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Financial IT

Innovations in FinTech

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JUNE ISSUE 2018

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Innovations in FinTech

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THE OPEN BANKING REVOLUTION...

...PUTTING IT INTO PRACTICE

Andrew Hutchings,
Editor-In-Chief

The March 2018 edition of Financial IT was devoted mainly to Open Banking. So too is this, June 2018 of Financial IT.

The previous edition looked, in depth and breadth, at the change that could take place in financial markets, Fintechs and incumbent institutions as a result of the second Payments Services Directive (PSD2) and the General Data Protection Regulation (GDPR) of the European Union (EU). If the previous edition was reduced to one question of just one word, that one word would be 'What?'

For this edition, the one word is 'How?' A lot of time, effort and money has been devoted to identifying and resolving problems that arise from Open Banking. Most of the articles in this edition of Financial IT are the result.

Some of the issues that are discussed arise directly from PSD2 and GDPR. How does a bank ensure that the personal data of clients is protected while ensuring that PISPs and AISPs have access to the data to which they are entitled? To what extent is the lack of knowledge of Open Banking on the part of banks' retail customers a problem? Do the new regulations actually prevent the attainment of seamless and invisible payments? Is the lack of clear API standards in relation to cross-border payments threatening the potential of PSD2?

In the new world of Open Banking, there are other issues which are relevant as well. How does a bank maximise the customer experience (CX) for a new client while, at the same time, collecting all the information that is required as a matter of law and procedure? What solutions can a bank use to protect itself from the increased risk of fraud? How can Artificial Intelligence improve productivity for banks and providers of trade finance?

All this is happening at a time that institutions and Fintechs alike have to contemplate other changes that are taking place at a rapid rate. There remains relentless pressure for faster and cheaper payments, and better CX for both individual and corporate customers. Machine learning can facilitate compliance with the EU's second Markets in Financial Instruments Directive (MiFID II). Blockchain continues to provide major – and largely untapped – opportunities for both conventional and Islamic financial institutions. There is growing interest in the cloud as a part of a core banking system. Innovators are addressing the question of how traders in crypto-coins can easily 'cash out' their positions through the crypto-exchanges that they are using.

A theme that is running through most of the articles in this edition of Financial IT is that Fintechs are disrupting the financial services. However, it is seldom because they are competing directly with incumbent institutions. Indeed, it is far more common for them to be collaborating with financial institutions in order to develop new solutions – whether those new solutions be related directly to Open Banking or not. Ultimately, the customers of financial institutions will be winners as a result of the changes that are taking place. The winners will also include financial institutions and Fintechs that collaborate most effectively. It may well be that the next edition of Financial IT can be reduced to the one-word question 'Who?'

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THE THREAT OF THE CRYPTO-WHALES

WHY 2018 WILL BE THE YEAR OF REGULATION IN THE CRYPTO WORLD

Chris Principe,
Publisher

Whales are the largest animals on Earth, and many kinds of whales live from eating one of the smallest animals, plankton.

I have used this example in many presentations; at banking conferences, I point to banks being the whales and needing to take care of the Small to Medium-size Enterprises (SMEs) as they are the plankton that the banks survive on, rather than solely focusing on the largest of corporations.

I have used this example at FinTech and Cryptocurrency events showing that if small companies and people who represent the bulk of bank clients gather together they can starve a whale, as they are the plankton.

This is all well and good and true, but today there is the growth of whales of a new kind. For now, those new whales have even stronger control over the plankton on which they feed.

The new breed of whale, is not the banks or governments, but the Crypto-whale.

These are even more dangerous and have control of a world that the banks and governments have yet to venture much into.

Crypto-whales will tell you that Bitcoin and other crypto-coins are the salvation of the world. In fact, they have an interest in eating the little people – including you and me.

These whales are a new breed to the world and not understood, but they have their interests at heart and have no belief system except that which benefits them.

They are generally narrow-minded and politically correct – which is something they remind the honest working man of all the time.

Their culture resembles that of the Robber Barons who dominated the United States economy at the turn of the 20th century in that they flout their power and vilify anyone who believes that regulation is needed for the Cryptocurrency world.

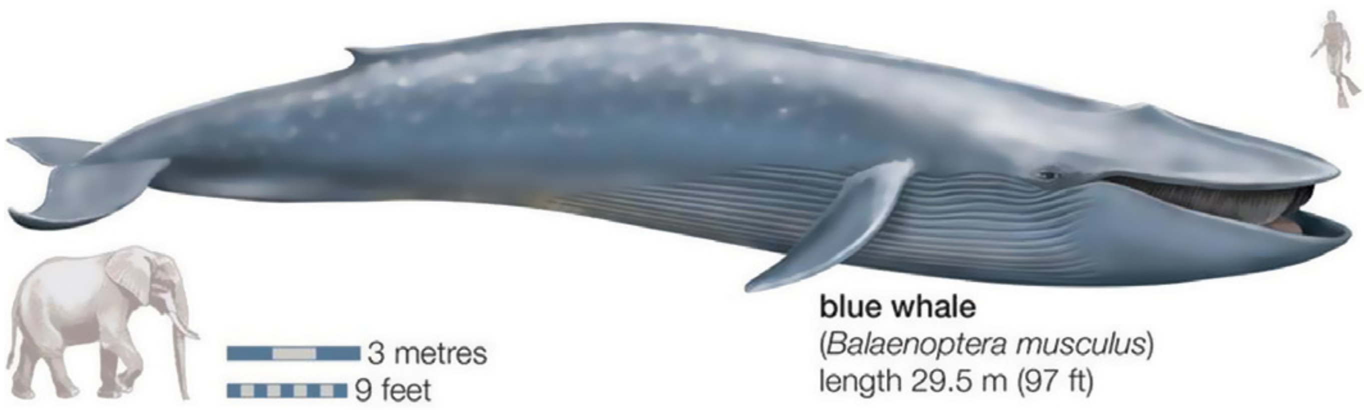
In fact, the Crypto-whales are fully against any form of regulation. They come with the will and now money to fight against it.

This is wrong. In today's world technology is more important than railroads, electricity and oil ever were. Our lives are dependent on technology. As we become more dependent on the Crypto world, we will become more controlled by the Crypto world.

Do not misunderstand me as I am excited by and fully in favor of the fantastic innovation that the Crypto world has brought. There is great potential for reduced cost, everyday use and reduction of crime that cryptocurrency and other Blockchain-based solutions will bring.

However, I am very concerned about the potential for abuse of power by the Crypto-whales, the few people that really dominate the new technology.

J. Paul Getty was once the richest man in the world. However, even with adjustment for inflation he would be way down the list of today's billionaires. In Califor-



nia alone, there are 53 technology billionaires out of the 78 in the United States that can be clearly identified.

That list would likely be larger if there was transparency into the holders of Bitcoin fortunes. At the turn of the 20th Century, the Robber Barons were elite wealth villains that were depicted as taking advantage of the working class.

A similar situation is developing today. When we start integrating the Internet of Things (IoT) with smart houses and cars, the Robber Barons of today will have an even deeper hold on our lives. This will be particularly true of Crypto-whales because crypto-currencies will increasingly be the mediums of exchange used within the IOT.

Today these Crypto-whales control the Bitcoin market with no restraint. The numbers I have seen, which are hard to measure with accuracy, say that about 5% of the owners of Bitcoin control 60% of the Bitcoins or more. They are easily able to manipulate the price and market for Bitcoin and do so regularly to their advantage.

Here is the most common example. Say the price of Bitcoin is $10,000 and some of that 5% put in big sell orders: well the price goes down and is aided by the many small people who panic and sell.

Then, when the prices go down to say $9,000, the Crypto-whales buy back their positions. Each and every time they do this, they increase the number of Bitcoins they own, giving them further control.

Even the most amoral or corrupt government in the world is unable to manipulate the value of its currency in foreign exchange markets the way that the Crypto-whales can do with Bitcoins.

As we experienced at the end of last year, when the price for Bitcoin quickly rose up to about $19,000 and then dropped as low as $6,000, the only ones who were hurt and lost so much value were the smaller buyers of Bitcoin.

The entire capitalization went from about $800 billion to under $500 billion, which is a real money loss for the small investor majority of over $300 billion. That is huge and has hurt so many people who lost their savings and retirement funds and, in many cases, greatly increased their credit card debt.

In conventional financial markets, governments rightly put in place regulations to prevent abuse of the many by the few. Those regulations include tax laws which result in everyone paying their fair share. However, the development of the Crypto world through 2017 has been almost totally unregulated. Billions have been made by a small number of crypto-savvy players – some of whom would otherwise be working as waiters or short-order cooks.

I have been outspoken about the need and benefits of proper regulation that is needed to guide the innovation and not stifle it as we have witnessed in the past environments of over-regulation.

Governments are still figuring out the Crypto world and how to regulate it. For now, I believe that the governments are smart enough to see that they must go after the Crypto-whales for much the same reasons that they went after the Robber Barons, prior to World War I, because that is where the money and power resides unfairly.

Let me put this plainly: in the Crypto world, 2018 deserves to be and will be the year of regulation.

Thus far, the lack of regulation has been a very good reason for banks, insurance companies, asset management companies, mutual fund distributors and other mainstream institutions to shun the Crypto world to date.

They have been concerned that if they do something today and regulation comes out differently that they will be in violation and subject to fines and penalties.

Additionally, they are concerned that Bitcoin is now a vehicle of choice for money-laundering, terrorist financing and ransom payments. Anonymity has always been to the benefit of those with bad intentions even if that intention is just tax avoidance.

Therefore, the imposition of a proper regulatory regime on the Crypto world could be a game changer. It could result in the entry by mainstream institutions.

If crypto-currencies are to reach their true potential as the currency for the people, by the people and not against the people. Whales depend on plankton, or they die!

BANKS WITH A FINTECH ON TOP?

Ioana Guiman

Business Development & Managing Partner, Allevo

Ioana Guiman has been active in Fintech since 2003, and has a technical background in computer science. She has been on the board of Allevo since 2016, and focuses on strategy and finding new business opportunities. She looks for customized solutions for very specific customer problems. She also ensures that excellence is what the customers receive, in terms of both products and services. She describes herself as a "geek with social skills"

This time last year, everyone was talking about big projects around PSD2, GDPR and instant payments even, either seeing 2018 as a game changer or as the big bad wolf in flesh and bones, depending on the level of preparedness and implication of whom you asked.

Now, in mid-2018, GDPR starts showing up in the inbox or notification center of every digital person out there, with a request to re-confirm what they have already confirmed before; it is just that this time they ought to do it in a more compliant way. As annoying as this is for people, it is even more of a hassle for companies who needed to prepare and align internal policies, procedures and the way they manage their business to ensure the most rigorous level of protection of personal data. All this involves high costs and happens even though the companies are not data processors.

European banks are implementing solutions for PSD2 compliance, while trying to look further into the future for opportunities brought by the open API structure laid out by PSD2. Some have started early, some bit later, but all are headed into one direction and that is allowing PISPs or AISPs to access customer data.

Some countries are following the lead of those more advanced in creating a seamless framework for instant payments. This will bring new services and enable some companies to catch up with Fintechs in terms of speed. Luckily PSD2 sets the scene for collaboration opportunities between banks and Fintechs, which will eventually help Financial Services keep pace with expectations of their digital customers.

PSD2 – What's in It for You?

As a bank, you can choose to merely comply with the Directive and give third parties access to data, as required by law, or you can step up the game and become an AISP / PISP yourself, heading towards a broader ecosystem with aggregated value. As far as open APIs are concerned, it is up to each bank whether to simply provide a free basic-level, or to develop a more advanced API platform in order to monetize access to raw data and new unconventional banking services.

So, what is Allevo's role in this story? Allevo developed a PSD2 compliance solution, FinTP-Connect. It provides centralized management of requests initiated by a PISP/AISP on behalf of the final customer, by retrieving and processing these requests, transferring them to the Core Banking system, and then returning the responses back to the PISP/AISP (JSON/XML, ISO 20022, or other native formats).

FinTP-Connect functionalities include API management, TPP identification and validation for access to services, rules management for applying Strong Customer Authentication (SCA), user activity tracking (TPP management and fraud risk management), log of services run by users, content or rules-based routing, as well as native format configuration.

A sneak peek into the components of this PSD2 compliance solution reveals the API Gateway, the API Integration & Services component, and the Reporting & Monitoring Interface. As far as FinTP-Connect flows are concerned, the API Gateway receives API requests (from the PISP/AISP) in compliance with the security policies in place (authentication, authorization, audit and regulatory compliance), passes the requests to the API Integration & Services component, retrieves the response and sends it back to the initiator (PISP/AISP). It also collects analytics data and provides it to the Reporting & Monitoring Interface.

When Fast Is Not Good Enough

Instant payments are no longer a fad, but a requirement, driven by consumers being anchored more and more in "real-time" everything. Consumers want their orders processed un-intrusively and instantaneously. This means that merchants could implement an instant payments solution, passing the demand to suppliers immediately, extending the B2C real-time need towards B2B.

Banks play the role of providing a relevant service to their corporate customers, gaining new business, while corporates address the current needs of modern people. In fact, businesses stand a lot to benefit from this, not only in terms of improved payment reconciliation process and increased efficiency of e-invoicing, but also from fewer late payments, enhanced e-commerce, predictability and reduced financial risk, not to mention the improved liquidity and cash management capabilities, optimized working capital and minimized external financing.

These being said, Allevo developed FinTP-Instant, a new functionality of its financial transactions processing application, FinTP, fit for using the Instant Payments service (IPS) of the Romanian Automated Clearing House – TransFonD, as well as for processing messages according to this service's technical requirements.

One of the requirements of the IPS is for the bank application to be STP- and FinTP successfully meets this requirement, interfacing with the low-value payments service through web services. The timestamp is set by FinTP-Instant, as timing is an essential part of this service.

FinTP-Instant supports all types of messages for the instant payments scheme. Besides the instant payment initiation, confirmation, reject messages, as well as recall and negative/positive answer to recall, this functionality also processes new messages pertaining to this scheme: SCT Inst transaction status investigation, overdraft message for configuring the guarantee ceiling, and reconciliation messages (automatically sent by IPS after completing each settlement process).

We firmly believe that as instant payments are widely made available throughout Europe, they will become the premier replacement for more expensive payment methods, such as credit cards, both online and at the point of sale. So, the sooner you tackle this issue, the better.

A bridge between Banks and SMEs

Allevo's focus on companies is based on the idea of replicating the success of FinTP for banks at corporate treasury level. The shift is reinforced by EU funding for developing a software suite dedicated to SMEs and corporate treasuries, marketed as ***FinOps Suite*** – Making financial operations easy*.

Having FinTP as a starting point, FinOps Suite follows the same high-level architecture, but features a new user interface and reworked functionalities and workflows. As its tagline suggests, this solution is aimed at automating a company's processes and flows in treasury departments.

It is positioned in the center of financial flows within a company, integrating core systems that process financial transactions (Human Resources Application, ERP, EDI, Accounting) and applications connecting to banks, either directly (Internet Banking / Cash Management application) or via market infrastructures such as SWIFT or local CSMs.

In short, FinOps Suite addresses flows pertaining to SMEs or corporations, ensuring consolidation of treasury and financial business to optimize resource allocation and efficiency, and providing a single view over financial operations, cash reporting and forecasting, accounting reconciliation, transaction filtering, all customized for company usage.

FinOps Suite can be used in a wider setup, serving not only treasuries of large retailers, but also their suppliers and these parties' relationship with banks. How? FinOps Suite processes invoice-based payments going to banks the retailer works with. Suppliers often face liquidity issues, driven by long due dates of invoices. It would make sense for banks to offer automated short-term financing for these invoices, especially as they are already approved for payment by the big customer of the supplier. FinOps Suite has access to this type of data and can therefore work seamlessly with the factoring solution of the bank, the internet banking application of the bank, the EDI the supplier and retailer work with, with the accounting systems of both the supplier and the retailer.

And this cumbersome and somewhat bureaucratic process can be then easily turned into a seamless business operation. A fully automated process for the plumbing system and interconnections of these players. It also redces the risk of financing for the banks. As factoring is an easier method to access than the usual credit line, it is also a riskier one. Oversight of invoices and payment details sets the premises for financial advisory, predictive cash flow analysis, reconciliation and the automation of these flows in between all parties involved – supplier, buyer, bank. And as new beginnings are a good opportunity to be generous, here's a perk: want to be one of the privileged super early adopters and have a hands-on chance to take a look behind the scenes at the requirements, code, and business flows? If so, please reach out and we'll be more than happy to run a lean proof of concept to show how our solution can help you optimize your financial operations.

* ***FinOps Suite*** *is the business name of the software solution being developed within our Treasure Open Source Software (TOSS) project. This project is co-financed by the European Regional Development Fund under the Competitiveness Operational Programme 2014-2020, Priority Axis 2 "Information and Communications Technology (ICT) for a competitive digital economy".*

Jo Howes,
Commercial Director,
CREALOGIX Group

OPEN BANKING FAILS TO HAVE THE EXPECTED IMPACT

Open Banking regulation came into force this January, but it isn't making the radical impact on retail banking that we expected. It has allowed new competitors to begin disrupting a market previously dominated by the big banking giants, but the term 'Open Banking' is still being more commonly met with confusion rather than anything else.

Challenger banks and fintech firms now have a whole new range of opportunities to offer consumers financial services outside of the scope of conventional banking. Even before the implementation of Open Banking, challenger banks were already making promising progress in the consumer banking market. However, with the added support of the Open Banking Initiative, challenger banks and other fintech providers will represent an increasingly viable choice for consumers in the future.

Open Banking Regulation

One of the biggest hurdles for challenger banks and fintech firms has been the issue of security. With Open Banking, big banks must now securely share their customers' data with third parties should they request it.

Before Open Banking, a common way to work around getting access to customer banking data was 'screen-scraping'. Customers would give their various banking and financial logins to third-party apps like Yolt and Chip, which in turn would log into their banking service and ingest the displayed data from their accounts, displaying it in one consolidated view. In the event of a security breach, it would not guarantee that customers would receive protection from their banks. Now, with new regulation from the Competition and Markets Authority (CMA), banks must now grant access to "read-only" versions of their customers' details. This approach offers a much more secure way for customers to share their data, and if security is compromised as a result of this, customers receive full protection from their banks.

Despite the relative safety of sharing your financial data with third parties now, research commissioned by digital banking solutions provider Crealogix has revealed that consumers are still unaware of these recent developments. The independent study of 2,000 UK consumers uncovered that customers were deterred from signing up for any Open Banking service – the primary reason for that being security concerns.

The Open Banking Initiative is bolstered by the EU's Revised Payment Service Directive (also known as PSD2), which also ruled that European banks must allow their customers' data to be shared. The motive behind this regulation was to promote increased competition within the consumer banking market, which would boost the level of innovation within the market. Moreover, it would allow for a more streamlined legal payment framework.

Hindered by lack of information

Naturally, people are wary about sharing their data. The irony is of course, that banks are indirectly enabling their competitors by providing assurance to their customers that their security won't be compromised if they use third-party financial providers.

Despite this, Open Banking isn't making big waves because, crucially, many consumers aren't even aware of it – 86 per cent either don't fully understand it or haven't even heard of it at all. From the few (one-in-six) who have heard of Open Banking, it also emerged that under 25 per cent had heard about it directly from their own banks or building society.

Additionally, HSBC ran a Twitter poll earlier this month with almost 85,000 survey respondents, asking customers what questions they'd like answered in regard to Open Banking. The most popular question by an overwhelmingly large margin (64 per cent) was 'What is Open Banking?'

To counter the threat posed by the barrage of fintech firms capitalising on the opportunities brought by Open Banking, many banks are developing their own versions of these services. Although the qualities of these apps are yet to be seen, there's no doubt that the services offered by third parties remain miles ahead of anything that banks providing currently.

Leading challenger bank Monzo launched its full current account earlier this year, with 94 per cent of its active users (over 362,000 customers) having upgraded by April. Meanwhile, traditional banks are still in the process of developing these services. HSBC will be the first big bank to dip its toes into Open Banking. In October last year, it announced its beta version of an Open Banking app which would be rolled out to 10,000 customers. It also announced intentions for the full app to be released at the start of 2018. The expected date of release has now been pushed back to later this month.

Promoting a better customer experience

Open Banking has the capability to reform the consumer banking sector for the better. With more competition, we'll have banks and fintech firms scrambling to create a more customer-centric experience.

Consumers will have clearer access to important financial insights, affording them a better understanding of their finances, and enabling them to save and invest more smartly. Once they understand how Open Banking can bring about these benefits and that they have their own banks ensuring their financial security, they will realise that really, they can only gain from using Open Banking services.

CAN SEAMLESS PAYMENTS EXIST IN A REGULATED ENVIRONMENT?

Online payments are constantly in a state of transformation, with incoming regulation providing both opportunity and challenges. The regulatory protections put in place to mitigate or avoid fraud will make the payment journey a complicated and fragmented experience for both the payment services users and the merchant.

There is a lot of discussion on how merchants can still try to achieve a 'frictionless' checkout experience for their customers by use of 'seamless and invisible payments', which are an enticing prospect. However, in an environment where fraudsters flourish, the question is raised whether 'frictionless' payments are really attainable or even desirable both for merchants and the consumers.

Consumers want to feel protected and merchants want to avoid financial risk as much as possible. At the same time, there should be a minimal trade-off between friction and security. So, how can businesses reduce friction while also maintaining compliance and reducing fraud?

Regulatory Reforms – how can businesses prepare?

The tightening of regulatory regimes will make next year and beyond very challenging for businesses that are not prepared for the European Commission's Payment Service Directive 2 (PSD2). The PSD2 mandates that all electronically initiated payment transactions need to incorporate Strong Customer Authentication (SCA). If a business does not plan effectively it will end up presenting its customers with unnecessary challenges and increased on-boarding friction.

Another challenge arising from the increased compliance, due diligence and reporting requirements is the processing of card payments originating from outside the EEA. Given the fact that most businesses now target the global consumer, they are likely to face serious challenges with customer payments coming from outside the EEA as SCA will be applicable. Title I of PSD2 extends the Directive's scope to non-EU/EEA payment transactions, even where only one payment service provider (PSP) is located in the EU/EEA.

Due to the low 3DSecure enrollment outside the EEA, and the Title I requirement to implement SCA, consumers can be left 'stranded' by the merchant's PSP for another merchant that can satisfy their purchase.

iSignthis provides a simple, yet patented, solution for SCA by implementing an onboarding process for the customer that is independent of 3DSecure, which also meets the onboarding requirements under the 4AMLD for regulated sector merchants, whilst also complying with PSD2 requirements. This speeds up and simplifies the onboarding of customers as well as the authentication of subsequent payments.

Seamless payments and security co-exist

For all stakeholders involved, from merchants and consumers, it is important to assess the environment in which a transaction will take place. Especially when looking at online businesses that offer high-value/high-frequency items or are within the regulated sector, all parties want some appropriate level of friction to exist to ensure that regulatory requirements are met.

iSignthis' Paydentity™ allows for an intuitive, user-friendly process taking place post-checkout which prevents abandonment rates of complex and manual procedures.

About John Karantzis:

Founder and CEO of iSignthis Ltd

John Karantzis is founder and CEO of iSignthis Ltd (ASX : ISX | DE_FRA : TA8), and also leads the Central Bank of Cyprus licensed EEA Authorised eMoney Institution, iSignthis eMoney Ltd (trading as ISXPay™).

John is qualified in electrical engineering, commercial, regulatory & IP law and business (University of Melbourne), with a broad understanding of international regulatory regimes as they relate to payments, money laundering and identity.

John has over 25 years' experience across a number of sectors including payments, online media, AML, defense and secure communications. In particular, John's experience includes application of technology to assist with remote enhanced due diligence, across a number of FATF legislative model jurisdictions. John has also been the inventor of a number of granted and pending EU/US/Australian patented technologies, all of which are related to the payments and AML sector.

John has previously been Managing Director/CEO of Australian Securities Exchange publicly traded ReelTime Media Ltd (ASX : RMA) and Director/CEO of Data & Commerce Ltd (ASX : PNW).

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REAL-TIME PAYMENTS: TIME TO BREAK FREE FROM LEGACY CONSTRAINTS

With both SEPA Instant Payments and US Real-Time Payments now live, banks have been urgently re-assessing their readiness to deliver on the potential of these new schemes. For international banks, it's not just a question of preparing for one scheme – but multiple different flavors of real-time payments across different geographies. To date some 35 countries around the globe have implemented real-time payment capabilities, with Accenture saying that it's estimated that as many as 140 could soon move to real-time payment systems.

For both corporate and retail customers the ease, speed and convenience of real-time payments is highly attractive. For banks looking to meet customer expectations for an 'always-on' service, it's imperative they deliver not only on real-time payments, but also on the full potential for real-time banking. Banking and payments are intrinsically linked – all banking activity (aside from master data management and account management) falls into two main categories: financing and payments. The ability to make and receive payments is crucial across all banking functions – from trade finance to lending and foreign exchange.

In my view, banks should use the move to real-time payments to implement a single, global banking platform with a payment processor in the middle that's capable of handling any payment type. This will enable them to put in place an infrastructure that allows them to adapt more easily to fast-changing market requirements across their global operations, while also reducing costs.

A flawed approach adds to complexity

The truth is that most banks today remain constrained by legacy technology and old-fashioned and inflexible IT packages. Many are taking a short-term approach to how they implement real-time payments in an attempt to prolong the life of their existing systems.

With few exceptions, today's incumbent banks have a multitude of different payment systems, each of them handling different payment types. They often have duplicate systems that have arisen through mergers and acquisitions. Just keeping these systems updated is a challenge – since banks have typically undertaken significant bespoke development. This makes it difficult and time-consuming to incorporate even the most basic system upgrades. It's not unusual to come across banks using customised IT packages that have failed to make any system upgrades for 6-8 years. The cost, complexity and risk involved in carrying this out have been prohibitive, and in some cases more expensive than implementing a new system.

With mandatory changes to SWIFT FIN messages now required as part of the upcoming SWIFT 2018 and 2019 releases, many banks have large ongoing development and implementation projects underway. Going forward, banks should be looking to vendors that can offer system upgrades as a standard part of their annual maintenance services, with no need for bespoke development.

To help illustrate the scale of the problem, imagine an international bank that has 80-100 different banking product solutions (or applications) in place – handling functions in areas such as trade finance, foreign exchange, money markets, deposits, loans, securities and trading. Then imagine that each of these apps handles on average ten different sets of business events, and that each business event results in an average of five different payments being made. These payments could be one of up to say ten different payment types: internal payments, domestic payments, bank-to-bank payments, customer payments, and cross-border/cross-currency payments, with the need to handle both incoming and outgoing payments for each. The bank also needs to be able to interface with all relevant master data management systems, account management systems and clearing systems across all the countries in which it operates.

If we assume that our bank is operating across many countries, and has deployed different banking systems per product solution in each country, this will result in an enormous number of different payments to be handled. Imagine the complexity this brings to development, testing and training, as well as to implementing new features and updating relevant interfaces. This scenario is not unusual. It's the reality for many large international banks today.

Those banks that are now adding separate siloed systems or modules to handle real-time payments, such as SEPA Instant Payments, alongside their existing architecture are only adding further to the complexity. Often they're layering these satellite systems on top of an infrastructure that hasn't been set up to handle interfaces to systems across the bank, preventing easy access to data on customers, customer accounts, available funds control, correspondent banks, bank accounts, geographical data, currency and exchange rates, embargo lists and anti-money laundering controls. Similarly, the siloed systems are unable to update account balances in real-time for relevant deposit accounts, Nostro/Vostro and general ledger accounts.

The implementation of duplicate account management systems as a solution to handle PSD2 and Open Banking is beset with risk and a potential recipe for disaster, and is not the recommended way to go. In fact, this approach means replicating most of the functionality already contained in the bank's legacy payment systems and creating a new set of duplicate interfaces on top of the ones it already has. While the intention is to extend the life of the bank's legacy systems, in the process the bank is creating even greater complexity, and another maintenance headache.

Rolf Hague,
Founder and CEO
of Commercial Banking
Applications (CBA)

Unlocking greater agility and freedom to innovate

The best approach to real-time payments should be to rise to the challenge and also embrace real-time banking. This means implementing a modern banking platform with a payment processor, offering rich functionality, that is flexible and adaptable, highly-parameterized, object-oriented and rules-based – which can also be used by any product solution across the bank. The banking platform should be able to easily accommodate future needs, changing regulation and specific-country requirements, such as the addition of relevant clearing systems. It should also offer a comprehensive library of ready-made global banking business objects, such as master data management, interfaces to relevant third-party systems and open APIs.

The banking platform should be rolled out as a standard, packaged system, country by country without creating any special version of the source code. This helps to ensure that all subsequent system upgrades and SWIFT updates can be quickly and easily incorporated on a fully automated basis so that the bank never falls behind. The use of ISO 20022 standards is also a must in facilitating electronic data interchange and connectivity to existing systems within the bank, external clearing systems, SWIFT and other networks such as Ripple. Such an approach is essential in delivering increased agility.

Banks are under immense pressure to reduce costs and drive down the total cost of ownership in relation to their technology infrastructure – with goals to make cost savings of at least 50%, sometimes 80%. Implementing a modern global banking platform is the only way to achieve this.

No-one would expect a new challenger bank today to implement multiple different payment systems to handle every different payment type. It would be madness to replicate the functionality, given 90% of the banking business objects and interfaces are common and global between the different banking applications. In a changing competitive landscape, banks should take action today to address their legacy systems and to seize the opportunities associated with Open Banking, real-time payments and PSD2.

Parth Desai
Founder & CEO,
Pelican & PelicanPay

CROSS-BORDER PAYMENTS: IS THE LACK OF CLEAR API STANDARDS THREATENING PSD2'S POTENTIAL?

Europe has been leading payment innovation worldwide by use of common ISO standards and SEPA initiatives rolled out across the EU. While heralding many benefits, SEPA was arguably a mixed success for pan-European cross-border payments – despite SEPA introducing a single standard, there were however many variations to it, diverging from one country to the next, and also even per-bank, with several interpretations sometimes implemented by a single institution.

Although slow, the SEPA project was an important milestone in bringing together pan-European cross-border Automated Clearing House (ACH) (typically non-urgent, low value transactions) to similar, if not quite the same standards. The variation in these standards hindered SEPA achieving the full potential of seamless payments interoperability across borders. In many ways, this was an important opportunity missed.

The recent launch of the SEPA Instant Payment Scheme is a significant and positive step forward in providing a pan-European and possibly very soon, real-time payments service. The scheme enables transfers of up to €15,000 within 10 seconds, 24/7, to any of 34 SEPA territories. The cross-border instant payment capability certainly looks to be a gain for consumers and increasingly the business sector. The wider adoption of real-time payments does of course come with its own specific challenges, as banks struggle to adapt their existing patchwork and more leisurely financial crime compliance processes with the very small review times allowed in a real-time processing environment.

With the combination of the SEPA Instant Payment Scheme along with the revised Payment Service Directive (PSD2), the European Payment landscape again has a chance to leapfrog ahead of the world and to invigorate the fintech and payments community. As payments are involved in all transactions, a frictionless instant payment system underpins an efficient economy, and encourages business growth.

Although the standards under which PSD2 should operate are defined in the Regulatory Technical Standards (RTS), these standards stop short of defining a communal API. An open banking based economy throughout Europe is an innovative idea with huge potential, a potential that is hindered by a lack of a properly defined API standard. We have seen many country-specific and bank-specific solutions being implemented, however this fragmentation and divergence threatens to squander the important benefits of PSD2.

Looking at the many current API initiatives in the market, it is disappointing that there is no single authority that has tried to take the lead and to harmonise the PSD2 APIs. We have seen that there are country or region specific initiatives – like STET in France and Berlin Group with participants across Europe, and we understand that some large banks will go on their own with their custom versions of the API, whilst some will go with national versions.

Are the cross-border harmonisation and efficiency goals of PSD2 being jeopardised by such fragmentation? There is certainly the possibility that an opportunity to streamline European standards will fail to meet its true potential.

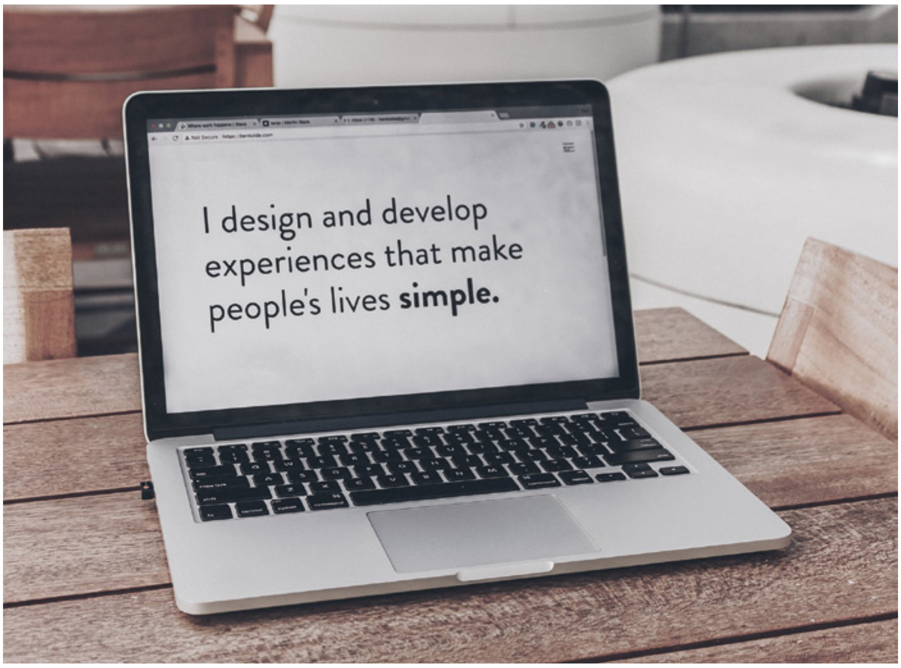
API Inter-operability

Is there a potential answer to the existing state of European API fragmentation? One clear way forward is the adoption of a single truly interoperable API solution – acting as an interoperable 'switch' that can support one API across Europe – harmonising and hiding the differences between various APIs and making the whole interface simple and frictionless. Such an interoperable API would support the multiple APIs for each existing standard or bank – enabling a bank to be accessed not only by its own published APIs, but also via other APIs in a transparent and interoperable manner.

The expansion of real-time payments alongside the open access heralded by PSD2 does represent a significant inflection point for banks and cross-border payments – one that fundamentally impacts how both domestic and international payments services are provided for businesses and consumers. The launch of an Interoperable API solution – one that removes the friction caused by the fragmentation of the existing landscape – will ensure that all participants can enjoy the economic benefits and the full potential of PSD2.

Don Bergal,
CMO, Avoka

THE SCIENCE OF OPTIMAL CUSTOMER EXPERIENCE DESIGN IN FINANCIAL SERVICES: **HOW TO MOVE FROM BUSINESS-CENTERED TO HUMAN-CENTERED**



Growing your business requires delivering an unmatched customer experience. No doubt, you've applied for a credit card, opened a new savings account, or applied for a loan. You know that there's required information you'll need to submit — which often means digging up various forms of identification and financial statements. You know how inconvenient and even unpleasant the experience can become if instructions or expectations aren't clear. The application experience can be so frustrating that, at some point, you may simply give up and take your business somewhere else, where the experience is less painful. That's how your customers feel, too.

If you can create a customer experience that puts your customers at ease, which provides much of the information already pre-loaded into fields, and makes the experience fast and frictionless, you're going to reduce abandonment rates and acquire more customers.

A human-centered design approach is the key to building an optimal experience for your customers and unlocking your business growth potential.

Creating a frictionless customer experience (CX) starts with looking at the experience through your customers' eyes. The key to a human-centered approach to CX design is to truly take your customers' perspective and seek to understand what the experience is like for them. Understand what they're trying to do, their goals, their motivations, and their needs. You can't dismiss or underestimate the emotions that are tied up in, for example, opening first savings account for a young child, or taking out a small business loan to kick-start an entrepreneur's dream.

Building empathy for your customers helps you connect with them at a deeper, emotional level and solve their needs. When customers begin an application for a banking product, they expect they'll have to provide information about their identity, income, and expenses and probably have questions going through their heads such as how long is this going to take, what information do I need on me to fill this form in, will my information be safe, and have I got enough time to do it right now?

Helping your customers know what to expect is essential to creating a good experience. You want to set them up for success.

Gain Insight from Direct Customer Feedback

By holding out for a "perfect" or "done" state, you'll never get anything out the door and into your customers' hands. Data analysis alone, while providing a certain level of insight, will not create the optimal experience design. No amount of data analysis will tell you what people will do, and how they will react, in a given situation. Getting something into the hands of your customers early and fast, to test how well it meets their needs, should be the goal. You can observe how customers complete your application:

- Where are people spending time?
- Are they confused by what information you're asking for, or how you're asking for it?
- Are they spending too much time on certain fields?

Then use this information to create a cycle of analysis, iteration, and optimisation.

Minimise the Effort

Lowering the effort required to complete a transaction has been directly linked to higher satisfaction levels and subsequent loyalty. Make the experience intuitive, quick, and simple – effortless – and the customer is more likely to complete the transaction.

One way to decrease effort is to focus on reducing the amount of information you ask for. Determine the minimum set of information you need to process their application and ask for only that. Using friendly and unassuming language creates a conversational tone as if the customer was speaking directly to a bank representative in a branch. Consider too "information

familiarity," how familiar is the customer with the information being requested, and how much effort may be required to submit it. Do they know it off the top of their head? For example, a birth date or social security number. Do they need to look it up, but it's easily accessible? Driver's licence details are a good example. Do they need to search for it, such as retrieving it from a filing system? Think tax returns and payslips.

The harder it is to retrieve the information, the more frustrated your customers will become.

Ask the simple questions early in the application experience, so the customer gets some momentum and isn't presented with big barriers that cause stress and frustration. Then, cluster together the more complicated questions that involve more effort later in the application. By that point, the customer will feel more invested in the process and will be more willing to see it through to the end.

The Results of a Human-Centered CX Design Are Dramatic

One of the challenges facing CX design and strategy is that it can feel highly subjective. What feels simple or intuitive to one customer may not feel so simple or intuitive to another customer — and opinions can be debated. This makes CX difficult to measure in a consistent way. Our experience helping customers create frictionless online interactions has shown that the results are often staggering.

One financial services organisation increased its loan application conversion rate from 36% to 51% in just four weeks.

Understand that different customers look for different experiences

Sales experiences are different for each customer and there are many different paths to purchase. Some customers want a high-touch experience from their bank with an experience created for them which is most convenient and comfortable. They want a needs analysis, product recommendations and guidance through the application process. Other customers just want a quick and easy 'checkout'. They have done their research and know exactly what they need. There are different paths-to-purchase for banking products that should cater for all scenarios.

> « *Avoka's proprietary data shows significant success for banks that have followed up on applications that were abandoned or saved and never completed.*

Just because someone doesn't complete a purchase doesn't mean they're not interested.

Taking retail giant Amazon as an example, if a shopper put something in their retail shopping cart, but does not complete the purchase, Amazon almost immediately generate reminder emails as well as targeted advertisements with the 'abandoned' product, which remind the shopper.

Applying for financial products takes time, and everyone is busy. So, if a customer takes the time to begin an application and goes to the trouble of filling out their name, email address and phone number, recognise that they are interested. If they don't complete the application (they may have been distracted, lost connectivity, or had a battery die…), you should still consider them a lead and follow up, or nurture.

Avoka's proprietary data shows significant success for banks that have followed up on applications that were abandoned or saved and never completed. One bank that followed up abandoned Personal Loan applications achieved a 40% conversion rate application.

Adapt or die – have a real-time strategy for improving the customer experience

Amazon has software and processes dedicated solely to continuously improving their customer experience through every channel that their platform can be accessed on. These processes are separate from any back-office systems used for supply chain management or inventory management, allowing for rapid and agile changes to the customer experience. The amazon.com site is constantly evolving, and they continually tweak little things like the shape, colour, text, icons and fonts on the Add to Cart / Buy Now button. All of these experiments are designed to make it easier for people to complete a transaction.

Separate your client facing CX such as digital account or loan applications from your core systems for ease. So often, banks build their CX directly on top of core back-office systems, inadvertently chaining the CX to the core and imposing limitations on the digital experience. As a result, CX experiments require full regression testing all the way through the core systems – which kills agility. A dedicated layer in the technology architecture focused on customer experience will enable safe experimentation in the CX without fear of introducing bad data into core systems.

By creating an individual and convenient customer experience, banks will put themselves way ahead of competitors. Your customers' lives are complicated enough, so do something radical and make doing business with you easy!

***Don Bergal**, CMO, Avoka*

AVOKA

FINANCIAL INSTITUTIONS ADJUST TO OPEN BANKING FRAUD

With the launch of Open Banking initiatives across Europe, there has been an initial backlash by consumers who worry that 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 perhaps these consumers' concerns are not entirely unfounded. But, on the positive side, Open Banking also provides a mechanism for banking innovation with new products and services well within the customer's reach.

Since Open Banking requires institutions to open up their environments to interact with third parties, this capability has led to the creation of some unique products, with other possibilities on the way. These new innovative ventures are already emerging. In Europe, they are moving 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 is regulated differently, the nature of the market is very competitive and embraces these innovations. Open Banking propositions like PayPal continue to grow.

Open Banking is seeing growth and expansion in additional ways. For one, 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.

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.

Then there are the possibilities of voice related options. When we hear the term 'Alexa,' we tend to think of Amazon's smart-speaker devices and the voice-activated artificial intelligence (AI) that allows us to speak to devices using natural language. In this emerging

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 individualised business needs. On Twitter, follow @_MaryAnnMiller

NICE Actimize is a leader in providing Autonomous Financial Crime Management. As the largest and broadest provider of financial crime, risk and compliance solutions for regional and global financial institutions, as well as government regulators NICE Actimize is consistently ranked as number one in the space.

Find us at www.niceactimize.com, @NICE_Actimize or Nasdaq: NICE.

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.

Open Banking Flavoured Fraud?

NICE Actimize has a strong 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. We see that APIs are clearly a different channel and the bank doesn't control the device anymore. We're already seeing issues with third-party providers, including such issues as insider fraud, point of compromise and stolen banking credentials. 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.

Mary Ann Miller,
Senior Director and Fraud Executive Advisor for NICE Actimize

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.

Effortless Customer Journey

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 changes in operations within the open banking environment, including such actions as how you react to a suspicious transaction, or how you try to re-authenticate the customer.

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 as it relates directly with the customer.

Perhaps the most important thing to remember here is that to the customer, a new channel should perform effortlessly. While improving security, financial institutions must consider the overall customer experience. Without that ease of use, all the innovation in the world of Open Banking could be for naught if the customer journey is made rocky and tiresome.

FINASTRA

Mitesh Soni,
Senior Director,
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BEYOND DIGITAL: THE EMERGENCE OF INNOVATIVE ECOSYSTEMS

Banks have been busy complying with regulatory demands. They have been reducing costs and dealing with routine technology maintenance. Meanwhile, many new Fintechs have emerged, and have gripped a share of the lucrative financial services marketplace. Last year, global Fintech funding topped US$31bn according to KPMG's Pulse of Fintech report. What does the future actually look like for Fintechs and incumbent banks?

Banks vs Fintechs: From competition to collaboration

Banks have been very successful at building robust, scalable, core systems, instilling a level of trust for consumers. In fact, some suggest that people are more loyal to a bank account than to a partner.

Meanwhile, Fintechs have captured the imagination of the millennial generation and early adopters. They've mastered the art of building systems at speed, developing rich networks coupled with agile execution.

Now the gap between Fintech and banking innovation is narrowing. From accelerator programmes to acquisitions, banks have been growing fond of Fintechs – tapping into their innovation engines, and succeeding in the process. A few years back, these two groups were competing like arch rivals. However, over the last 18 months, there has been a market shift towards cooperation, and a growing appreciation for the qualities each brings to the mix.

Banks are benefiting from the agility, speed and creativity bubbling out of the Fintech scene – a hotbed of talent, community, conversations and energy buzzing with possibility and disruption.

Fintechs are benefiting from long-established banking relationships and gaining the attention of senior executives in these organizations.

The birth of innovative ecosystems

Combining the economies of scale of the large banks with the economies of speed of the Fintechs, delivered through a common platform with multiple contributors, gives birth to a new, innovative ecosystem – a blended model of delivering value and providing greater choice for the customer. According to the recent McKinsey report, by 2025 $60 trillion in revenues will be accounted for by ecosystems – that's roughly 30% of global revenues.

Ecosystems typically have three important characteristics:

1. Bringing together many different service providers to deliver value for the customer
2. Supplying standardised core infrastructure services and facilitating community
3. Producing network effects and amplifying value to the customer.

As these ecosystems develop, they attract communities of creators seeking out new ways to deliver value without requiring deep pockets or experience. Such communities will become the source of innovation where students, ISVs, banks, Fintechs and entrepreneurs come together to design new products. Gone are the days where deep coding skills were a must in this environment. Instead, they are replaced by low code, designer toolkits with rapid deployment cycles. The focus has shifted from development to design using pre-packaged design components to invent new experiences.

The rise of the machines

Aside from ecosystems, technology has accelerated at an exponential rate – the Apple Watch is now twice as powerful as two Cray supercomputers. In terms of physical devices, we are witnessing an explosion in the growth of IoT devices, which surpassed the human population in numbers last year. IoT sensors can be used for anything from machine vision to temperature control.

Imagine, for example, using machine recognition to digitise the paper trail in the supply trade finance space, removing cost, operational risk and improving efficiencies for banks. Combined with AI and machine learning, these sensors could read and translate legal documents into digital records, freeing up large teams of lawyers for more value-add work, whilst improving efficiency.

Excitingly, the big software vendors like Microsoft and IBM are making services in artificial intelligence, big data analytics and compute power available affordably and conveniently in the cloud. Today, even a student developer can try before they buy industrial grade applications, supported by these publicly traded technology giants.

With so much technology capability, combined with large vendors turning their proprietary assets into easily consumable services, a whole new industry is opening up for entrepreneurs to create the next generation of personalised banking services at low cost. Robotics process automation (RPA) will increase the pace of digitisation across financial services, removing friction and reducing cost in the workflow. As the volumes of data being collected across the world continue to grow and Open Banking regulations encourage greater availability of this data to third parties, many new services are waiting to be created.

The future of finance is open

As we enter the dawn of a new banking era, the major ingredients that can push return on equity (ROE) beyond 10% will go beyond digitisation efforts and encapsulate end to end customer journeys. The emergence of innovative ecosystems that bring banks and Fintechs together, alongside entrepreneurs, student developers and other third-party providers, signals a positive shift for the industry. It is also a prime opportunity to embrace advanced AI, machine learning, voice recognition and APIs to co-create powerful new customer experiences.

Finastra and EFMA joined forces to find out what the industry thinks about Open Banking, the impact it is going to have on financial services, and what banks need to do to remain competitive and survive in this new banking landscape. The survey canvassed the views of 54 senior banking professionals, many of whom are already involved in implementing new strategies and changes in light of Open Banking within their organisation.

- Only **26%** of respondents surveyed feel ready for Open Banking
- Only **19%** have a comprehensive strategy to address Open Banking and PSD2
- The main challenge identified by banks is evolving their business model/changing the way they do business
- **61%** plan to make significant IT changes to comply with Open Banking and PSD2
- **85%** of respondents agree that a 'technology platform' will be key to their new IT architecture
- Only the largest **Tier 1s** can invest in their own private platforms, the vast majority of banks lack sufficient scale, expertise and time
- **Over half (58%)** of respondents surveyed believe an 'out of the box', 'bank as a platform' approach will help them address Open Banking and PSD2.

About Mani Nagasundaram:

Mani Nagasundaram is a Senior Vice President and leads the Global Solutions Team for Financial Services in HCL. A veteran of over 14 years with HCL, he has held a number of positions over the years at HCL.

In his current role, Mani is responsible for building and developing unique solutions for financial services clients across the globe. His focus has been on building propositions and capabilities for HCL around Legacy Modernization, Migration of Applications to Cloud, Modern Application Development, Application Enhancement and Digital Applications across the financial services portfolio. He is also responsible for driving key tech innovation and an agenda of client-focused partnerships across the division, through the creation of Co-Innovation Labs with key customers.

Prior to his current role, Mani managed the relationship with one of HCL's largest customers, globally growing the business multifold over an eight-year period. He has successfully managed the creation and operationalizing of shared services utilities for application management and testing on a larger scale for this customer, in addition to building a portfolio of businesses comprising modern and digital applications. He is widely credited in designing HCL's key propositions for financial services firms, bringing in his knowledge and experience of the business to diagnose and address technological solutions to trade issues.

Mani strongly believes that customer-centricity should be at the very heart of every company's business models – impacting every strategic decision and every technology deployment blueprint. He has implemented the same within HCL, often using his position to champion for greater customer involvement and business focus on everyday tech development. As a senior business technology leader, Mani is often invited to speak about IT services and the changing face of technology in today's world. He has spoken in multiple fintech conferences around the world including Innovate Finance, InsureTech Rising and the Netherlands India Business Meet.

Mani has a background in financial services, having worked with a large hedge fund prior to joining HCL. Based in London, he is an engineer and has an MBA from INSEAD in France. Mani is a social media enthusiast, and tweets under the handle Mani_ns.

RISE OF THE MACHINES

HOW AI & COGNITIVE TECHNOLOGIES ARE TRANSFORMING FINANCIAL SERVICES

Remember Deep Blue, the supercomputer that defeated legendary chess player Garry Kasparov in February 1997? That epic contest between human and artificial intelligence marked the first victory of a computer against a reigning champion under tournament conditions. And, it certainly provoked many more conversations in academia, industry and elsewhere about the forthcoming rise of the machines, and how technology could one day overtake humans.

Well, 21 years down the line, artificial intelligence (AI) is finally moving beyond the realms of research and sci-fi, and making its presence felt in the real world, amid an unprecedented convergence. Advancements in high-density parallel processing infrastructure and an extraordinary surge in the volume and type of data being generated are fuelling growing adoption of machine learning and other cognitive technologies. Also enabling this trend is the increasing adoption of cloud computing and mobility, as well as the open-sourcing of machine learning (ML) algorithm writing.

The Business Imperative

Like other industries, the financial services sector, too, has started using AI and related disruptive technologies, albeit on an incremental basis. Research and Markets expects the market for AI software in financial services to expand at a compound annual growth rate of 40.4%, from $1.3bn in 2017 to $7.4bn in 2022.

The business case for financial institutions (FIs) to leverage AI is pretty compelling. As ultra-low interest rates continue to impact their profitability, banks are eyeing opportunities to boost operating efficiency by reducing unscheduled downtime of systems, and "right-sizing" headcount based on evolving demand. Growing the top line through enhanced personalized targeting of offers and optimization of sales processes is also emerging as a focus area for FIs. The third major driver of AI adoption across the industry is the pressing need to comply with increasingly onerous regulations across different jurisdictions. Amid introduction of norms including the European Union's Payments Services Directive (PSD2) and the U.K.'s Open Banking program, banks now want to harness rich customer data for building better apps and services. Finally, finance is realizing the significant potential of enhancing marketing effectiveness and customer service via intelligent automation.

According to PwC's 2017 Digital IQ Survey, almost 52% of respondents belonging to the financial services sector cited ongoing "substantial investments" in AI, with 66% projecting significant investments by 2020. And, 72% of the senior management sees AI, ML and other cognitive technologies as a key source of competitive advantage going forward, the survey showed.

Emerging use cases

So, what are some of the notable emerging applications of AI and machine learning in the financial sector? While banks, asset managers and insurers have rolled out several pilots across the front, middle and back offices, let's look at the following key initiatives:

Credit and Insurance Underwriting: Lenders and insurers are using machine learning to process credit lending and insurance applications faster, and in a cost-effective manner, without diluting risk assessment standards. The key here is accuracy, scale and speed, with machine intelligence clearly proving to be far superior to humans in analyzing massive volumes of consumer data. For instance, FIs have begun using self-learning algorithms (SLAs) to mine millions of consumer data sets concerning age, job, marital status, credit history, and so on, in order to establish the risk profile of individual applicants.

Fraud Detection: Unlike conventional financial fraud discovery systems that were based primarily on a pre-defined checklist of risk factors and a complex set of rules, ML-driven fraud detection proactively spots "anomalies" and flags the same for security teams. The ability of intelligent algorithms to proactively anticipate potential fraud with an infinitely larger data set is likely to reduce false positives, instances where "risks" are flagged that turn out to be false alarm.

Workflow Automation: FIs are already using natural language processing (NLP) to automate certain business processes, in an effort to rationalize expenditure and boost customer satisfaction. Machine-based interactive customer service, in the form of chatbots, is gaining traction. Bank of America's intelligent virtual assistant, named Erica, harnesses predictive analytics and cognitive messaging to perform "day-to-day transactions", beside analyzing the unique financial requirements of each client and recommending relevant solutions.

JPMorgan Chase's Contract Intelligence (COiN) platform, meanwhile, deploys image recognition software to review contracts and other legal documents in seconds, as compared to the 360,000 hours it takes to manually scrutinize 12,000 annual commercial credit agreements.

The Bank of New York Mellon, the giant custody bank, has implemented "bots", robotic process automation (RPA) in particular, to enhance operational efficiency. The firm says RPA has enabled it to achieve 100% accuracy in account-closure validations across five systems, and improve processing time by 88%.

Asset Management: So-called "robo-advisors", such as Betterment, are offering algorithm-based, automated financial planning solutions to clients, helping them build investment portfolios that are aligned with their individual goals and risk tolerance. Wealthfront leverages AI to track account activity of each customer to mine account holders' spending and investing patterns, in order to be able to provide bespoke services.

Algorithmic Trading: Many hedge funds and other "buy-side" participants in financial markets are using complex AI systems to make thousands or millions of trades in a day. These systems, based on machine learning and deep learning, are facilitating "high-frequency trading" (HFT) by analyzing a wide range of market factors in real time.

Conclusion

As the pace of technological innovation breaks down barriers, the financial services industry needs to prioritise its goals and develop long-term strategies. We are already seeing signs of a certain maturity among CIOs as they weigh in on their investments. Recent tech developments, such as automated assistants that Google showcased in their recent I/O and intelligent image recognition has great potential for financial services, and firms are now deciding their investments with an eye towards capturing the next generation of digital-native customers.

While the adoption of AI and other cognitive technologies will only accelerate across the financial services sector, FIs will have to keep a couple of things in mind, in order to maximize ROI.

- One, the quality and reliability of data they gather and process must be beyond doubt. The failure to feed in top-quality data will result in poor outcomes, as far as AI and ML-based analytics initiatives are concerned.
- Second, financial firms will have to factor in the need for robust data security, while designing and implementing AI programs.

The journey ahead will not be easy, but banks and insurers must keep experimenting and iterating, if they are to remain relevant in an increasingly uncertain world.

PAYBASE_

PAYMENT FLOWS HAVE CHANGED. PAYMENT PROCESSING HAS NOT. THIS IS A PROBLEM.

THE PAYMENTS INDUSTRY'S RELUCTANCE TO EVOLVE IS HARMING BUSINESS INNOVATION, BUT SOLUTIONS ARE APPEARING.

In recent years we've seen a shift in the way in which we purchase goods and services. Online marketplaces, gig economy platforms, sharing economy platforms — however you want to describe them, businesses have emerged that do not fit the standard model of commerce.

These businesses, which we will refer to as 'platform businesses', work on the principle of connecting buyers and sellers. They do not sell anything themselves, but exist to facilitate commerce between others. Whilst Uber and AirBnB are the most notable examples, achieving global success and truly revolutionising their industries, there are many firms operating in this way. We now see platforms which connect dog walkers to dog owners and those owning camera equipment to aspiring filmmakers.

The success of these businesses may give the impression that they have faced no challenges. This is not the case. For every platform business that has succeeded, dozens more innovative and interesting businesses have fallen by the wayside. Why? Many encounter the same issue: payments.

In the standard model of commerce, payments work as follows: a customer offers money in exchange for a good or service. Nice and simple. For platform businesses, it is slightly different, as there are more parties involved. Now, if a customer wants to rent a car for example, they might not pay a rental service which owns many vehicles, but use a platform to choose a car from a list of individuals who are willing to rent out theirs.

Payments must therefore be routed between multiple parties, a task that the legacy technology and legacy thinking of the payments industry make incredibly difficult. The issue of routing payments presents platform businesses with several options.

The most common method is to partner with a Payment Gateway/ Acquirer. By doing this, all payments from buyers are taken in centrally by the platform. The business takes its cut of the sales before then reconciling with its sellers (or 'micro-merchants'), sending money manually to bank accounts. This creates high levels of operational overhead and can prove to be costly through the number of transfers that need to be made. It also prevents their micro-merchants being paid quickly.

Alternatively, platforms can attempt to create their own eMoney infrastructure, as AirBnB did. With electronic or eMoney, all funds are held within one bank account, with balances simply being adjusted in an electronic ledger when transfers are made. This offers more flexibility when routing payments and is a compelling option, but only if you can afford to hire many in-house experts and are prepared to wait months to be granted an eMoney licence, as well as meet all regulatory standards.

Finally, a business may wish to avoid the hornet's nest altogether and not offer a payment solution. Whilst Gumtree has had success with this model, it is out of touch with modern consumer expectations. Many people are not comfortable or simply not able to meet in person to hand over cash for a product. If making a user leave a platform to complete a transaction is bad user experience (UX), making them leave their house must be on another level.

Paybase was created to address this severe imbalance between business innovation and payment innovation. Paybase creates eMoney accounts for all parties, meaning payments can be sent directly between buyers and micro-merchants with the platform automatically taking its percentage. No reconciliation required, no waiting for funds.

Not only this, but Paybase gives the platform complete flexibility on their payments routing. Our custom-built Logic Engine allows firms to set rules based on their business model. For example, they may want to charge 5% to micro-merchants making £500 a month, but only 2% to micro-merchants making more than £1000. Rules can run for any period of time and can be altered in real-time, allowing the platform to experiment with how and when they charge fees or even create loyalty programmes. This unprecedented flexibility takes payments from being an uncomfortable afterthought to a weapon in a platform's arsenal.

If a platform business is able to wrestle their way through payments, they still face the challenge of compliance. This can involve having to partner with further suppliers to ensure all Anti-Money Laundering, Counter Terrorism Financing and Risk Management requirements are met. With recent regulatory changes such as PSD2 increasing the number of hurdles to market, the task has become greater still.

Using Paybase's Logic Engine, businesses can take control of their compliance and create a Risk Management system that works for them. A marketplace may want to flag a transaction over £200 on an account created in the past 24 hours, but allow a £500 transaction for a more established account, for example. Transactions could be blocked on accounts that have added more than X amount of cards, or on accounts that have changed address X number of times. Paybase has also built a Customer Due Diligence Processor, automating background checks and collecting more information on individuals or businesses with higher levels of risk.

These technologies, coupled with training and support offered by Paybase staff, enable firms to not only meet compliance requirements but give themselves the most accurate methods of combating fraud.

There are debates that surround the sharing economy, but what cannot be denied is that for the consumer, platform businesses have been a game-changer. The platform business model is upheaving the way we access goods and services, giving people more ways to buy, sell and rent. With taxi-hailing and holiday accommodation effectively conquered, it is highly likely more services will arrive to transform sectors — giving people more ways to both make money and save money. Or perhaps, the next sector-shaking platform is already out there but is lost in this 'flexibility gap' between innovation and payments. We can't allow this to continue.

The payments industry must step up to this change in demand. At Paybase, we're showing that not only can payments, compliance and risk management be met in a more efficient way, but that they can be harnessed to become a genuine part of a business's offering.

About Anna Tsyupko:

CEO and co-founder of Paybase

Anna manages the overall direction and strategy at Paybase, working closely with potential partners and suppliers whilst overseeing all aspects of the business. She has a passion for payments, and in particular the opportunities that eMoney infrastructure can offer businesses that require more than a simple payment gateway. Her goal is to democratise payments, by offering a solution that is affordable, accessible and flexible.

In 2017 Anna was shortlisted by PayExpo Europe as one of the 'Payments Power 10' and was asked to speak at Wired London. Anna graduated from the University of Cambridge and earned her Masters at the University of Oxford, before taking up senior positions in private equity.

FROM COMPLIANCE TO COMPETITIVE ADVANTAGE

Institutions in the capital markets sector are facing both regulatory and competitive pressure to gain a real-time, end-to-end view of every trade they make. But detailed monitoring of the complex value chains in capital markets is only possible with the right tools. This article examines the challenge and discusses the solutions that can meet it.

As with most regulatory compliance demands, thus far the minimum has been done with little thought given to how transformational change could positively impact the business, forcing it to look for better ways to do things. Widely used techniques in machine learning, for example, could significantly enhance a bank's operations and also prepare the business for any unforeseen bumps in the road.

In search of transparency and accountability

The EU's second Markets in Financial Instruments Directive (MiFID II) is here and is busily transforming the financial industry with its demands for greater transparency and tighter standards of accountability.

MiFID II, which took force at the beginning of 2018, massively extends the scope of the original 2007 directive, making it hard for any organisation with a stake in the EU's capital markets sector, however minor, to escape its reach.

With the aim of offering maximum protection for investors and greater visibility for regulators, the directive demands full transparency for every class of capital markets asset, from equities to fixed income investments, from exchange-traded funds to foreign currency deals. The new rules cover all aspects of trading within the EU, affecting every corner of the financial services industry, including banks, institutional investors, exchanges, brokers, hedge funds and high-frequency traders.

The intent is to push trading towards exclusively electronic methods, which come with better audit and surveillance trails. Institutions will have to report more information about most trades as soon as they happen, including all information on price and volume. The rules further mandate that institutions need to be in a position to report any suspicious trades immediately and to spot unusual patterns of activity, whether fraudulent or not. Saying 'I'm sorry' after the event and paying a fine is no longer good enough.

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®

MiFID isn't the only regulatory driver forcing finance houses to look at improving the monitoring of their business. The Second Payment Services Directive (PSD2) requires banks to open their payments infrastructure and customer data assets to third parties. And many institutions are facing uncertainty over what will happen to the regulation of the sector following UK's exit from the EU, and are therefore planning for all eventualities.

A golden opportunity

With regulators on the offensive to ensure that traders have full visibility of what's going on in their environments, it would be easy to see the matter as a tricky compliance hurdle and nothing more.

But it is important that all capitals markets stakeholders understand what is up for grabs here. It is crucial that they do not write off the need for better surveillance of trades as simply a regulatory box that needs ticking off. Unlike certain regulatory burdens, this one can and should be seen as an opportunity which, if grasped, has the power to transform an entire trading operation for the better. If managed right, the opportunity is a fast track to competitive advantage and a brighter, securer future for the business.

The key to this transformation lies in the power of technology. The more forward-looking players in the trading sector have already spotted the potential of adopting a software platform, such as that which TIBCO has implemented for a number of capital markets customers. Such a platform gives them the power of end-to-end trade surveillance, and rather than being a narrowly focused solution to a single need has the potential to be a framework that optimises all kinds of business processes. Such a task is not easy, and there is a vast amount of network, systems and infrastructure that need to be monitored. The important difference in this model is that trades are monitored not by human agency but by machine algorithms that are more accurate and effective at spotting degradation and at predicting what could happen next.

A powerful platform can edge the trader ahead of rivals in efficiency, reduce fraud and money laundering, result in better knowledge of the customer, and all this while meeting the most demanding of regulatory hurdles with ease, now and into the future. The right surveillance platform has multiple use cases, across the trading floor and reaching up to the boardroom.

Getting the right platform

At this point, some banks may be arguing that they already have plenty of tools that give them visibility of their business processes. What's the value of one more? The problem in reality is that they probably have too many tools, each a point solution for a single problem. Their IT is set up in such a way that each problem has led to the deployment of its own solution. This does not add up to true visibility, and moreover requires that all these disparate tools be maintained in isolation while delivering next to no synergy between them.

What traders need is a platform that offers a centralised destination for every event, wherever it is happening in the business. They need a dashboard that provides information on every trade, every kink in the supply chain, every node in the infrastructure that carries the trades, illuminating where problems might be occurring now and helping to pre-empt future problems before they happen.

With this kind of platform, information of all sorts is fed in, from routers, systems and applications. A vast number of sources in the trading chain all appear in a single real-time view. This gives an operations team a look at the trading flow end-to-end and the ability to communicate relevant information out to traders so that those at the sharp end of the business know what's going on. This is not just about the present, but the immediate future, with the platform able to build in predictive models around the data that's coming in. If the information coming back displays activity that could lead to a problem, then the trader can know about that before the problem occurs.

Information about what happened yesterday or an hour ago is no use. A platform must highlight deviations from 'normal' trading patterns in real-time. It must handle multiple streams of data and prep that data for human consumption so that correct decisions can be made in a timely fashion.

If a trading system is in any danger of an outage, then a surveillance platform must offer the data points required to identify the root of that outage, instantly and in an aggregated and coherent format.

The right platform will allow support teams to get in front of issues before they have any customer impact, improve customer service and ensure smooth running of the whole operation. This means having the ability to aggregate input from millions of data points, along with the power to turn raw data into useful and actionable information. In banking, time is money, and time is measured in tiny fractions of a second.

We are not talking about amounts of data that traders will already be used to – we are talking about massively more data than they ever dreamed existed. An inevitable result of the scrutiny demanded by MiFID II will be a wave of data, likely to be measured in petabytes, which must be monitored and protected. Clearly, tools with a high degree of sophistication are needed to ensure compliance.

The trading industry was the first to use algorithms for execution so they are no strangers to this world. The same techniques are now being used to better understand what is happening in the entire ecosystem not just when to execute trades.

A platform must do more than keep the trader in the picture with information on activities they are already aware of. It should have the power to prompt solutions to problems the trader either didn't know they had or old problems that previously went unsolved.

And every trading environment is unique, which means a flexible framework approach is the best way to get the trader where they want to go, as accurately as possible.

Achieving competitive advantage

Legislation around end-to-end trade visibility requires increased self-regulation by market participants and the clock is ticking to get this right with directives like MiFID II already in force. Only software can enable this effectively. By deploying the right surveillance framework, you are not just ticking a regulatory box but creating competitive advantage, enjoying efficiencies and driving business process optimisation.

Regulation plus operations plus machine learning means the regulatory burden can now be seen as a positive impact on the business not just a drag or bumps in the road to innovation.

Regulation and potential fines aside, it is in everyone's best interests for traders to adopt some form of surveillance that enhances visibility and transparency while assisting in minimising risk and avoiding losses due to rogue trading. But there is only a short window for decisive action before ground is lost to faster movers.

sibos

SYDNEY

22 - 25 Oct 2018

Mohammed Kateeb
Group Chairman & CEO
Path Solutions

Mohammed Kateeb is an established leader, known for being results-driven, dynamic and highly entrepreneurial. He has a diverse experience in building businesses, teams and identifying and capitalizing on market opportunities for over 30 years in the USA, UK and the Middle East. Before joining Path Solutions, Kateeb has spent 11 years as an executive with Microsoft. He is known as a key contributor to the region Telecommunication, Media and Information Technology industries. With a laser focus on innovation and quality, Mohammed has rapidly positioned Path Solutions as the World's Number One Islamic Banking Software Provider and the dominant player in its field, earning multiple awards in recognition of its continuous commitment to the Islamic financial services industry.

PATH SOLUTIONS: Driving Innovations in Islamic Finance

Financial IT: Growth in digital banking and the implementation of Blockchain technology provide great opportunities for financial services. From your point of view, how ready are Islamic financial institutions? And how is Path Solutions going to keep up with this constantly evolving technology change?

Mohammed Kateeb: The financial industry as a whole, and Islamic financial institutions are no different, realized that Blockchain technology is a game changer and a major disruptor that cannot be ignored. Blockchain provides the technology infrastructure to allow institutions and individuals to communicate and exchange value in a secure and credible manner. It has the potential to remove the middleman in many transactions and allows trusted contracts to be exchanged efficiently. Thus, almost every financial institution is either planning or already working on POC around Blockchain.

We, at Path Solutions have identified the importance of this technology early and we have already few projects in the development around this important evolving technology. Our job is to always empower our clients with the latest technologies, and we will continue to do so. Path Solutions spends over 30% of its revenues on R&D annually, focusing on cutting-edge technologies that empower the digital transformation such as mobility, open banking, AI, analytics, and of course Blockchain.

Financial IT: How the Islamic banking and financial industry can benefit from the disruptions in digital banking?

Mohammed Kateeb: Digital banking as a disruptor benefits the financial sector, as it expands its reach and empowers it to play part in a much larger ecosystem that is not currently available to many financial institutions. In addition, it provides much enhanced customer experience at much lower cost. It is also true that it comes with tremendous risk because different types of Fintechs and even technology companies are challenging the business model of the current financial institutions. But I believe that banks have tremendous trust value built into them and will not be ignored in this disruption and will continue to be major players in the new ecosystem. Many banks may transform their current roles by focusing on their different competencies but will continue to be very relevant in the future. All depends of course on the ability of a financial institution to digitalize and transform itself to offer open digital banking services.

One specific benefit to Islamic finance that comes from digitalization is the reach. Muslim populations around the world are estimated to be over 1.6 billion people, and over 90% of them are not included in the financial sector. Through technology, Islamic finance will be able to achieve financial inclusion for the majority of these people.

Financial IT: What does Blockchain mean for the Islamic finance sector? In your opinion, what are the potential threats and opportunities in deploying Blockchain technology in Islamic finance?

Mohammed Kateeb: Blockchain technology has the potential to enhance security and the speed of execution of the overall banking transactions especially cross-border ones, track physical assets, and provide the ability to exchange smart contracts in a secure and trusted manner, and these three could revolutionize the Islamic finance ecosystem if implemented correctly.

The nature of Islamic finance is asset-based. Therefore, tracking of assets is important pillar of Islamic finance. In addition, Islamic finance is documentation-heavy and Blockchain provides the infrastructure to exchange these documentations securely and efficiently. Self-execution with predefined conditions and sequence in smart contracts can improve Sharia compliance and reduce operational processes, which will impact the overall cost and business efficiency.

The biggest challenge for the Islamic finance industry is its ability to deploy this technology in a timely manner and not to fall behind the conventional segment in this race. It is important for the Islamic finance ecosystem to be developed independent of the conventional one, and to include strong Islamic finance Fintechs in addition to banking institutions.

To achieve this objective, the availability of trained resources having both Sharia and technological expertise is critical. In addition, the regulators in countries practicing Islamic finance are usually conservative in nature. It is also of critical importance that the regulators allow for the development of this ecosystem through advanced regulations.

Financial IT: How do you envision Path Solutions growing in the area of digital banking within the next five years?

Mohammed Kateeb: Path Solutions has been investing in a digital strategy for many years now. We started by transforming our core banking system to a fully open architecture digital platform that supports open banking initiatives. We built intelligence and analytics in all different components of the platform, we exposed all our services through open APIs, and we have heavily invested in redesigning our eChannels, and also integrated with social media platforms.

We have already been working with many of our clients by empowering their digital transformation strategies, and I envision Path Solutions will continue to do so for the next five years.

We will also continue to invest heavily in R&D, ensuring the completeness and competitiveness of our platform. Our main objective is to continue to be the number one Fintech company for Islamic finance.

path solutions
Powering Islamic Financial Markets

THE BUILDING BLOCKS OF THE FINANCIAL FUTURE?

FEW TECHNOLOGIES SINCE THE WEB HAVE GENERATED AS MUCH NOISE AS BLOCKCHAIN – AND IN PARTICULAR ITS MOST WELL-KNOWN APPLICATION, BITCOIN. BUT IS BLOCKCHAIN REALLY AS SIGNIFICANT AS ITS PROPONENTS CLAIM, AND CAN IT REVOLUTIONISE FINANCIAL SERVICES?

Simply put, blockchain is a digital version of an old-fashioned ledger – a place to record the details of transactions. However, unlike conventional ledgers, blockchains are distributed across every user of the network or platform; there is no single point of access, and no central authority with overall control. No one person or organisation can make changes to records on their own; instead, they happen by consensus, with other users of the network authenticating and authorising every addition to the ledger. That decentralisation is one of the most important aspects of the blockchain design – a characteristic that makes it not just completely transparent but also secure.

By nature, blockchain technology is completely neutral. Anything that can be recorded digitally can be stored in a blockchain-based ledger, whether it's a cryptocurrency such as Bitcoin, or something such as a set of shipping records held by a retailer. Even fiat currencies can be transferred using a blockchain system in order to leverage blockchain's benefits around speed, cost, transparency and security of transfer. That versatility and adaptability is one of the reasons why more or less every industry is researching or investing in blockchain-based solutions to customer problems.

Blockchain and financial services: Where is the opportunity?

There are a number of principal reasons why blockchain is of such interest to the financial services industry. The first is that it provides a completely transparent and entirely visible account of every event within a network, whether that's a client verification,

Paysafe

the trade of assets, or even an insurance claim. These events are stored in plain view forever; unlike traditional ledgers, a blockchain uses advanced cryptographic algorithms with an aim to ensure that it is not altered or erased. It's the ultimate tool for transparency, which not only means more open relationships between financial institutions, but also helps verify customers to improve KYC initiatives.

Blockchain's cryptographic design also makes it very difficult for third parties to manipulate. Due to their centralised nature, most banking systems around the world have a specific point of failure that, when breached, can give hackers access to the entire system. In contrast, there's no single point of failure within a blockchain network; it's a self-auditing ecosystem which checks its own integrity every few minutes. Proponents argue that this dramatically improves the security of the system.

Another of blockchain's landmark benefits is in its ability to execute smart contracts, in which value of some kind is moved around based on previously issued instructions, such as a futures contract, a property deal or even a personal will. Smart contract technology is extremely powerful because it is capable of facilitating high levels of automation, which is desired for efficiencies and accuracy purposes, without surrendering overall control of the system. Smart contracts manage this through carefully monitoring and rejection of anomalies that do not comply with a set of pre-issued instructions of the contract.

Daniel Kornitzer,
Chief Business Development Officer,
Paysafe

Breaking the chain

Sceptics rightly point out that there are still some significant barriers to overcome before blockchain is a genuinely mainstream component of the financial services industry. Perhaps the biggest problem is performance; an inevitable issue as the number of users of any given blockchain grows, thanks to the decentralised design and the way in which changes have to be notified to every node on the network.

This is particularly problematic in banking, where financial organisations have long since discovered that the Bitcoin network simply can't support the volume of real-time transactions required for large-scale service offerings. And ultimately the reality of poor performance has a negative impact on customers, whether that's in scanning a monthly bank statement, making a withdrawal from an ATM, or making an online banking transaction. Smaller private blockchains and alternative cryptocurrencies go some way towards solving these problems, but soon become victims of their own success.

There's also a big question mark around exactly what role existing payments providers will play in a new blockchain-enabled world. At some point, customers may need to put money into third-party platforms such as gaming sites, application stores, or trading networks, and want to be able to take it out again to spend in the real world. And it goes without saying that these third party platforms need to make that process as easy as possible if they're to attract customers – as easy as the digital wallets and direct debits they already use.

Today's cryptocurrency exchange processes and apps are often extremely cumbersome, involving considerable technical knowhow and, frequently, a serious leap of faith. Perhaps the biggest benefits that today's payments processors can bring to the blockchain party are confidence and ease of use; both critical factors in their own success in the fiat world.

Despite some concerns about the sustainability of blockchain-based platforms, they seem sure to be a rapidly expanding force in the financial world and will remain as such for the foreseeable future. While instability in the price of Bitcoin and a general cautiousness around a currency without any underlying assets to support it are causing some observers to question the value of blockchain generally, ICOs are offering good alternatives and promise to reduce the specific set of risks that Bitcoin offers. Whether their concerns will carry any weight remains to be seen; for now, the potential of blockchain has created an unstoppable momentum in the development of the technology, if not yet its broader adoption. But if the pace of evolution in financial services is anything to go by, it really is only a matter of time.

T8EX CRYPTOCURRENCY EXCHANGE - CASHING OUT OF YOUR CRYPTO HOLDINGS

The global marketplace for cryptocurrency exchanges is becoming more competitive with each passing day. Nonetheless, there still remains a huge gap dividing cryptocurrency exchanges and the 'last mile' issue of how to actually cash out.

Transitioning from any cryptocurrency into local fiat is undoubtedly the primary objective for any individual trader and investor. And yet, it appears abundantly evident that most exchanges are really ONLY interested in seeing you trade, just for the sake of trading, rather than actually providing the needed hardware tools & accessories that empower crypto enthusiasts to maximize their currencies in the 'real world.'

T8EX Cryptocurrency Exchange, also known simply as 'T8EX', based in Melbourne, Australia, is very much a game changer in the world of cryptocurrencies. T8EX has secured a world-class set of tools via exclusive third-party partnership and further propelled with proprietary technology, all of this allowing T8EX to achieve undisputed market success in the crypto universe. First and foremost, T8EX has direct collaboration with TiENPAY Tech Inc., a Philippines-based firm with global payment solutions ready at hand. TiENPAY's payment gateway solutions includes a China UnionPay PrePaid Debit Card that allows cryptocurrency holders and traders to come interact on the T8EX platform and exchange for equivalent values in terms of fiat valuations such as US Dollars, Hong Kong Dollars, as well as Philippine Pesos. Anyone who signs up for an account on T8EX is expediting several key steps for the Know Your Customer 'KYC' process. This Debit Card is an excellent elementary tool which allows crypto adverse users to quickly and easily dive right into the world of cryptocurrencies using an already well-known hardware tool.

A second revolutionary tool which T8EX is also primed to distribute across the globe is a world-leading Cryptocurrency Point-Of-Sale 'POS' Machine. T8EX is the heart, soul & the market making mechanism for the retail expansion and success of Cryptocurrency POS Machines across the globe. The future is here, and again in partnership with TiENPAY, utilizing TiENPAY's hardware solutions, Bitcoin, Ethereum, T8EX's own token, as well as dozens of additional tokens are set to be vigorously exchanged and bartered via price call mechanisms, direct trading as well as up to the split-second token valuation trading updates, all via the T8EX Ecosystem. Anywhere from hotels, restaurants, casinos, retail shops & countless other 'brick and mortar' establishments, everyone is now able to serve as their own Cryptocurrency ATM and retail access point outlet. Still more, T8EX is set to offer 20 listed pairs by the end of 2018 and an additional 50 pairs within the next calendar year.

To clarify, T8EX is a Utility Token focused exchange, and therefore does not host security tokens at this point in time. T8EX does not deal in fiat.

One final advantageous tool further empowering the T8EX Cryptocurrency Exchange is an earth-shattering proprietary technological advancement for Near-Field-Communication 'NFC' Cards. These cards will soon be embedded with a cryptocurrency 'hot wallet' address, thus further tapping into the massive global marketplace of new cryptocurrency daily users. The unification of NFC Cards and POS Machines allows any token to quickly achieve massive 'scale up' opportunities.

In the bigger picture, T8EX is confident that the exchange will achieve such ambitious targets, such as one million users by 2020, thanks in large part also to on-boarding more and more tokens. Each token always has a healthy percent of token holders who are swift and proactive in their overall cryptocurrency & token ownership. Therefore, T8EX is currently all set to be the epicenter of activity for token buying and selling, given that there is immense upside for token owners to interact within such a large pool of liquidity, thanks again to TiENPAY's cryptocurrency cash out hardware tools provided.

THE ROYAL WEDDING AND MONEY 20/20 EUROPE

WHAT DO THEY HAVE IN COMMON?

Katherine Emirosan,
Managing Editor

Money 20/20 Europe will take place at the Rai, in Amsterdam, on 4-6 June 2018. Like the wedding on 19 May of TRH the Duke and Duchess of Sussex, this will be a highlight of the year.

The happy couple, as well as literally thousands of people who planned and worked to make the royal wedding a success, have had to deal with many issues since Prince Harry and Meghan Markle (as they were then known) announced their engagement on 27 November last year. Now, after the huge event, the newlyweds have to make marriage work.

It seems to me that this year's Money 20/20 Europe event marks the beginning of the main challenge – for financial institutions, Fintechs and others – from Open Banking. There has been a lot of thinking and preparation. However, as this edition of Financial IT makes clear, the time has come for financial institutions and Fintechs to use real solutions to solve real problems. The real problems include compliance with the requirements of PSD2, GDPR and MiFID II, fighting fraud and many others.

Of course, Money 20/20 Europe is not just about Open Banking. It has long been a key forum for the best and brightest in the dynamic world of payments. As any regular reader of Financial IT would know, numerous shifts are underway simultaneously. Last year was the year of NFC contactless payments, sort code changes, biometrics, payments bracelets, blockchain and cryptocurrencies. This year is the year of customer experience (CX) in the context of the new regulations. Mastering the human-centered approach will be the key to success for many financial institutions that carry out business in an omnichannel way.

Looking forward, shifts include the rise of chatbots, message apps (WeChat, Facebook and Telegram) and peer-to-peer payments. Over the coming years, robotic automation and machine learning will play much greater roles than they do today.

Although future Money 20/20 Europe conferences are unlikely to follow easily identifiable landmarks such as the beginning of PSD2, MiFID II and GDPR, each will in its own way be the starting point for real work on one front or another. Payments conferences are more numerous, and affect far more people, then even the most spectacular royal wedding.

Financial IT

Innovations in FinTech

Financial Technology Buyers' Guide

June 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

COMPANY CONTACT DETAILS	
Contact	Sales Department
Job Title	Sales and Support
Contact address	110 High Holborn, London,WC1V 6EU
Telephone number	+44 207 653 3800
Email Address	sales@accuity.com
Homepage address	www. accuity.com

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	
Contact	Martina Jeronski
Job Title	Head Global Marketing
Contact address	Heinz-Nixdorf-Ring 1, 33106 Paderborn, Germany
Telephone number	+49 (0) 52 51 / 693-3375
Email Address	martina.jeronski@aevi.com
Homepage address	www.aevi.com

allevo THINKING EVOLUTION

Allevo plays in the financial services field and provides software solutions that help banks, companies, microfinance and public administration process financial transactions and achieve compliance.
The Romanian company uses agile methods in the software development lifecycle process, leveraging a long lasting customer intimacy relationship and easing access to newest technologies. Our team places great focus on providing stellar services to customers, making sure help is available when needed.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	1.35 mil. Euro (2017)
Number of Customers Total	50-100
Number of Employees	50
Inception	1998
Geographical coverage	Europe, Africa

COMPANY CONTACT DETAILS	
Contact	Alina Enache
Job Title	Sales Manager
Contact address	23C Calea Vitan, floor 3 031281 Bucharest, Romania
Telephone number	(+40) 21 255 45 77
Email Address	sales@allevo.ro
Homepage address	www.allevo.ro

AVOKA

Avoka creates customer acquisition and onboarding journeys in financial services, government and other industries. For account opening, lending applications, and business onboarding, Avoka Transact creates outstanding experiences that accelerate customer acquisition and time to market. By focusing on the customer journey portion of digital banking transformation rather than slower moving back-office processes, Avoka makes organizations more competitive and agile. Avoka solutions connect institutions to a wide range of FinTech providers, eliminating the multiple integrations needed to create a complete digital customer journey.

COMPANY PROFILE	
Company type	PLC
Annual turnover	Undisclosed
Number of Customers Total	150+
Number of Employees	260
Inception	2002
Geographical coverage	Global

COMPANY CONTACT DETAILS	
Contact	Susan Holmes
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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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CGI

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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COMPASS PLUS
Infusing Tradition with Innovation

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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computop
the payment people

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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Currencycloud

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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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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fiserv.

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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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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iSignthis (ASX: ISX / DE_FRA : TA8) is a leading payment and identity technology company. The company's core services include remote identity verification, payment authentication and processing and card acquiring services offered through our patented Paydentity™ and ISXPay® solutions. By converging payments and identity, iSignthis enables online businesses to on-board paying customers in 3 to 5 minutes, offering high conversion rates and a global reach to any of the world's 3.5Bn 'bank verified' card or account holders, whilst meeting compliance requirements to an enhanced customer due diligence standard. This allows our customers to stay ahead of the regulatory curve and focus on growing their core business.

COMPANY PROFILE	
Company type	Regtech
Annual turnover	Undisclosed
Number of Customers Total	20+ top tier, mostly regulated & licensed entities
Number of Employees	40
Inception	2013
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

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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path solutions

Powering Islamic Financial Markets

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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PAYBASE_

Paybase is an end-to-end payments platform that has achieved industry recognition for revolutionising the world of finance. In an industry fraught with legacy technology and legacy thinking, businesses needing to facilitate payments between multiple parties often have to work around payments, restricting their ability to build innovative, user-friendly products.

Paybase changes this, offering businesses a truly flexible payment system that suits their needs and matches payment experience to user experience. This makes Paybase perfect for marketplaces, gig/sharing economy platforms and products with complex payment requirements.

COMPANY PROFILE	
Company type	PLC
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	20
Inception	2016
Geographical coverage	United Kingdom

COMPANY CONTACT DETAILS	
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pendo systems

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

Pelican provides banks and corporates with solutions that enhance, streamline and secure the payments life-cycle. With over twenty years of expertise in the practical application of Artificial Intelligence technology to payments and financial crime compliance, Pelican partners with its customers to deliver innovative and agile solutions and drive growth. To date, Pelican has enabled outstanding efficiency benefits and increased speed to market for customers in over 55 countries, processing more than one billion transactions worth over US$5 trillion. Pelican is a global company with offices in New York, London, Amsterdam, Dubai, Mumbai and Hong Kong.

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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PPRO

the payment professionals

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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Profile Software

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®

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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Ripple

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

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

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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Volanté

Business Information Agility

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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