Financial IT

Innovations in FinTech

PROTECTING AN OPEN BANKING WORLD

Mary Ann Miller,
Senior Director, Fraud Executive Advisor & Industry Relations,
NICE Actimize

RUNNING ATMs IN A PSD2 WORLD

Aravinda Korala,
Chief Executive Officer,
KAL

WHY OPEN BANKING DEMANDS A COLLABORATIVE WORKFORCE

Richard Price,
Head of Financial Services Practice – UK&Ireland,
TIBCO

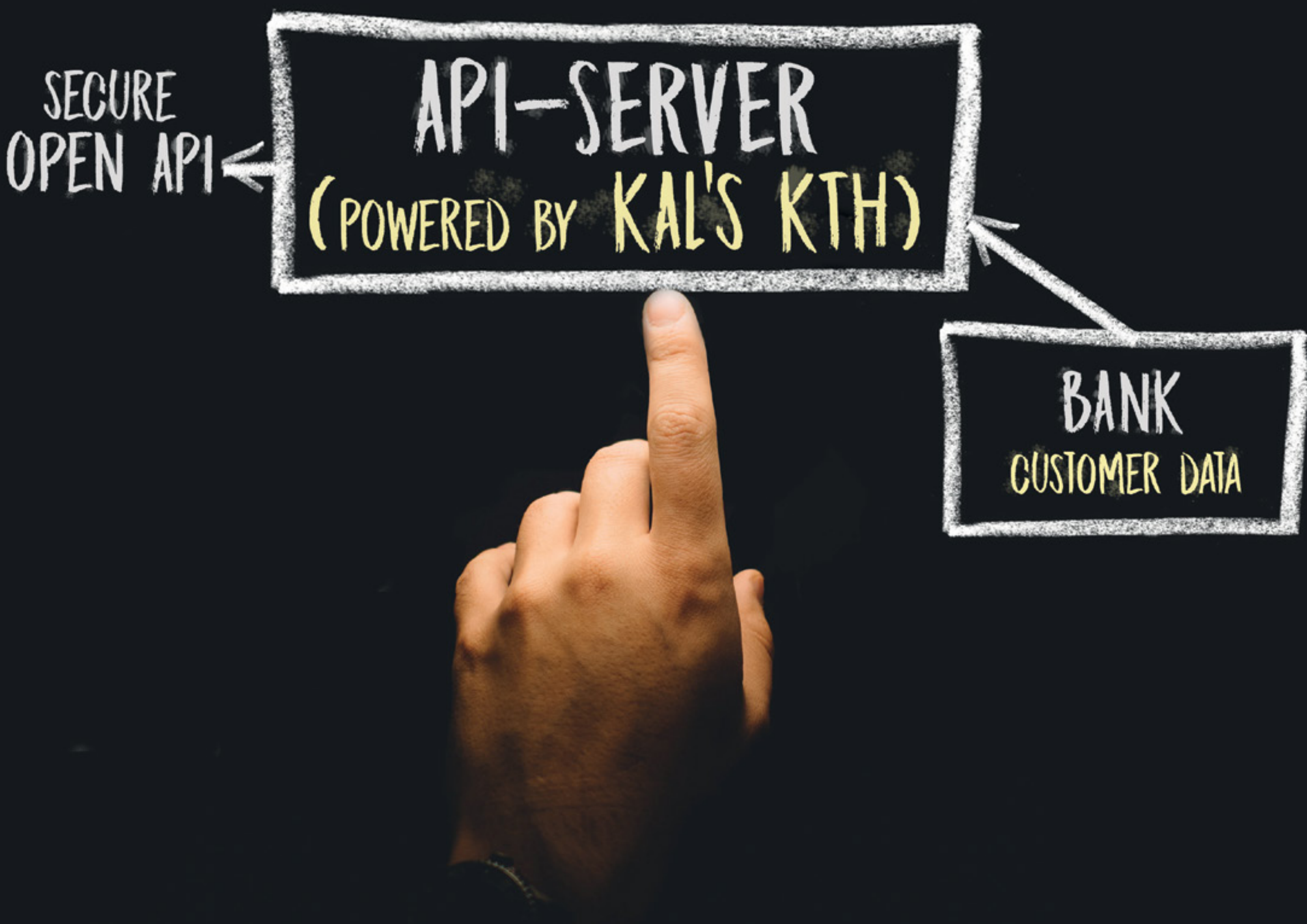
Rahul Singh,
President and Global Head,
Financial Services,
HCL

PLATFORMS: PUTTING WIND INTO THE SAILS OF FINANCIAL SERVICES

API-Server

POWERED BY **KTH**

DELIVERING PSD2 SOLUTIONS TO BANKS



KAL AND OPEN BANKING

PSD2 became law in all 28 countries of the EU on the 13th January 2018. Banks are now required to open their customer data securely to third party payment service providers (TPPs).

KAL software can help banks and TPPs become compliant.

KAL'S OPEN BANKING SOLUTION

One of PSD2's requirements is that banks make it possible for TPPs to access customer data securely using Strong Customer Authentication (SCA). This makes it easier and cheaper for consumers to transfer funds and make payments.

With PSD2 payments, each transaction must be explicitly authorized by the consumer using their SCA credentials. Only the consumer is able to do that – and a hacker cannot replicate this process using stolen information, as the credentials are unique each time.

THE TIMELINE FOR PSD2 & RTS

JAN 2018 - PSD2 GOES LIVE

The Second Payment Services Directive (PSD2) goes live

MAR 2018 - RTS PUBLISHED

Regulatory Technical Standards (RTS) on strong customer authentication and secure communication published in EU official journal

MAR 2019 - RTS IN FORCE

Regulatory Technical Standards come into force. Banks to provide documentation and testing facility for access to accounts (XS2A)

SEPT 2019 - SCA

Use of SCA becomes mandatory

WHY SHOULD BANKS CHOOSE KAL?

KAL's server technology is able to expose a secure API that allows SCA-compliant transactions to be carried out by TPPs.

KAL's API-Server powered by KTH is designed to be installed in a bank's data center with support for dual-data center architectures and secure hardware devices such as HSMs.

The API-Server is managed and monitored using KAL's KTC management system. It enables banks to navigate the transition into open banking easily while meeting the regulatory requirements.

SECURE

For over 25 years, KAL has delivered highly scalable secure transaction processing software

CUSTOMIZABLE

Highly customizable and can be adapted to legacy systems or integrated into a bank's digital strategy

COST EFFECTIVE

Easy to implement and does not require a bank to design its own solution

To learn more about KAL, please visit:

www.kal.com

MARCH ISSUE 2018

CONTENTS

6 RUNNING ATMs IN A PSD2 WORLD
Aravinda Korala,
Chief Executive Officer,
KAL

12 PROTECTING AN OPEN BANKING WORLD
Mary Ann Miller,
Senior Director, Fraud Executive Advisor & Industry Relations,
NICE Actimize

16 WHY OPEN BANKING DEMANDS A COLLABORATIVE WORKFORCE
Richard Price,
Head of Financial Services Practice – UK&Ireland,
TIBCO

EDITOR'S LETTER

4 The Open Banking revolution… …and how it could unfold

TOP STORY

8 Platforms: Putting wind into the sails of Financial Services

LEAD STORY

6 Running ATMs in a PSD2 world
12 Protecting an Open Banking World
16 Why open banking demands a collaborative workforce

INTERVIEW

20 Using exceptional tools to enhance the consumer experience
28 Helping the growth of electronic identity (eID) in Europe

INNOVATION CORNER

46 The Trade Finance Revolution

FEATURED STORY

18 2018 Trends, Predictions and Disruptions
22 When Customer Behavior Catches Up with Banking Technology
24 What's "In Store" for Payments?
26 Just a few months to go; Why isn't GDPR being taken seriously?
30 Open APIs: Weighing the Risks vs. the Rewards
34 Today's financial consumer: Open for business
36 AI: the reality for banks
40 Partnering technologies offer agile approach to tackling transaction reporting requirements head-on
42 PSD2: A regulatory puzzle of Data, Cyber, Innovation, Ethics and Value

DIRECTORIES

49 Financial Technology Buyers' Guide

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THE OPEN BANKING REVOLUTION...

...AND HOW IT COULD UNFOLD

Andrew Hutchings, Editor-In-Chief

This March 2018 edition of Financial IT comes between two key dates. One is 13 January 2018, when the second Payments Services Directive (PSD2) came into effect in the European Union (EU). The other is 25 May 2018, when the EU's General Data Protection Regulation (GDPR) will come into effect.

GDPR will reinforce PSD2 and, therefore, the opportunities from the world of Open Banking that are implied by PSD2. As one of our contributors writes, GDPR will enforce good behaviour by the incumbents and the new entrants to the new world of Open Banking that is envisaged by PSD2. GDPR will promote the trust that is essential to Open Banking.

The implication of this is that corporate managers within any financial institutions that are looking to do business in Europe no longer have to worry about how to put PSD2 into reality. PSD2 has arrived. For the first time, therefore, our contributors are able to consider how the revolution in Open Banking could unfold.

If the articles and interviews in this edition are any indication, the revolution will provide as many opportunities as challenges. One of our contributors, for instance, considers what could happen as a result of what he describes as 'platformification'. Amazon is a platform for retailers; iTunes, for the streaming of music.

Thanks to PSD2 and Open Banking, something similar could happen at the intersection of financial services and IT. Open Banking allows third party software developers to extract data from partner banks and to deliver completely new digital services.

The Open Banking revolution means that it should not matter if banks do not 'own' their customers. Provided that they can work through new platforms, financial institutions can add value to the entire ecosystem within which they operate. If they do so, they will thrive.

The Open Banking revolution will, therefore, have many beneficiaries. Those beneficiaries will undoubtedly include consumers, who will enjoy new products, improved services, lower (or zero) costs, seamless customer experience and greater transparency.

The changes which are underway in the Open Banking revolution are entirely consistent with the changes to financial markets which are envisaged by the EU's latest Markets in Financial Instruments Directive (MiFID II), which came into effect in January 2018 and which is also touched upon in this edition of Financial IT.

Several of our contributors discuss the acceleration of commerce that is happening at the same time as, and in part because of, PSD2 and the Open Banking revolution. International trade should be boosted by the elimination of tedious and costly paper documentation that is described in one of the interviews in this edition of Financial IT.

Meanwhile, another contributor describes a future where retail transactions (and payments) happen seamlessly and instantly. In this future, there are no sales staff, no tills and no way for a customer to pay with cash.

Although PSD2, GDPR and MiFID II originate in the EU, the changes which they recognize and promote are global. One of our contributors explains why there will inevitably be a move towards Open Banking in North America.

It may be that 2018 is remembered as the year of Open Banking. This edition of Financial IT explains how the revolution could unfold.

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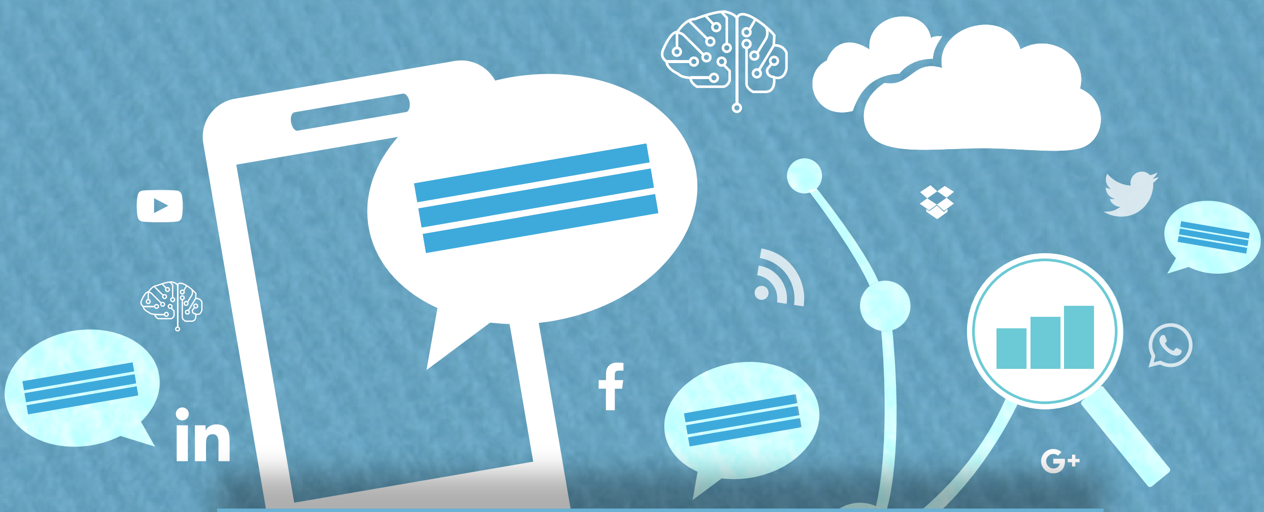

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RUNNING **ATMs** IN A **PSD2 WORLD**

Interview with
Aravinda Korala

KAL is a world-leading ATM software provider, specialising in solutions for bank ATMs, self-service kiosks, and bank branch networks.

Established in 1989, KAL is an independent company with extensive relationships across hardware vendors, solutions providers, and end customers.

KAL was founded by Dr Aravinda Korala, a recognised and respected leader in the industry, who is KAL's CEO. Headquartered in Edinburgh, UK, KAL has offices around the world. We have a multinational workforce to help us understand local customer needs whilst relating to global challenges.

Financial IT: To begin, please describe briefly in your own words what is KAL and the problem(s) that you look to solve?

Aravinda Korala: KAL is the world's leader in ATM software products. Among our clients are the largest global banks, such as Citibank, ING, UniCredit and China Construction Bank. We have presence in more than 80 countries. Our main suite of products is called Kalignite Software. It is a multivendor solution and supports a wide range of host protocols. We help banks to stay compliant, enhance their functionality and make sure that payment transactions are made easily. KAL's ATM Software supports 40 ATM manufacturers and over 250 different ATM model types, including NCR, Diebold, and Wincor Nixdorf. Globally, there are over 300,000 ATMs running on KAL's ATM Software today.

Financial IT: The second Payment Services Directive (PSD2) of the European Union (EU) came into effect in January. What, in your view, is the likely impact of the new regulations on the banking industry and e-commerce in the next three-to-four months? Are there any remaining uncertainties for banks, PSPs and consumers under the new regulation?

Aravinda Korala: Although PSD2 came into force in January, there will be delays in implementation as the Euro Banking Association (EBA) has to come up with final regulatory standard rules (RTS) around PSD2. This is especially true in relation to Strong Customer Authentication (SCA) and a lot of discussions around that are taking place at present. Banks have another 15 months to comply with the new law. SCA means that banks need to compare the details which involve PIN cards and cross-border transactions. Imagine that you try to buy something in the Internet and you have to swipe the card in your PC. Such a transaction would be very secure because your card can not be duplicated easily and because the provider of the hardware technology is good – and compliant with SCA, which applies to every transaction that is worth more than €30. The problem is that banks don't know how to do that. Another issue with implementation is multiple specifications from different banks, involving perhaps 30-40 different host protocols. SCA will be a big deal in the short-to-medium term. I suspect that it will not be until 2020 that we see PSD2 properly established in European banking.

Financial IT: How does KAL's KTH help European banks to comply with PSD2?

Aravinda Korala: We have software that is called Kalignite Terminal Handler (KTH) for driving bank ATMs. It is designed to be installed on servers within the bank's data center and connects ATMs to a wide range of host computer systems: this enables bank to deliver the widest possible range of transactions to its customers. For banks to thrive in this open market, it is vital they implement an Open Application Program Interface (API), which enables third parties to access customer data securely using secure customer authentication (SCA).

KAL's KTH for PSD2 product enables banks to implement that essential (API) and to provide PSD2-driven services to customers from other banks.

Financial IT: Please give us an example of applying KAL's KTH solution within the bank.

Aravinda Korala: One of our largest clients in Eastern Europe is Česká spořitelna, the biggest bank in the Czech Republic, with almost five million customers and assets of over $45 billion. Česká spořitelna provides its customers with the broadest range of banking services in the Czech Republic via a branch network of over 550 and more than 1,600 ATMs. KAL began providing its ATM software to Česká spořitelna in 2016. KTH is used as a front-end to the bank's host system on the ATM channel. This meant that KTH could be deployed by Česká spořitelna to offload a significant amount of work that the old ATM host system had been handling. KTH is also highly customizable, allowing Česká spořitelna to deploy new, innovative features to the market much faster than was previously possible. What's more, KTH can connect the ATMs to many bank back office systems using multiple messaging protocols at the same time. The nexo ATM Messaging Protocol was integrated into the KAL ATM Software to standardize the communication between the ATM and KTH. The role of KTH is to convert the nexo message it receives from the ATM into the messaging format required by the other host / central systems at Česká spořitelna that support the ATMs. Česká spořitelna has reduced its costs by using a single, common standard protocol, rather than one of the hundreds of bank-specific, vendor-specific and country-specific protocols currently in use around the world. Unlike these legacy standards, nexo standards provides open messaging protocols that allow better interoperability between ATMs and Česká spořitelna's host computers. We don't have clients for KTH for PSD2 yet.

Financial IT: What is the most challenging aspect(s) when applying the solution for one of your clients?

Aravinda Korala: The most challenging is that banks have different methods of doing transaction banking or online banking: there are multiple methods, channels and protocols that need to be supported and integrated.

Financial IT: Are there any rival products to the KTH for PSD2 solution?

Aravinda Korala: There are a lot of providers saying that their solutions are compliant with PSD2: however, the hype exceeds the reality. We have been searching the market for rival products, but haven't seen any relevant ones so far. We know that banks like Nordea are enabling their own solutions, like their Open Banking Portal platform, to comply with PSD2 requirements.

Financial IT: What are your suggestions for banks in relation to the challenges and opportunities that arise from PSD2?

Aravinda Korala: First, the banks have to hurry up and be compliant with PSD2, if they are not already, as it is mandatory now.

Second, banks and TPPS should consider PSD2 as an opportunity to share and provide transactions and customer data with other banks. It remains to be seen whether companies like Amazon and Google move in that direction as well.

Financial IT: What is the marketing strategy for your open-banking solution?

Aravinda Korala: We were showcasing the solution at the Paris Fintech Forum to more than 200 speakers and 2000+ delegates from 45+ countries.

Rahul Singh,
President and Global Head,
Financial Services,
HCL

PLATFORMS: PUTTING WIND INTO THE SAILS OF FINANCIAL SERVICES

Who hasn't paid the £20 fee for international money transfers? Who hasn't wondered about the interchange fees on debit and credit cards? For decades, consumers of financial services have got the short end of the stick with the most inexplicable fees and commissions tucked into asset management advisories, transactions on stocks and bonds, money-market transfers, etc. These fees go to layer upon layer of advisors, brokers, dealers, lawyers, accountants and assorted (and often invisible) custodians. The European Securities and Markets Authority (Esma), the EU financial regulator, was reported to have found that between 2013 and 2015, investors across Europe saw annual fund returns reduced by 19.8% on average as a result of fees and one-off charges[1]. But the tables are turning. Investors are looking for transparent, cheap and flexible options over which they have greater control. New services from non-traditional players are starting to fill the gap. These are lean and innovative customer-focused services such as TransferWise that claims to execute cross-border money transfers 8X cheaper than a conventional bank[2]. Will the traditional financial services industry be able to turn its ship around fast enough to meet these nimble new challengers?

The answer to that is "No" and "Yes". If traditional financial services organizations decide to build solutions from scratch, the answer is "No, they won't survive. The emerging breed of Fintech challengers will sink them before incumbents can enable the change". But if incumbents decide to build platforms for innovation and collaboration across the ecosystem, the answer is a resounding, "Yes! They can turn the ship around – and steam ahead of competition."

The pie is large enough to merit seemingly unconventional approaches. Assets Under Management (AUM) are growing at a fast clip – 7% annually and are now at US$111.2 trillion[3]. The stakes are high. And the Fourth Industrial Revolution is here with disruptive technologies such as Artificial Intelligence (AI), Robotics, Cognitive Process Automation, Internet of Things (IoT), Blockchain, Real-time Analytics, Social Media and Natural Language Processing to help build sophisticated platforms that help slice larger portions of the pie. Until a few years ago, no one would have found these words in the lexicon of bankers, asset and fund managers. Today, every financial services board room is buzzing with them because these constitute the lifeline to the future.

How can the transition to providing banking services as a platform come to the rescue? We have examples from other industries to lead the way. Amazon serves as a platform for retailers. iTunes is a platform for streaming music. In the case of Amazon and iTunes, the platforms provide ways for partners to participate in large markets using tools to display their products, enable product reviews from real users, interact and accept payment from buyers, and deliver products, thus using the platform to create value. For the consumer these platforms open the doors to choice, rationalized fees, transparency and control. Everyone wins.

Open Banking, driven by PSD2 (the revised Directive on Payment Services), is a step in the direction of platformification. PSD2 allows third party software developers to pull data out of partner banks in order to deliver new types of digital services. For example, PSD2

About Rahul Singh:

President and Global Head - Financial Services

Rahul Singh is President of HCL's Financial Services Division. He is responsible for managing and steering the business, developing relationships with clients and taking long-term investment and strategic decisions to meet the technology and operation needs of the financial services and Fintech clients.

Rahul brings with him over 30 years of experience across outsourcing, technology, banking and financial services. He is widely recognized as an industry pioneer in the Business Process Outsourcing (BPO) segment for financial services in India and has been the recipient of the 'Pioneer BPM Achiever' award in 2016. He is now an authority on the impact of the Fourth Industrial Revolution on financial services. In 2018 he was invited by the World Economic Forum in Davos to present his thoughts on innovations and emerging opportunities in the investment industry to a select group of CEOs, bankers and technology leaders. Prior to HCL, Rahul was with Citibank where he started his career in 1986. He quickly established Citigroup Global Service (aka eServe International) in 1998 and served as its first Chief Executive Ocer and Managing Director. Citigroup Global Service was India's first financial services BPO organization with team strength of 15,000 and was acquired by TCS in 2009. Rahul is a mechanical engineer with an MBA (Finance) from Mumbai University and a recipient of the 'Wockhardt Gold Medal for Excellence'. He has also done a Senior Executive Program from the London Business School, UK.

Rahul exemplifies HCL's commitment to reaching out and being a true partner to its clients with relationships that go beyond the contract. His zeal for building strong teams and his methodical approach to processes and implementation have set high benchmarks in the industry. He takes a keen interest in sustainability and renewability, promoting organizations that further these goals. He is an avid reader and a prolific blogger, regularly writing on the impact of digital technology on the financial services industry. He is also a regular contributor to leading publications that predict trends and provide insights into the financial services industry.

will allow third party providers to use data from a partner bank to deliver Account Information Services (AIS) and Payment Initiation Services (PIS), thus creating opportunities for banks to monetize their APIs. Technologies such as analytics and Artificial Intelligence will help neutral 3rd party providers decipher customer data and spend patterns to suggest new insurance products, eliminating the need to interact directly with the bank.

The significance of PSD2 for the rest of the world cannot be ignored. It is the first step in showing the world how to rapidly create a modern, transparent, cost-effective, competitive and innovative financial ecosystem with customers as the focus as opposed to the unnecessarily hurtful fees and commissions.

We already see the emergence of competitive platforms that are turning people away from banks. Payments and lending have become the first targets. Mobile payment platforms all over the world are shifting transactions away from banks and cards. Other platforms are helping entrepreneurs raise capital through crowdsourcing without complex contracts and legal fees. Europe is teeming with them: Funding Circle in the UK[4], FundedByMe in Sweden[5] and My Micro Invest in Belgium[6]. These may or may not be successful, but they indicate a strong wind in the sails of the platform trend in financial services.

To appreciate platforms, we can turn to the success of Uber that doesn't have its own fleet of vehicles but is in the transport business on the back of a platform. There are scores of similar platforms: AirBnB doesn't own real estate, Alibaba has no inventory, and the Berlin based Delivery Hero delivers food in 40 countries but doesn't own a single restaurant. Banks must also explore the possibility of creating platforms that can be consumed by others to create value. If they don't, they will see commissions, transfer and escrow fees shrink.

Platforms are a difficult concept for bankers to come to terms with. Until now, banks owned the customer. They could sell directly to the customer. There was no need for platforms. The data and business logic underlying credit pricing, risk evaluation and underwriting belonged to banks. It was closely protected and business remained secure. Technology has changed that. Today, the data is easily available and the business logic is better managed by Machine Learning, intelligent algorithms and analytical engines.

But platforms have the potential to put banks back in the game. Banks won't own the customer, but platforms will ensure they create value for the eco-system and those that do it well will thrive.

There is an urgent need for banks and other financial service providers to take note of this trend and reimagine their business with platforms at the core. They should work at incentivizing engagement with external players to continuously catalyse value creation and future-proof their businesses.

Our experience of working with European financial services organizations shows that a single dimensional approach with digital transformation at the core may prove to be inadequate. An equally important aspect is to leverage technology to power platforms that enable collaboration and innovation across the services value chain.

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1 https://www.ft.com/content/79202816-c94d-11e7-aa33-c63fdc9b8c6c

2 https://transferwise.com/ - the brain child of London-based Taavet Hinrikus a migrant entrepreneur from Estonia

3 PwC, "Asset & Wealth Management revolution

4 https://www.fundingcircle.com/uk/

5 https://www.fundedbyme.com/en/

6 https://www.mymicroinvest.com/en


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PROTECTING AN OPEN BANKING WORLD

HOW CAN FINANCIAL INSTITUTIONS ADJUST TO THE BENEFITS AND CHALLENGES OF OPEN BANKING?

Interview with Mary Ann Miller, Senior Director, Fraud, Executive Advisor & Industry Relations at NICE Actimize.

With the introduction of Open Banking initiatives across Europe, there has been an initial backlash by consumers, who worry their data may be unsafe. With APIs representing a whole new channel to secure, there is potentially a gaping hole in a bank's perimeter defense, so consumers' concerns are not unfounded. As Open Banking moves to the rest of the world, how can other countries move more quickly to address security issues around Open Banking?

In Singapore, the Monetary of Singapore (MAS) and Association Banks in Singapore (ABS) launched its own Open Banking initiative in late 2016. It is expected that in 2018, 25 percent of Financial Institutions (FIs) in the APAC will have adopted Open Banking. As the world moves quickly to adoption of an Open Banking approach, it is certain that financial services organizations must not overlook the need for protection.

Financial IT: What does Open Banking mean and how is it taking affect across the globe?

Mary Ann Miller: Open banking provides a mechanism for innovation to spawn in global markets. Since Open Banking requires institutions to open up their environments to interact with third parties, this capability can lead to some unique products, such as the creation of a new place for customers to manage bills and budgets; or it may enable a third party that helps them reach retirement goals or find the best value for their shopping needs by providing coupons.

These new innovative ventures are already emerging. In Europe, they're forcing Open Banking through the Payment Services Directive 2 (PSD2) regulatory action, which requires banks to open APIs to third party providers. In the U.S, where banking regulated differently, the nature of the market is very competitive and embraces these innovations. We've seen Open Banking propositions like PayPal growing by the day.

Financial IT: How will Open Banking change e-commerce, mobile payments and mobile wallets?

Mary Ann Miller: We anticipate seeing Open Banking bringing improvements to such industries as public transportation. In London, you can now use Apple Pay for the underground, and the New York Subway system is going the same way. Singapore was an early pioneer with PayNow, which was launched a few years ago.

About Mary Ann Miller:

Senior Director, Fraud Executive Advisor & Industry Relations, NICE Actimize

Mary Ann Miller is a global authority on enterprise fraud and risk management. Leveraging more than 20 years of experience and extensive knowledge in decision analytics, operational excellence, and customer centricity, Ms. Miller consults with financial institutions worldwide to establish business and technology strategies pertinent to the cultural climate and individualized business needs.

In her previous directorships and executive roles in fraud strategy at USAA, eBay/PayPal, and Lloyds Banking Group, Ms. Miller provided a strategic business perspective on establishing financial crime analytics across the enterprise. She has also guided cross-functional teams in complex fraud implementations designed to minimize criminal activities.

Ms. Miller started her career in loss prevention, investigations, and operations in the retail and banking industries and has also held several leadership positions in global fraud consulting in the information technology and services industry

With e-commerce companies like Amazon, payments traditionally go through the card network. In the future, consumers will pay directly from their current account. Amazon can initiate the transaction on the consumer's behalf by communicating directly to the paying bank through an API. The same goes for other Point of Sale (POS) examples. For retailers accepting this kind of payment, they'll gain access to immediate cash flows, not to mention reduced fees per transaction.

Financial IT: We hear a lot about Alexa payments. What is the role of voice payments in this scenario?

Mary Ann Miller: When we hear the term 'Alexa', we tend to think of Amazon's line of smart-speaker devices and the voice-activated artificial intelligence (AI) that allows us to speak to devices using natural language. In this emerging category, and in the context of open API banking, a third party can make API calls over the internet. They'll then convert the voice-instructions to a function that the bank makes available in its API. The bank doesn't receive the voice recording, but some conversion of that voice command into a well-defined instruction. From a fraud prevention perspective, that means there is information about that voice interface, such as its version or some voice biometric identity markers, that is sent to the bank to judge whether there is some associated fraud risk with that user session.

Financial IT: We've talked about Open Banking retail scenarios. How do you predict Open Banking will first occur in the corporate setting?

Mary Ann Miller: Corporates and FIs are already beginning to think about how they can leverage APIs to enable better business products such as payroll services or expense and travel reimbursement systems. With these innovations will come more complex fraud and the need for even more detailed fraud strategies.

Financial IT: What drove Actimize to develop a separate solution for Open Banking?

Mary Ann Miller: Actimize has a big European base of top tier banks, in the U.K. and Germany especially, among its clients. We assess fraud risk by considering the payment event, the access or channel and the entities involved. APIs are clearly a different channel. However, the bank doesn't control the device anymore. We're seeing issues with Third Party Providers, such as insider fraud, point of compromise and stolen banking credentials.

Financial IT: What does Open Banking as a new channel to protect mean for fraud strategy?

Mary Ann Miller: We're calling this "Open Banking-flavored fraud". This means that some bad actor can take advantage of this new channel. Similar to digital banking in the online bank or mobile banking apps, the open API as a banking channel introduces a new "attack surface area".

With Open Banking, we can also expect more account takeover scenarios. As a financial institution, you can only rely on how well the third party or FinTech is identifying who is accessing its application. Fraudsters have entirely new targets now to gain control of and the FinTech application acts as a proxy into the core customer accounts at the bank.

Financial IT: Social engineering schemes are dominating fraud attacks and losses in both retail and commercial settings now. How does Open Banking add to this problem?

Mary Ann Miller: The promise of Open Banking creates a new ecosystem of banking services by FinTechs, and each becomes its own target for social engineering. We see classic social engineering repeatedly, such as romance scams on Facebook, email compromise or social engineering that comes from a fraudster calling the customer as the FinTech. All of these methods are particularly good environments for fraud if a third party or FinTech is providing services or products that relate to a real-time payment.

FinTechs can also be targeted for phishing attacks that mimic formal communications to steal banking credentials. In the event of some security risk to the account, are users expecting a call from their bank? Or from the FinTech? This can get confusing to the end-user.

Financial IT: What are the most important points of an Open Banking fraud strategy?

Mary Ann Miller: We look at an open banking strategy through three areas. First, there is Channel-specific fraud detection, where the banking service event occurs. From the perspective of a bank, it's through the API gateway, which is why we refer to the open banking as a channel. Next, there is Payment-specific analytics, which is about evaluating the specific type of banking transaction, such as a payment initiation or approval. Last, one must consider Operations for an open banking environment, such as how you react to a suspicious transaction, or how you try to re-authenticate the customer.

Financial IT: What are the authentication challenges linked to Open Banking?

Mary Ann Miller: In some geographies, individual regulators are addressing this subject directly. However, regardless of the authentication required by regulators, financial institutions must carefully facilitate fraud controls with the authentication journey with the customer. To the customer, a new channel should perform effortlessly. While improving security, financial institutions must also consider the overall customer experience.

WHY **OPEN BANKING** DEMANDS A **COLLABORATIVE WORKFORCE**

Much has been made of the power shift cemented by the new era of open banking that sees the customer – empowered by PSD2 (Revised Payment Service Directive) – seizing greater control of their personal account data.

The popular narrative has long centred on a subsequent power struggle over data between the bank and the account holder but, in essence, GDPR is a contract of trust between the customer and organisation. While the success of all contracts hinge on both parties acting in an ethical and accountable manner, here expectations are intensified by both the level and complexity of compliance and what exactly is at stake – namely the sensitivity and risk over the sharing of personal financial data with third parties.

Via APIs, customer information makes its journey across an increasingly omni-channel landscape, in which the supply chain is opened to expand and innovate the service offering to the marketplace beyond pure payment. Yet in doing so, the potential for fraud rises exponentially and those banks which fail to minimise this risk and instil trust and credibility throughout the process, risk untold damage to the brand and reputation, and losing out in a saturated and hypercompetitive market.

Indeed, regardless of where responsibility lies for any weak link in the security chain, the buck will stop with the bank with whom the customer has entered the arrangement, having given written consent to allow the sharing of the data, rather than with third parties. Consequently, complying with the regulation-heavy framework, but crucially in a way that doesn't compromise on the speed and agility now expected in the service offering, becomes the ultimate test for businesses in this new era of banking.

In negotiating this balance between compliance and innovation, attention turns to the cultural shifts that are needed within an organisation. Open banking is often defined as a collaborative model and the same ethos needs to filter through into the approach of the team delivering it; establishing consumer trust demands a collective effort from the top down.

A greater onus and responsibility falls on a wider section of the workforce to play a part. Those in customer-facing roles must be equipped to handle the greater complexity now attached to customer interactions. This could range from having the necessary knowledge around user rights, identifying any deficiencies in the offering (needing?) to be rectified, and in the event of a security breach, communicating the right information as quickly as possible through the appropriate channels and minimising any further fall out.

Ultimately this new framework and hyper-diligence calls for employees that care, that are just as equipped to spot an opportunity to add value to the service experience as they are to notice a discrepancy. While incentives, rewards and penalties may have their part to play in cultivating this behaviour, they are in fact only part of the equation. Driving instinctive and intuitive personal responsibility amongst employees, so that they understand the role they have to play in protecting the organisation's data, demands deeper and substantial change and innovation at structural level, and is inextricably linked to employee engagement.

Technology platforms which foster new and improved ways of working through boosted clarity around core processes, accessible data insight and intuitive integration, become a vital ingredient in supporting this challenge. The result is improved collaboration, which enables a broader section of the business to get involved, resulting in faster solutions, risk being minimised and improved operational efficiencies.

It's an area that businesses still struggle with. A survey by global information service company Wolters Kluwer of banks across the EMEA, APAC and North America identified how integrating and creating a consistent view of their data across the organisation was cited as their core challenge when it comes to data management, rather than the oft cited threat of disruption from FinTech competitors.

It's a reminder of the importance of implementing solutions that not only ensure process maps and regulatory certification are clearly articulated through easy to understand visualisation, but that knowledge hubs of best practice are created to ensure that risk and regulatory requirements are met. Furthermore, with evolving customer demands driving expectations for more emotionally intelligent connections, the onus falls on accessible and real-time information that identifies relevant offers irrespective of the interaction channel, turning moments of opportunity to advantage.

Data visibility and the ability to cut through the swathes of intelligence to hone in on areas of high risk to, and opportunities for, new product creation becomes a vital weapon in delivering the emotional intelligence customers now expect when it comes to the handling of their finances.

About Richard Price, Head of Financial Services Practice – UK&Ireland, TIBCO:

Richard is an experienced leader with extensive IT Sales, Marketing and Partner enablement experience within EMEA. Having joined TIBCO in late 2016, Richard assists TIBCO clients and their partners deliver business advantage with the challenges they face across the financial services and insurance sectors.

Prior to joining TIBCO, Richard held a number of senior sales positions at Open Text over a period of eighteen years, and has a proven track record running sales and partner collaboration across a number of financial services sectors including Retail, Corporate and Investment Banking, as well as General, Life and Specialist Insurance.

Front Office projects delivered include direct customer portals in wealth management, global marcomms and marketing asset management platform in investment banking, brand management & product delivery in retail banking and underwriting & claims re-platforming in insurance.

Back office projects include delivering transformational global HR management processes projects, ERP management delivery from invoice management to expense processing, and AUM & market positional compliance programmes with High Performance Compute, Analytics and Content Management projects.

TIBCO®

2018 TRENDS, PREDICTIONS AND DISRUPTIONS

FROM MOBILE TO DIGITAL BANKING, WITH INVISIBLE PAYMENTS AND ACCELERATED COMMERCE.

Gary Singh, VP of Marketing for Ondot System, a Fintech innovator from Silicon Valley, tells of the coming trends that will change the dynamics of the Fintech sector in 2018.

From Mobile to Digital Banking: Real-Time Actionable Insights for Consumers

We are all familiar with Mobile Banking. It lets us gain access and information about our bank accounts while we are on the move and operate payments from our mobile devices. The next shift on the horizon is to Digital Banking, where we are likely to see some progress in 2018.

Digital Banking goes beyond simply offering you information and access to your bank account – it avails timely and contextually-relevant insights that help you make smart decisions about your money. The advent of new technology like AI and machine learning makes real-time, insightful data available to us, helping us in our buying decisions. 2018 could be the year when consumers start taking charge of their financial decisions. The new technology also enables banks to better understand consumer behaviour, tailoring their services for a better customer experience.

There are some catalysts that are contributing to the acceleration of this shift. In the UK, Open Banking is driving the requirement to make data available for consumers so that they are able to make increasingly informed decisions about their finances and get more competitive options to better suit their needs.

Ten years ago, retailers tried to understand consumer behaviours through retrospective analysis of point of sale data, a kind of 'rear-view mirror' analysis. Today, thanks to incredible advances in data processing power, we have the means to predict, anticipate and analyse data in real time. Similarly, banks can take advantage of these advances in forward looking analytics to predict consumer behaviour, reduce fraud and better serve their customers.

Instant, Invisible Payments

In the world of Digital Banking, payments will increasingly happen in the background, as an automated process that does not require user intervention and does not interrupt user flow. Just like car-share services today, we jump into a car without taking any payment action, in the future all sorts of goods will be purchased on the go through intelligent payment systems that are customized to understand our location, preferences and are protected by advanced security measures.

Similarly to how IOT devices such as Amazon dash buttons or smart refrigerators are ordering on our behalf, payments will be securely delegated and trusted to smart devices that will be buying on our behalf - just in time and instantly. Imagine pulling up to a drive through and your standard order is already displaced on the ordering screen and as you pull up to the window to pay, you simply grab and go without any payment action or you pull up to a gas station and simply fuel and go. The car in this case is making payments on your behalf in real-time, based on location and your association with the car.

Accelerated Commerce through Frictionless Payment

The combination of digital banking and invisible payments will lead to accelerated commerce. Payments in the digital banking era won't require you to pause to make a physical payment, your personal needs will be serviced magically; coffee served as you like it, soap for your dishwasher ordered while you are at work, groceries shipped as per your needs appear at your doorstep, grab and go lunch –all enabled by trusted, delegated and invisible payments. Gone will be days of making shopping lists and dedicated shopping trips. Instead, the new era will bring high frequency of delegated payments that take place in the background. Invisible payments drive a better consumer experience, as long as trust is built into the system and consumers feel in control of their financial assets before, during and after the transaction takes place. Commerce will take place more frequently with purchases initiated by delegated devices on a frequent and on-demand basis.

Test case: Arizona Federal Credit Union

Arizona Federal Credit Union (AZFCU), a financial institution in Phoenix, Arizona has been testing a new system where its customers get to play a more active role in the management of their payments and in preventing fraud on their payment cards. AZFCU introduced CardPower, an app based on technology from OnDot Systems that lets consumers set control preferences to match the desired usage profile for their own cards as well as their dependents' cards, and change them instantly when needed, all with a touch on a smartphone app. They can turn cards on and off with a single touch, and the status is changed immediately.

AZFCU's customers can set up cards to work only if the card is physically near the member's smartphone, or only within a certain geographic region – and if they want, only with certain types of merchants, like fuel stations or grocery stores. They can even block a card's ability to be used for e-commerce, or for transactions over a certain dollar limit, or ATM access for debit cards. Basically, the card does only what the cardholder wants.

As AZFCU was piloting the new technology, it did something unusual: It tested the technology on its own staff, learning that the feature their employees liked best — was the proactive push notifications to smartphones each time a card was used.

Adoption rate from customers surpassed all expectations and led to higher transaction rates, showing increased customer confidence. Over a three-month period, members averaged 6.62 more card transactions after signing up for the new service. The more transactions made by its cardholders, the more revenue flows to the not-for-profit AZFCU, which can then be used to fund member services, such as lowering borrowers' interest rates.

This was part of AZFCU's goal to set up a digital first initiative. AZFCU customers are increasingly becoming more mobile, so they demand tools they can use while on the go. 14,000 members are now using CardPower. They are mobile-active – and ideal members for the digital first initiative.

About Gary Singh:

VP of Marketing, Ondot Systems

Gary Singh is the Vice President of Marketing at Ondot Systems Inc., a financial technology company that puts personalized control of credit and debit cards in the hands of the consumers to prevent fraud and decide when, where and how their cards are used. Gary has extensive specialist knowledge of the IOT market, mobile technologies and marketing and digital payments.

Prior to Ondot, Gary served as Vice President of Sales at Zebra Technologies, where he led go-to-market activities for new and innovative product categories. Gary has a long history of developing solutions for the mobile and wireless markets, and brings over 20 years of executive-level experience in both public and venture-backed companies. A Silicon Valley industry veteran, Mr. Singh joined Zebra from Nokia where he was Managing Director and General Manager for Nokia Mobile Payment Services.

Gary covered Senior VP and GM roles in the mobile payments sector at Obopay and Aruba Networks, for Nokia's Security and Mobile Connectivity group and at Symbol Technologies where he helped pioneer the Wi Fi market.

Mr. Singh holds multiple patents and graduated with BS in Economics from Punjab University.

USING EXCEPTIONAL TOOLS TO ENHANCE THE CONSUMER EXPERIENCE

Interview with Yulia Clarke, Marketing Director of CASHOFF Limited

Financial IT: How would you describe CASHOFF?

Yulia Clarke: CASHOFF provides profit-generating solutions for banks, and a unique digital experience for their customers by gathering and analysing the customers' financial flows.

More importantly, CASHOFF is one of the few companies to really prioritize consumer experience inside Web and Mobile banking apps and to develop tools to enhance the experience.

Financial IT: What is the Selling Proposition of CASHOFF for banks and financial institutions?

Yulia Clarke: Our solutions enable banks to foresee customers' buying behavior. That means that the customers can ultimately receive benefits which match their individual preferences. We use AI, machine learning and mathematical modeling to identify the patterns of behavior of each customer.

Financial IT: What is the main business/ product line that receives the greatest interest from your clients?

Yulia Clarke: Each feature of our service was created in order to create value for banks and customers. Depending on banks' strong and weak points, we are able to apply one or another solution from our portfolio. Among the solutions, for example, there are E-Receipts Itemisation and variety of Cashback offers. Just think about it: a consumer can see all the receipts with items divided by categories, prices of bought goods and detailed information about merchants. Consequently, through the Mobile Banking app, the customer will be able to receive a Cashback but not only for a transaction made, but also for a specific purchased item. The Cashback will be funded by supplier and not by the bank.

Financial IT: Is there any offer of this kind in the market?

Yulia Clarke: Not yet, but we are ready to compete in the event that similar services will appear. We earned trust by building strong ties with banks, merchants and suppliers, successfully integrating our service with their businesses and receiving positive reviews from final consumers.

Financial IT: Who are your target clients?

Yulia Clarke: Being a white label service inside Web and Mobile banking app, we are mostly working as B2B, or to be precise as B2B2C, so our direct clients are banks. However, we are currently working on our own application updates and are preparing to launch a new version for Google Pay. It will be targeted on users, who want to take under control their finances and receive personalized beneficial offers that will meet their needs.

Financial IT: What are the business and marketing strategy for the product?

Yulia Clarke: Currently CASHOFF is operating in three different geographic markets. Therefore, there is a huge planning and analytics involved, so we can deliver the right features for each bank. We are actively using both traditional and digital marketing channels in order to reach, engage and retain our clients.

Financial IT: What is the main trend for 2018 in digital banking?

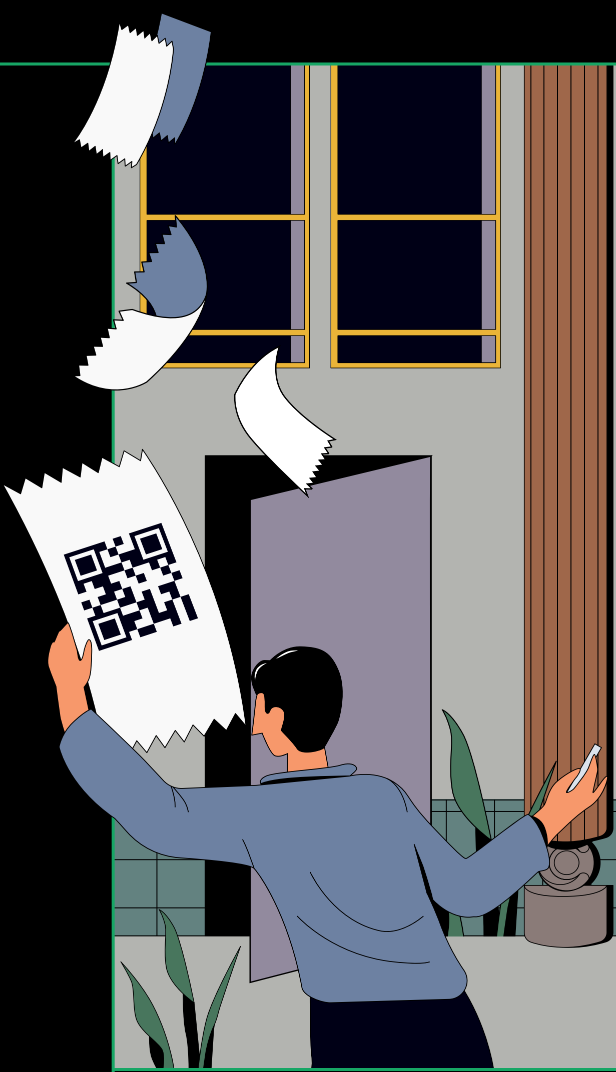
Yulia Clarke: In my view, the answer is the same as it was in 2017: prioritizing the consumer experience. In this new world, it is no longer enough for banks to understand what their customers are doing now. The banks need to predict what their customers will do in the future, The banks will need to follow each customer through his/her lifetime. Fortunately, AI, machine learning and other technologies that were not really available five years ago make this possible.

CASHOFF

CASHOFF Ltd. is a global fintech company with HQ in London, Innovative Research Hub in Moscow and Sales Office in Hong Kong. A highly scientific approach and talented team have allowed the company to create real value for its clients, which include 30 banks serving over 100 million customers.

COFF.UK

PROFIT-GENERATING SOLUTIONS FOR BANKS AND UNIQUE DIGITAL EXPERIENCE FOR CONSUMERS



Our features

Gathering Consumers Financial Data

Data Enrichment

E-Receipts Itemisation and Cashbacks

Smart Advice

Enhance your Online and Mobile Banking app with features of CASHOFF Service to reach, engage and retain consumers!

CASHOFF

Jean Pierre Lacroix,
President, SLDNXT

WHEN **CUSTOMER BEHAVIOR** CATCHES UP WITH **BANKING TECHNOLOGY**

There has been a race raging that will only intensify as banks try to get ahead of their digitally immersed customers. For many markets, such as China, 2025 is already here. The use of technology in this market is eliminating the majority of banking friction points, including queuing, opening an account, getting a new credit card, finding the best loan, applying for a mortgage, and serving business finance needs.

How much more change will the banking industry witness? We have listed five major scenarios that we believe will play themselves out - and we believe the rate of change will only accelerate. If there is anything we have learned working with companies in the midst of industry shift, it is that change happens more quickly than expected and consumers do not always respond rationally to that change.

Scenario #1 – A Digital-Only Banking World: In this scenario, convenience and control are customers' priorities and technology becomes the invisible enabler. Technology driven by AI, robotics, IoT, advances in digital technology, and encrypted currency will make banking fully automated. The movement has already started with robo-investing and predictive analytics. The definition of a branch experience will be totally disrupted, even going so far that the phrase "bank branch" will remain as relevant as 8-tracks or floppy disks. In this scenario, banks will bring value by providing better analytics than their competitors, and partnering with related industries to build an interlocking business relationship around the customer's life stage needs.

Scenario #2 - The Digital Revolt: For every action, there is an equal and opposite reaction. As technology becomes pervasive, the growing group of consumers who crave human contact and a sense of belonging will become a stronger force. We have already started to see this trend as more consumers are gravitating to the tactile things of the past, such as vinyl records and comfort food. Consumers will find the need to "disconnect" and will be willing to pay more to bank with financial institutions that provide personal, human service. People will revolt against the use of technology as a barrier to accessing a real person. The branch network will become the only true place to build customer engagement and loyalty. Branch design will focus on making the experience customizable to the given needs of each customer, layering the comfort elements found in homes.

Scenario #3 - Virtual Banking Assistant: Voice-activation will be connected to every aspect of our lives, from controlling the temperature in our homes to managing our emails, and will have a dramatic impact on how we interact with financial institutions. Our virtual assistant will know more about our lives than our closest friends, responding proactively to customers' financial needs. Banks will create virtual avatars with the appeal of leading Hollywood stars. The role of the banker will shift from someone who helps you access to money to someone who coaches customers on everything money-related. The virtual assistant will integrate a customer's whole life well beyond banking by providing other advice such as when a favored brand goes on sale. Physical branches will remain popular as customers engage with live advisers as part of monthly or yearly financial check-ups.

Scenario #4 - Value is Everything: This scenario relates to the evaporating middle class and the growth of the value-focused customer. All you need to do is look at the growth in the grocery sector with brands such as Walmart, Costco and dollar stores, whose customers are focused on saving money. We will see the growth of the lower class and underbanked moving from 51 million consumers in the US to over 100 million. These consumers, who want to maintain strong credit ratings and access to money, will depend heavily on the branch network for financial advice. Technology will be an enabler to reduce their transaction costs and find the best deal. Mobile wallets will provide greater flexibility to have multiple bank accounts, all based on whatever financial institution has the best rates. To compete, banks will need to develop a narrower range of capabilities in order to find scale and margin, while remaining differentiated from the wide range of offerings.

Scenario #5 - Not About Money: In a world where hard currency no longer exists and ATM'\s will fill junk yards, customers will be looking for financial institutions with the greatest access to knowledge and a network of support. Since currency and the storing of private information will be managed by blockchain platforms, transferring accounts and money will be effortless. If the last decade was all about making banking frictionless through the use of technology, the next decade will be about bringing insights and advice to millennials and baby boomers. Financial institutions will leverage AI and IoT to deliver personalized service, while technology will become invisible to customers. Branches will look very different from each other, being grouped by key persona types - for example, providing small business incubators as more millennials want to go it alone in building their careers. This branch would provide access to spaces for rent and advice for growth, and added value services such as accounting and bookkeeping. Wealth management centers and family centers might be other popular models, as offering a one-size-fits-all-solution to banking becomes a thing of the past.

Predicting the future is difficult, as trends, irrational human behavior, and world economics have a very strong influence on potential outcomes. Irrespective of the various scenarios (and we are certain we could devise more), the physical branch will remain a central hub to the growth of financial institutions, as technology will never replace the need for human empathy and connections. Our prediction is that with the growing push toward immersive technologies, we will start witnessing a counter movement towards a greater need for a sense of belonging.

Ralf Gladis,
CEO, payment service provider,
Computop

WHAT'S **"IN STORE"** FOR PAYMENTS?

Imagine a time when you walk into a shop to do some shopping, and there are no sales staff, no tills and no way to pay with cash. That may seem futuristic, but some of these things are happening at the present time, with a view to being the stores of the future.

For example, some companies in China are looking to revolutionise retail by taking advantage of e-payment technologies. One, Bingo Box, is offering unmanned convenience stores that require a mobile app to enter, and then you pay at a self-service checkout using a mobile wallet like Alipay or WeChat.

Chinese retail behemoth Alibaba is offering a “smart” pop up café called Tao Café, where customers can order snacks by voice and automatically pay when exiting the store through a smartphone app.

And, launched not long ago, Mobymart is a 24-hour, unstaffed, currently remote-controlled, cashless mobile shop. Scanning a QR code to enter after registering for its mobile app, shoppers are able to scan barcodes on products they want and pay for them with their phones. While the technology has not been perfected yet, it shows where shopping could be headed in the future.

What these all demonstrate is consumer craving for convenience and efficiency when it comes to shopping and payments. With that in mind, what’s in store for payments in the coming year and beyond? Following are some thoughts:

More Convenience, but not at the Risk of Security

As shown, convenience appeals to consumer wants and needs. As a result, the next ‘Killer App’ in the payments sector will be tied to convenience. While, technically, convenience itself can’t be an app, whomever best captures true consumer convenience will become the next significant disruptor of payments. We’re already seeing user names and passwords replaced with biometric authentication like fingerprints, face and voice recognition. Biometrics technology is evolving all the time. It’s becoming faster, more secure and reliable. We can’t forget a fingerprint and we won’t have to type in complex passwords on small touch screens anymore. That’s a compelling offer for consumers. But we must ensure the technology is secure.

Use of IoT Grows, but Trust is Necessary

The Internet of Things (IoT) is fast becoming a reality. Both small and large devices will soon process payments for us. Our cars will automatically pay for fuel and parking fees, our smartwatches will pay for taxis and our smartphones will prove to be a universal tool to buy and pay everywhere. With that scenario in mind payment will have to become a silent, smooth and automatic process. Only payment methods that support this will have a future. We need established payment brands that consumers already trust. How do you want your car to pay for fuel? Credit card, PayPal or your company’s’ fleet card? Handing that process over to our devices will be a big change in consumer behaviour. New payment brands with no history or trust would keep consumers from embracing new technology and would slow the process down. Established brands will probably make the decision easier.

More Payments Through Virtual and Augmented Reality

The leisure, hospitality and retail sectors are all looking for opportunities to commoditise virtual worlds with virtual shop shelves, augmented and 3D product views. These technologies can provide real opportunities to bring visual representations of goods more in line with their physical reality -- a particular plus for mail-order and e-commerce companies. Applications like these open up new possibilities for online purchases, but also present new challenges at the checkout: entering billing and delivery addresses is far from plain sailing in a virtual space and media disruptions are to be expected. Straightforward navigation and easy shopping also call for simplified payment processes. One-click buttons are becoming more and more prevalent. By positioning them in the shopping cart or even at item level, innovative payment schemes are hoping to appear on the screen as early as possible in the payment process and stay one step ahead of other payment schemes. And, at the same time, the customer benefits as the payment process becomes easier for them.

Alibaba is ahead of the game with VR Pay, which allows virtual reality shoppers to browse through virtual reality shops and malls and pay for things simply by nodding their head. Shopping identity is verified through authenticated account logins on connected devices with passwords, or using voice identification technology designed to recognise unique voice patterns of a person. Whether you’re a fan of virtual reality or not, what’s clear is that virtual reality is by no means simply the stuff of movies. It will become a new sales channel. Businesses, and the payments ecosystem supporting them, must transform in order to offer safe and easy to use virtual shopping experiences for customers.

Increase in Instant Payments

We are starting to see evidence of the rising popularity of bank accounts for payments due to the introduction of Faster Payments in the US and UK and Instant Payments in Europe. These make it much faster, easier and more convenient for consumers to send money from account to account. Historically in Europe, with 28 member states and just as many banking systems, it had been difficult, expensive and slow to transmit money between countries. However, with SEPA Instant Payments announced for 2018 it will be easy, fast and cost-effective to send money to any European account within 10 seconds, 365 days per year. Being able to process European payments instantly from account to account will be a big leap forward towards a cashless society. However, without complete consumer trust in data privacy, it will still prove impossible to replace cash altogether.

It’s clear that payments are continually evolving with a view to meeting consumers’ desires for streamlined processes. However, what is also evident is that until security and consumer trust are properly addressed as part of this evolution, it may take some time for all of these things to become a reality.

computop
the payment people

Stuart Clarke,
Head of Security
and Intelligence Solutions,
Nuix

JUST A FEW MONTHS TO GO; WHY ISN'T GDPR BEING TAKEN SERIOUSLY?

In the digital age, almost every organisation that handles data runs the risk of losing or corrupting it through either accident or malicious intention. Whilst losing sensitive commercial and customer information can have severe repercussions to revenue, business confidence and reputation, the damage doesn't just stop there. Those found liable face fines from regulators and untold bad publicity if they are found to have flouted national and regional data protection legislation. Recent research from PwC finds that UK firms alone have spent up to £3.2m on 35 fines levied by the Information Commissioner's Office (ICO) in 2016, which is double the previous year. Factor in that not all European data protection regulators make this kind of data publicly available, and the scale of the problem could be much more widespread than initially thought.

Plans to curtail the issue are already in motion, with 28 of the European Union member states set to harmonise their data privacy regulations with the introduction of the General Data Protection Regulation (GDPR), whilst the UK will be leaving the EU, there are still plans to implement an equivalent legislation which will ensure that UK firms handling the data of EU citizens continue to comply with the EU regulations.

So, in light of these stringent regulations, how prepared are businesses when it comes to being GDPR ready? Our recent research shows that as it stands, organisations have mixed levels of confidence when it comes to the ability of their existing cybersecurity defences to prevent or minimise internal threats to their data and business operations. Uncertainty is a common theme, understandably given the number of European companies which have experienced multiple instances of hacking attacks, unauthorised network access and malware incidents leading to the theft or loss of mission critical information and customer data in recent years. Only 55 to 60 percent of the companies surveyed said they were confident of being able to prevent the theft of customer information, intellectual property, and end user credentials and identities which could be used to launch further cyber-attacks. However, this figure then drops to 45 percent when it comes to preventing employees from losing or corrupting their own mission critical data. In fact, only 53% were satisfied that they could prevent any failure to follow proper auditing and compliance procedures. Regardless of industry, all organisations have work to do in order to reach GDPR compliance. If recent breaches have taught us anything, it's that it's a matter of when, not if organisations are breached.

The road beyond compliance

The majority of businesses surveyed felt confident that their organisation was ready to meet the specific requirements needed to comply with the GDPR, but there is some variation on individual requisites. 84% believe they can meet the 72-hour data breach reporting timeframe, a mandate which insists breaches must be reported to the relevant national data protection authority within three days of the organisation learning that a breach has occurred. However, the fact that only half of companies are confident that they can prevent the loss of customer data demonstrates the disconnect between businesses' understanding of the stipulations of GDPR and their actual capabilities. Loss of revenue was the biggest concern for 57% of businesses. This is unsurprising with the Ponemon Institute suggesting that the average cost of a data breach is around £2.5m with those in the most regulated industries, such as financial services and healthcare enduring the highest cost per stolen record.

UK broadband service provider TalkTalk is a good example of how the costs resulting from a breach can rack up. The company is reported to have spent a total of £86m cleaning up after the cyber attack it suffered in 2015 when approximately 160,000 customer records were compromised.

So, with such huge financial repercussions, there really is no excuse for businesses to gamble with the risks of not being compliant. There are a few things that businesses can do to ensure that they meet the minimum requirements.

Getting GDPR ready

At the very least, an organisation needs to:

- Understand how it uses personal data. Are they reliant on the data subject's consent to legitimise the use of it, or is there some other legal basis for doing so?
- Be ready for prompt breach notification. When - not if - an organisation is breached and realises it, under GDPR businesses are required to notify EU data subjects within 72 hours.
- Document, document, document. Establish clear, written policies that can be pointed back to if challenged about on compliance.
- Be aware of all data held by the organisation. Is there EU resident data within the organisation's systems? They must also make use of technological advancements, such as an analytical tool that can easily and quickly flag if they do currently hold EU data in their ecosystems. Tools can also determine where the data is stored, when it was created, and make fact-based decisions about how organisations can best take steps to protect it.
- It's vital that organisations have plans in place which go beyond just GDPR compliance. Compliance represents the bare minimum that companies should be achieving in order to effectively protect customer data. Any GDPR strategy should extend past the deadline and include developing and auditing readiness plans, forming partnerships with key parties such as incident response, insurance and legal teams.

It's not too late for organisations to begin working towards GDPR readiness but that doesn't mean that the clock isn't ticking. Organisations won't be able to get away with claiming ignorance if they are found to be non-compliant with the GDPR requirements. With such steep costs and reputational repercussions for non-compliance, now is the time for businesses to start looking at your data and privacy practices. Businesses can no longer afford to wait until the last minute.

nuix

HELPING THE GROWTH OF ELECTRONIC IDENTITY (EID) IN EUROPE

Interview with Gunnar Nordseth, CEO of Signicat

Financial IT: To begin, please describe briefly in your own words what is Signicat and the problem that you look to solve?

Gunnar Nordseth: Signicat is a Nordic-based software company with over ten years of expertise in the electronic identity (eID) business. The company has been operating since 2007 and is the largest provider for identity assurance as a service (IDAaaS).

With Signicat, financial services (and other) companies can build and leverage existing customer credentials to connect users and devices across channels, services and markets. The companies using Signicat can therefore transform identity into an asset rather than an obstacle. By ditching manual, paper-based processes and replacing them with digital identity assurance, customer on-boarding is accelerated and access to services is made simple and secure.

The basic problem that we solve for our clients - banks, financial institutions, insurance companies and so on - is confirmation of their customers' online identities so that our clients can provide value added services that include electronic signatures. We are a one-stop-shop for businesses that operate in highly regulated environment and that are typically subject to anti-money laundering (AML) legislation. We started the company in Trondheim, Norway but we are expanding into other Nordic and European countries. We have office in UK since the beginning of last year.

Financial IT: What products in your portfolio form the highest revenue?

Gunnar Nordseth: Some 70% of our revenues come from our eID application. The remainder comes from electronic signature and electronic documents assurance products.

Financial IT: What are the advantages of Signicat in comparison with its rivals?

Gunnar Nordseth: We were the first company in the Nordic countries to provide eID solutions in the cloud. We are able to provide a wide range of services, technologies and geographical coverage. We have services that cover all typical use cases to create a digital identity and develop value added services for end-customers. We work with a wide range of technologies such as fingerprint, biometrics, facial recognition at the point of contact, and we have a vast geographical coverage.

Financial IT: Signicat secured a second-round tranche of funding in the Horizon 2020 of the European Union (EU), with a grant of €1.35m euro. Please tell us more about that initiative.

Gunnar Nordseth: Horizon 2020 is the EU framework programme funding research, technological development, and innovation. We started the first phase of our Horizon 2020 project in 2016. The grant helps us to enable financial service providers and other businesses across seven European countries to verify the identity of a new customer. Our clients can use eID and digital verification of paper ID, as well as other technologies including registry lookup, facial recognition, and other innovations.

We have been working on digital identity schemes in Finland, Sweden and Denmark. This experience might be useful for GOV.UK Verify. The UK's existing digital identity scheme, GOV.UK Verify, is chronically under-used and has consistently failed to meet key targets. Unlike other European digital ID schemes, it is limited to the public sector, does not support financial services and is not inter-operable with its European counterparts. The public sector doesn't have a high-volume use case and the result is low efficiency. The cooperation of public and private sectors might lead to a great success.

Financial IT: How long does it take you to on-board a client?

Gunnar Nordseth: It depends on the type of services that the client wants to use. Typically, it takes us a few days to deliver the services and do the necessary integration.

Financial IT: What are the challenges that you face while applying the solution?

Gunnar Nordseth: The big challenge is when you go to a different market, or to several European markets at the same time, is diversity in the regulatory environment. There are varying types of identity checks required by regulatory and compliance bodies, and it takes time to search on how they differ from market to market. It's very important to get the right balance in security and internal checks and controls to comply with Know Your Client (KYC) and AML requirements.

Financial IT: A Strong Customer Authentication (SCA) requirement under the EU's second Payments Services Directive (PSD2) is a hot topic in 2018. What can you suggest for banks, PSPs and consumers to meet the requirement?

Gunnar Nordseth: I think that, under the umbrella of PSD2, banks need to cooperate with payment service providers and regulatory bodies in order to enable a single European electronic identity scheme. The PSD2 ecosystem will enable the growth of eID that is inter-operable digital identity between banks and corporates. SCA is therefore an enabler for banks to take control of the secure digital identity scheme.

Gunnar Nordseth is CEO of Signicat. Signicat is a Digital Identity Service Provider (DISP) and is one of the leading providers of electronic identity and electronic signature solutions in Europe. The company, founded in 2007, delivers online trust-based services to the public and private sector globally.

The solutions fulfill operational capabilities in line with international standards and requirements, such as Privacy, Anti-Money Laundering (AML) and Anti-Terrorist legislation and regulations, as well as Know Your Customer (KYC) requirements for onboarding of new users.

OPEN APIs: WEIGHING THE RISKS VS. THE REWARDS

Anoop Basavarajaiah,
Principal Solution Consultant, Finastra

Many banks and financial institutions in the U.S. remain cautious about the adoption of open APIs. Perhaps they're not convinced of the potential rewards, or don't believe that any gains justify the perceived risks. Data breaches, fraud, and compromises to cyber security don't only cost banks money, but lead to immeasurable reputational damage. But with fears of disintermediation weighing heavily on their minds, should banks work to overcome these concerns and allow third parties access to their technology?

To the uninitiated, the concept of open APIs can be intimidating. Traditionally, APIs, or Application Program Interfaces, are the software tools that enable disparate systems and applications to communicate with each other and share data. By opening them to the external entities, banks can expand their capabilities or improve the experience of their customers that use these external resources. Good examples of this would be enabling a consumer access to their bank account information via a financial management app or allowing third-party applications access to initiate payments on their customer's behalf.

And while the adoption of open APIs has been mandated in Europe, that isn't the case in the United States. But can U.S. banks afford not to open their APIs? Do the rewards outweigh the risks, or will taking a wait-and-see approach, in fact, present the real risk to a bank?

Financial institutions that choose to play it safe and wait for others to act first risk falling behind the competition. Already, a number of forward-thinking institutions are opening APIs, and gaining access to existing business applications to identify new opportunities that can create value within a financial institution's business systems. These institutions are exploring use cases for open APIs, and putting them into practice to expand customer-centric applications. Among these first movers there is the realization that open APIs can deliver important benefits: they enable business services that transcend the typical intra-bank or corporate infrastructure; provide an extension of value-added payment services beyond organization borders through channels, clearing partners and systems; and allow more meaningful engagement with bank customers, opening opportunities for up/cross-selling and reducing attrition.

In the United States, the move toward open APIs in banking is gaining pace for three main reasons:

1. **The Rise of Fintechs**
The rapid emergence and global expansion of the fintech industry has delivered a constant stream of innovation focused on meeting customers' financial needs more effectively, while providing a differentiated, friendlier user experience. This is most evident in specific areas such as payments, mortgages, and financial management for small and medium-sized enterprises. All bank customers, including major corporations, are now demanding payments, cash management and treasury services that mirror the speed and convenience provided by consumer applications and devices. They do not care whether these solutions are provided by their bank or by a third-party, and the rapid expansion in the fintech sector means the latter is increasingly the case.
Banks are eager to harness the rising tide of fintech innovation within their own service portfolios to win and retain customers. To achieve this, they are moving away from purpose-built solutions to an environment where solutions can be assembled from a series of vendors, using open APIs as the "glue" to link all the components together and create the customer experience they seek to deliver.

2. **Demand for Real-time**
Another key driver for adoption of open APIs is the growing need for real-time service experiences and information, coupled with the rise of real-time or "immediate" payments infrastructures across the world. According to Ovum's ICT Enterprise Insights data, 50 percent of commercial banks in the U.S. plan to increase their IT spending on RTP systems in 2018. The recent adoption of The Clearing House's (TCH) real time payments system by multiple banks, including BNY Mellon, U.S. Bank, Citi, J.P. Morgan, PNC and SunTrust shows the industry's acceptance to meet market demand for faster payment solutions by opening their platforms to API initiatives.
This trend means the traditional model of creating batch files of transactions and sharing them via an FTP site is no longer fit for purpose, with organizations and applications needing to exchange data in real time. Moving away from the world of batch and overnight processing to real-time implies that banks need very different systems and a different approach—one based not on the monolithic IT programs of the past, but based on speed, responsiveness and agility.
Creating publicly-available APIs and opening them up to third parties is the optimal way for banks to combine rapid agility with disciplined, regulator-approved operations.

3. **The Need for IT Platforms to Keep Pace with Innovation**
The final driver for open APIs has emerged as bank technology organizations increasingly look for ways to increase the flexibility and responsiveness of their information technology infrastructure. According to McKinsey & Company, "given breakthroughs in advanced analytics and the market traction of numerous nonbank fintech companies...APIs are receiving renewed attention as a means to enhance the delivery of financial services to both retail consumers and business customers."
Banks are realizing that the best way to avoid long and expensive application development while keeping pace with innovation is to combine third-party solutions with a bank-directed integration approach. This can be achieved by onboarding and integrating third-party services, which are accessed on a hosted basis. This trend is often termed "platformification", since it involves banks developing platforms that can carry a wider range of services—both financial and non-financial—for their customers to access.

Despite Clear Benefits, Fears Remain

Despite these drivers and the clear benefits they offer, the fear of open APIs remains within many financial institutions. Some banks, particularly those in markets without regulatory mandates for open APIs, are adopting a wait-and-see attitude, perhaps in the hope that the drivers for open banking will weaken and business-as-usual will resume.

Clearly, for any bank exposing its APIs to the public domain for third parties, security and privacy are key considerations. By opening its data center to external access, and relinquishing control over how this is displayed and used, banks face new security risks. These risks can, however, be managed through registration and authentication controls, ensuring that only those organizations authorized to access the bank's customer data are able to do so, and only at the appropriate level of detail and sensitivity, whatever the interaction channel.

A further consideration is that banks are moving away from the idea that robust security is best accomplished through guarding the perimeter, to a more comprehensive view that it is best achieved through openness and sharing. In other words, many no longer believe that the "walls" of a data center are thick enough to protect all the systems and information within them. The clearest example of the shift towards sharing-based security models is the disruptive power of blockchain technology. Here, robust security can be maintained through a capability that's both open and public. Indeed, the security standards of public cloud solutions are generally higher than those of individual companies. Open APIs with embedded security are aligned to this new view of security, helping to keep banks, fintechs and customers safe through collaboration and advanced controls.

While open APIs raise issues around security and privacy for banks, they also serve to underline banks' strengths in these areas. Customers trust banks' security, reflecting the fact that the experience of these institutions in maintaining effective security, and capacity to invest in it, are several magnitudes greater than other providers. As a result, technology providers gain credibility with customers from their ability to link into bank APIs. Even those fintechs whose offerings overlap with banks' services are eager to integrate, rather than trying to replicate the security traditional players have already built into their solutions.

It is worth noting that every step in the evolution towards open ecosystems, from the days of workstation computing to the beginning of internet banking, to today's networked cloud, has been met with objections from a security perspective. Far from the impeding adoption of the new technologies however, the objections have spurred creative solutions to security and privacy concerns, with the result that yesterday's experimental technology becomes today's accepted norm.

Kevin Poe,
VP, Global Retail Banking, CGI

TODAY'S FINANCIAL CONSUMER: **OPEN FOR BUSINESS**

Technological change is now driving —not just enabling —retail banking. New technology accelerates customer demands and increases competition from both digital incumbents and digital-native FinTechs. It also emboldens regulators who view technology, such as open APIs, as a way to transform the industry, and financial criminals who try to use it to stay a step ahead of bank defenses.

As the age of digital fully roots itself in the banking space, Retail banks are finding themselves urgently pursuing a complex and comprehensive change agenda to position themselves ahead of their peers. Key to this is meeting their customer demands and delivering a better end-to-end customer experience while protecting their business and customers from increasing fraud and cyber crime. As CGI's recent Global Financial Consumer Survey reveals, there is an ever-growing need for banks to accelerate their digital and innovation agendas to keep pace with evolving consumer expectations in a highly competitive market.

CGI Global Financial Consumer Survey

Continuing CGI's many years of primary research into the views of banking consumers around the world, we explored consumer perspectives on financial technology (FinTech) concepts, including which services consumers value the most and the types of providers they want to use to access those services. With the advent of open banking enabled across the globe by open APIs and pushed by regulators in Europe, we also explored consumers' views on using third party providers for less flashy, everyday banking activities, such as ordering a new card or answering a basic query.

For this report, we surveyed 2,250 consumers across the U.S., Canada, the UK, France, Germany, Finland, Sweden, Singapore and Australia to get their perspectives on 10 digital FinTech services, such as marketplace lending, mobile payments and robo-advice.

Perceived value of FinTech services and their providers

The 10 digital services analyzed by the survey include the following: protection, personal finance management (PFM), mobile payments, personalized digital experience (both auto- and self-personalization), personalized offers, bartering, alternative currency, marketplace lending (e.g., peer-to-peer) and robo-advice.

The relative ranking of value did not change from last year's results, with protection leading all demographic groups and countries—not too surprising in light of recent events that only add to consumers' concerns about cyber attacks, identity fraud and other security risks.

What was perhaps more striking was that, while a majority of consumers still prefer to receive new digital services from their current primary financial institution, preference for incumbent banks to deliver FinTech innovation is in decline, down by an average of >8% in just 12 months.

This should sound warnings to retail banking leaders. There is a real need for established banks to move rapidly in deploying new services before their advantage evaporates. Those that do not move quickly run the risk of their customers going elsewhere for services they want but can't get from their current bank.

For FinTechs, it's clear that getting access to customers remains a big challenge. While the increasing openness of consumers to go outside the traditional banking industry may give some FinTech leaders renewed hope, the door isn't exactly wide open for a new wave of additional players to succeed with a "go it alone" strategy. Partnering with banks is still the clearest path for FinTechs to overcome the challenge of gaining awareness and consideration on the path to winning customers for their innovative services.

Open banking

We are in the early days of the emerging open banking ecosystem, enabled by open API technology and accelerated by regulators. But what of consumers? Do they see an advantage in open banking?

We found that over half of banking consumers are open to third-party service providers for everyday banking services.

Consumers aren't just willing to look beyond their current primary bank for innovative services. They're also quite willing to look to third-party providers for even mundane tasks. When you consider that 58% of consumers felt they had lost their connection with their main banking provider, an increasingly digital population could begin forming brand relations with third party providers that offer them exactly what the banks are not offering as well as everyday banking services. A further issue to consider is that 60% of consumers say that they'll still hold banks responsible for their money despite using a third party.

There is a real risk here for incumbent banks. As the boundaries between banks and non-bank financial service providers continue to blur, traditional retail banks could lose out on important consumer engagement and revenue streams, while paying the price for infrastructure modernization and upkeep.

Recommendations for banks

As FinTech firms aggressively push their way into the financial services space, established banks are honing in on how to effectively respond to the competitive threat. However, the growing interest in new services, coupled with the greater openness to newer, third-party providers, reveals an urgency for banks to rapidly accelerate their efforts to get customer-focused, innovative digital services to market. Banks need to move beyond proofs-of-concept and pilots to get real innovation to their customers.

Partnerships with FinTechs offer the fastest and clearest approach. Now is the time for banks to move quickly to establish the necessary mechanisms to support this partnership approach, including strategic clarity, technology capabilities (including open APIs), customer and business processes, etc. This certainly doesn't mean that external sources are the only sources of innovation, but it does mean that banks should consider augmenting their internal innovation efforts with external sources to move at the pace that consumers are demanding.

Recommendations for FinTechs

Despite the headway they've made in launching new value-added digital services and gaining market share, FinTechs still face a major challenge. CGI's survey shows that consumers still prefer their current financial institution, mainly due to a lack of trust in new service providers. Getting access to consumers and gaining their trust are significant hurdles for FinTechs, challenges that partnerships with banks can overcome. For the vast majority of FinTech players, partnerships with banks offer the best and fastest way forward.

TEMENOS
The software specialist for banking and finance

AI: THE REALITY FOR BANKS

Prema Varadhan looks beyond the headlines and the hype about artificial intelligence to discuss how, when and for what banks might use this game-changing technology

AI is in the news. Recently we've had "Is AI killing Japanese banks?", "How AI is unleashing a new type of cyber-crime" and "How artificial intelligence is cutting costs, building loyalty and enhancing security". Confused? I'm not surprised. And it's not just headlines; there's plenty of hype, too. More and more vendors – established and start-ups – are jumping on the AI bandwagon, promising machine learning and AI-powered solutions to improve your business. So what's the real picture?

Without doubt, AI will be a game changer. As Andrew Ng, Stanford professor and one of Google's original DeepMind team members, says: "Whoever wins AI will own the future."

Regulatory headache

That future is proving a bit of a headache for the watchdogs whose job it is to regulate the financial markets and protect consumers. The problem is that no one fully understands how AI impacts the businesses the regulators supervise. It is not fully auditable. This means when decisions need to be verified, there's no one to ask and no traceable audit information is produced in human-readable and interpretable form. Compare this with a fund flow prediction generated by a real person. We can ask why a certain prediction was made and look at the workings; this is not possible today with a machine. Indeed, auditing the rationale of AI machines has become a hot topic of research to help us monitor and understand how they work.

It seems likely that the current regulatory framework won't extend to many AI solution providers, making it unclear where responsibilities lie and even creating an uneven playing field. No regulator has yet stepped in, but the European Union has launched an initiative to discuss the problems and come up with some recommendations.

Data requirements

Regulatory dilemmas aside, the reality is that many banks aren't in a position to take advantage of AI. The technology demands large, clean, well-organized data sets collected from multiple data sources and stored on a mature data platform. AI solutions are only applicable for banks that have their data under control.

For those with the right data and the right platform looking to engage with AI, it's vital to examine carefully any claims that vendors make. If the solution requires humans to set up new rules and programming in response to the data, it's not AI – no matter how many rules and how complex the software logic. Machines should demonstrate learning capabilities, which can be achieved only if machine-learning algorithms are used.

So assuming the bank has the platform, the data and the solution has real AI capabilities, what are the deliverables? First, AI will allow banks to analyze data to help automate more repetitive and similar tasks to help lower costs. Second, the technology can deliver valuable insights to help increase customer engagement and share of wallet.

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Plus

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About Prema Varadhan:

Prema Varadhan, Chief Architect, Temenos

Prema Varadhan has 20 years of technology experience in the financial services industry. In her current role as Chief Architect at Temenos, she analyses emerging technology and architectural trends and practices in the banking industry, and in turn incorporates her findings into Temenos' product strategy and development.

Last but not least, AI is useful to detect and combat fraud, which also saves on costs while giving a better banking experience and lowering customer churn.

Back office opportunities

Banking is awash will repetitive tasks that eat up resources, all ripe for the introduction of AI. Nowhere more so than in the back office. Robotic Process Automation has already been put to good use in some situations. But RPA works best when tasks are exactly the same. Any anomaly throws it out of kilter and human input is required. For example, when a customer makes a payment for the first time to a recipient overseas a member of staff is needed to check its validity. These exceptions might make up only one per cent of the total throughput, but they represent a big cost to the bank and can be time-consuming. Over time, AI solutions working with RPA can look for patterns, link data and add their own new rules, eliminating the need for human input and making the processes more efficient.

But that's not the only data analysis for which AI will be helpful. Chat bots are already helping customers manage their accounts. With AI, these bots will become better at interpreting questions and commands, improving the service.

Niche solutions

There are also plenty of fintechs with niche solutions that do one thing very well. Proving particularly popular is robo investment advice. Wealthfront is using AI to help banks provide private banking services to a wider customer base through its robo advisers, for example. And some banks are using AI solutions to improve internal productivity – Credit Suisse's Amelia comes to mind. Fighting real-time fraud is another successful area.

AI is also about extracting from large data customer insights sets that would be impossible to achieve by traditional analytical methods. It's using data on a very granular level to drive efficiency and revenues. This might mean finding applications to monitor the profitability of products and services – or of customers. Or using AI to up-sell and cross-sell, much in the way that Amazon offers customers suggestions along the lines of "this is what other customers also bought".

Adding valued services

Alternatively, it can be used to deliver a more valuable service to customers. For example, analyzing customer spend against their saving goals. If it is clear that the customer with a looming savings target for a holiday is buying more party food and drink than usual, the bank could send out an alert highlighting this behavior.

Another clear use case is in the fight against fraud. Identifying fraud incurs high operational costs and carries huge reputational risk. Solutions such as that from Featurespace use AI to identify fraud in real time, enabling the bank to block the transaction before it is completed – automatically protecting customers and the bank's own reputation. It can spot new fraud patterns and update its rules automatically.

The reality is that AI is growing, gathering speed and intelligence as it churns through the data. The current applications are just the beginning. There is a multitude of possible applications waiting to be discovered. If you've got the right organized data, now is the time to get creative about what you could do with it.


Gresham

PARTNERING TECHNOLOGIES OFFER AGILE APPROACH TO TACKLING TRANSACTION REPORTING REQUIREMENTS HEAD-ON

Brian Lynch,
CEO, RegTek Solutions

MiFID II/MiFIR came into force on January 3rd 2018, adding to the catalogue of regulatory reporting demands already in place which currently includes Dodd-Frank, EMIR, HKMA, JFSA, Canada, MAS and ASIC. The impact of these new regulations has been felt across the whole financial services landscape, requiring many firms to re-think and re-organise their business operations. Within the regulatory reporting requirements alone, MiFIR sets out not just the reporting data requirement, it also mandates an operational model to ensure the delivery of good quality data, requiring a systematic approach to compiling valid and accurate data. The reported data is to be reconciled against the original booked trades, and a test regime it to be put in place to confirm compliance. This requirement goes beyond previous regulatory reporting demands and adds overhead to a firm's operational costs. The regulation demands more than the tactical reporting effort many firms have applied to other trade and transaction reporting regulations. Built on the experience regulators have had with other reporting jurisdictions, MiFID II/MiFIR aims to ensure only valid and high-quality data is reported, a pre-requisite to regulators being able to meet their mandate of safer, more transparent markets.

MiFID II/MiFIR is the latest of the increasing list of trade and transaction reporting requirements with which financial services firms must comply. The tactical approach followed by many firms is to resource each reporting requirement in turn, adding to operating costs. The originating trade data for the many reporting regulations has a significant degree of overlap, not only in the width of asset types, but also in the reporting attributes. However, key differences in symbology, nomenclature, codes and flags, as well as report formats, differentiate the necessary reports. It is therefore uneconomic to take a tactical approach and separately resource each. A centralised reporting mechanism delivers cost and operational efficiency through economies of scale, and expertise in understanding the nuances and context of the qualifying asset types, trades and data attributes.

RegTek.Solutions and SmartStream have brought their global leading software and operations together to deliver a unique service, providing a centralised control for all G20 regulatory reporting, combining: quality, completeness and accuracy assurance with the identification and resolution of errors and resubmission into an efficient low-cost platform that addresses the ease of deployment and on-going cost of maintenance. Deployable as secure services on the cloud or in a firm's data centre, the service offers complete flexibility for the client.

This leading edge service is the result of a collaboration between SmartStream's global leading TLM Reconciliations Premium, delivering built-in, regulation-aware reconciliation models and integrated error and omission analytics, and RegTek.Solutions' modular regulatory reporting software, providing data quality assurance, independent reporting eligibility, and secure connectivity to trade repositories (SDR / TR) or Approved reporting Mechanisms (ARM).

The service delivers a unique turnkey platform. It alleviates its subscribers of the costly challenge of tracking and maintaining the specific regulatory and repository rules and standards, making transformations and mappings intuitive and predictable, while offering connectivity to a wide range of regulated venues, backed up by fully-configured and maintained regulatory reconciliations per required jurisdiction.

RegTek.Solutions' software is in-built, with a comprehensive library of report formats to cover a wide range of trade repositories, including UnaVista, DTCC GTR and REGIS-TR. RegTek.Solutions maintains the rules library to current standards at all times and makes upcoming format modifications proactively available before their release cut-over, enabling compliance testing ahead of go-live. Seamless transition to a new revision is critical to an efficient service.

Compliance through reconciliation is delivered by SmartStream's TLM Reconciliations Premium, which is deployed with regulatory ready reconciliations models. TLM Premium's integrated workflow automates the distribution of resolution actions to upstream lines of business, technical teams and external parties. Resolution actions are tracked to completion with robust audit trail to evidence corrective action to the regulators.

The pairing of the reported transactions, with expected reporting activity generated by RegTek.Solutions' proprietary reporting eligibility engine, identifies over- and under-reported reported trades, while SmartStreams' rich matching engine detects errors in the data attributes between the regulatory view and front office systems. The service's built-in root cause analysis system provides statistical analysis of the distribution of data errors from the original different sources within a firm, and monitors the performance of a firm's counterparties. The toolset enhances a firm's ability to identify poor performance and enables the firm to take the necessary steps to improve data quality once and for all.

Direct reporting firms are required to reconcile their trading activity against the reports returned from their NCA. For many reporting firms using an ARM, a three-way reconciliation between the firm's trading activity, ARM and NCA will be required. All these reconciliation models are provided seamlessly by the service. Moreover, the service will update the models in line with changing regulatory requirements.

Uptake of the service is further simplified through its Cloud deployment: a fully integrated virtual instance with standard data load endpoints. The service provides production, test and user acceptance (UAT) environments as required to meet regulatory requirements. Hosting in the cloud considerably reduces the cost when compared to a traditional on-premise installation and on-going maintenance costs. New subscription to the service is quick, with low on-boarding project costs. The in-built test facilities, that are provided with the service, provide assurance of compliance at throughout the project. The service software can, however, be deployed as an in house solution on the end user's infrastructure where so required. The service will continue to provide maintenance of the data format and report layouts when regulators publish updates.

By consolidating parallel and duplicitous reporting operations into a centralised platform, subscribers maximise operational efficiency. They also substantially save on cost by off-setting risk, and assuring not only reportable data quality, but also delivering evidence to regulators of a systematic approach to the reporting operation, de-risking punitive action against them. Statistical analytics, built into the service, enables data issues to be quickly identified and root causes eliminated, delivering opportunity for continuous improvement in operations and continuous cost savings.


Dr. Darryl Twiggs,
SVP Strategic Initiatives

SmartStream

PSD2: A REGULATORY PUZZLE OF DATA, CYBER, INNOVATION, ETHICS AND VALUE

Over the last sixty years or so, since the widespread adoption of information technology and automation, financial institutions invariably generated, collected and stored data for every customer and interaction. Over time, this digital data became the foundation for algorithmic decision making – from choosing what products to market, to on-boarding and lending decisions to investment advice and payment fraud detection – to name a few examples. This had huge value to the business and the data firmly stayed within the secure boundaries of the institution. However, a few decades on, the regulatory and industry bodies believed that not enough value was created for the end-users and there was a state of limited competition in the market. The latest regulatory change is designed to change that and transform the financial services sector.

In effect from the 13th January 2018, EU's Payment Services Directive 2 (PSD2) is designed to allow account owners the ability to delegate access to their bank account for two concrete use cases; (1) aggregate bank account transactional data (debits and credits we see on our bank statement) from multiple banks in a single app using aggregators knowns as AISP (Account Information Service Provider) and (2) to initiate payments directly from a bank account using Payment Service Provider (PSP). Both AISP and PSPs are referred to as the Third-Party-Providers (TPPs). A customer can delegate access to third parties, if they believe they are getting value in return. A TPP can be an incumbent financial institution or, a digital technology start-up.

Also, on the 13th January 2018, UK's Competition and Markets Authority (CMA) "Open Banking" mandate also came into effect albeit only for the nine UK banks – referred to as the "CMA9". Both regulatory changes have overlapping but varying scope. Open Banking covers 'Personal and Business Current Accounts' within the CMA9 whilst PSD2 covers 'Payment Accounts' across the European Economic Area. The founding principles of legislative changes are similar – it is to foster innovation, allow new entrants in the market and for new value to be created and empowering the customers through insights driven by the data. And, as a result, give customers choice in how they use banking services and increase account switching.

This empowerment of the customer, however, only happens when they allow a regulated TPP to access their banking data or, bank account(s). A TPP develop and use machine learning algorithms on the account data available to detect patterns in a customer's banking behaviour at scale. The outcomes of algorithms can be turned into actions that help businesses or, individuals be better off over time. This is powerful stuff. But, it is not without its pitfalls. The data will reveal personal and sensitive information and in wrong hands, it can do more damage than good.

Inferred Insights from Simple Daily Transactions

Transactions from an individual's current account may include regular and irregular payments. And the meta-data within the transaction describe it as a payment for mortgage, utility bill, transfers to a savings account or a simple coffee purchase. Machine Learning can not only predict account balances or, when and where you are likely to make your next purchase, it can also deduce if you are a homeowner, the number of accounts held, an estimated level of income, family size, potential lifelong illnesses and shopping, eating habits. This is a goldmine for those looking to commit fraud. There is enough insight to create a targeted social engineering attack. For business customers, deep insights about the health of your businesses can be inferred from data. If these insights are leaked to the market, competitors or suppliers, could have catastrophic effects. On this basis, TPPs have ethical and moral obligation to handle this data with care.

Regulatory Oversight and Reporting Rules

The regulators have enforced controls to ensure customer protection and to check that TPPs are fit-and-proper. TPPs have to be registered and approved by the regulator for a specific function. Only valid TPPs will be able to connect with the banks and test their services before launching them on digital marketplaces. Whilst banks do not have the authority to enforce a contract on the TPPs, they will check the status of the TPPs making requests to ensure that they still have the license to operate and have not been black-listed. Customers can give and remove consent at any time. And, strong customer authentication will be enforced from September 2019 – most likely through biometrics and

sibos

SYDNEY

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Bharat Bhushan, CTO of Banking & Financial Markets, IBM UK & Ireland.

He drives Innovation with his clients to support creation of new platforms, revenue streams and to optimise business operations using digital technologies.
Bharat is currently working with clients to implement Open Banking and PSD2, application of data science and artificial intelligence for improving customer experience and investment research, blockchain for new operating and trust models etc. Some of his conference presentations and papers are available on his LinkedIn profile.
He is a contributing member of the UK Open Banking Implementation Entity, Industry council member at techUK and EIT Digital, FinTech mentor at StartupBootCamp and guest lecturer at Warwick University. Bharat has an MBA from Warwick University and an MSc in Advanced Computing from King's College London. He has 22 years of experience in the IT Industry delivering solutions.

secure one-time-password valid for a specific transaction and a few minutes. Despite all this, banks still have the ultimate power to stop a transaction if they believe (and can prove it) for it to be fraudulent. But, they cannot discriminate against a TPP.

A market oversight control enforced by the regulator is for TPPs and Financial Institutions to report major incidents within four hours. The European Banking Authority (EBA) defines major incidents as "a singular event or a series of linked events unplanned by the payment service provider which has or will probably have an adverse impact on the integrity, availability, confidentiality, authenticity and/or continuity of payment related services." This seems like a belt-and-braces approach that still allows room for innovation. Also, PSD2 and Open Banking have a new friend - General Data Protection Regulation (GDPR).

Scheduled to come into effect on the 25th May 2018, GDPR has been making headlines across the world – primarily because of the significant fines and the rapid breach notification window. Depending on the incident and the PSPs service, they may also need to adhere to GDPR and Network and Information Security (NIS) incident reporting requirements, both of which carry up to a 4% of turnover penalty for severe control failures. PSD2 and the UK transposition of NIS have a 4 hour reporting requirement after an incident has been discovered.

The regulations state that an organisation must report to the respective Competent Authority (CA) if it experiences one "higher impact" element to an incident, or a combination of three lower impact elements to the same incident. These include areas such as the number of payment service users affected (less than 5,000 is lower impact), the level of internal escalation, other providers potentially impacted, or the level of transactions affected. For a breakdown of the precise thresholds, please see page 23 of the EBA's final guidelines on major incident reporting under PSD2.

The reporting requirements are not offered without guidance. The EBA's advice on the security measures for operational and security risks have made is clear that there are certain steps to take to mitigate operational and security risk. These include:

- The establishment of an effective operational and security risk management framework
- Processes that detect, prevent and monitor potential security breaches and threats
- Risk assessment procedures
- Regular testing
- Processes to raise awareness to customers on security risks and risk mitigating actions

Therefore, TPPs looking to build and offer new and innovative services should look to achieve the following:

1. **Preparation:** Have cross-functional teams work together to plan, prepare and deliver the service. The team must have a collective responsibility for identifying gaps.
2. **Data Governance:** ensure you can prove lineage of your data and have a single version of the truth in one place. Clear ownership of data is defined, documented and understood across the organisation. Protocols on how data will be discovered and shared are understood.
3. **Detect and Respond:** Use technology to detect incidents and robust and clear processes on how to handle and respond. Operational playbooks should be created involving cross-functional teams – Legal, IT, Risk, Internal and External Communications etc.

In 2017, research conducted by Ponemon and IBM Resilient on "The Cyber Resilient Organisation" revealed that 74% of IT and IT security practitioners in the UK do not have a formal Cyber Security Incident Response Plan (CSIRP). And 64% agreed that insufficient planning and preparedness was a key barrier to an organisation's resilience.

In summary, PSD2, Open Banking affect the access, flow of data and how value could be created for greater good. Controls within these regulations and GDPR should enforce good behaviour by the incumbents and new entrants. However, this is new territory. Nothing like this has ever been done before in any other industry. The world is looking to Europe to lead. It is time for all organisations to innovate and accept the spirit of the regulatory change to act in the interest of customers, deliver value and help them be better off.

THE TRADE FINANCE REVOLUTION

ELIMINATING PAPER DOCUMENTATION FOR CORPORATES AND BANKS

Interview with Sameer Sehgal, CEO of Traydstream

Financial IT: Sameer, please tell about Traydstream and your experience.

Sameer Sehgal: I have been a banker for almost 22 years, working in Citi, Bank of America and ANZ in Asia, Middle East and Europe. I specialize in Transaction Banking, Credit and Commercial Banking.

During my career, I noticed that in credit and commercial banking, operational paper-based processes were very inefficient, especially in trade finance which drives the global economy. They were manual and for many decades had remained unchanged.

Traydstream was set up a year before I joined the company. Traydstream is a UK fintech company that has created unique, Artificial Intelligence (AI) and Machine-Learning (ML) technology to automate the complex, antiquated manual processes of reviewing paper-based, trade finance transactions.

Normally the entire paper-based, end-to-end processing takes 2-3 weeks (between the seller, seller's bank, buyer's bank and the buyer). With Traydstream we envision the process taking no more than 20-30 minutes end-to-end. On the platform we scan the trade finance documents, and convert them with proprietory OCR (Optical Character) Recognition software into data which the platform can use downstream. Subsequently, the data is run through a very sophisticated AI & ML based rule engine that we have developed in-house based on months of research and analysis.

The platform is able to come up with responses and decisions which humans currently take on a daily basis, enabling the entire process to become data-driven (as opposed to paper dependent) with an exceptionally high rate of accuracy and precision. These automated steps include document discrepancy-checks, due-diligence, and regulatory and compliance screening, thereby making the role of the user, more the exception rather than the rule in discovering errors, and removing the need for mundane, repetitive activities.

We believe with time, improvisation & testing, the same technology can be applied to Insurance, Mortgage Lending and other areas within the wider banking and finance industry. The Traydstream solution can be delivered - both on 'cloud' and 'on-premise' as a solution to banks, trade finance providers and corporates.

Since commencing our sales efforts in Q3'2017, the Traydstream solution has evoked a very strong response, with over 50 Banks and Corporates worldwide, in various stages of testing and active deployment. We have offices in London, Cardiff, Milan, Dubai and Kolkata. In January 2018 we opened a branch in Mumbai, India, as our centre of excellence, where we could source best in class subject matter expertise in Trade.

Financial IT: What are the biggest issues that you face when supplying Traydstream's solutions to a bank?

Sameer Sehgal:I think the biggest challenge for a solution of our nature, is the initial inertia to change. There are processes that have been followed for decades and hence not surprisingly there is a certain comfort factor associated with them. However, the focus on efficiency and accuracy, driven by the huge attention on expense management, is forcing organisations to look at solutions like our own to become leaner and fitter. Not surprisingly therefore our conversations are progressing much faster with clients than one would have ever imagined a few years back.

The other big challenge that comes with the turf is the unchartered nature of what we are attempting. The need on the Trade shop floor for banks and corporates has always been there. But no one has focussed on alleviating it. With a deep recognition of that problem we at Traydstream are maniacally committed to resolving the problem that exists and making it a faster, easier and much more comfortable user experience for all in the ecosystem. Thankfully, with this one-minded focus, we at Traydstream are realising that solutions can be found to that which seemed unsolvable.

Our final challenge will be around scaling up. From a solution which solves a problem that's been out there for decades, to being able to cater to tens and hundreds of clients in the matter of few years, presents its own challenges of scaling up – effectively and in a disciplined manner. Thankfully, the management at Tradystream, is blessed with people who have deep experience in running businesses including scaling up from scratch.

Financial IT: Please give an example of how your platform works.

Sameer Sehgal:Imagine a trade transaction between two Oil majors, transacting a large oil shipment worth $50 Million. Both majors are likely to bank with large global banks.

So to start the trade, the shipment is made and the exporting major prepares its documents. A process that could take between 3-4 days. The documents would then be handed over to its bank for checking against the Letter of Credit (LC), who will take another 2 days at an average. Sometimes documents could be sent back to the major for corrections due to discrepancies detected, a process which will delay the end-to-end chain furthermore. Then those documents are sent physically to the buyer's bank, who will take another 2 days to process and if all is well, the buyer will get the documents to concur and be ready to pay. So the end-to-end process could take up to 10-12 days, not to mention the holiday impact depending on jurisdictions.

With Oil Majors, since they usually get a faster turnaround, the process is quicker. On the other hand, with SME's, or other sectors, this very process through the banking system could take much longer. It's also a process that goes on day in day out for all companies in the international arena all over the world.

The Tradystream platform makes this inefficient process history. Our platform enables banks and corporates to complete those operations, in minutes. Through the use of best in class technologies, in a safe and secure manner, information can be shared, checks can be conducted and the entire process can be consummated very quickly. We have just conducted our first blockchain technology transaction and are now in the process of conducting a live trade on the platform. Once incorporated, it would reduce the cycle time substantially more.

We believe this would be a big change for the way trade finance is handled worldwide.

Financial IT: How safe is your platform as you deal with customers' data?

Sameer Sehgal:The underpinning of any global system for banks and corporates needs to be in a very safe and secure environment. We at Traydstream are zealously cautious when it comes to security and safety of our clients' data. The platform deploys the best in class measures to keep data partitioned and protected.

Sameer Sehgal
CEO of Traydstream

Financial IT: Do you face any rival products in the market?

Sameer Sehgal:We do not believe so. Our platform does use several technologies in a very integrated and seamless manner. Within each of these technologies there could be providers offering perceivably similar solutions. However, as a holistic mix, that aims to resolve the issues in the Trade processing sector, we do not think there is a rival solution that we are aware off. A lot of our capabilities are proprietary, since we could not find an off the shelf solution in the market or we thought the products in the market did not fulfil what was needed.

Financial IT: What trends do you see in the market?

Sameer Sehgal:To start with we do believe industries are converging. We have seen that happen earlier and now finance and banking is in the middle of it. Technology and communication are the two game changers that are bringing several industries closer. We do believe Banking, logistics, Insurance are among a few of the industries that will face the brunt of this wave of convergence.

We also see breaking down of the erstwhile barriers to entry being forced by this change. In the good old days brick and mortar presence, enabled banks to garner business for themselves. In today's digital era, people are a lot more comfortable with technology and do not need the brick and mortar presence. Further, with solutions like Traydstream scale can very quickly become a non issue for the smallest of players and hence allowing them to compete on equal footing with the large players.

Finally, the shift in mindset that we have seen in the banking and finance sector in the last two years has been mind boggling. Senior management and business leaders are so much more receptive to change, embracing technology and championing it through their respective organisations, than ever before. We see this behavioural change becoming even more endemic, which is only good for the industry. The prospects are very bright and we do foresee a very different world order in Trade and banking in the next few years.

TRAYDSTREAM
Redefining Trade Finance


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Financial IT
Innovations in FinTech

Financial Technology Buyers' Guide

March Issue • 2018

ACCUITY

Accuity offers a suite of innovative solutions for compliance and payments professionals, from comprehensive data and software that manage risk and compliance, to flexible tools that optimize payments pathways. With deep expertise and industry-leading data-enabled solutions from the Fircosoft, Bankers Almanac and NRS brands, our portfolio delivers protection for individual and organizational reputations.

COMPANY PROFILE	
Company type	Public Company
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	over 1000
Inception	1836
Geographical coverage	Global

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AEVI | DO MORE

AEVI brings acquirers closer to their merchants, and merchants closer to their consumers, with an open Ecosystem that combines apps, payment services and a multi-vendor selection of payment devices. Selecting from a marketplace of high-quality apps and services, Acquirers can quickly create differentiated, innovative SmartPOS solutions under their own brands. AEVI's centralized payments as a service platform eliminates obstacles, and helps Acquirers simplify the complex payment landscape with a single integration and access to a comprehensive suite of cloud-based, back office reporting tools for enhanced control and flexibility.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	over €80 million
Number of Customers Total	Undisclosed
Number of Employees	over 200
Inception	2015
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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allevo
THINKING EVOLUTION

Allevo provides software solutions that help financial institutions of all sizes reduce TCO and achieve end-to-end interoperability across the financial supply chain – by using FinTP, a complete open source application that processes transactions, automates flows and offers compliance to regulatory and industry standards. The Allevo guaranteed distribution of FinTP is aimed to grow competitiveness and offer operational risk containment, making such systems affordable to SMEs as well. FinTP and all ancillary documentation is distributed freely and openly through the FINkers United community and it provides collaboration ground for rapid development and integration of new technologies, such as crypto currencies, biometric security, data analysis algorithms.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	1,44 mil. Euro (2015)
Number of Customers Total	Undisclosed
Number of Employees	48+
Inception	1998
Geographical coverage	Global

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bpm'online

Bpm'online is a global provider of award-winning CRM software that streamlines customer-facing processes and improves operational efficiency. Bpm'online financial services is a powerful CRM designed for corporate and retail banks and financial institutions to manage a complete customer journey and enhance customer experience. The users of bpm'online financial services highly value its process-driven CRM functionality, out-of-the box best practice processes and agility to change processes on the fly. Bpm'online financial services offers products that are seamlessly integrated on one platform connecting the dots between banks' business areas: retail banking and front-office, corporate banking, marketing.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	Undisclosed
Number of Customers Total	6500 total, 90 in financial services industry
Number of Employees	Over 500
Inception	2011
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Founded in 1976, CGI is a global IT and business process services provider delivering high-quality business consulting, systems integration and managed services. With 68,000 professionals in 40 countries, CGI has an industry-leading track record of delivering 95% of projects on-time and on-budget. In the Financial Services industry, CGI professionals work with more than 2,500 financial institutions including 24 of the top 30 banks worldwide. We are helping our retail and wholesale banking clients reduce costs, achieve strategic objectives and drive competitive advantage. As a demonstration of our commitment, our average client satisfaction score consistently measures higher than 9 out of 10.

COMPANY PROFILE	
Company type	Corporation
Annual turnover	$10 billion
Number of Customers Total	Undisclosed
Number of Employees	68
Inception	1976
Geographical coverage	Americas, Europe and Asia Pacific

COMPANY CONTACT DETAILS	
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Computop is a leading global Payment Service Provider (PSP) that provides compliant and secure solutions in the fields of e-commerce, POS, m-commerce and Mail Order and Telephone Order (MOTO). The company, founded in 1997, is headquartered in Bamberg, Germany, with additional independent offices in China, Hong Kong, the UK and the US. Computop processes transactions totalling $24 billion per year for its client network of over 14,000 large international merchants and global marketplace partners in industries such as retail, travel and gaming.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	Undisclosed
Number of Customers Total	Over 14,000
Number of Employees	100
Inception	1997
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Compass Plus provides proven software and services for financial institutions, including retail banks and payment processors across the globe that operate in complex and rapidly changing business and technology environments. Compass Plus builds and quickly implements comprehensive and integrated payment technologies that allow customers to increase revenue and profits, and improve their competitive position by implementing flexible systems that meet market demands. With hundreds of successful projects spanning card, account and merchant management, card personalisation, mobile and electronic commerce implemented in record breaking time, Compass Plus ensures its customers make the most of their technology investments.

COMPANY PROFILE	
Company type	Limited Partnership
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	Undisclosed
Inception	1989
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Currencycloud's Payment Engine is the power inside countless businesses, driving the transformation of the global payments landscape. The company is re-imagining the way money flows through the global digital economy, allowing businesses to remove the friction and inefficiencies of traditional cross-border payments using its flexible suite of APIs. Launched in 2012 Currencycloud is based in London and is regulated in Europe, the USA and Canada.

COMPANY PROFILE	
Company type	Private Limited Company
Annual turnover	Undisclosed
Number of Customers Total	200+
Number of Employees	100+
Inception	2012
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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CustomerXPs™

CustomerXPs is an enterprise software product company offering Enterprise Financial Crime Management (EFCM), Anti-money Laundering (AML) and Customer Experience Management (CEM) products for Tier-1 global banks. CustomerXPs is revolutionizing Fraud Management and Customer Experience Management in Fortune 500 banks by harnessing the power of extreme real-time, cross-channel intelligence. Voted 'Best Fraud Detection Product 2016' by OpRisk / Risk.net, CustomerXPs' flagship product Clari5's differentiated approach deploys a well-synchronized, context-aware 'central nervous system' in banks with the ability to stop fraudulent transactions with real-time, actionable insights.

COMPANY PROFILE	
Company type	Sole proprietorship
Annual turnover	Undisclosed
Number of Customers Total	15+
Number of Employees	70
Inception	2006
Geographical coverage	South Asia, South East Asia, GCC, MENA, North America

COMPANY CONTACT DETAILS	
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DIASOFT
the way it should be

Since 1991 Diasoft has been providing cutting edge financial software solutions supporting all the aspects of retail, corporate and universal banking, treasury and capital market services, and insurance business. The company's main offer to the global financial market is FLEXTERA – a SOA-based software solution for front-to-back automation of financial services. Using the most advanced technologies to create its software products, Diasoft became one of the first companies having implemented SOA-principles in the banking solutions, which is attested by IBM Banking Industry Framework certification. The company is ranked in TOP 100 global financial technology providers and TOP 5 software vendors in Russia.

COMPANY PROFILE	
Company type	Sole proprietorship
Annual turnover	2014 results: 69.2 Million Dollars
Number of Customers Total	400
Number of Employees	1,600
Inception	1991
Geographical coverage	Asia, Europe, Russia

COMPANY CONTACT DETAILS	
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essDOCS

essDOCS is a leading enabler of paperless trade, providing customer-led solutions that automate and accelerate trade operations & finance. essDOCS' flagship solution – CargoDocs – delivers significant value to the entire supply chain: enabling users to streamline processes, reduce working capital needs and risk, while improving collaboration, compliance and visibility across organisations. As of Q1 2016, Over 3,600 companies, ranging from 12% of the Fortune Global 500 to innovative SMEs, use essDOCS solutions across 72 countries in the energy, agriculture, chemicals and metals & minerals markets.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	Undisclosed
Number of Customers Total	3,600+
Number of Employees	55
Inception	2005
Geographical coverage	EMEA, Asia Pacific, Americas

COMPANY CONTACT DETAILS	
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FERNBACH
We automate financial reporting.

FERNBACH, a medium-sized software company, was established by Günther Fernbach in 1986 and now operates internationally. The company focuses on the automation of reporting processes, particularly in the finance and accounting sectors. Reports are created automatically for all stakeholders, employees, managers, investors and supervisory authorities. Each year, FERNBACH has been listed in the upper third of the 100 leading risk technology vendors worldwide by Chartis Research, the main provider of global research and analyses for risk management technology.

COMPANY PROFILE	
Company type	Sole proprietorship
Annual turnover	Undisclosed
Number of Customers Total	more than 50
Number of Employees	150
Inception	1986
Geographical coverage	Africa , Asia, Europe

COMPANY CONTACT DETAILS	
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Fiserv is highly regarded for its financial services technology and services innovation, including solutions for mobile and online banking, payments, risk management, data analytics and core account processing. Fiserv is helping its clients push the boundaries of what's possible in financial services delivering deep expertise and innovative solutions to help financial institutions, businesses and consumers move and manage money faster and with greater ease. The most popular solutions invented by Fiserv are DNA, CUnify, Signature, Agiliti Platform.

COMPANY PROFILE	
Company type	Public Company
Annual turnover	Undisclosed
Number of Customers Total	13,000+
Number of Employees	10,000+
Inception	1984
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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GFT Group is a business change and technology consultancy trusted by the world's leading financial services institutions to solve their most critical challenges. Specifically defining answers to the current constant of regulatory change – whilst innovating to meet the demands of the digital revolution. Utilising the CODE_n innovation platform, GFT is able to provide international start-ups, technology pioneers and established companies access to a global network, which enables them to tap into the disruptive trends in financial services markets and harness them for their out of the box thinking.

COMPANY PROFILE	
Company type	Public Company
Annual turnover	€178.76 M in H1 2015
Number of Customers Total	9 out of 10 world's top investment banks
Number of Employees	4,000
Inception	2001
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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INDATA is a leading industry provider of software and services for buy-side firms, including trade order management (OMS), compliance, portfolio accounting and front-to-back office. INDATA's iPM – Intelligent Portfolio Management technology platform allows end users to efficiently collaborate in real-time across the enterprise and contains the best of class functionality demanded by sophisticated institutional investors. INDATA provides software and services to a variety of buy-side clients including asset managers, registered investment advisors, banks and wealth management firms, pension funds and hedge funds. What sets INDATA apart is its single-minded focus on reducing costs and increasing operational efficiency as part of the technology equation.

COMPANY PROFILE	
Company type	Limited Liability Company (LLC)
Annual turnover	Undisclosed
Number of Customers Total	Over 200
Number of Employees	Over 150
Inception	1968
Geographical coverage	North America, Europe

COMPANY CONTACT DETAILS	
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Intellect Design Arena Ltd, a specialist in applying true digital technologies, is the world's first full spectrum Banking and Insurance technology products company, across Global Consumer Banking (iGCB), Central Banking, Global Transaction Banking (iGTB), Risk, Treasury and Markets (iRTM), and Insurance (Intellect SEEC). With over 25 years of deep domain expertise, Intellect is the brand that progressive financial institutions rely on for digital transformation initiatives. Intellect pioneered Design Thinking for cutting-edge products and solutions for Banking and Insurance, with design being the company's key differentiator in enabling digital transformation.

COMPANY PROFILE	
Company type	Public Limited
Annual turnover	$124M
Number of Customers Total	Over 200
Number of Employees	Over 4000
Inception	2004
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Jabatix is a comprehensive, component-based software development and software production environment for batch applications on application servers based on standard technologies. The Jabatix Community Edition is an all-in-one Eclipse-based Interactive Development Environment. It is a comprehensive workbench for developing information management and reporting solutions – and this free of charge. Jabatix Enterprise extends the functionality created in the Jabatix Workbench to the Enterprise Environment and adds relevant management and monitoring services.

COMPANY PROFILE	
Company type	Public Limited Company
Annual turnover	Undisclosed
Number of Customers Total	100+
Number of Employees	2
Inception	2015
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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NICE Actimize is the largest and broadest provider of financial crime, risk and compliance solutions for regional and global financial institutions, as well as government regulators. Consistently ranked as number one in the space, NICE Actimize experts apply innovative technology to protect institutions and safeguard consumers and investors assets by identifying financial crime, preventing fraud and providing regulatory compliance. The company provides real-time, cross-channel fraud prevention, anti-money laundering detection, and trading surveillance solutions that address such concerns as payment fraud, cyber crime, sanctions monitoring, market abuse, customer due diligence and insider trading.

COMPANY PROFILE	
Company type	Public Company
Annual turnover	Undisclosed
Number of Customers Total	over 100
Number of Employees	over 500
Inception	1999
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Kuwait-based Path Solutions is a leading information technology solutions provider offering a broad, deep spectrum of Sharia-compliant, Riba-free and asset-backed integrated software solutions and services to the Islamic financial marketplace, covering the entire range of Islamic Banking, Retail and Corporate Banking, Investment and Financing, Treasury, Asset Management, Risk Management, and Regulatory Reporting in GCC and Global Capital Markets. Designed to meet the needs of modern Islamic banking, Path Solutions' turnkey solutions are based on an open, flexible architecture and an established deployment methodology.

COMPANY PROFILE	
Company type	Privately-owned company
Annual turnover	Undisclosed
Number of Customers Total	117
Number of Employees	500
Inception	1992
Geographical coverage	Middle East, GCC, Africa, Asia Pacific, South America & United Kingdom

COMPANY CONTACT DETAILS	
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Pendo Systems was established to provide a new standard in Investment Accounting System Delivery. At Pendo Systems, our mission is to be a premier provider of software solutions to global financial institutions. We strive to not only help our clients achieve their business objectives and goals, but also to contribute to the success of individuals, businesses and communities throughout the world. We are driven to work with our clients in a collaborative partnership, and are guided by the fundamental values of professionalism, respect, teamwork and quality in delivering products and services to our clients.

COMPANY PROFILE	
Company type	Sole proprietorship
Annual turnover	over $5M
Number of Customers Total	20+ top tier banks worldwide
Number of Employees	over 10
Inception	2006
Geographical coverage	North America

COMPANY CONTACT DETAILS	
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Pelican is a growth FinTech that has been driving innovation in payments and compliance for over 20 years. We deliver outstanding efficiencies to banks and corporates by injecting pioneering Artificial Intelligence technology into compliance and the end-to-end payments life cycle, drastically reducing the need for costly human intervention and manual processes. A consistent focus on innovation and industry-leading reliability has resulted in the growth of lasting relationships with major clients that use Pelican in over 55 countries globally. Pelican has offices in New York, London, Dubai and Mumbai. (88 words)

COMPANY PROFILE	
Company type	Privately held
Annual turnover	Undisclosed
Number of Customers Total	20+
Number of Employees	150
Inception	1992
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Homepage address	www.pelican.ai

Cross-border e-payment specialist PPRO removes the complexity of international e-commerce payments by acquiring, collecting and processing an extensive range of alternative payments methods under one contract, through one platform and one single integration. PPRO supports international payment methods across more than 100 countries. PPRO also issues Visa and Mastercard consumer prepaid cards, under its own brand name VIABUY, and enables B2B prepaid cards, under its CROSSCARD and FLEETMONEY brands, which can be issued both physically and as virtual cards or NFC devices.
Founded in 2006 and headquartered in London, PPRO is an EU-certified financial institute with an e-money license issued by the British regulatory body FCA.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	200
Inception	2006
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Homepage address	www.ppro.com

Profile Software, an ISO-certified and listed company, is a specialised financial solutions provider, with offices in Geneva, Dubai, London, Singapore, Athens and Nicosia. It delivers market-proven solutions, with an exceptional track record of successful implementations, to the Banking and Investment Management industries. The company is acknowledged as an established and trusted partner across many regions, offering a wide spectrum of solutions to the financial services sector.
Profile Software's solutions have been recognised and approved by leading advisory firms and enable Institutions worldwide to align their business and IT strategies while providing the necessary business agility to proactively respond to the ever-changing market conditions.

COMPANY PROFILE	
Company type	PLC/listed firm
Annual turnover	Undisclosed
Number of Customers Total	250
Number of Employees	152+
Inception	1990
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Reval is the leading, global provider of a scalable cloud platform for Treasury and Risk Management (TRM). Our cloud-based offerings enable enterprises to better manage cash, liquidity and financial risk, and to account for and report on complex financial instruments and hedging activities. The scope and timeliness of the data and analytics we provide allow chief financial officers, treasurers and finance managers to operate more confidently in an increasingly complex and volatile global business environment. With offerings built on the Reval Cloud Platform companies can optimize treasury and risk management activities across the enterprise for greater operational efficiency, security, control and compliance.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	Undisclosed
Number of Customers Total	575+
Number of Employees	500+
Inception	1999
Geographical coverage	North America, EMEA and Asia Pacific

COMPANY CONTACT DETAILS	
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Homepage address	www.reval.com

Ripple provides global financial settlement solutions to enable the world to exchange value like it already exchanges information – giving rise to an Internet of Value (IoV). Ripple solutions lower the total cost of settlement by enabling banks to transact directly, instantly and with certainty of settlement. Ripple bridges these siloed networks with a common global infrastructure that brings new efficiency to financial settlement by enabling real-time settlement, ensuring transaction certainty and reducing risk.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	Undisclosed
Number of Customers Total	25 active integrations
Number of Employees	110
Inception	2012
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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SmartStream provides Transaction Lifecycle Management (TLM®) solutions and Managed Services to dramatically transform the middle and back-office operations of financial institutions. Over 1,500 clients, including more than 70 of the world's top 100 banks, 8 of the top 10 asset managers, and 8 of the top 10 custodians rely on SmartStream's solutions. SmartStream delivers greater efficiency, automation and control to critical post trade operations including: Reference Data Operations, Trade Process Management, Confirmations and Reconciliation Management, Corporate Actions Processing, Fees and Invoice Management, Collateral Management, Cash & Liquidity Management and Compliance Solutions.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	Undisclosed
Number of Customers Total	1,500 clients
Number of Employees	over 500
Inception	2000
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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TIBCO fuels digital business by enabling better decisions and faster, smarter actions through the TIBCO Connected Intelligence Cloud. From APIs and systems to devices and people, we interconnect everything, capture data in real time wherever it is, and augment the intelligence of your business through analytical insights. Thousands of customers around the globe rely on us to build compelling experiences, energize operations, and propel innovation. Learn how TIBCO makes digital smarter at www.tibco.com.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	Undisclosed
Number of Customers Total	10,000+
Number of Employees	3,500+
Inception	1997
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Volante Technologies is a global leader in the provision of software for the integration, validation, processing and orchestration of financial messages, data and payments within financial institutions and corporate enterprises. Many clients use Volante to assist with multiple product implementations ranging from message transformation and integration, through to the processing and orchestration of transaction data and payments. Along with its products, Volante Designer and its VolPay suite of payments integration and processing products, Volante constantly maintains a growing library of over 85 domestic and international financial industry standards plugins with more than 250 prebuilt, customizable, and bidirectional transformations to and from these standards.

COMPANY PROFILE	
Company type	Private Company
Annual turnover	Undisclosed
Number of Customers Total	more than 80 in 26 countries
Number of Employees	around 120 and growing
Inception	2001
Geographical coverage	US, Latin America, UK, Europe, Middle East, Africa, India

COMPANY CONTACT DETAILS	
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