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Sibos 2014:
Deliberations on the Digital Age

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INTRODUCTION

Sibos returned to the shores of the United States this year and to the city of Boston, which played host to the annual SWIFT conference back in 2007. Proceedings kicked off September 29, 2014 at the Boston Convention and Exhibition Center with an opening plenary focused on SWIFT's achievements over the last seven years, ongoing regulatory overload for the industry (a dominant theme over the last five Sibos conferences), and the growing trend toward digitization. Keeping ahead of nonbank competition was definitely at the top of the agenda for delegates from both the payments and securities markets, with discussions centering on the need to digitize interactions with clients or face extinction.

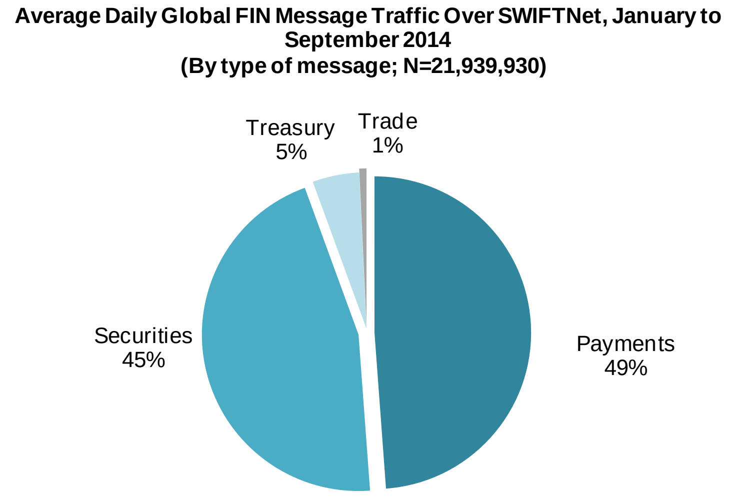
The conference included the usual forums focused on discussing industry topics related to corporations, market infrastructures, standards, and compliance as well as the technology innovation-focused Innotribe sessions. To capitalize on the location and the local community of asset management firms, Sibos this year also featured a dedicated stream for investment managers. The stream focused on the challenges of outsourcing in an age of heightened focus on operational and systemic risk as well as the place of innovation in a traditionally conservative marketplace.

This report rounds up the key discussion topics from the event and evaluates how some of these reflect SWIFT's five-year strategic program, which is entering its last year in 2015.

SWIFT TRAFFIC STATS

If we look at average daily message traffic and compare FIN messages sent across the SWIFT network between January and mid-September 2013 to those sent during the same period in 2014 (Figure 1), we see a 10.7% increase in daily volume. This growth has been driven by the increased volume of payments and securities transactions, which have increased by 8% and 15%, respectively. The average daily volume of treasury and trade messages, on the other hand, has declined by 4% and 3%, respectively, over the same period. The distribution of traffic has not changed significantly from 2013; securities messages account for 1% more of traffic, and payments traffic accounts for 1% less.

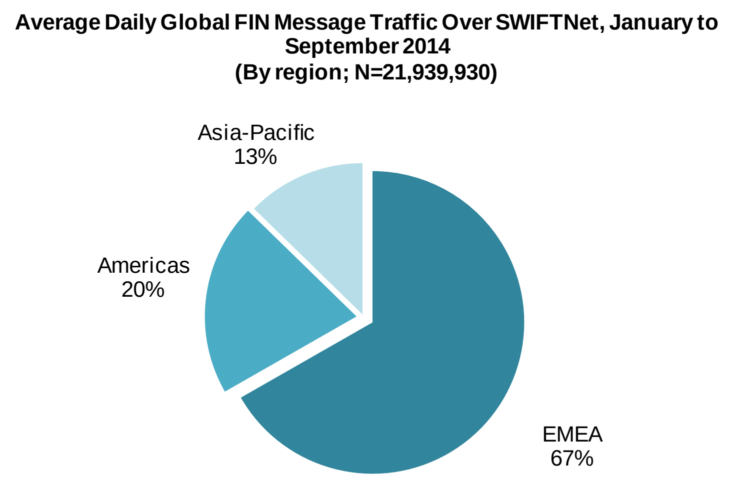
Figure 1: Breakdown of Average Daily FIN Message Traffic Over SWIFTNet



Source: SWIFT, September 2014

According to September 2014 SWIFT figures, September 30, 2014 was the global FIN peak day, with 25.9 million messages. Figure 2 shows the regional breakdown of FIN message traffic over the SWIFT network as of mid-September 2014, indicating the continued dominance of the Europe, Middle East, and Africa (EMEA) region in terms of overall message traffic. Again, very little has changed in terms of regional proportions from 2013, with Asia-Pacific increasing by 1% and the Americas declining by 1%.

Figure 2: Breakdown of Regional Average Daily FIN Message Traffic Over SWIFTNet

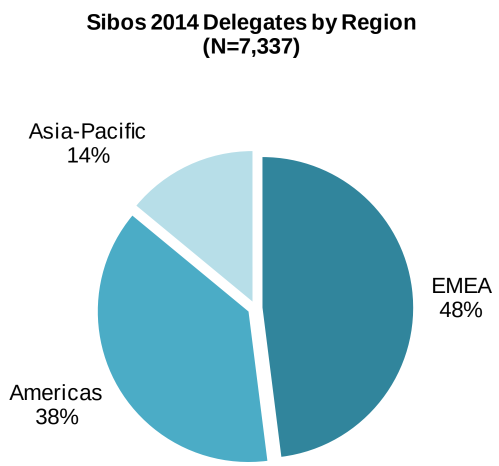


Source: SWIFT

A FEW SIBOS STATS

Overall attendance declined by 4% from the previous year's Sibos, from 7,650 delegates in Dubai to 7,337 delegates in Boston. This year saw a higher percentage of delegates hailing from the Americas, up from last year's 11% in Dubai to 38% in Boston (Figure 3), whereas the percentage of delegates attending from the Asia-Pacific region declined by 2% (likely due to the distance required to travel).

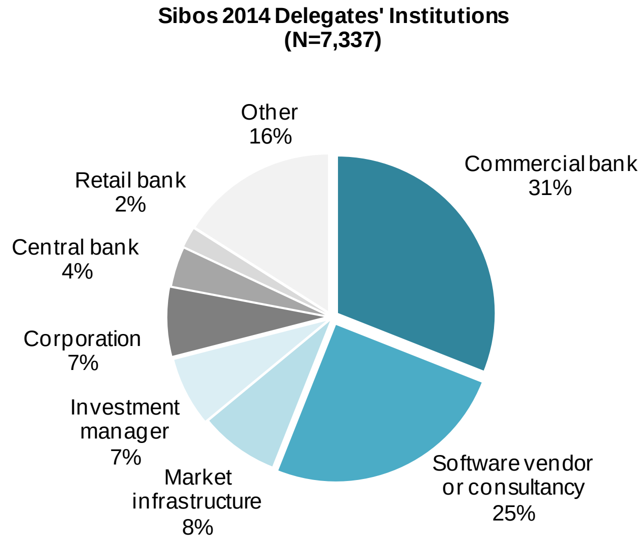
Figure 3: Sibos Delegates by Region



Source: SWIFT

The percentage of asset management attendees increased from last year's 1% to 7% due to the concentration of asset managers in Boston and the surrounding area and the incorporation of the Investment Manager Forum in the agenda (Figure 4), and the percentage of corporations increased on the previous year by 2% as well. Given that both of these communities are key targets for SWIFT's growth plans, this uptick in attendance is a positive step forward for the network provider's expansion strategy.

Figure 4: Sibos 2014 Delegates by Type of Financial Institution



Source: SWIFT

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NEARING THE END OF A FIVE-YEAR STRATEGY

As SWIFT's 2015 strategy enters its final year of implementation, board members elaborated on what has been achieved since the goalposts were first set at Sibos in Amsterdam in 2010. One of the core targets for the strategy was the reduction of its messaging prices by 50% between 2010 and 2015, and it has managed to achieve this goal a year earlier than scheduled. The messaging network provider indicates that the price reduction has stemmed from ongoing traffic growth and the introduction of stricter cost controls, and that it will establish a new price reduction target as part of the 2020 strategy next year.

As a reminder, the key tenets of the 2015 strategy comprise the following:

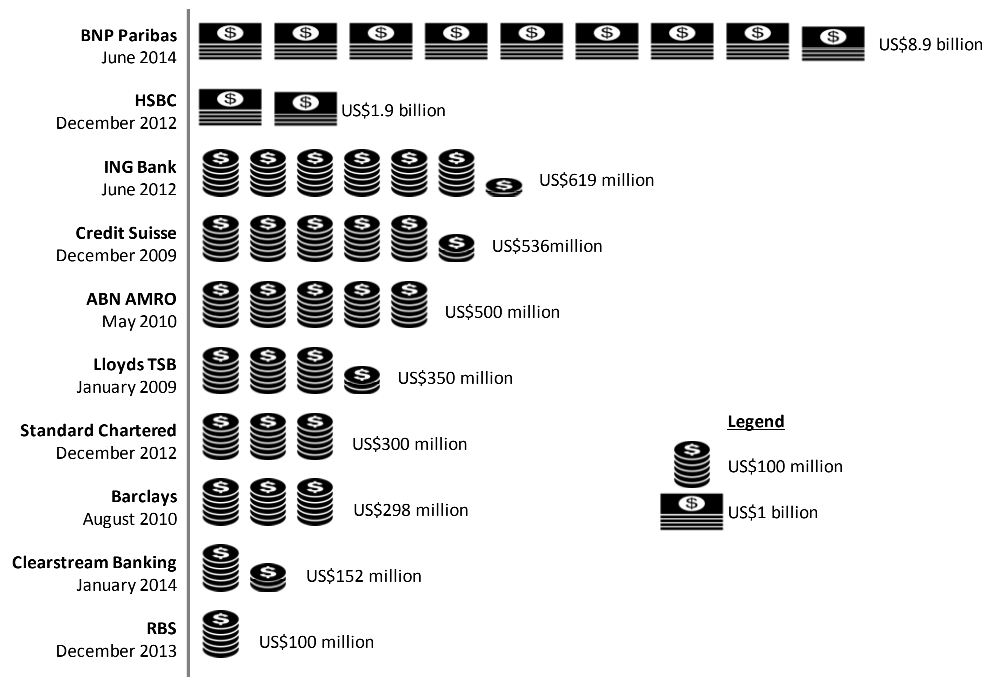
- **Deepening the core**: Relates to increasing the messaging network provider's relationships with key demographics in the financial services industry, including market infrastructures such as central clearing counterparties (CCPs) and central securities depositories (CSDs) in certain regions and corporations (directly and via service bureau arrangements)
- **Expanding the core**: SWIFT's expansion plans include:
  - Supporting broker-to-broker confirmation matching with its SWIFT Accord platform and broker-to-client confirmation matching with its Global Electronic Trade Confirmation platform
  - Promoting its Sanctions Screening and Know Your Customer (KYC) Registry offerings as well as providing related consultancy services
  - Extending its support for reference data in the payments area with SWIFT Ref and in securities markets and beyond with its partnership with the Depository Trust and Clearing Corporation (DTCC) for the issuance of legal entity identifiers for the global swaps market
- **Enabling interoperability and reducing total cost of ownership (TCO)**: Bringing down the overall cost of messaging year-on-year, expanding its global footprint via the "go local" initiative, and extending the range of connectivity options for the messaging network
- **Enabling transformation**: Including the modernization of the FIN messaging platform, bolstering its disaster recovery plans (which involved the addition of a new operating center in Switzerland in 2014), and establishing practices to deal with the threat of cybercrime

Reflecting a wider trend across financial services, cybersecurity was a central topic of discussion during Sibos week, and SWIFT was quick to assure its community that the resilience of its messaging infrastructure is top of mind for the board. Aside from keeping pace with technology change, the last few years have not been without their political challenges for the messaging infrastructure provider, and one of the talking points of the conference floor was the pressure SWIFT is facing in a climate of increasing geopolitical tension.

SWIFT AND THE KYC "UTILITY" PLAY

For the second year in a row, the topic of the industry's need for a KYC "utility" was discussed during the opening plenary. This is no surprise, given that financial penalties for noncompliance with anti-money laundering (AML) and KYC legislation have been gradually increasing over the last few years (Figure 5). In December 2012, HSBC was fined US$1.9 billion by the U.S. Treasury's Office of Foreign Assets Control for AML sanctions violations, and in June 2014 BNP Paribas faced a record-breaking fine of US$8.9 billion for contravening U.S. sanctions against trade with Sudan, Iran, Burma, and Cuba between 2002 and 2012. As well as the direct cost of these penalties, financial institutions face the reputational damage associated with breaking sanctions and falling afoul of the regulators. The KYC function is therefore a key area for investment in 2014 and beyond, though one of the many challenges the industry faces in this regard is the regional or even country-level bias to the KYC checking process due to distinct jurisdictional requirements and geopolitical dynamics.

Figure 5: Significant Financial Penalties Incurred in the United States for Sanctions Violations



Source: Aite Group, OFAC

Financial institutions face a huge challenge in collecting accurate and complete KYC information, and it is a resource-intensive process that requires external data, human capital, and technology resources. At a basic level, the KYC process encompasses the following:

- Collection and analysis of account information (in future, including beneficial ownership details)
- Matching of client data to Politically Exposed Persons lists and other watch lists

- Determination of the client's risk in terms of the propensity to commit acts of terrorist financing or money laundering
- Establishment of a client's expected transactional behavior
- Monitoring of clients' transactions against their expected behaviors

Sometimes the cost of compliance is so high that some institutions are "derisking" by eliminating or reducing the number of relationships they maintain with counterparties, clients, or correspondent banks, especially in high-risk countries. This was the case with Barclays when it withdrew from Somalia in 2013, closing the accounts of many money transfer companies. Taken to the extreme, this situation could lead to the financial exclusion of several countries from the global banking system.

In its latest annual survey, the International Chamber of Commerce highlights the before-mentioned risk. More than two-thirds of respondents to a poll of 298 experts from 127 countries declined transactions from correspondent banks due to stronger AML/KYC regulations, and almost one-third said they had shut down banking relationships entirely. The survey shows that the AML/KYC requirements are at the top of the biggest impediments list for trade finance.[1]

According to the United Nations' estimates, around 2% to 5% of global gross domestic product (GDP)—as much as US$2 trillion annually—is laundered. Banks and other financial institutions are increasingly involved in money-laundering detection activities in support of government agencies. On the securities side of the coin, during the first half of 2014, the U.S. Financial Industry Regulatory Authority (Finra) levied US$11.3 million in AML fines and was involved in 17 AML cases, building on the 36 cases conducted in 2013.

Further regulatory change is also on its way—the U.S. Financial Crime Enforcement Network (FinCEN) and the Securities and Exchange Commission (SEC) are planning to increase customer due diligence requirements, including AML, as part of their review of the Bank Secrecy Act in the next few years. One of the most significant changes to the rules would be adding in requirements for broker-dealers, banks, and mutual funds to identify the ultimate beneficial owners (those with more than 25% equity or managerial control) behind new and existing accounts. In Europe, the fourth AML Directive will add in similar requirements for beneficial ownership identification as well as enhanced due diligence for clients that are considered to be high-risk.

Panelists attending the dedicated session on KYC were encouraged to accept FinCEN's call for promoting a culture of compliance among financial institutions. Michael Cho, head of global financial institutions compliance at Wells Fargo, echoed that sentiment when he said that "an effective compliance culture offers true competitive advantage" since it favors relationships based on confidence and stability.

The audience almost unanimously (90% of voters during the session's interactive poll) stated its desire for a common, standardized, outsourced "utility," which is expected to save costs,

1. Jakob Eich, "KYC Rules Threaten Correspondent Banking Network," Euro Treasurer, September 9, 2014, http://www.eurotreasurer.com/news/financing-accounting/kyc-rules-threaten-correspondent-banking-network/.

resources, and time. The concept of a utility in this space involves the centralized gathering of KYC documentation at an industry level rather than at an individual firm level—with a service provider in the center responsible for maintaining that data and providing it to the financial institutions that require these documents about their clients or counterparties. The use of the term "utility" in this context is somewhat misleading, however, as it is currently not a fully standardized process and there are significant geographic differences in requirements; hence, the term "service" may be more appropriate.

Fifty-six percent of the audience to the KYC session declared that regulators' attitude represents the main barrier to the wide use of utilities. These statistics should also be taken with a pinch of salt, however, as those in the room were likely to have at least a passing interest in the concept of a KYC service. Time will tell whether the rest of the industry is on board with the concept, as any such endeavor will succeed based on volume of participants.

There are currently a number of industry players vying for the role of utility provider in the KYC space, and SWIFT has its own KYC Registry solution in the mix. Sibos delegates did question the wisdom of having numerous KYC utilities, but SWIFT responded by saying it would be cooperating with some of the other bodies on the market (such as DTCC, Genpact/Markit, Accuity, and Thomson Reuters) to establish best practices and common standards.

SWIFT's service, which is due to be operational by the end of 2014, is primarily focused on the correspondent banking universe (unlike many of the other plays in this space, which have focused on other demographics), and participating banks will be granted free usage in 2015. SWIFT's stated aim is to simplify and make more efficient and transparent the 1.3 million bilateral relationships among the 7,000 banks involved in correspondent banking on the SWIFT network.

It has stated that it will check for completeness and accuracy of provided data and documentation, and each user will be able to decide which other users can get access to its information. As presented at Sibos, the KYC Registry content was built in close consultation with banks. The result is a standardized set of information and a predefined set of validation controls. The solution is a Web-based central platform to collect, store, and access KYC information. Much like the DTCC's play in the KYC space, SWIFT's position as a not-for-profit and industry-owned organization is a key tenet of its strategic approach to the market.

Also in relation to sanctions compliance, sessions were dedicated to the global compliance challenge facing the correspondent banking industry. SWIFT has developed a specific community-driven shared services solution—SWIFT Sanctions Screening—that can address the needs of both small and large banks. Panelists emphasized the potential role of SWIFT as a community service provider of centralized, cost-effective solutions such as SWIFT Sanctions Screening that aim to protect clients against sanctions breaches by screening transactions against multiple lists and blocking or flagging those that are prohibited.

STANDARDS AND INTEROPERABILITY

A core value proposition of SWIFT as a utility messaging network is to facilitate reduced—or at least controlled—TCO for network members and participants. SWIFT provides a number of services that contribute to reduced TCO, including standards development and promotion (e.g., ISO 20022), 3SKey digital signatures, connectivity solutions, and the aforementioned KYC compliance registry and sanctions screening and testing. Sibos covered each and every one of these services in nearly every track of the conference. Banks and corporate representatives acknowledged the benefits—secure, available, reliable, resilient, and trusted—of the SWIFT proposition (e.g., the network, standards, and noncompetitive offerings like compliance and security aids).

ISO 20022: 10 YEARS AND COUNTING

It is hard to believe that ISO 20022 is 10 years old, but it celebrated that anniversary at Sibos. To date, ISO 20022 is used in 71 markets, though some have been much harder to crack than others (stand-up corporate actions). ISO 20022 is an end-to-end transaction standard designed to reach beyond the bank-to-bank environment. Its modeling and requirements techniques and capabilities differentiate ISO 20022 from other standards, enabling the collection of explanations and logic from a business perspective that technologists can access to implement interoperable systems on reusable components. The ISO 20022 repository is an enabler, acting as an access hub for other standards to support interoperability rather than convergence.

While reasonable consensus exists about the significant value that could be realized from a single, global standard, rational industry participants acknowledge that the banking and securities industries are unlikely to achieve such agreement. Therefore, interoperability is the driving force to contribute to straight-through processing from one corporation through its bank to another company's bank to the second company and connecting to clearing and settlement systems. Getting a standard adopted often relies on a compelling business case or regulatory compulsion.

ISO 20022 has really come into its own in the payments space and is used for real-time payments systems as well as for communicating large amounts of remittance information for business-to-business payments. It is gaining greater adoption globally than any previous standard effort but is still in the relatively early stage of adoption.

Looking at the securities industry, however, is a different story. Aside from certain markets, the corporate actions community has failed to adopt ISO 20022, and although it has made some inroads in certain areas for funds, it has a long way to go. This is largely because the business case isn't seen as strong enough for those that have already invested in support for other earlier standards such as ISO 15022. The markets that have already or are currently in the process of adopting ISO 20022 for corporate actions are those in which market infrastructures or regulators are directly compelling change. For example, the domestic stock exchange in Australia, ASX, launched its near real-time service for accessing corporate action event information at the start of September. The ReferencePoint ISO 20022 Intra-Day Corporate Actions delivers corporate action notifications as announced by issuers of ASX-quoted securities in ISO 20022 format via both ASX distribution channels and SWIFTNet.

CONNECTIVITY: BEYOND SWIFT ON A STICK

SWIFT continues to expand the options for banks and corporations to gain access to the SWIFT network for multibank communication, building on the first version of Alliance Lite (also jokingly referred to as SWIFT on a stick), which was launched in 2008. Alliance Lite2 now offers cloud application services for cash management, treasury, trade, and foreign exchange. It was reported at Sibos that over the last 12 months, 25 new SWIFT customers connected via Lite2. 3SKey is proposed for user security on the network. Value-added offerings include SWIFT certification of service bureaus meeting minimal operational standards and acknowledging those that excel; SWIFTRef, a centralized reference-data repository; and support for format conversions. The ongoing need for format conversions is proof of the continuing importance of translation software.

THE THREAT OF CYBERCRIME

Cybercrime and cybersecurity are increasingly hot topics of discussion for financial institutions, their clients, and all payments participants. This topic reaches across all online activity and encompasses securities and banking, with hackers representing one of the greatest threats to financial institutions today. Often operating without budget limitations, hackers are shrewd, experienced, very well organized, and have access to the latest technology and analytics to seize information. The bottom line is that attacks are becoming increasingly sophisticated, and the gap between this sophistication and that of banks' and companies' security capabilities remains large.

The vast majority of cyberbreaches occur due to human error. For example, phishing emails that include Trojan horse viruses are used to invade organizations' systems through employees unknowingly clicking on fake links. So, a priority for firms is better educating their staff on these threats. Furthermore, banks should be focused more on investigating how a cyberbreach occurred and ensuring it doesn't happen again rather than purely focusing on recovering systems and data after an attack. In fact, during a dedicated session on cybercrime at Sibos, 61% of the audience said they thought their firms' cybersecurity budgets need more money assigned to prevention. In addition, panelists stated that even more emphasis should be focused on identifying measures that can minimize damage and loss for banks and customers and called for greater regulation on cybersecurity, particularly in areas such as information sharing and coordination.

In November 2013, the importance of this topic was highlighted by a Bank of England test (dubbed Waking Shark II) within the wholesale banking sector to check the response to a continuous and intensive cyberattack. The test provided good results in terms of cross-sector communication and coordination but highlighted the need to overcome the current tendency to underreport attacks to law enforcement and regulators. Financial institutions are notoriously wary of revealing flaws in their security systems for fear of damage to their reputation.

Though much needs to be done in educating the industry about how to better communicate and tackle the issues, developments from areas such as mobile technology could provide new and important security boosts at the firm level. Sibos panelists agreed that there is interest in using biometrics—facial, voice, and fingerprint recognition technologies—to improve security systems, and these are being closely monitored by firms as a future means of fraud prevention.

THE INCREASING IMPORTANCE OF CLOUD

Financial institutions need a pirate's mentality to survive, according to nexxworks' chairman Peter Hinssen (referencing Steve Jobs' maxim "it's more fun to be a pirate than to join the navy"). The statement came as part of a clear call for banks to stay innovative. "Linear thinking has to turn into nonlinear thinking," said Hinssen during an Innotribe session, adding that planning strategies with a three-year or even 12-month horizon is not realistic anymore.

Other industries have set a precedent for putting the customer at the center of their networks, such as Amazon, Airbnb, and Rent the Runway. The financial services industry should radically change its traditional hierarchical view of the world and start thinking that supply, demand, and competitors that come from different industries are all parts of the same network. To gain competitive advantage, banks should learn from other industries and become a part of the winning network.

Putting the customer at the center is a must if banks want to compete with disruptive new entrants in delivering a superior customer experience. Mobile devices are changing the way consumers interact with the world, which has in turn created an expectation that services will be provided more promptly. Banks' customers expect high-velocity payments, driven by the online banking and e-commerce models. Smartphones provide businesses with new ways of identifying the customer at the point of sale; they provide customers with the opportunity to authenticate and confirm that a payment is requested, and they provide payment intermediaries and banks with new ways to exchange transaction, authorization, and settlement data. The proposition of omnipresent payments as it relates to mobile creates a more seamless, inclusive experience.

Legacy payments systems provide a solid foundation for payments services; however, Automated Clearing House (ACH) systems rely on batch processes, which by today's standard are not universally fast or efficient from an end-user perspective. The inefficiencies of this siloed legacy payments system, the pressure of new regulatory requirements, and new customer expectations are pushing payment modernization as a key challenge for many banks.

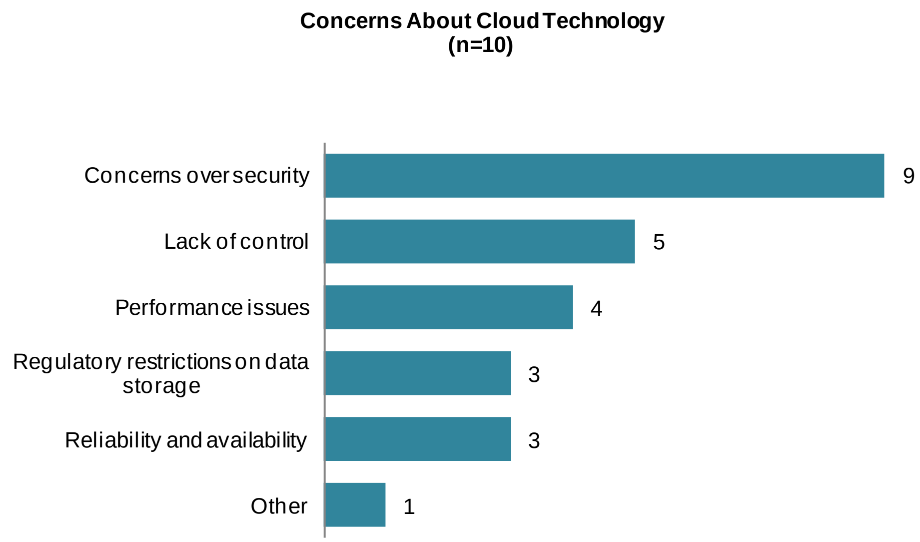
In various sessions, cloud computing was stressed as a valid support to deliver a new customer experience and compete with aggressive new players while reducing operational and service costs. Innovative technologies and service-oriented architecture are permitting the convergence and integration of payment services and information across the various bank channels and through different outsourcing models. Financial services have to restructure both their business and operations in order to build a more responsive, efficient, and flexible payments infrastructure.

The inaugural Sibos University stream discussed the benefits and pitfalls of private, public, and community cloud. The session emphasized that the main advantages of these models are savings in cost, space, and energy. On the other hand, many firms are concerned about the lack of clarity in the details of cloud service provisions and are keen to see some certification introduced in this space or perhaps even direct regulatory requirements.

Public cloud adoption is still low among the wholesale banking community. An interactive panel session at Sibos perfectly highlighted this, as 42% of the audience was using the private cloud, only 10% had opted for public cloud hosting, and 22% were still making plans regarding cloud computing.

As is often the case when it comes to adopting new technology, capital markets firms are behind the curve when it comes to cloud computing. Aite Group research[2] found that the key reason for this is concern over security, particularly in the context of a public cloud (Figure 6). Many firms fail to realize, however, that the level of security on a public cloud offering would actually be higher than the quality of security currently applied to on-site infrastructures managed by financial institutions. Public clouds can also provide embedded disaster recovery in a cost-effective manner.

Figure 6: Capital Markets Firms' Challenges to Cloud Adoption



Source: Aite Group survey of 21 capital markets participants, March and April 2014

While there are several barriers to the adoption of cloud-based systems by wholesale banks and capital markets firms, there are also many opportunities for those that do introduce the technology. These opportunities exist in areas such as data management, regulatory compliance, trading infrastructure, risk management, trade analytics, quantitative research, and strategy development and testing.

It is likely that the Tier-1 sell-side and buy-side firms will take a decentralized approach to cloud technology adoption, targeting specific business subgroups inside the aforementioned areas. The success of these projects would then provide the stimulus for a more centralized, enterprise-wide initiative.

2. See Aite Group's report *Capital Markets in the Cloud: Not Such a Gray Area*, July 2014.

BEYOND THE BIG-DATA HYPE

At Sibos, panelists noted that 90% of all the existing data in the world was created in the last two years, and the financial community has been one of the main parties responsible for this growth. At the same time, banks have to admit to their delayed exploitation and management of big data. More specifically, various panelists talked about financial institutions as players who are still "hunting for big data's true value," meaning they have not discovered the real value behind big data yet. On this note, recent Aite Group research[3] indicates that there are currently no viable public examples of enterprise-wide big-data programs within financial institutions active in capital markets; there is still a long way to go before the talk turns into action.

Big data includes structured, semistructured, and unstructured information. While structured and semistructured are generally collected, stored and analyzed, unstructured data is difficult to find and handle, making managing unstructured information where the bulk of the value resides. Today, many financial institutions in the wholesale banking sector are focusing on using big-data technology as a means to reduce costs and maintain revenue while overlooking the opportunity to generate new sources of revenue from it.

A key point to better exploiting big data is the adoption of cloud technologies, which allow the storage of data in different formats using a single system instead of different systems to support hundreds of diverse business procedures. Another advantage of cloud-based solutions is the possibility to aggregate data from multiple regions of the world and benefit from more efficient conditions. Cloud technology also provides the ability to scale computing power up and down without requiring in-house technology resources. One of the bigger obstacles to cloud adoption, however, is that some jurisdictions prohibit free movement of data outside the country.

Jack Klinck, head of global strategy and new ventures at State Street, explained to Sibos delegates that greater access to data is likely to disrupt the custody business in future due to the commoditization of the traditional business model and the desire for greater analytics and insight. To this end, he suggested that clients will no longer pay for transaction processing but will instead push for greater volume of relevant data targeted specifically at their requirements.

Other panelists added that universities have not yet caught up with the big-data trend, since degrees do not exist to train people on the skills to manage and handle the universe of big data inside a company or a bank—that is, the skills required of a "data scientist." Data science is a discipline that encompasses the range of techniques and processes to generate business value from data. Gone are the days when a data scientist's required skill set would be restricted to having strong mathematical and programming ability—data scientists increasingly need to understand industry drivers and dynamics so that actionable information can be extracted and delivered from complex data sets.

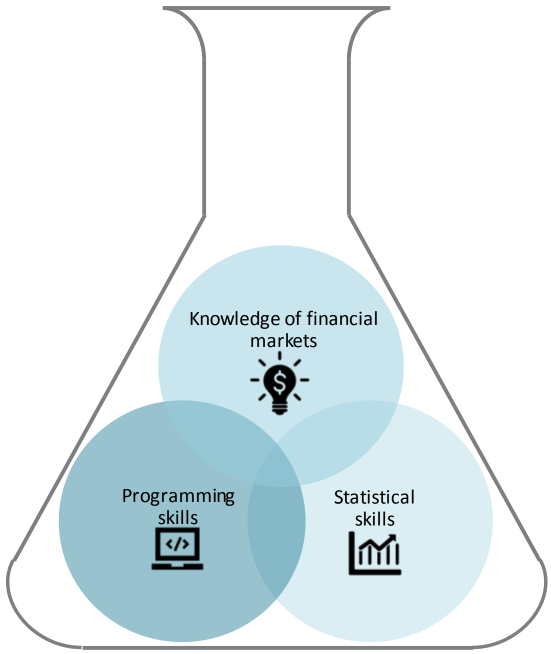
Figure 7, based on recent Aite Group research,[4] shows the three main requirements for a successful data scientist within the capital markets, highlighting why it is so challenging to find

3. See Aite Group's report *Big Data in Capital Markets: The Placebo Effect?*, October 2014.

4. See Aite Group's report *Big Data in Capital Markets: The Placebo Effect?*, October 2014.

the right individuals. The requirement for relevant domain knowledge makes it harder to move from a field like genetics to finance without significant education and retraining.

Figure 7: The Key Requirements for a Successful Capital Markets Data Scientist



Source: Aite Group survey of 22 capital markets participants, May and June 2014

BANKING SESSIONS

Sibos provided a forum for discussion, education, status updates, and networking for the banking industry. Particular hot topics included emerging customer demands, corporate treasury and liquidity management, payments modernization/transformation, nonbank competition, and cryptocurrencies. Innotribe, which was first launched at Sibos in 2009, provides a forum for the commercialization and recognition of technology- and business-driven companies. This year, Innotribe recognized companies that are innovating in security, money movement, performance improvement, and connectivity between players in the financial services ecosystem.

EMERGING CUSTOMER DEMANDS: DIGITIZATION, REAL-TIME, SURETY, UBIQUITY

Banks' need to evaluate and improve their customer experience was a key talking point during Sibos. Financial institutions were invited to collaborate and follow the example of manufacturing firms' ability to deliver a better digital customer experience using technology: The key is to apply engineering rigor to business processes. This also means that banks need to attract and hire technology professionals, especially programmers. The following crucial areas of improvement were discussed during the dedicated sessions:

- Speed and surety
- Ubiquity
- Ease of use
- Paperless processes
- Use of information

Banks must embrace digitization in order to stay competitive in the current arena, which will give them the opportunity to reach a currently untapped market: more than 2.5 billion people that gravitate outside the financial system. Consumers and corporations expect everything to happen in real time; they are moving faster, they are shopping faster and communicating faster, but the flow of money is still not synchronized accordingly. Nonbanking players are better at meeting these needs, and banks that want to win the digital game have to keep pace with faster transfer of funds and information. This is corroborated by the results of an Aite Group survey of 22 banking senior managers in May 2014, which finds that the benefits of real-time payments are considered very or extremely promising by respondents regarding customer-to-business (C2B) payments (stressed by 95% of respondents), person-to-person (P2P) domestic money transfers (65%), and payment information value-added services (60%).

Surety is important as well, as people have become accustomed to immediate confirmation and instant gratification, and money transactions should reflect this trend. According to the mentioned Aite Group survey, corporations demand a significant reduction in end-to-end transaction time in order to gain better visibility of intraday liquidity and timely tracking of data and remittance information. In particular, small and midsize enterprises are interested in getting increased transparency and traceability along the payment value chain. Payment information related to routing choices, operators involved, exceptions identified, and beneficiary bank confirmation can help companies to manage tracking data and remittance information to achieve reliable and predictable delivery of transactions.

The digitization of society is forcing banks to rethink the concept of a "branch," since customers are increasingly asking to access money and payment services by mobile devices, anytime, anywhere. This explains why a growing number of bank branches are closing globally: In 2013 this number reached 2,563 in the United States.

Panelists in different sessions agreed on the necessity to replace password-based recognition with biometrics and voice recognition systems, and some banks have testified to this need. The same can be said about paper: Everything must go digital, including Sibos documents and handouts. As Citi co-president Jamie Forese pointed out during the opening plenary, 85% of global consumer transactions are still paper-based.

The streamlining and integration of information within the payments value chain was another hot topic at Sibos. Modern financial institutions should abandon the silo-based data and information procedures they currently use and replace them with systems and tools that allow them to process linked information that provides a consolidated view and a finished, competitive, end product to the customer. Cloud technologies are the best answer to accomplish this transition. A crucial message passed to banks was that digitization does not mean only "automation;" instead, it means creating an ecosystem where each source of client data is shared among all the systems in order to reach a deep knowledge of what customers need today and will need in the future.

The importance of the theme was further strengthened during the grand finale of the Innotribe Startup Challenge 2014, where innovative digital value propositions were presented, such as that of TransferGo, "the leading European pure-play digital remittance brand," and Stockspot, which offers "personal investment advice and portfolio management online." First prizes went to the startup Epiphyte, provider of an "enterprise software that bridges traditional finance and cryptofinance" and to the innovator MatchMove, which offers a social platform-as-a-service for e-commerce and entertainment.

Furthermore, digitization is a key success factor in expanding financial services to the world's poor. Speaking at Sibos' closing plenary, Bill Gates said: "To move up to the middle class, the poor need financial services. They need the ability to save and borrow." Digital payments technology, leveraging the global penetration of cheap mobile phones, is the key to achieving both financial inclusion for poor communities and profits for service providers capable of delivering financial services at low costs. It will require innovative business models and bank partnerships with the telecommunications industry, according to banks that have led the way on financial inclusion in different regions.

CORPORATE TREASURY AND LIQUIDITY MANAGEMENT

In the current uncertain economy, corporations need to constantly keep control of their financial situation and have a trustworthy banking partner for financial solutions like working capital optimization, cash and working capital management, financial supply chain protection, and liquidity management. Indeed, demand for systems capable of returning real-time information about corporations' cash and liquidity positions and exposures is growing.

Banks' technology investment is required to ensure more detailed, faster, and safer financial information for corporate clients. From January 2015, Basel III will require banks to report their liquidity positions on an intraday basis. Despite the short time left, very few banks are prepared to meet the Basel III requirements and to seize business opportunities related to the management of intraday liquidity.

Further, panelists highlighted that the regulator-required smoother intraday liquidity profile could lead to a slowdown in payments' execution time, in clear contrast with the strong demand from customers for faster payments. Today's corporate treasurers are demanding real-time access to accurate and detailed liquidity positions and exposure and the possibility to more precisely forecast future positions. In fact, according to a recent Aite Group survey of 185 U.S.-based corporations fielded in July and August 2013, 81% of corporate treasurers state that access to more real-time information is critical to improving their cash management experience.

Basel III will require banks to provide more comprehensive and timely payments data to improve liquidity management and to enhance the customer experience, such as supporting treasurers' mission to mitigate risk and ensure the timely availability of company funds across multiple markets and currencies.

Dedicated sessions at Sibos indicated that while banks are starting to deal with critical compliance requirements for intraday liquidity management, they require new tools for automating collection, validation, and presentment of real-time cash flow data. In a faster cycle, full integration between banks' cash flow and payments flow is mandatory. With only 18% of payments over the SWIFT network reported on an intraday basis, panelists think there is a long way to go.

Currently, there are some highly advanced systems for performing liquidity management and risk assessment, but they are not widely adopted. Gathering timely payment data is crucial, but to monitor and manage risk effectively it is necessary to have a comprehensive reporting capability that reaches across all of a bank's payments systems. With these systems, it's possible to draw a complete profile of customers and correspondents, taking data from a set of integrated sources to provide a single enterprise view.

THE CORPORATE FORUM

"To be the most preferred secure network for multibanked corporations globally" is SWIFT's mission statement for this forum. This mission drives SWIFT to serve multibanked companies of any size, with any volume. It strives to be the preferred network of companies in all geographies because of its reach, ease of use, and wide range of messages containing rich information. Paul Simpson, head of equity asset services at Bank of America Merrill Lynch, asserted that "corporates benefit most by implementing utilities." He indicated that key trends for and desires of corporations include the following:

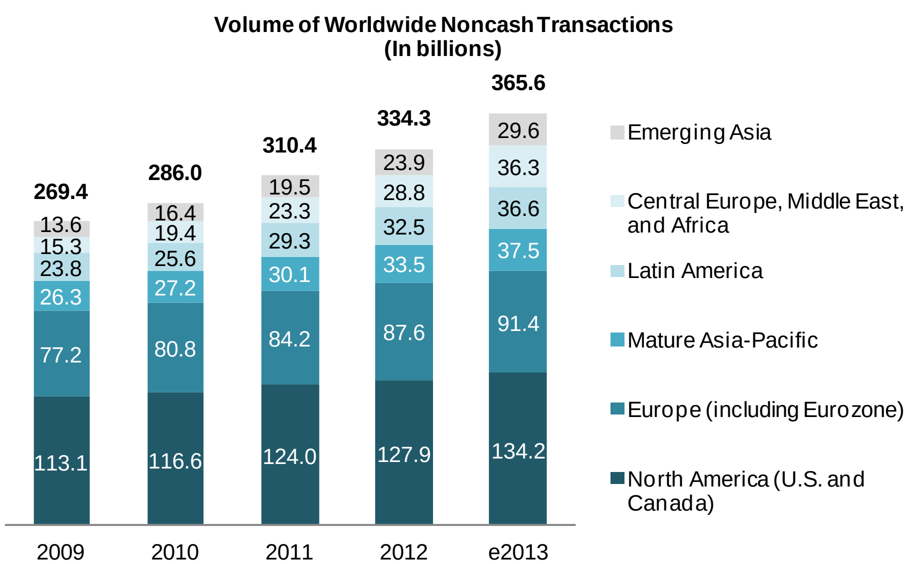
- Agnostic standards, such as any-to-any integration (common gateway interface), accelerated onboarding, multibank approach, payment contingency, and flawless execution
- Security of all systems
- KYC registry
- Innovation to replace legacy infrastructure (e.g., shared service approach to intelligent receivables and digital disbursements)

Obviously, many of SWIFT's initiatives support the goals of companies. SWIFT is in the throes of creating its 2020 strategy and acknowledged that consideration is being given to providing corporate-to-corporate connectivity, dependent on identifying an appropriate value proposition.

PAYMENTS MODERNIZATION AND TRANSFORMATION

As highlighted by several payments outlooks presented in different sessions, payments still remains an attractive business for banks. This is confirmed in the "World Payments Report 2014" by Capgemini and Royal Bank of Scotland (RBS), which estimated that global noncash volume grew by 9.4% from 2012 to 2013 to reach a total of 366 billion transactions (Figure 8 and Table A). Central Europe and Africa emerged as the fastest-growing regions, followed by Asia and mature markets. According to The Boston Consulting Group and SWIFT's "Global Payments 2014," estimates for the next 10 years see further growth both in volume—with a compound annual growth rate (CAGR) of 5.9%—and in revenue—with a CAGR of 6.6%—although characterized by harsher competition (Figure 9 and Figure 10).

Figure 8: Volume of Worldwide Noncash Transactions



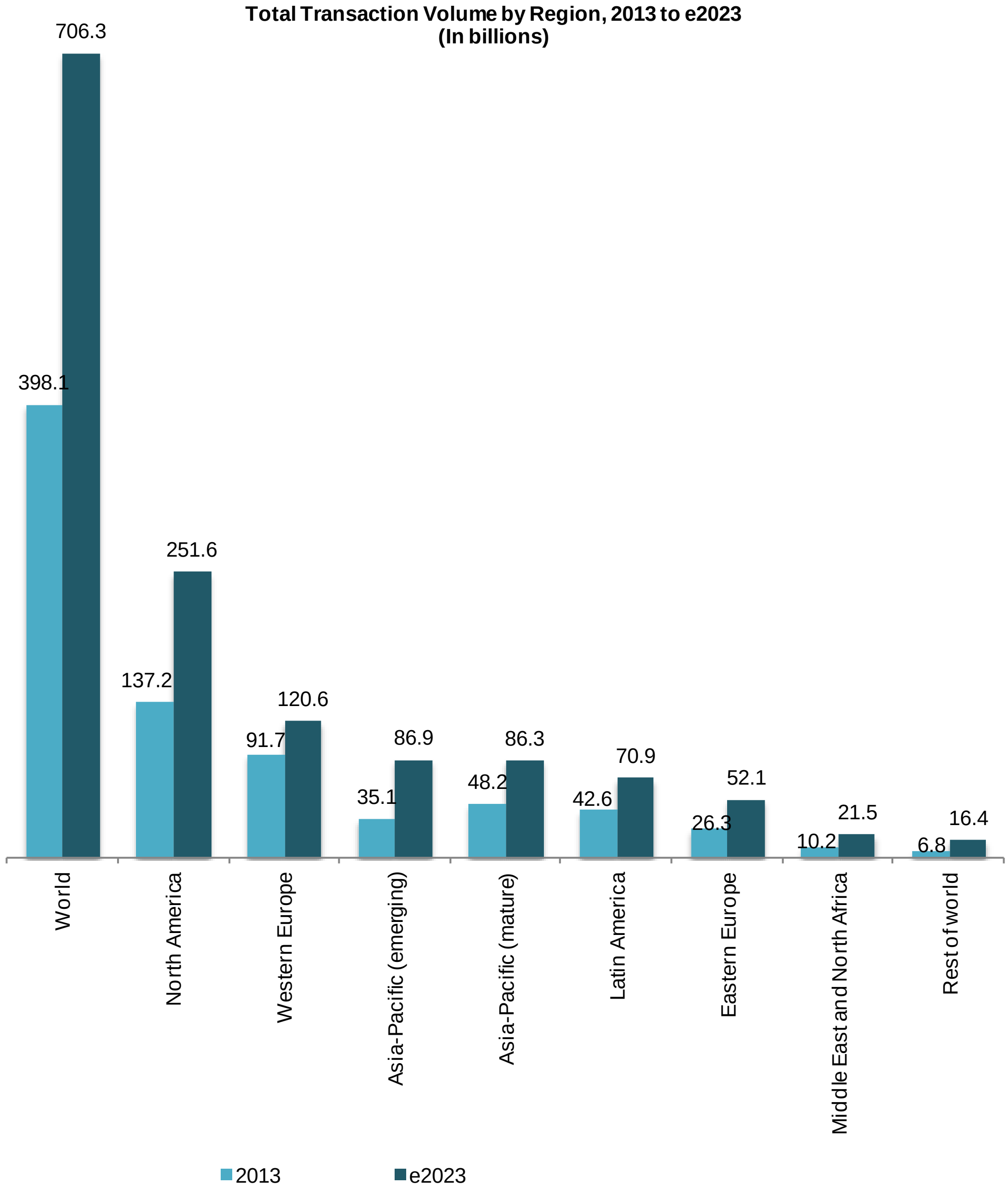
Source: Capgemini and RBS, "World Payments Report, 2014"

Table A: CAGR and Growth in Noncash Transactions

Markets		CAGR 2009 to 2012	Growth 2012 to e2013	
Developing	Emerging Asia	20.6%	23.9%	20.2%
	Central Europe, Middle East, and Africa	23.5%	25.9%	
	Latin America	11.0%	12.5%	
Mature	Mature Asia-Pacific	8.3%	12.0%	5.6%
	Europe (including Eurozone)	4.3%	4.3%	
	North America (United States and Canada)	4.2%	4.9%	
	Global	7.5%	9.4%	

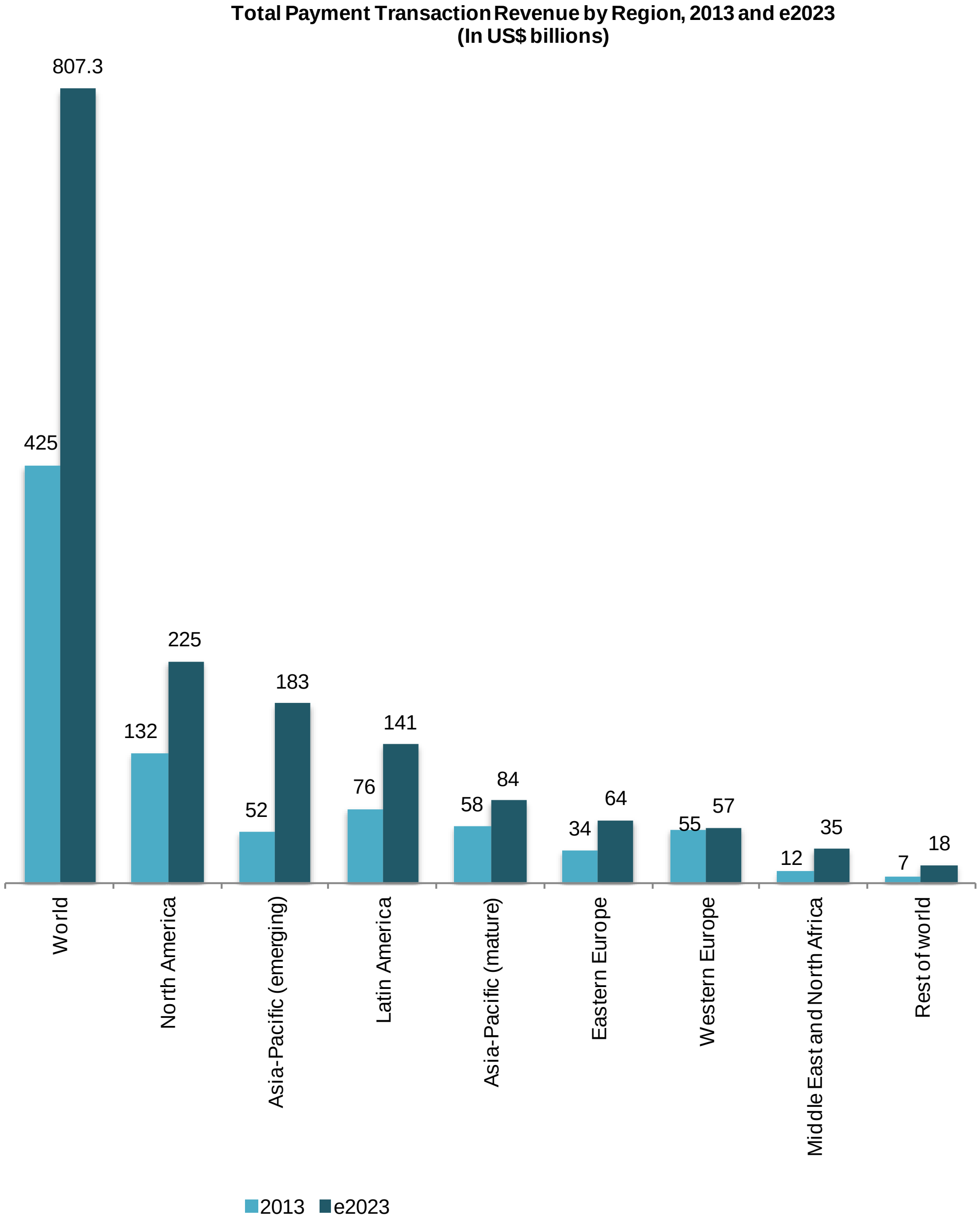
Source: Aite Group elaboration on Capgemini and RBS data, "World Payments Report, 2014"

Figure 9: Estimated Volume of Worldwide Noncash Transactions



Source: Aite Group elaboration on BCG and SWIFT data, "Global Payments 2014: The Interactive Edition"

Figure 10: Worldwide Noncash Transaction Revenue



Source: Aite Group elaboration on BCG and SWIFT data, "Global Payments 2014: The Interactive Edition"

Shifts and evolution in global trade are contributing to these results: According to Standard Chartered Bank's special reports, "Global Trade Unbundled" and "The Super-Cycle Lives: EM Growth is Key," the fastest-growing trade corridors are all south-south: Asia-MENA (Middle East and North Africa), Asia-Africa, and Asia-Latin America[5] now represent 18% of total global trade

5. Standard Chartered Bank, "Global Trade Unbundled," April 2014, https://www.sc.com/en/news-and-media/news/global/2014-04-10-special-report-global-trade-unbundled.html.

and are expected to reach 40% by 2030.[6] Banks will also have to adapt to a new world in which developing countries are increasingly trading specialized products with each other: According to World Trade Organization data, the share of developing countries' exports to other developing countries rose from 29% in 1990 to 47% by 2008.

Regarding modernization and transformation of the payments industry, never in the past has there been such innovation and opportunity across regions. Financial institutions are changing their products and services in an effort to meet new challenging customer demand and regulation requirements in a rapidly evolving payments landscape. The nature of payments is changing as a consequence of varying factors. One of the most important aspects, stressed during various sessions, is that real time is the very nature of the digital economy, and real-time experience is part of our daily life: Everything is connected, people stay always on, and nowadays technology is capable of making every end-to-end transaction immediate.

In order to balance the new demanding regulatory environment with the disruptive technology advancements that are driving new expectations in the market, banking payments infrastructure has to move to the next level of maturity. In recent years, banks have focused on optimizing different payments instruments, integrating fragmented systems, processes, products, and channels by translating from one system to the next or through manual processes. Nevertheless, the infrastructure built over time still consists of numerous siloed components that often result in higher total operations cost to manage maintenance and evolution of the services, and loss of timely visibility of the information flow.

In particular, dealing with regulation relates to more rigorous liquidity management requirements and forces financial institutions to accelerate the transition to payment hub solutions that are capable of orchestrating process and data through the whole end-to-end payment value chain. Unsurprisingly, payment systems modernization and transformation was one of the key topics during the conference.

THE EMERGENCE OF REAL-TIME PAYMENT SYSTEMS

In many regions, domestic retail payment systems are evolving toward real time or near real time. While most transactions take days to go through the financial system, real-time payments services allow one to send or receive payments almost immediately, 24/7, safely and conveniently. As the demand for near real-time payments increases globally, countries are modifying their batch systems or creating parallel systems that speed the settlement cycle.

Real-time payment solutions are spreading all over the world. Europe has the largest real-time payment system in the world, U.K. Faster Payments Services (FPS), and has several other developments in progress. Sweden launched its real-time system BiR in 2012, which is natively designed for mobile payments. Switzerland and Poland each have a real-time payments system in place. In other regions, such as Japan, Mexico, and South Africa, real-time payments have been in operation for years. FAST in Singapore was launched this year. All are good examples of successful approaches to banks' adoption of this technology. Most importantly, real-time

6. Standard Chartered Bank, "The Super-Cycle Lives: EM growth is key," November 2013, https://www.sc.com/en/news-and-media/news/global/2013-11-06-super-cycle-EM-growth-is-key.html.

payments mean more payments transactions, as shown by the U.K. Faster Payments reaching 3 billion payments processed in 2013.[7]

During the conference, special sessions presented real-time enhancements in different regions. In the Asia-Pacific, where there are various systems in place, we are seeing new initiatives such as Australia's near real-time system, which is planned to go live in 2016.

The Brazilian electronic payment system has been cited as a model of modernization thanks to its "Sistema de Transferência de Reservas" (STR)—launched in 2002 by the Banco Central do Brasil—which enables interbank irrevocable real-time transfers. Governments in Latin America are fostering a process of payments system transformation in order to promote transparency, and U.S. or EU companies are also investing in this territory and introducing the sophisticated systems they have elsewhere.

Concerns exist regarding real-time-payments' potential interoperability given the number of real-time systems in the world. Creating and embracing standards for messaging is one component that will be vital to promote cross-border payment growth and revenue generation for banks. The main issue is that real-time payments schemes are based on differing message standards, and various systems have been implemented differently from one country to another.

Real-time services such as accessing real-time information on cash and liquidity positions and exposures rank high on the corporate agenda as well. Nowadays, a key objective for most treasurers is more accurately forecasting and managing cash flow given the challenging economic environment. Therefore, having access to real-time or near real-time information is extremely important. For large corporations, intraday liquidity monitoring is a key feature of modern cash management functions. There is a huge need for real-time information, and the challenge for banks is to move from daily processes and batch procedures toward providing all services in real time, particularly to provide more timely collections and liquidity position information.

PAYMENTS BECOME UBIQUITOUS

Addressing the issue of payment modernization includes payments ubiquity. Ubiquity goes hand in hand with the mobile devices revolution and with the current trend of debranching. Retail customers now have the ability to access banking services anytime, anywhere from the app downloaded on their smartphones, so they resist going to a branch for the same needs. It follows that banks have to redesign the banking customer experience and assign a new role to brick-and-mortar branches.

On the corporate side, adoption of mobile technology follows a slower pace of growth, mainly because of security concerns raised by corporate treasuries: The risks of losing devices and of information being intercepted over Wi-Fi are barriers. Panelists at Sibos were of the opinion that banks should focus on tablets because their graphical and usability features make them more suitable for the business market (i.e., they can provide useful tools when employees are travelling or are in a meeting and need fast access to reports, charts, and cash flows).

7. Faster Payments Scheme, History/Timeline, http://www.fasterpayments.org.uk/about-us/historytimeline, accessed October 22, 2014.

Technology's ubiquity has been a hot topic too, with divergent points of view among participants. Some delegates see the lack of payment systems as an impediment to innovation, while others think that technology does not necessarily start with scale or ubiquity. Those attendees who think that a lack of payments systems impede innovation think that at minimum there should be a common orientation to share the risk of investing in something new. Supporting the contrary view are several examples of successful technologies (e.g., emails, messaging, etc.) that were only used by a small group of people at the beginning and then triggered a viral effect.

NONBANK COMPETITION

Payments remain an attractive business for banks, with continuous growth in volume and revenue. Data presented by Capgemini—joint publisher of the World Payments Report 2014 with RBS—and Boston Consulting Group show that payments and transaction-banking businesses continue to represent a crucial component of the banking industry (Figure 8, Figure 9, and Figure 10). This is particularly evident for emerging markets, while growth in mature markets keeps rates above domestic GDP growth, said Christophe Vergne, leader of Capgemini, the global cards and payments center of excellence.

Despite such an outlook, banks will struggle to keep pace with nonbank providers in relation to payments innovation and will need to manage innovation carefully. Global payments will continue to grow, as will even more competition. As William Higgins of RBS, said, "competition in payments is at a level never seen before." This means fighting in a red ocean. More investment is needed, especially in talent, in order to differentiate providers' proposals and to reach the blue ocean, or cleaner water at least.

As highlighted by Peter Cowhey of the University of California, San Diego, if banks want to reach the cutting-edge of technology in such competition, they have to attract the very best talent. They must switch to hiring and retaining top-quality staff from the new generation of technology professionals.

The competition for real-time payments is particularly strong. Generally speaking, new entrants to payments processing break the accepted rules and challenge incumbents to reimagine payments processing, including the opportunity to improve customer experience, regulatory compliance, and fraud prevention and to generate value-added revenue.

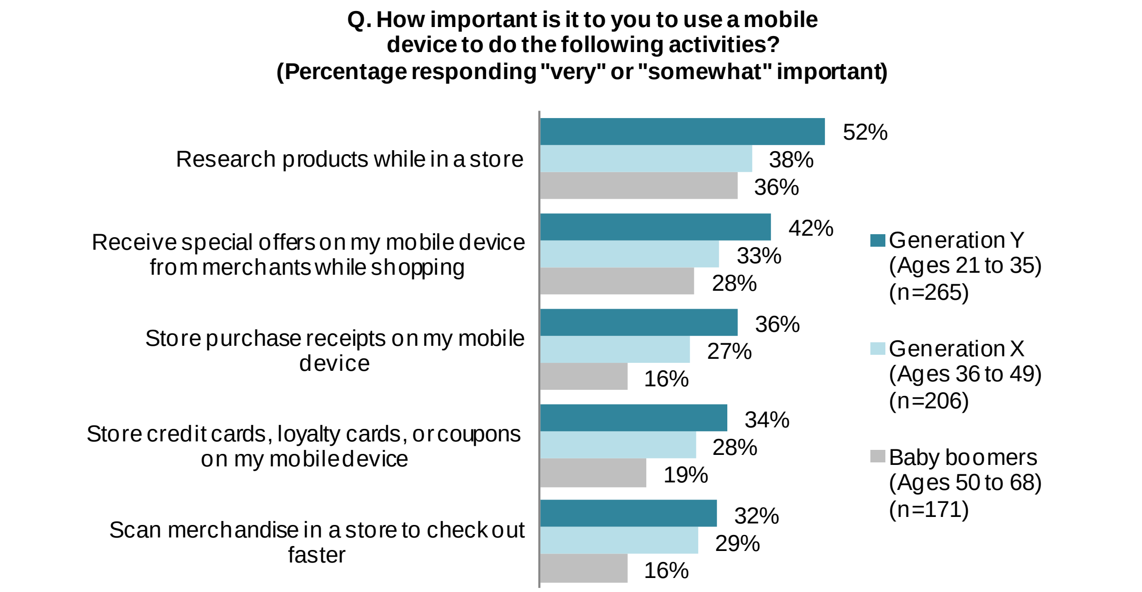
Nonbanks have been able to provide end users with innovative solutions and satisfy latent needs such as faster delivery of value and information. To some extent, PayPal and Bitcoin are great examples of this, as they offer consumers and merchants a value proposition not too dissimilar from what a real-time payments solution is expected to give (e.g., privacy, immediate notification, good funds, etc.).

In a recent Aite Group study about real-time payments, more than 70% of respondents are convinced that providing faster payments will dramatically improve banks' competitiveness against nonbank providers, especially in relation to online and mobile payments and in person-to-person money transfers.

The success of the U.K. Faster Payments scheme, in terms of volume and broad adoption, shows how attractive a banking real-time payments service could be as an alternative to cash and checks, particularly for the person-to-person and small-business market segments.

Nonbanks' strength and competitive potential are highly evident in mobile payments, especially referring to Generation Y (ages 21 to 35) customer behavior as shown in Figure 11.

Figure 11: Mobile Shopping Activities



Source: Aite Group survey of 1,242 U.S. consumers, Q2 2013

The use of technology is the real differentiating factor, but simply providing more technology isn't the solution. New generations want tools and services that provide advice and guidance on how to make financial decisions. Within this context, panelists of sessions dedicated to changing customer behavior agreed that banks will continue to play a role in payments if they cooperate more closely with nonbank entities to meet the demands of these generations. Indeed, this is particularly true for cross-border payments, a segment in which trust and confidence in a regulated bank provider represents one of corporations' most important payment provider selection criteria.

In this arena, correspondent banks still maintain a competitive advantage over nonbank competitors: Handling high-value payments supported by complementary trade products and services, maintaining a close working relationship with the client with dedicated sales and relationship teams, and having widespread international networks with local presence and knowledge (especially in compliance and regulations) can still make the difference in corporations' choices.

Asked about how the payments landscape will look in 10 years, panelists of one of the final sessions agreed that payments will become a pure commodity like electricity. Other descriptions suggested that banks and large corporations will compete in offering value-added services along an extended financial value chain; financial institutions will continue to play a key role in the payments industry if they will partner with nonbank players and leverage their main asset, which is trust.

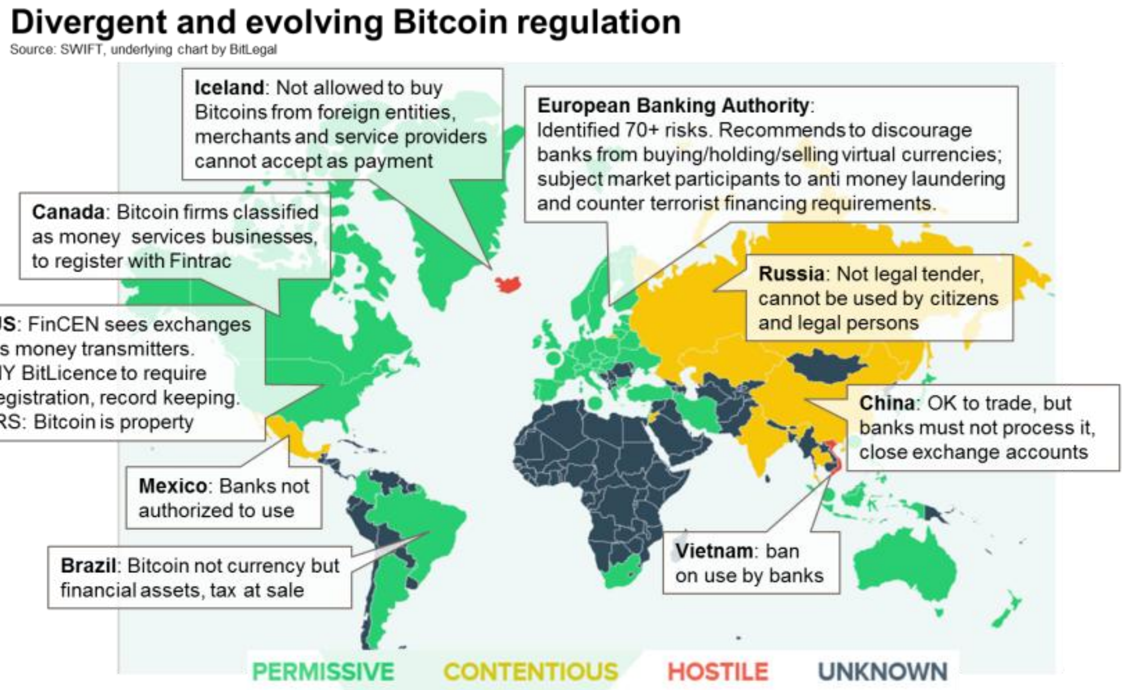
CRYPTOCURRENCIES: OPPORTUNITIES HIDDEN BEHIND A THREAT

Cryptocurrencies was a hot topic on the Sibos agenda this year, with Bitcoin dominating the scene. At the beginning of the entire day dedicated to this theme, participants were confused about cryptocurrencies and why they exist. Nevertheless, cryptocurrencies are increasingly drawing venture capitalists' attention—over US$130 million of investment in the first two quarters of 2014, with a total amount of US$240 million across 49 companies achieved so far—and more and more businesses are accepting cryptocurrencies as payment.

Even though there is great enthusiasm around this innovation, which is expected to transform the existing global financial infrastructure, critics are skeptical about cryptocurrencies and believe they are based on pure speculation. Those who happily welcome the advent of cryptocurrencies consider them an alternative store of value and a powerful technology that allows cheap and fast global transactions. These advocates also see them solving the problem of proving the unique ownership of a digital asset, as indicated by Richard Brown, executive architect at IBM UK. "There is a ledger that allows you to prove and transfer ownership. There is nothing to stop an issuer asserting that a particular set of bitcoins represents ownership of a particular set of securities." On the contrary, several regulators, such as the Consumer Financial Protection Bureau in the United States, prefer to alert users to the potential risks of using cryptocurrencies, such as the risk of incurring fraudulent exchanges or of losing virtual currency as a consequence of a theft or hack.

Different countries adopted divergent approaches toward Bitcoin specifically (Figure 12). The European Banking Authority opted for a permissive approach, even if it discourages banks from buying/holding/selling virtual currencies; the same can be said for the United States, Canada, Brazil, and Australia. Some countries like Iceland and Vietnam banned its use, while others such as China, Russia, and Mexico adopted a contentious attitude that in most cases does not permit banks to process it or citizens to use it legally.

Figure 12: Divergent National Approaches Toward Bitcoin



Source: SWIFT, chart by BitLegal

Hence, the core of the entire session dedicated to cryptocurrencies focused on one protagonist—Bitcoin—and on one question: Do banks have to consider cryptocurrencies as a threat or as an opportunity? The consensus of the day seems to have favored the second option, particularly in relation to the technology underlying Bitcoin. Some participants even see Bitcoin and its blockchain technology as a potential overlay intended to affect all aspects of our lives.

Bitcoin has been presented by the members of Bitcoin Foundation as a "distributed data ledger" and a secure set of protocols for communicating changes on that ledger by reassigning values. "The screens are showing transactions going through the Bitcoin network. Every 10 minutes, they're picked up in a transaction block and added to the existing blockchain to form the ongoing history of transactions," said John Matonis, executive director and board member at Bitcoin Foundation.

Every day new Bitcoin startups are announced in the press, and the btc.com domain name was recently sold for US$1.1 million. The prizewinning "Etherium Project" presented at Sibos leverages the blockchain technology behind Bitcoin to deliver a decentralized database that can be used for more than just currencies. This example paved the way for a discussion about the potential use of the blockchain for validation of the parties involved in a contract and for tracking anything that can be recorded in an agreement.

Bitcoin's promoters consider it a faster and cheaper alternative to other payment solutions, such as paying via banks or through money transfer operators or shopping online using a credit card. Bitcoin currency is now accessible via ATMs, and some nonbank players have already started to exploit it by creating market niches and targeting the unbanked, who can access cryptocurrencies via their mobile devices and use them to make remittances, for example.

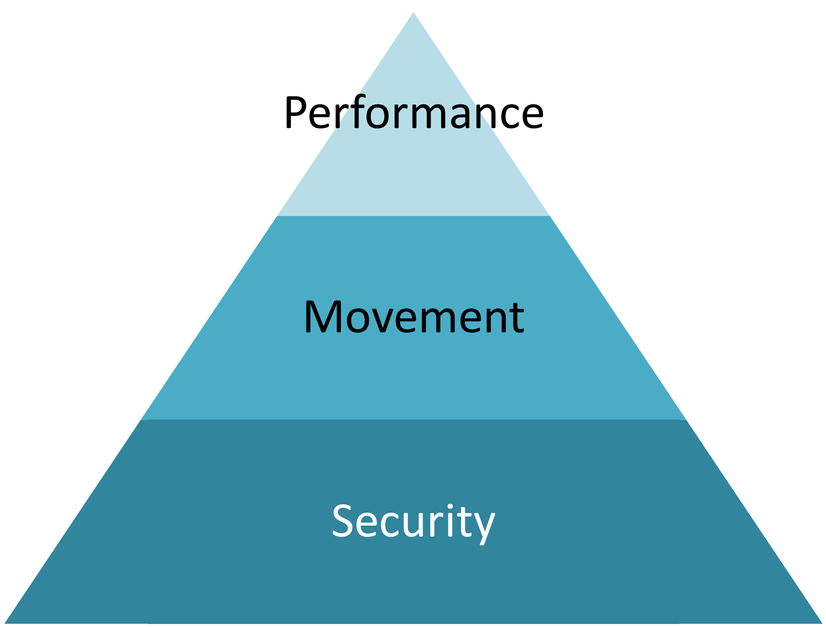
At the end of the session, it came out that the underlying technology of cryptocurrencies may offer banks an opportunity to deliver secure intermediation and a chance to provide new services that in the past were too costly or difficult to consider. This concept was strengthened by Wim Raymaekers, head of banking markets at SWIFT, who said that "in the world of cryptocurrencies, we are seeing the birth of intermediaries who can deliver many services, but in the long run they will never be able to grant the security, the reach, or the credibility that banks can offer."

INNOTRIBE STARTUP COMPETITION

When you hear the phrase "hierarchy of needs," you probably think of Maslow's theory, which posits that human needs range from physiological needs (e.g., food, water, shelter) at the bottom level of the hierarchy to self-actualization at the top (although the theory has recently been updated to reflect that Wi-Fi and battery life are perhaps more important than food and shelter).

The "hierarchy of needs" concept is a useful way to look at the banking industry. There is—and always has been—a hierarchy of needs. At the bottom of the hierarchy is security, in the middle is (money) movement, and at the top level, performance (Figure 13).

Figure 13: The Banking Hierarchy of Needs



Source: Aite Group

In this hierarchy of needs, consumers have a need for security—they want to know that when they put their money in a bank on Monday, that money will be there on Tuesday. With deposit insurance and a highly regulated industry, that level of need is satisfied and has been for a while now.

Consumers also have a need for money movement—they want to know that when they write a check on their banking accounts (or make a debit or credit card payment), the money will be moved to whomever they wrote the check to. And they want to know that when they deposit money into their account, the money will be moved there (although they've long wished that movement happened faster than it does). These needs have been long met as well.

And in the world of retail banking, consumers have a need for account performance—they want to know that they are getting the best rates and paying the lowest fees. This is a relatively newer level of need, as consumers (especially and predominantly in the United States) have become more affluent over the past 50 years. The Internet has contributed strongly to helping meet this need.

The Innotribe Startup Competition at Sibos 2014 demonstrated how the hierarchy of needs in banking is being re-established. Seven of the eight finalists addressed the three levels of the hierarchy of needs:

- **Security:** Singapore-based Sixscape Communications replaces insecure username/password authentication with certificate-based authentication. Its Identity Registration Protocol Server (IPRS) combines a user directory, automatic IPv6 address registry, and public key infrastructure to make it simple and inexpensive to replace insecure username/password authentication. Ensygnia's OneScan technology improves identity verification by creating a trusted environment for users to share a verified identity and log in to services, complete registration forms, authenticate transactions, or make online payments.
- **Movement:** Competition finalists also addressed the changing needs at the money movement level of need. Competition winner Epiphyte avoids traditional money movement avenues by converting currency to bitcoins, then converting them on the other end of the transaction to the local tender. The bitcoins are moved for a fraction of the cost of traditional money transfers using exchanges like Coinbase and Bitpay, which take on the currency risk. TransferGo is a digital international money transfer service that enables international money transfer without actually transferring the sender's money internationally. A third finalist, LendStar, is a social financial network that provides real-time money transfer via a mobile wallet and prepaid credit card.
- **Performance:** At the performance level, Stockspot provides robo-advice to investors using algorithms to match investors to low-fee index funds based on their investment horizon, risk tolerance, and liquidity needs. Lending Robot automates loan selection and investment in peer-lending platforms like Lending Club.

Since seven of the eight startup competition finalists address the three levels of the banking hierarchy of needs, why didn't the eighth competitor fit into the framework? A new level needs to be added at the bottom of the pyramid for application programming interfaces (APIs), which enable connectivity between players in the financial services ecosystem.

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The eighth finalist, Standard Treasury, creates what it calls the API banking channel. It helps banks automate treasury and accounting processes by creating a platform to integrate internal bank information and payments systems to provide ACH transactions, wire transfers, foreign exchanges, and other liquidity management and payments transactions.

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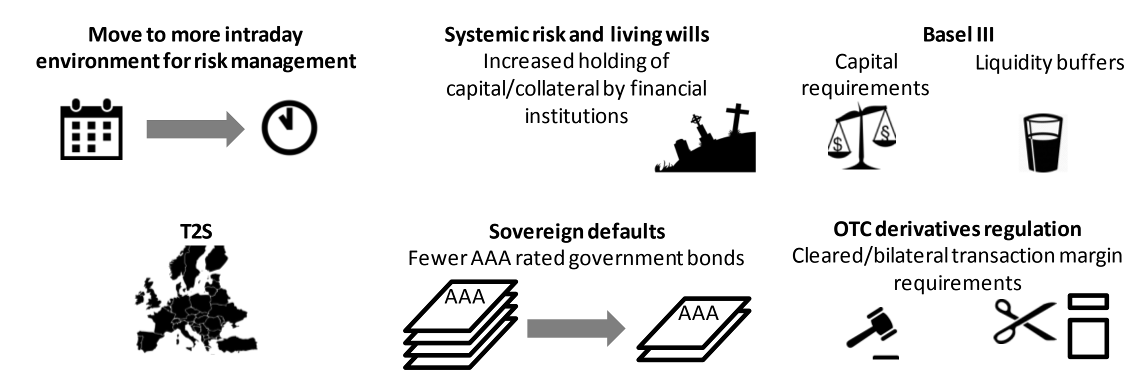
SECURITIES SESSIONS

Once again, regulation and market infrastructure change were the dominant themes of the securities sessions at this year's Sibos. The lack of international coordination among regulators was a particular bone of contention discussed by panelists and delegates alike. Discrepancies between similar regulatory requirements across jurisdictions are causing a considerable amount of pain for firms present in multiple markets, sometimes causing firms to exit particular geographies altogether. During one of the "big issue" discussions, panelists noted that this lack of coordination is negatively impacting market liquidity and causing pain for end clients by driving up the cost of operations overall.

The geographic dimension is merely one aspect of compliance pain, however, as some regulations in the same region are also in conflict with each other, such as some of the requirements under the European Market Infrastructure Regulation (EMIR) and the Basel III framework as interpreted in Europe. The definition of high-quality liquid assets under the Capital Requirements Directive IV (CRD IV) differs from the definition under EMIR; moreover both require firms to hold separate pools of capital, collateral, and liquidity, which is placing some degree of strain on firms' finance and collateral management functions.

The Liquidity Coverage Ratio (LCR) aims to improve the short-term resilience of banks' liquidity profiles by requiring banks to hold adequate levels of high-quality liquid assets for them to endure a 30-day stress test. This means that a lot of collateral will be left sitting encumbered on balance sheets for LCR purposes at a time when firms active in the OTC derivatives markets are required to post collateral as initial margin at CCPs. This tension of competing demands for high-quality assets was acknowledged by numerous panelists during the Market Infrastructure Forum sessions as a key concern for 2015 and beyond (Figure 14).

Figure 14: Collateral Demands in 2015 and Beyond



Source: Aite Group

A speaker from Deutsche Bank noted that liquidity management has become more than using traditional techniques such as cash concentration or notional pooling, especially when cash has to be managed on an intraday basis. It entails managing time-critical payments in and out, surplus cash from incoming payments, balances on individual accounts, yields from investments on balances, and, of course, collateral assets.

Regulatory fatigue seems to have well and truly set in within the securities sector, and the industry is currently less than halfway through the post-crisis reform program. Numerous panelists during the week indicated that some of the regulation that has been implemented may not have actually improved market transparency because of the disparate approach to reporting and the fact that some firms have exited certain jurisdictions in order to avoid onerous requirements. The inability of regulators to make sense of trade reporting was one area well-discussed by the community during Sibos, along with the failings of the U.S. Volcker Rule, which some panelists suggested has ended up restricting the securities banks can hold, resulting in a negative impact on liquidity in markets.

The delays and last-minute changes to the regulatory reform agenda were also highlighted as a pain point by delegates and panelists. A recent tangible example of the negative impact of delays to EMIR is the closing of Bank of New York (BNY) Mellon's European clearing operations. The operations, which were launched back in 2011, will be wound down over the next few months, and the firm has indicated this decision was taken due to the significant delay to clearing obligations under EMIR. Moreover, BNY Mellon closed its U.S. derivatives clearing business in December 2013 because of regulatory and financial reasons.

A NEW LAUNCH: WATCH FOR SECURITIES

SWIFT also introduced a new business intelligence solution for the securities markets, called Watch for Securities, which it plans to launch in early 2015. The aim of the service is to provide consolidated access to monthly aggregated global, regional, and country-level data for asset servicing and settlement messages for equities and fixed income markets (though this may be extended to other message types over time). Much like SWIFT's business intelligence offering in the payments space, Watch for Securities is aimed at providing firms with data in order to conduct benchmarking and analysis of market trends and monitor activity share and operational indicators.

MARKET INFRASTRUCTURE AND RISK

The biggest discussion point with regard to risk and securities market infrastructure was the ongoing reform of the over-the-counter (OTC) derivatives markets. This year's Market Infrastructure Forum discussions reprised last year's themes of concern about extraterritoriality and a shortage of collateral for initial margin, but there was much more focus on the potential systemic risks posed by CCPs. The too big to fail issue for CCPs has been a topic of much debate across the industry during 2014 due in part to recommendations by the Basel Committee for Banking Supervision (BCBS) for these market infrastructures to set a minimum level for their default funds and to establish recovery and resolution plans. These recommendations, which were first published in July 2012, are due to be incorporated into a draft European Union law due in early 2015.

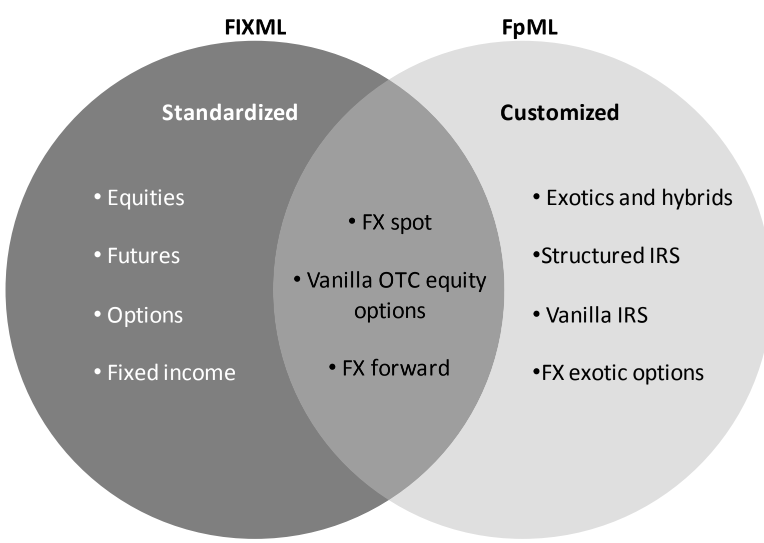
BCBS 227 also requires that CCPs provide regulators access to data about how the capital requirements for their default-fund exposures are calculated. These calculations are based on the counterparty credit risk exposures to all of the CCP's clearing participants, its prefunded default-fund contributions from all clearing participants, and its own default-fund resources (these resources must be used by the CCP to cover its losses before clearing participants' default-fund contributions are used).

Behind closed doors (on Sibos stands), a number of these CCPs indicated that they are less than pleased about this move, as it means that they essentially take on the role of lender of last resort for their clearing members. The fact that the CCP must hold its own default funds and use these ahead of any contributed by clearing members is a bone of contention because CCPs feel regulators should not treat them the same as they do banks, but this requirement means CCPs will be bailing out any members in default. It is a tricky issue, however, as the prospect of a CCP defaulting is a key concern for the industry as a whole, and there are very few precedents in the market overall to indicate how such an event should be tackled.

The lack of interoperability and comparability of CCPs was another recurring topic during Sibos week, with panelists noting that greater market fragmentation has occurred due to Dodd-Frank Act requirements, and more is expected when other jurisdictions introduce mandatory clearing. One panelist noted that a lack of interoperability between CCPs means that both counterparties must rely on the same CCP, which could result in one counterparty dominating and picking the CCP of its choice, thus resulting in suboptimal risk management.

Standards divergence among CCPs and trade repositories was also a theme reprised from 2013, with many standards forum panels dedicated to highlighting the areas of coverage and crossover. Figure 15 shows the coverage of the derivatives universe and the areas in which both the Financial Information Exchange Markup Language (FIXML) and the Financial Products Markup Language (FpML) are used. Though neither of these standards sit under the auspices of SWIFT, there was lengthy discussion about the role of the network provider in fostering greater standards adoption in the securities markets overall. Taylor Bodman, head of information systems and technology services at Brown Brothers Harriman, issued a call to action to SWIFT and its user community: "If data is an asset like money, we need to get control of it as an industry."

Figure 15: Standards Usage in the Derivatives Universe



Source: Aite Group

An ancillary area where messaging standards are also being recognized as vital is collateral management communications, and a whole session was also dedicated to that subject.

TRANSATLANTIC COLLATERAL MANAGEMENT

If collateral shortages were the main topic of discussion last year, 2014 saw a much more practical bent to discussions on the subject of collateral management and transformation. Following last year's memorandum of understanding between Euroclear and DTCC, the two CSDs announced the official launch of the new joint venture, which has been dubbed DTCC-Euroclear Global Collateral Ltd. The aim of the joint venture is to establish a transatlantic link between European markets and the United States for collateral assets, which essentially means that each CSD's clients will have access to both CSDs' collateral pools.

Though neither DTCC nor Euroclear have disclosed how much investment is required and how much technology work needs to be done, they have indicated that they will merge their technologies to create an open IT system that will underpin the venture. The joint venture will initially offer automatic transfer and segregation of collateral based on agreed margin calls for OTC derivatives and other collateralized contracts.

The project builds on assets and capabilities such as DTCC's Margin Transit Utility, which is focused on increasing straight-through processing for margin at the U.S. domestic level, and Euroclear's Collateral Highway, which aims to connect collateral pools across the international CSD's markets. The Margin Transit Utility, which was announced in 2013 and is currently in development, focuses on the following:

- Matching of margin calls
- Validation and enrichment of margin calls messages and translation to ISO messaging
- Communication of settlement instructions to various providers
- Settlement of collateral including cash obligations for multiple currencies and securities
- Safekeeping for segregated margin accounts
- Reporting and recordkeeping of collateral

It is very early days for the joint venture, but it will be another important project to track over the next 12 months because of the perceived importance of collateral management in the current market. It hasn't been a great year so far for collateral agreements, as a joint project established by Clearstream and Euroclear in July 2013 to enhance an existing collateral pooling link by the end of 2015 has already been delayed by up to two years. The two international CSDs indicated that the project would not meet the deadline at a European Central Bank (ECB) meeting in June 2014, noting that a more achievable deadline could be 2017.

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SETTLEMENT IN EUROPE

Less than a year before it goes live, Target2-Securities (T2S) was inevitably a topic of conversation during multiple sessions at Sibos 2014. Unlike in previous years, the concerns surrounding the pan-European settlement system this time around were not so much about meeting the technical requirements but more about the competitive landscape that will emerge as a result of its implementation. It is expected that creating a single marketplace for settlement will drive consolidation across the CSD landscape, breaking up the national monopolies that are currently in place.

For those who have been under a rock for the best part of the last decade, the intent of T2S is to settle almost all heavily traded securities circulating in Europe against the euro and other European currencies (those from countries that have signed up to participate) using standardized communication protocols and harmonized market practices on the T2S platform. As part of this, a single set of rules, standards, and tariffs will be applied to all transactions settled via T2S. The platform will therefore significantly alter the European settlement framework by divorcing settlement from other asset servicing functions and simplifying the current settlement market infrastructure landscape. It will take the settlement function out of the hands of domestic CSDs.

May 2014 marked the beginning of the T2S user-testing phase, signaling the transformation of T2S from an ECB-led project to an industry-led one, with the legwork duly transferred at the same time. Doubts remain, however, about the true drivers behind the inception of T2S—some market participants argue that it was created merely to keep hundreds of ECB employees in their jobs following the completion of the Target2-Payments project and that the industry did not want or need its implementation. While supporters of T2S maintain that it will reduce the cost of cross-border settlement, there are still concerns over the impact it will have on the cost of domestic settlement, particularly in the short term, as well as the wider cost effects it will have by triggering a market infrastructure shake-up.

There are currently 24 CSDs (Figure 16) that have agreed to connect to T2S, although Jean-Michel Godeffroy, chairman of the T2S board at the ECB, told Sibos that he thought it would be unlikely that they will all make positive returns on their investment. Moreover, with the loss of settlement business, the remainder of the services that CSDs provide will become unbundled and therefore more transparent. As a result, this could cause more direct competition on price to provide these other services, and some CSDs, particularly those at the smaller end of the scale and that previously held national monopolies, will struggle to cope with the new competitive pressures without the steady income of settlement revenue.

Figure 16: CSDs Connecting to T2S

Source: Aite Group

The competitive impacts of T2S will reach further than just the CSDs. Custodian banks, which currently provide the link between market participants and CSDs, will no longer need to connect to CSDs in each individual European country. As any CSD connected to T2S can settle trades in a T2S-compliant country, it is anticipated that the expensive and expansive networks that custodians have built over the years will no longer be required in the euro area when T2S comes in (provided it works the way the industry and the ECB hope it will). Subcustodians are particularly vulnerable, given that global custodians can now bypass them altogether, and as a result several smaller custodian firms are looking to move away from providing custody services altogether. On the other hand, some custodians have begun to encroach on the territory of CSDs. Global custodian bank BNY Mellon, for example, launched its own CSD in Luxembourg after gaining regulatory approval in January 2013.

A wave of consolidation is inevitable, but how far will this extend? Some market specialists believe that only niche practitioners and giant-flow monsters will survive the impact of T2S in the long term. Smaller players that do not have enough of a niche will therefore opt to sell up or just close down. The signs of early exits from the realm of custody have already begun, with ING opting to sell its custody business in seven Eastern European markets to Citi in April 2013.

It will be interesting to see who remains in the custody and asset-servicing arena when next Sibos rolls around, given that the first wave of CSDs will migrate to T2S in June 2015. At least at that point there will be some more clarity about how much domestic and cross-border settlement costs will be changed over time and how successful the system implementation phase has been.

Another hot talking point on the show floor was the move in Europe to shorten the settlement cycle from trade date plus three days (T+3) to T+2. Given that the switchover was to be made a few weeks after the conference, there were many nervous delegates pondering whether there would be a short-term rise in settlement failures as a result.

ASSET MANAGERS IN THE HOUSE

One of the main subjects for discussion during the Investment Management Forum was the benefit of an open-minded approach to outsourcing. Panelists suggested that rather than considering outsourcing purely as a means of bringing down costs, asset managers should also explore the benefits of access to an external pool of talent and expertise and consider the potential diversification of operational risk. A speaker from asset management giant Pimco indicated that the firm opted to outsource some of its operations as part of its strategic growth program to improve its core competencies, and this has been a successful approach over the years.

Outsourcing doesn't suit every firm, however, and a speaker from Schroders explained the firm's tale of outsourcing woe, which resulted from a failed back-office outsourcing arrangement. The firm insourced its operations, and operating costs are now so low that no outsourcer could provide a competitive enough offer for them to outsource again. On this note, the specters of risk and liability were common fears for all panelists. It was agreed that asset managers cannot outsource liability because they still own the risk for any external arrangements, and this is particularly concerning in light of a higher industry focus on reputational risk. Scrutiny of third-party outsourcers' risk management practices is therefore a key consideration before any relationship is established.

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CONCLUSION

There is no doubt that the dominant theme of Sibos 2014 was the threat and the opportunity posed to both the payments and securities sectors by new entrants and new technologies. A key takeaway for all delegates was the need to keep vigilant and carefully evaluate any potential partnerships and technology arrangements that may be beneficial in future.

On the wholesale banking front, Sibos highlighted the following:

- **Clients and regulators' payments expectations of banks are escalating, especially with regard to digitization, real-time payments, surety, and ubiquity.** Fundamentally, these expectations can be characterized as demands for straight-through processing that provides speed, safety, transparency, and global reach. As in years past, straight-through processing remains a banking industry goal. It is ever closer to realization but remains tauntingly elusive. SWIFT connectivity holds a promise for facilitating these demands by providing a network commonly accessible by banks and their clients, but limitations remain with regard to the many payments value chain players that are currently excluded or not connected, and by the need for more message types with richer information. Banks must continue to participate in industry standards groups (including SWIFT) while also embracing data translation solutions and other technological innovations to meet the demands of the market.
- **SWIFT is a strong resource to help banks innovate.** Facing nonbank competition, greater technological customer demands, increasing global regulations, and heightened threats to cybersecurity, banks must embrace utilities like SWIFT to provide them with noncompetitive services, freeing banks to focus on their opportunities to differentiate. Key SWIFT initiatives include more options to connect to the SWIFT network, continued standards development, KYC and SWIFTRef repositories, bank payment obligation, sponsorship of the corporate forum that brings banks and companies together to consider and resolve common interests, and Sibos University, which connects the banking industry with academics for innovative opportunities. Large, global banks recognize these benefits but also realize the need to balance the advantages of utility with legal liability in compliance and the criticality of differentiating for their target markets.
- **ISO 20022 is gaining ground particularly with real-time payments solutions globally, but it is still misunderstood by many industry participants.** As with many industry standard initiatives, the focus to date has been on the technological drivers rather than on the business opportunities provided by ISO 20022. Banks and their technology partners must alter that focus to incorporate clear understanding of the business needs that this standard can resolve. More than any prior standard initiative, ISO 20022 has momentum and the promise to improve interoperability between and among banks and their clients, and to add value through the incorporation of rich and comprehensive data exchange.
- **Nonbanks are the new competition but may also be the new partners.** Banks must consider the opportunities nonbank competition introduces for banks to upgrade or replace legacy infrastructure. New market entrants are not encumbered by existing

infrastructure, policies, and procedures, and banks that establish relationships with these entities can offer new services for clients without completely renovating back-office systems.

On the securities markets front, Sibos highlighted the following:

- **Extraterritoriality and conflicting regulatory requirements across jurisdictions will continue to be a point of pain (and complaint).** The securities markets are facing a case of regulatory fatigue—there is absolute belief in some corners of the industry that there is not enough joined-up thinking going on within regulatory circles. The sentiment is that politics have managed to derail sensible regulation in some cases and that regulators are not playing nicely together. The onus is on the industry to lobby the regulators and get the right messages heard and policies adopted going forward, given that a lot more reform is on its way. SWIFT can play a key role in the standards universe to this end.
- **Collateral infrastructure change and standardization is in the cards.** The movers and shakers in the collateral transformation universe are busy working on various projects to connect the global dots between collateral pools. This will all be going on while T2S is set to go live, which will also have a significant impact on collateral movement in central bank money (or so the ECB hopes). Next Sibos should give the industry some indication of whether all these plans and projects are on track and are making an impact.
- **We're going to be hearing the word "utility" a lot over the next 12 months.** There are numerous industry utilities being set up in the KYC space but also in the area of reference data and securities processing. The industry won't be able to support all of them in the long term, but there is likely to be a fierce fight for market share in the interim, before some die on the vine.
- **CCPs are facing a lot of scrutiny and will continue to be under the microscope in 2015.** Regulators and industry participants are concerned about the potential systemic risks posed by CCPs and are keen to see a higher degree of transparency from these market infrastructures. The BCBS guidelines, though unpopular with some CCPs, will set a baseline for recovery and resolution but may thin the numbers of CCPs over time.

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