country.

Funds transfer, both inter-bank and intra-bank, can be between any two branches registered with the Reserve Bank of India (RBI). The fund transfer request messages are created at the branches or at the core banking systems and transmitted using the SFMS web-enabled module. The

transactions/messages received from various branches of a bank are parsed, stored and grouped into one message and sent to RBI for better utilization of network and for better performance. At RBI, the transactions are segregated and settled, after which inward credits are sent to beneficiary banks. All settlements are processed in batches.

The settlement engine is designed to segregate the bank level debits and credits and make a net settlement, interacting with the RTGS system in real-time.

Outward Message Flow

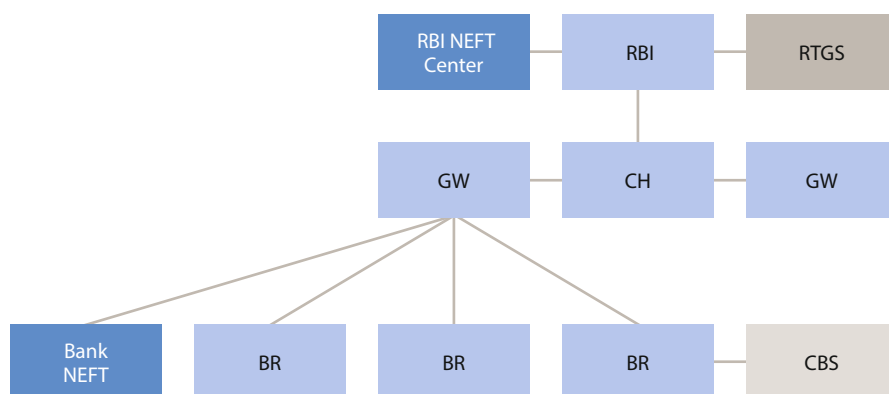
Customer initiated requests are sent to the bank for authorization. The approved transactions are then sent to NEFT for settlement. The outward flow of the messages is as shown below:

The bank level consolidation happens at Bank NEFT centre and sent to RBI for clearing and settlement.

Inward Message Flow

The settled transactions at RBI NEFT centre are sent to beneficiary banks after inter-bank settlement at RBI. The inward flow of messages is as shown below:

Figure 3: Outward Message Flow





The message segregation happens at NEFT service centre at the bank level and credit messages are sent to respective SFMS branches or Core Banking Systems (CBS) or legacy systems of Banks

Payment infrastructure of the country has been further strengthened with the introduction of NEFT. Exploiting the potential offered by SFMS-NEFT, RBI introduced several market appetizer initiatives in terms of availability, convenience, efficiency, speed and other value-added services. Key initiatives introduced by RBI include:

- i) **B+2 Return Window (Batch Time + 2 Hrs Return Window)** NEFT mandates banks to return NEFT transactions in the very next available batch. The B+2 return concept was introduced in order to complete the processing cycle on a near-real-time basis. This would require banks to afford credit to beneficiary accounts immediately upon completion of a batch or else return the transactions within two hours of completion of the batch

settlement, if credits cannot be afforded for some reason.

- ii) **Extended Business Hours** Extended NEFT operating hours by an hour on both week days and week ends, complying with persistent requests from various individual and business segments. This makes for more flexibility with NEFT.
- iii) **Hourly Settlements** With a view to evenly space out transactions across batches as also to make the system near-real-time, RBI has introduced the concept of hourly settlements. Presently, it has ten hourly settlements starting from 9 am to 7 pm on all week days and five hourly settlements from 9 am to 1 pm on Saturdays.
- iv) **Confirmatory Messages** Customers receive mobile or e-mail confirmation messages from originating bank after crediting the beneficiary bank account, a feature that has been widely appreciated by the industry as well as media.

Real Time Gross Settlement (RTGS)

messages are also enabled through SFMS for the high value funds transfer between the customers or banks. SFMS carries the funds transfer messages securely to RTGS for the near time settlement.

Bridging Domestic and International Payments

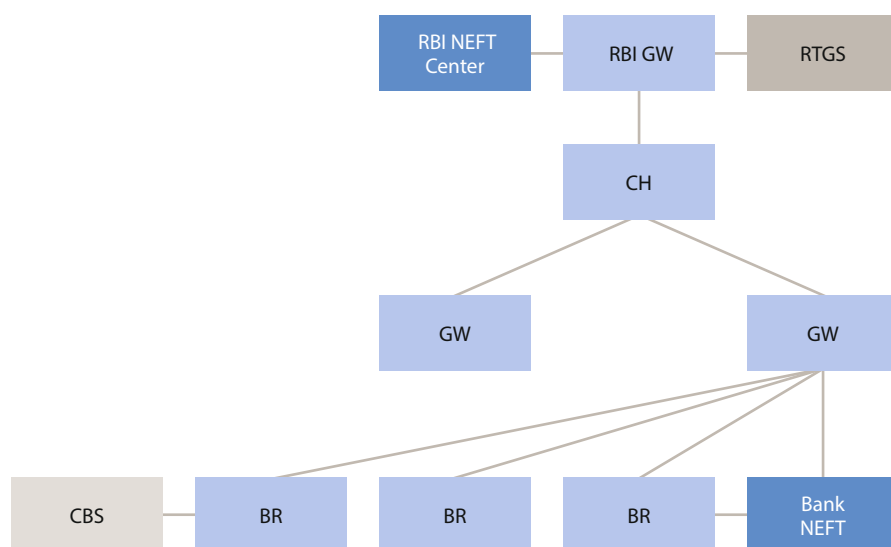
State Bank of India, the largest bank in India and its 6 associate banks, implemented a variant of the existing payment solution to reap in significant business benefits in International payments. With over 1000 branches involved, the bank is the largest carrier of cross border payments in India.

A common payment hub was established at the bank level, which acted as a bridge between domestic and international cross border payments. This offered high degree of flexibility for the bank in governance of the messages in the domestic segments.

The key benefits realized by the bank include:

- i) **Cost Efficiency:** All international connected branches migrated to this cost efficient solution, which helped reduce license and maintenance costs for the bank.
- ii) **Reduction in Payment Cycle Time:** With the new solution, the payment cycle, which took three days to sometimes three weeks earlier for completion, could be completed in about an hour. This feature helped increase business in some remote branches of the bank multi-fold.
- iii) **Message Repair Engine:** A rule-based repair engine in the new solution helps filter doubtful payments

Figure 4: Inward Message Flow





and directs them to a different channel where pre-defined rules are applied to tag messages to the right beneficiary. This helped the bank avoid significant manual efforts in processing messages and reduced delays in effecting payments.

iv) **Liquidity Management:** The solution enabled the bank to track the funds position and exposure at any point of time with branch, zone and bank-level visibility, both on domestic and international fronts mitigating liquidity risk for the bank.

v) **Anti-money Laundering:** Interfaces are built-in to integrate with anti-money laundering solutions.

vi) **Automatic Rule Based Re-Routing:** Flexible, user-configurable rule engine helped the bank define inter and intra-day message re-routing rules based on market conditions and geo-political considerations.

vii) **User Definable MIS:** The solution provided a user interface to business users, which had drag and drop features to select various combinations of message data at the lowest granularity possible – ‘sub-field’ of the message. This is one of the most powerful and popular business features of the solution.

Other services enabled in SFMS include:

- Intra-Bank funds transfer
- Trade finance messages for exchange of LCs, bank guarantees
- Interface to advanced channels like ATM, internet and mobile banking
- Extending interbank payment services to Regional Rural Banks (RRBs)

- Salary disbursement of Railway employees.

Potential areas/services on the pipeline include:

- Direct access to corporate customers
- Stock exchanges
- Post offices for Intra/Inter-post office messaging
- Government departments (both at center and state level) for inter and intra department transactions and their integration with external payment agencies like Banks
- Payment transactions in Railways
- Payment transactions in insurance companies

Some of the challenges faced during the development of SFMS, and the unique and innovative ways adopted to overcome them are highlighted below:

Multiple Stakeholder Workshops:

A committee of both public and private sector banks organized multiple workshops to brainstorm on the various possibilities and requirements that would work towards placing Indian payments infrastructure in the forefront of international payment systems. These workshops acted as fusion points and helped in striking the balance between varied aspirations and visions of various banks, and designing solutions that meet their business objectives and technology needs within permissible budgets while achieving uniformity and standardization at the country level.

Inter-Operable Technology Platform: One of the key challenges was integrating and migrating of

heterogeneous messaging systems in the country with different standards across banks. Keeping this in mind, the solution was built in J2EE environment to allow the best possible flexibility with respect to inter-operability across a variety of technology platforms. Considering significant variation in the size of banks in India and their corresponding governing structures, the n-tier architecture was adopted.

Innovative Software Distribution:

The ‘Auto proliferation of messages’ feature in SFMS enabled centralized message definition changes through the network across all connected bank gateways and branches automatically through application. These message changes get automatically applied in the software at each node when they connect to the SFMS network. This offered significant flexibility to the Central Bank in launching multiple business products in the interest of the community.

Wider Connectivity: Multiple network connectivity options such as PSTN/ISDN, V-SAT, and Leased line were provided in the SFMS design to enable wider connectivity across networked bank branches in the country.

Plug and Play Interface Adopters:

With the core banking solution not in practice at the time, several branch and bank applications were developed even within the same bank. To address interfacing needs of these applications, multi-layered, modular solution was built with plug and play based interface adopters.

Advanced Security: To build a futuristic solution, PKI based security was chosen for the SFMS solution. With the concept still in its nascent stages in the industry, the PKI innovation lab was



established to work in close co-ordination with application solution development team to create the finest security components for SFMS.

Cost Effectiveness: Open source technologies were used to a great extent to mitigate cost risk. This helped in attracting multiple smaller banks to migrate to SFMS with commitment and conviction.

Processing Volumes

The usage of SFMS spans across various types of messages, with the volumes spread across NEFT and RTGS transactions, based on the infrastructure of the banks.

For all inter-bank customer transfers, banking industry across the length and

breadth of India is using NEFT and the volumes have grown exponentially since the inception of the service. The volumes processed currently are:

Conclusion

A next-generation payment infrastructure in place ensures that all components of global payments landscape function in harmony, helps face newer challenges posed by funds mismanagement, irregularities, anti-money laundering, among others.

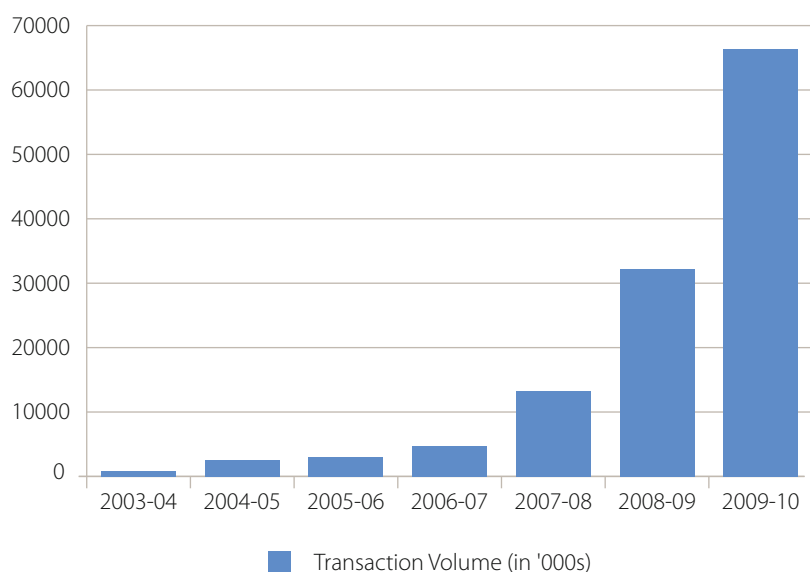
Any country/institution not envisioning and deploying such payment systems not only exposes themselves to risks, but also becomes a weak link in the global payments engine crippling the overall system.

'Cost effective' and 'Easy to deployable' solutions such as SFMS can help plug this infrastructure gap with minimal effort. The ability of SFMS to seamlessly integrate with SWIFT clouds is a compelling option to upgrade payments infrastructure systems and keep pace with a league of the countries/institutions offering advanced payments infrastructure.

At present, the usage of SFMS has been confined largely to funds transfer only. There is a large potential to extend the services to other application transactions such as treasury markets, securities etc, apart from leveraging the flexibility offered by SFMS in hosting country/institution-specific, proprietary message structures such as Government and Chest transactions in India.

The overall framework solution can be used either in full or part depending on the need of the country/institution. The modular architecture helps in adding new interfaces and components in a 'plug and play' mode in any technological environment.

Period	Transactions Value (in INR Billion)	Transaction Volume (in '000s)	% Increase over previous year
2003-04	171.25	819	
2004-05	546.01	2549	211
2005-06	612.89	3067	20
2006-07	774.46	4776	56
2007-08	1,403.26	133,15	179
2008-09	2,519.56	321,61	142
2009-10	4,095.07	663,42	106



Raju MBM

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M-Payments across Asia Pacific

Prospects in M-Payment

There has been a steady rise and a wider reach in the market for mobile payments systems as a consequence to the ever expanding commerce and the steady growth of the globalization process. With governments emphasizing on the prospects of micro-finance for the general uplift of people in remote areas, a new dimension has been attached to this booming sector. The development of mobile and wireless technologies and the growing demands to widen the scope of reach to the remotest and most underdeveloped regions have transformed this to a possibility.

With development in financial institutions and centralized banking, the market in these economies will surge with prospects in mobile banking

Karim Taga, Director at Arthur D Little's Telecoms, Information, Media & Electronics (TIME) Practice, opines that m-payments services would grow at 68% per annum across the globe, and secure a transaction volume to the tune of USD 250 billion by the end of 2012. Even so, he believes that m-payments are unlikely to substitute existing payment systems in developed markets.

The Scene in APAC

As financial institutions across the globe are gradually stabilizing themselves post the financial crisis, the focus is entirely on the technological leverage that could be derived to cut through prospective markets. Marketers strategize according to the geographic and economic classifications as put down by the International Monetary Fund (IMF), depending on the trends and market scenario in these regions/economies. Geographically, we have classifications as Asia Pacific, Middle East and Africa, North America, Europe, and Latin America; economically we have classifications like Developing Economy, Emerging Economy, and Advanced Economy.

The m-payment prospects in the Developing economies are not immediate with traditional methods of banking through checks and cash and person-to-person transactions still popular. With development in financial institutions and centralized banking, the market in these economies will surge with prospects in mobile banking. Advanced economies would look at deployment of payments hub and automation of payments processing.

The trend in Emerging economies is for mobile payments and options like the Near Field Communication (NFC). Prospects in these markets are huge with the infrastructure in place and the market all set to take off. Karim Taga's projection of 76% per annum growth in m-payment transactions in emerging

markets by 2012, accounting for 65% of the total volume, in comparison to a 56% per annum growth in developed markets, representing 35% of the total transaction volume is indicative of the prospects in these emerging markets.

The trend in Emerging economies is for mobile payments and options like the Near Field Communication (NFC)

Marketers have narrowed down on the Asia Pacific as the next potential for the e-payments and m-payments market. The Asia Pacific region presents the most diverse economies with advanced countries like Japan, South Korea, Hong Kong, Taiwan and Singapore; emerging economies such as India, China, Malaysia, the Philippines, and Thailand; and developing economies such as Indonesia and Vietnam. This explains the further classification of APAC into Established and Emerging markets in the region.

Japan and Korea

The M-payments market in Japan and Korea is thriving largely due to the dominance of NTT DoCoMo, which embraced the market with a two-fold strategy of meeting the demand and supply sides to gain maximum leverage. Even as they took the customer base head-on by adding quality and price to their offering, they also met the supply-base by allowing banks,



card and transport companies attractive offers.

The contactless touch-and-pay cards system entered the market in 1997, with the development of the FeliCa IC chip as part of a joint collaboration between DoCoMo and Sony. In 2003, the FeliCa chip was added to DoCoMo's 3G service to create the m-wallet inside the phone. There was considerable success for the m-wallet concept with the variety of transactions one could make while not having their security compromised or breached. M-wallet allowed the mobile users with payment services, secure transactional services, and profile-driven value-added services, with KDDI entering the m-wallet scene while DoCoMo launched its FOMA phones. At present, around 20 million DoCoMo FOMA phones and 5 million KDDI m-wallet phones have been sold in Japan.

Korea's progress was much different from that of Japan, with early disagreements almost marring the prospects of the m-payment market there. Factors like mutual distrust between Mobile Network Operators (MNOs) and banks led to a collapse of early collaborative efforts. The entry of payment gateway services like Danal, Mobilians, Infobuh, Inicis, led to the resurgence of m-payments in the region. Third-party gateway services were significantly costlier, yet this seemed to be the most preferred solution in an environment of distrust. Marginalized profits led to MNOs and finance companies looking for common ground. In 2007, South Korea Telecom (SKT) collaborated with Visa, while their rivals Korea Telecom Freetel (KTF) teamed up with MasterCard to re-launch m-payment in Korea.

Hong Kong, Singapore and Taiwan

The m-payments market in this region is limited to the usage of contactless

cards and retail purposes. DoCoMo and Sony's FeliCa chip have the largest market in this region too with Singapore's ezLink card and Hong Kong's Octopus card. The focus in Taiwan is more on the near field communication (NFC) deployments, and the solution providers here are Visa and MasterCard.

Marketers have narrowed down on Asia Pacific as the next potential for e-payments and m-payments

By 2009, there were already 6 million VisaWave cards, and 441,000 MasterCard Paypass smart cards; the figures are expected to double by the end of 2010.

China and India

These are potentially huge markets with large development prospects and have demonstrated an inclination for a wide range of services from transfer of funds, bill payment, to e- and m-ticketing. Development is the key in these regions. China and India are accepted as the regions with the most potential for a wide range of market. There are around 700 million mobile phone subscribers in China in comparison to 400 million subscribers in India. With a 100 million subscribers added every year, the total number of mobile subscribers is expected to be approximately 500 million by the end of 2010. In 2014, India's population is expected to be around 1.26 billion with mobile penetration at 1.01 billion. MNOs in this region realize that prospects are large here with respect to m-payment/banking, considering that China and India would have

the maximum reach in terms of users than any other region or country.

Though China has a high penetration level in terms of mobile phone users, m-payment/banking has to be launched in large cities only. The usage and awareness would then percolate down to the other local regions. China Union Mobilepay, Unicom Huajian, and Monternet, are the leading service providers that are aiming to capitalize on this market trend in China.

Multiple operators, low technology handsets, and low usage fees are factors that have complicated the m-payment environment in India. It is still in its nascent stage in India, though MNOs do feel that this is a huge market to be tapped. Companies like Obopay, mCheck, and Paymate are fairly established in India and are looking to capitalize on the huge market base here. The large population of migrant workers in India, prefer m-payment services for remitting money to their homes/families. The growth prospects for the m-payments market, therefore, are fairly high.

Indonesia and Philippines

Indonesia and Philippines also boast of a huge potential in the m-payment market, with SMS being the major focus, and SMS is widely viewed as the precursor to the early m-payment market. With a large migrant population, the major focus in these regions is on the usage of mobile technology to remit money to their families. However, overseas financial institutions and firms are reluctant to offer e-and m-payment services owing largely to the fact that Indonesia accounts for a high percentage of internet card frauds in the world. So, even though financial firms view Indonesia as a huge potential, the



Major MNOs in APAC

	MNO	Subscribers (in millions)
India (as of February 2010)	1. Airtel	124.61
	2. Reliance Communications	100.10
	3. Vodafone Essar	97.22
	4. Tata Indicom	64.29
	5. Idea Cellular	62.14
Japan (as of March 2010)	1. NTT DoCoMo	56.08
	2. KDDI	31.87
	3. SoftBank Mobile	21.88
	4. WILLCOM	4.11
	5. EMOBILE	2.35
China (as of March 2010)	1. China Mobile	538.887
	2. China Unicom	147.263
	3. China Telecom	65.45
Korea (as of March 2010)	1. SKT	22.5
	2. KTF	14
	3. LG Telecom	8
Indonesia (as of December 2009)	1. Telkomsel	81.64
	2. Indosat	39.83
	3. XL	32.6
	4. Telkom	15.139
Malaysia (as of December 2009)	1. Maxis	12.3
	2. Celcom	10.145
	3. DiGi	7.947
	4. U Mobile	0.41
The Philippines (as January 2010)	1. Smart Communications	24.2
	2. Globe Telecom	12.934
	3. Sun Cellular	12.39
Singapore (as of December 2009)	1. SingTel Mobile	3.181
	2. Smart Hub Mobile	1.918
	3. M1	1.758
	4. Qmax	Figures not available
Taiwan (as of February 2010)	1. Chunghwa Telecom	9.31
	2. Taiwan Mobile	6.41
	3. FarEas Tone	6.237
Thailand (as of December 2009)	1. Advanced Info Service	28.772
	2. DTAC	19.657
	3. True Move	15.8
	4. Hutch	1.041
Hong Kong (as of December 2008)	1. CSL	2.5
	2. 3	2.072
	3. SmartTone Vodafone	1.23
	4. PCCW	1.071



m-payment market is limited; the scenario could change with the amendments in regulations in the country to protect consumers from errors made by financial firms.

Thailand and Malaysia

These two countries reflect a varied acceptance in such areas as gaming and top-up, with almost minimal acceptance of m-banking technologies. Thailand and Malaysia have limited m-payment market as of now, with m-payment in Thailand being confined to simple bill payment and top-up services. Thailand's Advanced Info Service (AIS) caters to these services while maintaining a close watch with regard to introducing newer features to its catalog of m-payment services.

Prior to AIS, DoCoMo's joint venture with ePay had been able to acquire around 100,000 subscribers only through one year, with their transactions being confined to one transaction of THB 260-270 (USD 8.80) per month on an average. To address this situation, AIS added the P2P (person-to person) remittance service in 2007, to attract customers and increase its customer-base. Thailand's leading MNO True Move launched the True Money service, a SIM based mobile-wallet service, transforming the mobile SIM to the money SIM. True Money currently claims about 5.6 million users of its e-Wallet service. The number is rising by about 100,000 new users every month and the company is aiming to reach 10 million users by the end of 2010.

The scenario in Malaysia is much the same with Maxis, Maybank and Digi being the leading service providers for m-banking. The market reach of mobile services in Malaysia is much less than that of Thailand, though there is greater acceptance of m-banking here. From the simple content and downloads, there has been a shift to more m-banking and m-wallet services, albeit limited, with the introduction of the payment gateway model by Mobile Money International (MMI).

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The success of e-payments and m-payments/banking is the outcome of a variety of factors, with the constructive role of the Mobile Network Operators (MNOs) being the foremost

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In both these countries, the shift is gradually towards the Near Field Communication (NFC) services. Maxis is a prominent service provider for these services, accounting for 11 million subscribers. With such trends, MNOs envisage future growth prospects in NFC, person-to person (P2P) business, remittance, and development of content.

Winding Up

The success of e-payments and m-payments/banking cannot be attributed to a single factor. It is the outcome of a variety of factors, with the constructive

role of the Mobile Network Operators (MNOs) being the foremost. MNOs recognized that the key to retaining existing customers while enhancing customer base lay in developing mobile technologies in sync with the prevalent trends across industry verticals. With the financial sector gradually recovering from the recent financial crisis, the growth in the m-payment and e-payment services has steadily increased. The focus for financial institutions now is on the unbanked population or the population with little or no access to internet. The emergence of e- and m-payment services has made transactions-making a veritable option for the less technology savvy population. Universality of reach, usability, interoperability, security, pricing, and speed of operation, are factors that have contributed to the extensive acceptance of this service across geographies.



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Emerging Trends in Payments in India

Over the last decade, India has witnessed numerous changes and many feel that it is on the threshold of even greater economic growth. Banking in India has also progressed hand in hand and it would not be wrong to attribute some of that credit to RBI. RBI has proactively helped in the maturing of payments systems with the introduction of Payment and Settlement Systems Act 2007, spectacular growth of RTGS, NEFT & ECS settlement systems and introduction of new channels such as mobile in a calibrated manner. However, these transformational changes achieved during the last few years are insipid in comparison to what RBI aims to achieve in the near future. The changes being planned by RBI to address the various needs of the country are manifold in nature. It is in the light of these forecasted changes that McKinsey has estimated the growth of revenues from payments at around 17% CAGR to around 45 Bn USD by 2015.

Transformational changes achieved during the last few years are insipid in comparison to what RBI aims to achieve in the near future

New Initiatives in India

The formation of the National Payments Corporation of India (NPCI) has gained

utmost attention for bringing in the second wave of payment infrastructure evolution. Some of the key changes planned by NPCI include Automated Clearing House, Centralized Mandate Management System, India Money Line and Cheque Truncation System. The key drivers for this revamp are consolidation of infrastructure, harmonization of standards, reduction of clearing cycles and better customer experience with real time realization of funds.

McKinsey has estimated the growth of revenues from payments at around 17% CAGR to around 45 Bn USD by 2015

Financial inclusion is a renewed focus area for RBI and several initiatives are being undertaken in this regard. The new impetus for financial inclusion is driven by the strong need for inclusive growth and the belief that requisite technology is now available to realize it. Possibly the most interesting initiative is the leveraging of the Unique ID program, christened Aadhar, to facilitate financial inclusion. NPCI has recently tabled a draft architecture for interoperable, UID-based financial inclusion, which targets a combination of UID and biometrics as a means of authentication. Since driving down costs

are imperative to make financial inclusion viable for banks, interoperability of smart cards, devices, micro-ATMs and other infrastructure will be the key.

Another area with great growth potential is mobile banking. RBI has clearly indicated that India will have a bank-led model and has defined a broad framework for the same. The formation of the Mobile Payment Forum of India represents the collaborative initiative of IDRBT, IIT Chennai, regulators, banks, telecom and technology firms to facilitate mobile payments in India and jointly resolve any technology, regulatory or banking issues. With mobile rapidly becoming ubiquitous in India, it is clear that it has the potential to become a key channel, along with branch, ATM, internet and IVR, for initiation, thus allowing banks to not only use this as a tool for financial inclusion, but also offer value-added services to the upwardly mobile segment.

Citi Tap, the world's largest pilot on contactless payments using mobile has achieved reasonable success and could lead to opening up of contactless payments in India, especially, in areas requiring quick turnaround such as mass transport systems, parking lots, among others. An open loop model would naturally take longer to roll out as it requires alliances with a wide set of players. Therefore, banks need to move faster in order to capture this



market and prevent themselves from losing ground to players bringing in the closed loop model.

Strong Foundation but still a long way to go

Is India being overly ambitious in trying to undertake large scales programs that have the potential to transform the payments landscape? India definitely starts off on a sound platform with RBI being both pro-active and measured while taking on these changes. Another huge advantage is that most of the Indian banks now have centralized core banking solutions that are running on new and robust technologies. This ensures strong technology fundamentals required to leapfrog and achieve the elusive enterprise-wide and integrated payments hub. One of the biggest challenges, especially, in the area of financial inclusion, would be the cohesive growth of the India ecosystem in terms of regulations, telecom penetration, technology innovation and banking sector initiatives.

The new impetus for financial inclusion is driven by the strong need for inclusive growth and the belief that requisite technology is now available to realize it

The way Forward for Banks

The question to be answered now is - who will get a major share of the 45

Billion USD worth pot of gold at the end of the rainbow? Though it is too early to specify any institution, it is apparent that the leader would have most of the characteristics mentioned below:

1. Capability to achieve excellence in IT initiatives: It is evident that the IT infrastructure of a bank is no longer a hygiene factor but a differentiator and banks will rely on it to be ahead of the pack as changes sweep India. It is here that the partnership between the bank and their technology solution provider will differentiate in the context.

The question to be answered now is - who will get a major share of the 45 Billion USD worth pot of gold at the end of the rainbow?

2. Formation of strategic alliances to offer more products and deepen penetration: Both for financial inclusion and introducing innovative products on the mobile, banks having alliances with telecom operators will have a significant edge.
3. Offering a wide variety of channels to address the needs of all customer categories: If there is one country where one size does not fit all, then it is India. Solutions offered would need to be customized to meet the business and cultural requirements of various regions within the country. This would require banks to develop new business models and back it with strong IT infrastructure.

4. Continuous innovation as against one-off innovation given the minimal cost of replication: In a rapidly changing environment, banks would need to come up with a series of business and technology innovations. This would require banks to possess strong alliances with technology and business partners and a culture that promotes incremental innovation.

In a nutshell, as the battle for the payments market share heats up, banks that are nimble footed, open to experimenting with new solutions and forge long term, meaningful partnerships would have a strong advantage.



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Payment Execution through Mobile Applications

Introduction

With the availability of high bandwidth wireless networks and data plans to the mass, the smart mobile phone has come a long way. When at home or in the office, on the road for business or pleasure, Smartphone has become an indispensable device for searching for information, products and services. The mobile wave will gain momentum with the newest range of tablets that offer larger screens and handling capabilities.

The next step of using smart-phones to make transactions is slightly less developed, particularly, where the transaction also results in executing the accompanying payment. This is changing rapidly now, with the availability of payment technology on the mobile.

History of Payment Services

Initially, e-commerce payments were made through cheques and direct debits, which rely on individual banks in many countries, national circuits at best (like Equens in The Netherlands). Today, e-commerce players are offering support to a broad range of payment methods in order to service large number of customers. In addition to the globally standardized Visa and Mastercard networks, they also support non-country-bound e-money solutions such as PayPal and Ukash. The need to support the payment methods in individual countries implies dealing with individual banks, as per national standards for making internet payments

easier. One of the best examples of this would be iDeal in the Netherlands.

The growing popularity of e-commerce led to an increase in the number of suppliers for this market, with a number of players such as Adyen, Chase Payment-tech, Ogone and RBS Worldpay delivering web merchants a global platform to accept a plethora of local payment methods, including unified reporting and reconciliation. Today, with the help of a highly fragmented and regulated e-payment landscape, these firms offer everything through a single interface (one stop shop).

Mobile Payments

The emergence of mobile payment - a new method of payment - has allowed consumers to make payments using their mobile phone, which has also become an extremely attractive alternative to cash and credit cards. The mobile payment can be made in a number of ways:

1. **Payments through SMS** – This is the best known model for making smaller payments. The consumer is instructed to send an SMS message to a merchant short code. This authorizes the merchant to charge the consumer, through the network provider. Once the payment has been confirmed, the merchant can deliver the service or goods. The method is common for downloading music and ringtones.
2. **Mobile Billing** – This model makes use of two-factor authentication.

The consumer needs to register for the service, record a PIN and log in at the service, an online gaming site, for instance. Authentication with the PIN is required while making a payment. If successful, the consumer receives a one-time password on the mobile phone and enters that in order to complete the payment transaction and this will be charged to the consumer's mobile account through the network provider and can release the services or goods.

3. **Mobile Web Payments** – In this model, the payment functionality is built in the web site of the merchant, typically optimized for usage with the mobile phone (the mobile web), based on WAP (Wireless Application Protocol). In some cases a thin wrapper is written in the form of a lightweight application on the mobile. The consumer uses the web pages or the lightweight application to make payments. A number of different actual payment mechanisms can be used behind a consistent set of web pages:

- **Instant Operator Billing** – Because of the existence of a billing relationship between a network provider and a consumer, it is simple to make an additional payment. Also, the payment is instantly processed, allowing instant delivery of service or goods. A drawback of this model is that merchants are confronted with the daunting task of integrating with all



operators through which they want to provide their services.

- **Credit Card** – As a derivative from the well-accepted internet payment method through credit cards, it is a straight forward exercise to develop the functionality to allow consumers to provide their credit card details and make payments from the mobile. When a secure identification and registration infrastructure is in place, customer and card details can be stored for repeated usage. Easing the payment process will lead to additional purchases.
- **Online Payment Companies**
 - Online companies such as PayPal, Amazon Payments, Wirecard, CCNow, Google Checkout and Kagi, have extended their internet payment options with mobile payment.

Near Field Communication (NFC) – This method serves well for payment for articles and services in stores and for paying for transportation services. Examples could be paying for lunch in the office restaurant or checking in and out of public transport and being billed based on the distance travelled. All that the consumers need is a purpose card or a smartcard-equipped mobile phone. He/she just waves her phone or card over a reader device, connected to a vending machine or – in the case of public transport – access gate. Usually, no further authentication is required and the payment is typically made against a pre-paid balance. By linking the pre-paid balance to a bank account, the pre-paid balance can be replenished when required. A drawback of NFC is that the NFC technology

needs to be built into POS devices or client-specific devices need to be designed. Proper industry standards have not yet been defined, making NFC a risky investment for merchants.

SMS Payments

This has become very popular, particularly in media. The technology is, however, only suited for low-value payments and has suffered from many cases of misuse and the high processing cost charges by telecom operators.

For almost a decade, people wanted to believe mobile payments were the next big thing. And they all thought the NFC chip would deliver that new boom in business, despite the drawbacks of that technology. However, it seems that the rise of the mobile app has changed it all.

Mobile Apps

Mobile apps are applications that are either pre-installed on smart-phones during manufacture, or downloaded by customers from app stores and other mobile software distribution platforms. Their functionality is usually trimmed for usage on smaller screens. Driven by the popularity of the iPhone, Apple has succeeded in giving the usability of apps a whole new dimension. On June 7, 2010, Apple accounted for 225.000+ mobile apps with 5 billion downloads.

During the first two years, companies struggled to find the right approach towards making money out of the apps. The first category of mobile applications was developed for creating brand awareness and providing brand specific information. A more advanced category of applications delivers free and premium services, and their business case assumes that the user information

collected has a high business value. The eventual viability of these services, particularly in the current economic turmoil remains to be seen.

A more down-to-earth application, enabling a new business channel for e-commerce merchants, mobile payments via apps seem to be on a high rise.

Mobile Payment via Apps

Mobile payment via apps derives advantages from all of the above models of mobile payment. It eases delivery work on the side of the merchant, improves trust and usability on the customer side, all possible in a safe and secure way of doing business, also allowing customers to do their purchases and merchants to increase their business. It also offers:

- **Ease of including the Functionality** – After Apple set the standard, mobile browsers are improving continuously and development frameworks for apps have become strong. It is even possible to develop a device independently while delivering native applications to the market.
- **Ease of use** – As you can see in the screen shot below, the interface of a mobile app is direct and simple. The user will be able to see all the information that is required to make the transaction as merchants and their developers are forced to keep the buying process lean and mean.
- **Security** – Apps are typically developed to make use of web services that have been in use for computer-based internet usage and that have matured and evolved. Hence, mobile payment via apps does not



have to start from scratch, but can draw on proven and mature security features.

- **Advantages for the Merchant** – The benefits to the merchant are clear. His customer has another channel of access to his services and goods. While the internet allows the user to make purchases whenever he wants to, the mobile apps and mobile payments have gone one step ahead by allowing the consumer to purchase wherever he wants to, and wherever he deems the product or service relevant.
- **Advantages for the user** – The consumer does not have to depend on the personal computer workspace for making the purchase. You can even make a picture and send it as a postcard to your friends directly as and when you want and pay immediately. (Pls refer Showcase)

Conclusion

Although probably in a few years time we will look back at this moment of time as just an interim period in the development of doing our mobile business, we believe developments will be evolutionary, instead of revolutionary, over the coming years. Mobile payments using smart-phones will become common to all users, not only the early adopters. We will see competition for the iPad, a range of tablets is announced that are based on Android and Meego. There is plenty of room for existing companies to innovate or just adopt new channels, but we will also be surprised, as over the last decade, with the emergence of new business models and companies. Over the last five years, it were companies such as Google and Salesforce.com that joined the ranks of Wall Street. Who will be next?

Showcase - Malaysia Airlines

Malaysia Airlines, globally, witnessed a turbulent time over the last couple of years, owing to increased fuel prices and intense competition from open skies and airlines from emerging markets. Another big impact on airline operations was the required raising of security levels as a result of terrorism and terrorism threats. Airline flight had become synonymous with long check-in queues, long waits for luggage and lost baggage.

Malaysia Airlines was looking to leverage the latest technology and streamline the passenger experience, thereby making it easy for passengers to approach them. Recently, the airline purchased Apple iPad tablet devices and built a kiosk application that allowed customers to select itineraries, pay these via credit card and receive confirmation via SMS and e-mail.

Paperless booking and payment process helped reduce the carrier time and money to a great extent. Secondly, Malaysia Airlines succeeded in making their online booking tool fit-for-use on the mobile.

This case shows that mobile payments is now no longer limited to its initial domain, being used for low-value convenience products such as sending a postcard, but fit for the higher payment segments as well. In addition to making use of mobile apps for smaller payments, customers are purchasing upgrades and business class tickets that cost multi-thousand US dollars.

The screen shot below illustrates a screen to make the final settlement for a purchase, using a credit card.



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This article has been written with support from the team of Adyen (www.adyen.com/mobile). Adyen is specialised in internet and mobile payment solutions for international corporations as well as mid-size corporates.



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