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Financial IT

Innovations in Technology

Dharmesh Mistry,
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for Temenos

AN ACCOUNT OF THE FUTURE

FINANCIAL SERVICES 2016 & 2017 – LOOKING BACK AND LOOKING FORWARD

Tim Difford,
Strategy & Innovation Director
for Sopra Steria Financial Services

VIRTUALLY REAL – PAYMENTS THROUGH A HEADSET, REALLY?

Ralf Gladis,
CEO, Computop

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Parth Desai,
the founder and CEO
of Pelican

bpm'online

Key pillars for building a successful omnichannel banking experience

In order to succeed at establishing a successful omnichannel banking system, banks have to carefully evaluate their customer data and identify the most relevant touchpoints of interaction with their customers. Another aspect critical for building an effective omnichannel banking is determining what the complete experience means for their customers. Analyzing this data will provide essential information pertaining to user experience which would help banks to build an illustrative blueprint on where and how the bank should interact with their clients.

Consistency

No matter what channel an inquiry is submitted through, banks need to answer it in the same manner. It is rare that a customer engages with a brand through a single channel (web, mobile, branch, contact center, etc.). Poor customer service over one of the channels can spoil the history of relationships with this client.

Internal alignment

A bank needs to break down its internal organizational barriers to address the challenges of omnichannel service. For example, a simple transaction in which a customer orders a service online and wants to complete it in-branch can create issues within an internal system that has not been structured to accommodate the fluidity between channels.

Transparency

While there ar e occasions where product availability will vary by channel, it is essential to make it very clear to customers where and how they can find what they are looking for. By setting expectations, a company avoids creating unnecessary disappointment.

Measurement

Traditional behavioral metrics struggle with omnichannel experiences. Only by truly understanding how the customer evaluates the experience will help banks to understand if they are meeting the needs and expectations of their customers.

Benchmarking stats

44%

Only 44% of respondents say they are satisfied with the consistency of the experience their bank provides across

19%

Only 19% of banks report integration of online, mobile and social media on a common platform.

83%

83% of bank customers are ready to switch to another bank if the bank presents a slight hint of deception.

10-15%

Banks only process about 10-15% of available data. Very often, this data is in business silos or functionally separated from the rest of the relevant data sets.

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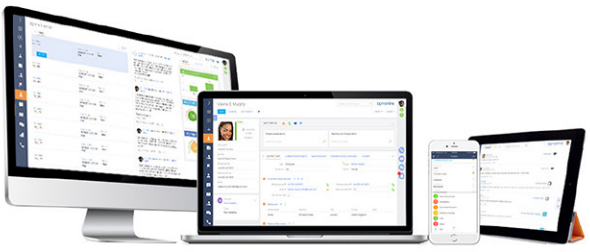

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Financial IT

2017: THE YEAR OF THE FOURTH INDUSTRIAL REVOLUTION?

Andrew Hutchings,
Editor-In-Chief

Could it be that technological change really captures the popular imagination - and the headlines – next year?

In the future, historians will almost certainly look at 2016 as being a year of huge political shifts. As this letter is being written, the results of Italy's constitutional referendum and the re-run of Austria's presidential election are not yet known. Anti-establishment sentiment has in the last few weeks produced U.S. President-elect Donald Trump as well as Brexit - the UK's (probable) departure from the European Union.

However, there are other huge changes that are underway. Some are geopolitical, such as China's extension of its economic and military power in South East Asia. Many are technological, as even a random selection of articles from this year's editions of Financial IT would indicate. Some are economic. For instance, the latest rhetoric from the U.S. Federal Reserve, together with the sharp rise in U.S. Treasury bond yields, suggest that we may be at the beginning of an era of rising interest rates.

In other words, the changes that are most likely to be seen as important are those that are driven and/or experienced by individual people. Strategic decisions that are made by senior diplomats, by the Chief Information Officers of financial institutions, or collectively by bond traders may be truly momentous. However, they are not necessarily going to feature prominently in the mainstream media or in popular histories.

The big question

This begs the question: what will be the year in which technology, rather than economics and (geo-) politics really captures the popular imagination and the headlines?

The question is asked in the context of the Fourth Industrial Revolution. This is the title of a book published this year by Professor Klaus Schwab, the founder of the World Economic Foundation (WEF). Schwab suggests that, unlike its predecessors, the Fourth Industrial Revolution 'is not defined by any particular set of emerging technologies themselves, but rather by the transition to new systems that are being built on the infrastructure of the digital revolution. As these individual technologies become ubiquitous, they will fundamentally alter the way we produce, consume, communicate, move, generate energy and interact with one another'.

In this edition of Financial IT, it is very easy to find discussion of systems that are built on the digital revolution and that will be used and recognised by individual people.

For example, several of our contributors highlight how most banks only process 10-15% of available data. For these banks, too much data is trapped in siloes where it is inaccessible. Until this problem is addressed, it will be difficult for any particular institution to build a successful omni-channel banking experience. Unless it provides such an experience, that bank will almost certainly not interact with its individual customers in the optimal way.

Omni-channel means instant gratification – among other things

Another industry observer highlights how many successful fintech challengers 'have been able to create niche solutions that are highly relevant to customer demand by bringing innovative services to market using their expertise in mobile, digital and cloud technology, appealing to a younger, more tech-focused demographic'. As is explained by another of our contributors, 'the balance of power in the payments landscape has shifted from the provider to the customer.'

This is in a world where consumers have a need for instant gratification. As one payments expert notes in this edition, instant issuance of credit/ debit cards may become the norm in Europe. Through the bank's 'printing personalised, activated cards seconds after an account, the cardholder can experience the pinnacle of in-branch customer service and absolute convenience'.

That argument pre-supposes, of course, that the customer actually uses a card for his/her payments. A key change in recent months has been the arrival of virtual reality (VR) gadgets that are affordable to the mass market. In coming weeks, China's e-commerce titan Alibaba will likely launch VR Pay, which will allow virtual reality shoppers to browse through virtual reality shops and malls and pay for things by merely nodding their heads.

Welcome to the cognitive era

Other contributors consider how artificial intelligence could change the face of the financial services sector, 'as the digital age morphs into the cognitive era'. Many of the examples they cite involve making staff much more efficient (or redundant). However, individual financial services workers who truly understand the cognitive era should benefit enormously. For instance corporate analysts and decision-makers can derive a huge productivity advantage from cognitive engines such as IBM's Watson - which can summarise massive amounts of information that would otherwise take hours of research. Artificial intelligence and augmented intelligence will almost certainly have a profound impact on the way in which data is combined, visualized and analyzed.

In the coming months, mainstream media headlines will continue to feature political developments that at least appear more momentous than those of previous years. However, taken together, the articles in this edition of Financial IT indicate that the pace of change in that part of the universe where IT intersects with financial services is accelerating. Some of the developments that are discussed will give rise to headlines in the trade press, if not the mainstream media, within weeks. 2017 could well be the year in which the Fourth Industrial Revolution captures imaginations - of the public at large and the historians of the future.

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Tim Difford,
Strategy & Innovation
Director for Sopra Steria
Financial Services

FINANCIAL SERVICES 2016 & 2017

LOOKING BACK AND LOOKING FORWARD

Tim Difford, Strategy & Innovation Director for Sopra Steria Financial Services, looks back at 2016 and explores some of the technology trends that will influence the Financial Services landscape next year.

FinTech: a year of uncertainty

2016 saw more FinTech vendors joining a vibrant and rapidly evolving market, although 2017 may well be the year of uncertainty for start-ups in this space. Brexit has already had an impact on the sector with investors pulling funding from dozens of new ventures, plunging them into a cash flow crisis, and this may continue into the New Year. In addition, while FinTech solutions are more accessible by smaller organisations than ever before, the challenge for start-up vendors will be whether they can deliver at scale and sell these services credibly into big organisations.

Looking more broadly at the market, the shifting sands of Financial Services, driven by the gradual shift towards Open Banking and the growing understanding of the opportunities – as well as the threats – presented by FinTech, open up a more mature and collaborative dialogue amongst new and established financial services institutions. These latter two are not diametrically opposed – one needs scale and market, and the other needs nimbleness and innovation. On the surface, they seem to be unlikely bedfellows, but this is why working with organisations that can broker relationships between the two will be key for both sides as they look to re-invent themselves in a crowded, competitive but ever more collaborative market.

We'll also see FinTech continue to stratify into different areas, with an ever stronger focus on regulatory technology as the compliance landscape heats up.

The Brexit question

Speaking of uncertainty – it's still too early to determine the definitive impact of Brexit, but it will undoubtedly be the foremost hot topic in the Financial Services industry in 2017 and beyond. The reverberations are still being felt, but there are short and mid-term opportunities as organisations create transition and migration programmes to attract highly skilled workers.

Up, Up and Away – the Cloud

We've seen cloud resonating more and more with Financial Services businesses this year, and we expect to see this accelerate in 2017. One of the biggest barriers to adoption thus far has been security concerns in the wake of multiple hacks and breaches. The Financial Conduct Authority's partnership with Amazon Web Services, and their announcement that cloud would be a part of their future strategy, was a turning point in terms of business confidence in the technology. Occasionally, one of the other obstacles can be the word 'cloud' itself, but as organisations come to realise more and more that the cloud offers, at its core, secure distributed server networks, it will become a more palatable, cost effective and routine technology choice for the business sector.

Regulation as opportunity

Traditionally, regulation has been all about compliance, which most organisations view as a necessary evil. However, forthcoming directives such as the Revised Directive on Payment Services (PSD2) and the General Data Protection Regulation (GDPR) which do require compliance, also open up opportunities for both new and existing players to reimagine their role in the market and establish new commercial and collaborative models. Compliance should and will be a catalyst to drive forward an IT strategy, and innovate and transform the way an organisation works. While some businesses will look upon compliance as a box-ticking exercise, they may miss the broader opportunities presented by different forms of regulation. Businesses which embrace regulation and interpret it as an opportunity for change, modernisation and differentiation will thrive in 2017 and beyond.

The rise of the robots and the decline of Blockchain?

Distributed ledger technologies, often referred to as Blockchain, are undoubtedly important and have huge potential to change business infrastructure across many industries including Financial Services– but, fundamentally, one needs to ask if it has been overhyped. The infrastructural components of the banking system which this technology may well one day replace are large, complex and global. The transformation programmes which may ultimately deliver cheaper ledger-based alternatives will in themselves be costly and potentially take years to produce tangible benefits.

What we'll most likely see in 2017 is Blockchain beginning to be considered as one of many relevant solution components rather than a standalone replacement for entire systems. Blockchain will increasingly be an essential feature within the overall delivery of a solution, but it will not be its forefront, as, in 2017, it teeters on the brink of the 'trough of disillusionment' (as discussed in Gartner's 2016 Hype Cycle).

On the other hand, advances in automation driven by robotics, machine learning and cognitive intelligence have the potential to leapfrog Blockchain in terms of popularity with a faster route to business benefit in the form of cost reduction and business agility. Clearer, more understandable business cases associated with these technologies will help to accelerate innovation in robotics, and along with the greater confidence in the scale and security of the cloud, lead to the growth of robotics-as-a-service.

A new era of business & IT collaboration?

IT and business teams have always needed to work together, but the nature of this relationship and the roles played by the key players has often set them at odds with one another. Nothing characterises this better than the issue of 'Shadow IT", which regular IT teams fear will blow an institution off course. Meanwhile, business departments regard it as an opportunity to take control, innovate and leapfrog the competition as they experiment behind-the-scenes and away from the rigour of traditional IT development, procurement and security.

What we'll see in 2017 is closer integration between IT and business functions as they recognise the benefits of working closely together to maximise the benefits of taking the success of small scale experiments and delivering them at scale across the enterprise. At the forefront of this new era of collaboration are the twin disciplines of data and analytics which have grown to become more customer-oriented, with business areas naturally taking on a much more hands-on approach in tandem with IT. This has been in response to developments in cloud, big data and changing market conditions – and the understanding that there is a necessity for the two to work together. The pace of digital transformation programmes and agile software development techniques has effectively merged IT and business decision-making power.

Against a volatile social and economic backdrop, 2017 looks to be one of the most unpredictable years in recent times. But with instability comes opportunity – and those organisations which adapt quickly and are prepared to take risks are the ones which will flourish.

Jouk Pleiter,
CEO of Backbase

BACKBASE

THE BANKING INDUSTRY ATTACKED ON ALL TECHNOLOGICAL FRONTS

With the advent of the challenger bank and a recent acceleration of financial technology, banks need to think about how they can adapt their business models to develop compelling services and stay relevant to their customers.

Disruption across industries: Industry giants die as they don't adapt to the new digital era

Over the past few years we have seen industries such as transport, travel, retail and music being transformed by disruptive technology – and the banking sector has not been spared. Until now, banks have managed to keep a competitive edge with specific regulations that make it harder for new challengers to enter the market.

Think about one of the most talked about disruptive services of recent years, Uber for example, and how its success stemmed from the culmination of several services (a mapping system similar to Google and a payment platform similar to Stripe) combined with its own proprietary technology to handle the bookings and job allocations. The result: a revolutionary customer-centric service.

Now, take a look back into recent history and you'll see established companies that were once dominant in their fields (the likes of Nokia, Blackberry and Kodak) all fail to accept the changes in their markets, and all of whom consequently crumbled to their competitors. The same can and will happen to the big banks that have dominated the high streets for as long as anyone can remember; if they want to survive the technological revolution they had better be ready to learn from those paving the way – fintech startups.

Let's look at Transferwise. A startup which has put itself directly in competition with banks by offering lower foreign transfer fees and fairer exchange rates and much better customer service. Although this is one revenue stream for the big banks, continued innovation outside of their own offering could impact their bottom line, diminish their customer base and affect their brand.

The inevitable threat of fintech

The increase in funding and investment toward fintech firms has allowed the rise of new challengers. These firms are now able to not only gain interest from the bank's customers, but also to deliver services and benefits that consumers need, want and seek – rolling these out much faster than the traditional bank.

The level of agility and speed in which fintech firms can prototype, innovate and launch a product has changed the banking landscape, and we are now seeing a change of pace which is accelerating in the industry. Banks are under threat from these digital challengers as their customers are becoming increasingly aware of the value proposition of fintech firms, as well as their superior customer service.

Some banks were able to catch up to the digital competitors who introduced new channels but were still focusing on delivering traditional financial products and services. These were easy to overcome as banks could simply emphasise their full range of integrated channels. However, others were not that fortunate in retaining their customers and are seeing fintech firms nibble their way slowly into their customer base.

The competitive landscape has become more aggressive, as fintech firms target specific pieces of the banking business, whether it be deposits, loans or payments, retail banking or corporate. These digital challengers have been able to create niche solutions that are highly relevant to customer demand by bringing innovative services to market using their expertise in mobile, digital and cloud technology, appealing to a younger, more tech-focussed demographic.

The fintech threat is here to stay – banks need acknowledge it and use this to further change in their organisation and challenge any technological and innovation barriers that are preventing them from competing more effectively with these startups.

Transforming the existing legacy

With the advent of the challenger bank and a recent acceleration of financial technology, banks need to think about how they can adapt their business models to develop compelling services and stay relevant to their customers. In the face of PSD2 this need is greater than ever. The legislation will call on banks to provide third-party providers (TPPs) such as fintech companies, secure access to customer accounts (with customer consent). This will open the payments market to new providers and widen consumer choice, leading to more competitive transaction fees, products and services, as well increased convenience.

If banks can proactively figure out how to further their offerings, and blend them into a service with higher value, then they stand a greater chance of delighting their existing customers and attracting new ones. This how challengers have come to the forefront of the industry – by offering customer-centric features and functionality that big banks must now catch-up with.

To combat disruption banks must first shift strategic focus to the customer – this is one of the main reasons challenger banks have been able to startup and gain a sizable following. For too long the big banks have taken their customers for granted and their technology as satisfactory; now they're finding themselves on the backfoot of technological innovation and playing catch-up to deliver the customer experience expected of them.

They must challenge the old legacy-based business model that plagues their systems and upheave infrastructure to source new players from the fintech startup world who have a background in innovation. Perhaps banks could even go as far as acquiring startups that could soon become major competitors.

However, this will not be enough for banks to ensure market control. An increasingly potent asset for many fintech startups is their omni-channel offering, and across-the-board customer service. This has been a recent trend in many sectors with the gradual adoption of various platforms and devices; now companies and businesses are expected to provide a continuous level of service across all points of contact. To picture this, think of the fluid viewing feature that Sky released, whereby you can watch and pause a show on one device, move to another and pick up right where you left off.

Now it's the banks' turn to shift into this innovative and nimble infrastructure. This is by no means a simple act, but meeting consumers' increasingly high expectations of what a good experience entails is vital.

If customers can perform an action such as making a balance transfer in-branch, then they need to be able to do this on the phone, online and on their mobile device too. Although most high street banks have introduced a simple smartphone app, it's in many cases very basic. However, this is arguably the most important facet of an effective omni-channel service, as most consumers rely on their personal mobiles on a day to day basis for a multitude of purposes. The necessity of perfecting this component cannot be understated, and despite the complications of using legacy-based IT systems to accomplish this feat, it should be considered a top priority.

Going digital

Traditional banks do not fully understand how to deploy an effective omni-channel strategy because they have a siloed mentality. Customers want a seamless experience that's personal and instant. To begin, banks must understand digital consumer behaviour and enable a lean IT stack that can compliment customer-centric innovation. Banks have to undergo a drastic paradigm shift – It's important that banks think from the perspective of a new customer, and then lay this vision on top of existing systems.

The first step in a successful omni-channel banking strategy is to recognise that there are several different use cases for banking services, and this will be reflected in the device the customer uses to do this. Some customers may want to do something simple by quickly using their smartphone, others might want to do some casual research while on the sofa at home watching TV – for this they might use their tablet. For more focused activities, such as planning their budget for the next month, they may use a laptop or desktop PC. With more advice-based tasks, such as applying for a loan, they will favour face-to-face interaction within a branch.

Banks need to have one unified platform delivered through multiple channels in such a way that the customer always knows exactly what is going on and has complete confidence that the bank does too. Banks have no choice, they need to take the leap and become digital or take the risk of losing out. It's now or never that they rethink their existing IT legacies and innovate, change and adapt to the increasingly high expectations of customers by providing high value digital banking services and applications, improving the banking experience and the customer's online journey.

More info on Backbase

Backbase is a fast growing fintech software provider that empowers financial institutions to accelerate their digital transformation and effectively compete in a digital-first world.

We are the creators of the Backbase Omni-Channel Banking Platform, a state-of-the-art digital banking software solution that unifies data and functionality from traditional core systems and new fintech players into a seamless digital customer experience. We give financials the speed and flexibility to create and manage seamless customer experiences across any device, and deliver measurable business results. We believe that superior digital experiences are essential to stay relevant, and our software enables financials to rapidly grow their digital business.

More than 80 large financials around the world have standardized on the Backbase platform to streamline their digital self-service and online sales operations across all digital touchpoints. Our customer base includes ABN AMRO, Barclays, CheBanca!, Credit Suisse, Fidelity, Hapoalim, HDFC, Hiscox, ING, KeyBank, Legal & General, Al Rajhi Bank, NBAD, OTP, PZU, PostFinance, Societe Generale de Banque au Liban and Westpac.

Industry analysts Gartner, Forrester and Ovum recognize Backbase as an industry leader in terms of omni-channel banking platform capabilities, and award the company high marks for its deep focus on customer experience management and unparalleled speed of implementation. Forrester named us a leader in the Forrester Wave for Omni-Channel Banking.

Backbase was founded in 2003, is privately funded, with headquarters in Amsterdam (HQ Global) and Atlanta (HQ Americas) and regional operations in London, Mumbai and Singapore.

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Financial IT

Sergey Putenikhin,
Associate VP and Business Development and Sales Manager, Europe at Compass Plus

INSTANT ISSUANCE: THE NEXT DIFFERENTIATOR FOR FINANCIAL INSTITUTIONS IN EUROPE

It is common knowledge that debit, credit and prepaid cards are all big business for financial institutions – and card ownership and usage is only increasing. The European Central Bank found that, over the course of 2015, there were 53 billion card payments across the EU countries – an increase of 11.5 per cent on the previous year. This growth has been consistent for a number of years, with the overall value of transactions increasing and the value per transaction falling – proof that Europeans are increasingly using their cards as alternatives to cash, even for low value payments.

Thanks to their consistent and ongoing success, card based payment methods are a significant area in which banks can prove their worth in comparison to their competitors and truly differentiate themselves in a crowded marketplace.

Convenience is king

With the needs of consumers constantly changing and the ongoing updating of regulations, traditional business strategies adopted by financial institutions (FIs) have become somewhat outdated. Today's consumers want really great service that aligns with their busy lifestyle, and convenience is priority number one. It is fair to say that Europe is doing well in addressing this need, with 112 billion cashless payments being made last year across the region and cards accounting for nearly half of these. The inconvenience of cash, coupled with the widespread acceptance of alternative payment methods, has led to this success. Now, FIs are at a crossroads as to what to offer next that will set them apart from their competitors.

To stand out, FIs must incorporate innovative strategies and advanced technologies into what they can offer their customers, like the instant issuance of payment cards. Instant card issuance technology is an effective, efficient way of allowing banks to increase the volume of active cards in circulation, potentially increasing the number of transactions – and it is a great way for them to cater to the needs today's demanding consumer.

The benefits

As the service is not tied to a specific card type – prepaid, debit or credit – it enables FIs to focus on the products that will suit their customers and potential customers the best.

About Sergey Putenikhin:

Sergey Putenikhin is Associate VP, Business Development Director and Sales Manager, Europe at Compass Plus – a company that offers comprehensive, integrated and flexible payment and retail banking software to payment service providers and financial institutions worldwide. In this role, he handles business development in Europe and manages key accounts in the region. Prior to joining Compass Plus in 2006, Sergey worked for an electronics retailer, and he holds a degree from Magnitogorsk State University's Faculty of Foreign Languages.

The process of personalising, mailing, and activating cards using conventional methods takes around ten days – a length of time that is becoming close to unacceptable in today's on-demand world. Instant issuance enables new and existing customers to receive a fully functioning credit, debit or prepaid card mere minutes after walking into a branch of their FI. The fact the card is immediately activated is significant in the grand scheme of things, as Entrust Datacard estimates that up to 40 per cent of cards that are centrally issued by banks remain awaiting activation and therefore go unused. Instant issuance encourages the customer to use their card from day one and, ultimately, promotes the flow of revenue. Couple this with increased customer satisfaction – Entrust Datacard has found those who can receive cards instantly are 30 per cent more likely to be very satisfied with their FI, and 37 per cent are more likely to recommend their FI to a friend – and it is difficult not to question why all FIs do not offer this service.

Overcoming the hurdles

The main issue is cost. Most of the major players in banking are always trying to reduce outgoing costs, and this extends to personalisation related expenditures. FIs want to outsource their personalisation requirements to a solution provider that will allow them both bulk personalisation and offer them appealing rates that are not based on order quantity. This combination of services is currently difficult to source in the market, despite the obvious demand for them.

As with any product that lacks competition, the companies that do offer these services have driven up the price, and by offering them at a base cost of hundreds of thousands of Euros, they instantly become unprofitable. What FIs need to see in order for them to take instant issuance services more seriously is a flexible, cost effective alternative.

This alternative must integrate seamlessly into legacy infrastructure with minimal disruption to existing processes, which will allow FIs who already have central issuance in place to add the instant service in-branch, reducing expenditure and any downtime that may occur. The solution provider must also offer support in terms of training staff and system maintenance in order to ensure that the customer receives the most professional, efficient service possible.

With the continued growth of card payments across the region, the time is right for Europe to adopt instant issuance on a widespread scale, and ultimately, the most flexible solution will prevail. By printing personalised, activated cards seconds after opening an account, the cardholder can experience the pinnacle of in-branch customer service and absolute convenience. This will, no doubt, lead to a higher probability of retaining the customer and improving their overall banking experience at a time where convenience is king and brand loyalty is close to non-existent.

ACI UNIVERSAL PAYMENTS

FINANCIAL TITANS AND CHALLENGERS PUT COMPETITION ASIDE TO UNLOCK SUCCESS IN THE NEW PAYMENTS ECOSYSTEM

The balance of power in the payments landscape has shifted from the provider to the customer. In this new ecosystem, the need and value for banks and other traditional payment providers to collaborate with Fintech startups is gaining consensus, but we have yet to see active collaboration take hold.

The Fintech sector has been viewed as a disruptor to many established financial services business models, and specific to payments, they have taken the lead in creating a more seamless and invisible experience. However, the various methods of payments have broadly remained unchanged and continue to be supported and delivered by banks and intermediaries.

In spite of all this positive disruption, Fintechs working in isolation will not achieve the innovation that regulators or the market is looking for, and with "payments 2.0", the need for collaboration across a broader set of payment providers will be key. This New Payment Ecosystem is real-time, more open and offers a broader set of choices and controls to the user, be that a business or a consumer. How will such different entities as Fintechs and Banks achieve the collaboration and partnerships required to thrive in this evolving market? A recent report by ACI Worldwide and MagnaCarta mapped the criteria for Fintechs and banks to achieve success in the new era of payments. The findings highlighted three main areas that banks felt could provide the most growth opportunities through collaboration with Fintechs - APIs (46%), mobile applications (43%) and Data Analytics (38%). Participants from across the industry also emphasised the need for open technologies, open partnerships, and open choice for the customer, to be successful in both the near future and long-term.

Open Technology

Customers are driving change through their demands for more choice, clarity and cost-effective services. These expectations are coupled with imminent regulatory changes. From the New Access Model for UK Faster Payments to PSD2 in Europe, the industry is well aware of the need to innovate toward open technology as an enabler of a more open vision for payments. Unsurprisingly, financial institutions (46%) and Fintechs (44%) both ranked Open APIs as a key opportunity in 2017.

Open Partnerships

But open isn't just about technology, it's about organisation too. Payments has not historically been an agile industry, but we are witnessing a growing "open-source" approach to innovation and product development, with an emphasis on collaboration. It's the range of partners that is important; being open to partnerships with each other, as well as considering non-traditional pairings, such as FinTechs and intermediaries,

Paul Thomalla,
Senior Vice President for Global Corporate Relations and Development, ACI Worldwide

is the next step toward succeeding in the New Payments Ecosystem. Many FinTechs are all tech, no fin – they need experienced financial services partners to succeed. These partnerships will be mutually beneficial in both emerging and developing markets.

In regions such as Africa, where legacy constraints are less of a problem, Fintechs are able to deliver leading products and services that also contribute to growing market demand. In fact, this continent is viewed as providing a great opportunity for fintech applications, with a large unbanked population estimated to be as high as 90% in some countries such as Nigeria. In comparison, Fintechs in mainland Europe are trying to achieve scale and drive adoption. The European market is highly regulated and increasingly competitive, so creating new types of partnership models would help open new growth opportunities. For example, London-based Transferwise recently teamed up with Raphaels Bank to become the first Fintech group to gain access to the UK's Faster Payments Service since the system's launch in 2008. Through the partnership, Raphaels Bank is also able to offer related services to other Fintechs, now that they have established direct access to the scheme. These partnerships enable established institutions to share in the disruptors' ability to capture new customers through innovation while new players can leverage their larger partners' expertise in meeting complex regulatory requirements. These partnerships also accelerate the rate of innovation by bridging the existing and emerging payment rails.

Open Choice

The result of these partnerships is going to be a wealth of choice for the consumer. However, choice shouldn't equate to more complexity. Financial Institutions can learn from their Fintech partners about unbundling services into more transparent options, whilst Fintechs can capitalise on the cross-sell opportunities a bank's customer base offers. By 2020, we are more likely to discuss the consumption of fintech services, rather than the manufacturing or development of financial products. Payments as a service or banking as a service is akin to thinking about a traditional bank as being a vinyl album. In the shift from analogue to digital, the different tracks need to be cut into separate components.

However, unbundling doesn't mean creating more siloes. Most Fintechs, even Unicorns, tend to focus on one area of service (lending, cross-border transfers and so on). However, the drive toward open means that these narrow services will need to become interoperable with other solutions or providers. Eventually the consumer will be able to create his or her own perfect package. This personalised approach to payments and, more broadly, financial services is reflective of the 'appification' we are seeing across all industries. We expect our services on demand; quick, simple, and with a focus on the end benefit, rather than the transaction. To be effective, experience of building an open ecosystem is key, which Fintechs have been more adept to manage than banks, whilst banks continue to hold the business and customer trust when it comes to finances.

FinTech 2.0

Payments innovations are here to stay for the foreseeable future, with many seeing this industry as the biggest area of investment in 2017 (56%), spurred on by the successes of the open, collaborative approach that has brought innovation to emerging markets, where perhaps there was previously less choice. The next wave of partnerships will be seen in mature markets. Many banks and traditional payment providers are developing horizontal strategies to better engage customers, or play a different role entirely in the future provision of financial services. Banks may potentially become providers of central repository services, such as credit profiles. Payment intermediaries may focus on controlling the ever-expanding data that surrounds payments, including customer preferences and fraud management. As a consequence of the continued digitalisation of everything, the modernised payments infrastructure will be able to provide more data around areas such as confirmation of funds, clearing and payer/payee notifications. The access to these infrastructure 'rails' will allow even more innovative services from FinTechs. Success will be reliant on merging the perceived stability and continued trust of established institutions, with the appeal, innovation and agility of the new digital marketplace. This collaborative FinTech 2.0 is the foundation of the New Payments Ecosystem.

To find out more, download your copy of the FinTech Disruptors Report 2017, from ACI Worldwide and MagnaCarta.

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AN ACCOUNT OF THE FUTURE

There's a YouTube video where Mark Zuckerberg of Facebook does a live virtual reality trial at CNET this autumn. Much of it is stilted, scripted, predictable stuff – albeit fairly impressive. But what got me engaged was when Zuckerberg took a selfie. Using a VR selfie stick he clicked his wife, who'd joined his VR world from her surgery via a video link, his dog sitting on the sofa at home and on whom he'd checked up via another link, and his VR avatar, and then posted the picture on Facebook, for the world to see.

The mixture of real life and VR was awesome, if not a little mind bending. And it's the way of the future, a future not that far away.

It's not just VR that will change the way we interact with each other and in business. Voice, artificial intelligence and augmented reality will have a huge impact and are already making their mark. This is especially true in financial services where they promise to make the user experience richer, more efficient, more effective and more convenient.

Barclays recently introduced voice recognition software for phone customers, cutting out the need for multiple security questions and passwords. Meanwhile, Santander has an app that allows customers to voice questions about their transaction history rather than have to search manually for the data. The result is speedy access that can't be matched in branch. Eventually, the service will be extended across different types of customer interaction, facilitating, for example, the reporting of lost cards and making payments.

But all this talk of technological adoption needs a caveat, certainly when it comes to the use of voice recognition technology in banking. Voice interaction can only be used in certain circumstances – people are always going to want an element of privacy about their finances. You probably aren't going to want to be told your account balance in front of your children or parents, for example. But voice control is ideal when banking blends into the background of everyday life – buying lunch, booking theatre, train or bus tickets, or paying bills. This is particularly true when a customer wants to mash up a series of actions in one interaction. Buying a birthday present, for example.

Not sure if it's your mother's birthday next week? Ask your phone to check your diary, get the date, find a local florist, choose some flowers, look up her address, check your balance to see if you can afford them, upgrade the bouquet because you have more than you thought, pay for them, get a receipt, know they've been sent, get your new balance. All by talking to your phone.

A similar sequence of events was demonstrated at Disrupt NY2016 by the team that developed Siri. The presenter booked and then cancelled an Uber in New York, all by voice. It's seamless, painless and quick, and leaves a useful digital record.

There are already hundreds of thousands of developers working to plug in new voice driven services to make our lives easier, and many will have a financial or banking element. Banks are also on the case. At least 10 around the world have launched chatbot services in the past three months alone as adoption moves from the early to the fast follower stage. Mass market will depend on how quickly the analytics mature to make the interactions truly smart.

Of course, this might all turn out to be a big puff – look at Pokémon Go! Its launch was the most successful ever, achieving five world records including most ever grossed by a mobile game app in the first month, most downloaded in first month, top of the most international charts in first month, and fastest to gross $100m by a mobile game. Seemingly everyone tried it. I even did – I got to level 4 or 5 before I stopped, having learnt all I needed. I understood what it was about, but beyond that it didn't add to my life. So I stopped.

Similarly, the successful banking services will be those that add value to the users – the customers, us. This means banks need to make sure they are looking beyond banking. It's about the role they will play in the background. Successful banks will enhance their services and role by pushing analytics further and become data generators rather than data capturers, and from this they will provide value-added services.

For example, a bank could collect data on a payment – who was it to, when, where, it might even know why by checking against a diary. Is it a birthday present? Was it more than has been spent before? Is it a regular payment but more than before? All that data can be tagged to build up a picture of how much a customer spends on birthdays each year. By adding 3% for annual inflation the bank could create a birthday present budget, along with reminders of what was bought and the date of the birthday. This can all be fed into a monthly budget, with advice on how to make sure each month is balanced.

But analytics can do more than that. Combined with artificial intelligence, and augmented and virtually reality, banks will be able to help customers manage their money so much better.

I love the idea of a VR meeting where a customer's total assets and commitments can be clearly set out. Advisers can come in to offer suggestions about making the income and assets sweat, according to the customer's risk appetite. Does it make sense to release some equity in a house to invest in a higher yielding product? Would buying a cheaper insurance policy with a higher excess rate make more sense as the customer's claims are historically low? Not only would the bank be offering advice, the connections and inter-relationships between it and third parties mean it would be able to affect any changes. How easy is that?

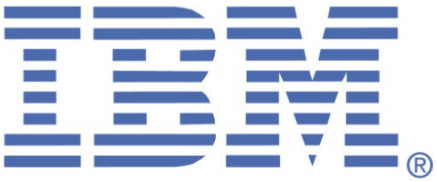
Of course, the more data across the population a bank has, the smarter the system can be, the better the advice it will be able to give. Just as Nest, the home management system, can let you know that houses in your street are kept at an average of 2 degrees cooler than yours, encouraging you to turn down the thermostat, a pension provider can advise you on your pension pot at 40 by monitoring what others at that age have with similar incomes, lifestyles and health situation.

Perhaps the most exciting prospect in all this is augmented reality. Shopping, you pick up an item and the screen you're wearing gives you availability, reviews, the best deal, and compares alternatives. You can access finance, order, and pay. It's not just going to be glasses; Google Lens is already patent-applied; VR systems will get there; car windscreens; school whiteboards. This is going to be really powerful from a user perspective.

Together these technological advances have all been termed the Fourth Industrial Revolution. It has arrived and its impact is being felt. The banking sector might think it has a choice. It really doesn't. Their customers have seen the future and are demanding it today.

Dharmesh Mistry paints a picture of banks using voice recognition technology, virtual reality meetings and augmented reality shopping to enhance the user experience and make finance seamless, efficient and fun.

Financial IT



David Robson
European Director for IBM Watson
in Financial Services

ARTIFICIAL INTELLIGENCE IS CHANGING THE FACE OF THE FINANCIAL SERVICES SECTOR

As the digital age morphs into the cognitive era, success for many financial services institutions depends on radical transformation that enables the integration of advanced analytics, artificial intelligence, machine learning, robotics, blockchain and more. Over half of these institutions have seen their efficiency decline over the last three years and innovation is key to reversing this trend.

Artificial intelligence has been used in the financial services industry for many years most commonly in the domain of trading systems, where intelligent algorithms are used to scan the market for opportunities and react in real-time to quickly exploit them. Such systems are highly tuned and domain specific; and while many are successful, they have a mixed reputation due to their potential to distort the markets in which they operate.

A new breed of artificial intelligence, known as cognitive computing, has recently emerged that is able to deliver a broader value across financial services by supporting knowledge workers in the performance of their work.

An Introduction to Cognitive Computing

Cognitive computing platforms, like IBM Watson, provide a range of cognitive services that can be combined to perform extensive knowledge work to augment and support human intelligence.

The Watson platform learns through two mechanisms. Firstly, Watson is fed a corpus of information about the business domain in which it is to operate; Watson reads digests and understands this information. Secondly, Watson is trained to use this corpus to answer questions or to derive actions or recommendations in support of knowledge professionals. This process is very similar to the way humans learn, first we read about a new topic and then we reinforce our knowledge of the topic by answering questions.

In my role leading the application of Watson technology across the financial services sector I see four common deployment patterns:

1. Sales and Service Chatbots

Almost all financial services companies today offer their clients an on-line capability containing both product information and offering an ability to transact. Over time the websites of many organisations have grown to contain many thousands of web pages making information too difficult to access and research.

Sales and/or service chatbots allow financial services companies to deploy a more customer-centric approach to their client engagement. Presented with a simple text box, users simply expresses their objective using natural language. Watson can be trained to understand the users' intent (regardless of how it is expressed) and to service a request based on its knowledge and training.

Such chatbots are becoming increasingly common across the sector because of the improved and lower cost levels of customer service they deliver. They can also be deployed in an 'agent assist' mode, in which Watson effectively sits on the shoulder of bank employees, guiding them to service their customers through complex or unfamiliar transactions.

2. Opportunity Identification

Many banks serving the SME corporate community have relationship managers that each serve large numbers of small clients. Generally, these relationship managers are unable to invest the time to get to know their clients' strategies, plans or even key executives, and often become order takers rather than trusted advisors to their clients.

Innovative clients are making a variety of news sources available to Watson such as annual reports, interim trading statements and news feeds. Watson is able to read these documents and can be quickly taught that a statement on high factory utilisation might create an opportunity for a loan to extend the factory, or a new distribution partner might be an opportunity for a currency hedge and other such correlations. As these opportunities are identified they can be ranked in a priority order thereby maximising client value and therefore the bank's returns.

3. Regulation and Compliance

Regulation and compliance is characterised by enormous amounts of complex written information that is made difficult to access because of both the volume and style of writing. Regulatory manuals that might take a person weeks to read, can be consumed

About David Robson:

David Robson leads IBM's Watson business in the European financial services sector. Watson is a cognitive computer that can read, understand, reason and engage with humans in support of a broad range of knowledge workers including medicine, banking and insurance. David has been working with Watson for two years, advising banks and insurance companies on how to deploy cognitive technology within their operations. Before joining the Watson Group, David was a Partner in IBM's consulting business, where he ran IBM's analytics practice for the UK and Ireland. During his consulting career, David has had the opportunity to work with a large number of banks and insurance companies across Europe.

by Watson in a fraction of a second. They can be made available to answer relevant questions; for example to guide compliance procedures or to intervene on business transactions to ensure appropriate compliance.

4. Research

Cognitive engines such as Watson are excellent for providing knowledge workers with summarised information that would otherwise take hours of research. Watson can read enormous quantities of information about a wide range of topics and make it available on demand to business leaders seeking to make important decisions.

Examples of use cases in this area include asset managers seeking to research investment companies that match their fund objectives, equity desks wishing to research investment opportunities, or merger and acquisition teams looking for suitable corporate actions. In performing this work, Watson can very rapidly digest and summarise company information allowing users to ask complex questions such as "find me a list of companies based in Germany operating in the field of medical appliances".

First Steps towards becoming a Cognitive Financial Services Company

Companies embarking on a cognitive journey should start by developing a strategy which is underpinned with a prudent business case and managed by an appropriate governance framework. Using the strategy as a guide, organisations should identify and rank cognitive opportunities on a matrix of ease of implementation versus delivered business value; and start with the easiest to implement that deliver a positive contribution.

In my experience, it is also necessary to appoint "cognitive champions" in key business areas, whether in the call centre, back-office, compliance or other appropriate touch-points in the organisation. In the prioritised use cases, champions should strive to offer the ideal experience whether it be obtaining a mortgage, reallocating portfolio assets, or evaluating a range of diverse funds.

Champions should seek to demonstrate the unique power that cognitive systems can bring to an organisation. They should avoid the temptation to achieve too much in a single project, follow agile approaches, build prototypes and deploy limited-scope pilots. It is also important to demonstrate and celebrate new systems to ensure they are accepted and adopted both internally and externally.

Preparing the Enterprise for Cognitive

The transition of a financial services company into a cognitive organisation will require an investment in new types of employees. Of course domain expertise remains key, but they will need to be complemented with experts on data, natural language processing, cognitive computing and other machine learning skills. Teams should assess the likely impact of cognitive insights from previously dormant data on both business processes and the broader organization.

Substantial organisational changes may also be necessary to support the deployment of cognitive systems. For example, what higher value tasks can a research analyst be switched to when his three of four days of research work can be performed by Watson in a matter of minutes?

One area in which many organisations struggle with their initial cognitive solution is in building and maintaining the quality of its corpus of information. It is generally true that any cognitive system is only as good as the corpus of information it can read, and the training it is given. The most common reason for poorly performing cognitive systems is almost exclusively due to poor quality information.

The Dawn of a Cognitive Era

For financial services companies to succeed in a low interest rate and increasingly digital age, I believe that they need to start to exploit the wealth of unstructured information that is available to them. Cognitive systems offer dramatic improvements in sales, service and back office processes, thereby enabling financial institutions to improve on customer engagement while reducing operational expenditure.

Oliver Yaros,
Senior associate in the Intellectual Property &
IT Group at Mayer Brown

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CHALLENGES WITH THE EVOLUTION OF BLOCKCHAIN

Since the start of the global financial crisis in 2008, weakening profits, a more challenging trading environment and tougher regulatory requirements have put banks and other financial institutions around the world under increasing pressure to reduce the cost and increase the efficiency and effectiveness of operating their businesses. Whether it be in client onboarding and anti-money laundering processes, trade reconciliations and settlement, messaging or the processing of market data, each bank spends hundreds of millions of dollars each year on internal operations to support its business that may not provide it with any competitive advantage against other banks, increase the value of its business in the eyes of its clients or necessarily satisfy the demands of its regulators. Thanks to this development, the quickening adoption of the open source movement by the financial services industry and the growing challenge posed by technology companies and other disruptors to the sector, an increasing number of financial institutions and fintech companies are coming together to create consortia or shared utility service providers that will identify, design, build and provide those emerging technologies as well as bringing mutual benefits. By way of an example, costs savings and increasing efficiency and effectiveness was cited as the greatest benefit of collaboration by 33% financial services and 42% fintech respondents in a recent fintech survey by Mergermarket and Mayer Brown entitled 'The ABC of Fintech'. Another benefit identified in the survey for financial institutions is to keep pace with the speed of technological change demanded from them by their clients.

At the forefront of the emerging technologies being investigated by financial institutions at the moment is blockchain and the possibility of using decentralised, distributed ledger technology that can be accessed and used by market participants to record information. Rather than each bank keeping its own record of events about the transfer of ownership of assets, the performance of contracts and the identities of its clients which it logs according to its own policies, procedures and standards and constantly checks, verifies and updates with its counterparties, each bank could instead, using blockchain technology, hold a copy of a ledger that is used to record this information according to a common standard, with every change in the information about a client, ownership to an asset traded or action performed in accordance with a smart contract between participants recorded in each copy of the ledger held by those participants. So the potential benefits of using blockchain to ensure that transactions are recorded accurately, that contracts are automatically performed according to their terms and that information about clients has been provided correctly by every market participant are clear. But there are a number of challenges for any consortium trying to launch this technology to overcome.

Building a consortium and establishing the benefits from participating in it

Defining the objectives of the consortium and the role that each member will have in its success can be difficult to establish, with each participant often having different and competing interests that will have to be carefully managed. Some financial institutions will try to influence the direction the consortium takes so that the eventual solution will be tailored to satisfy their particular standards and legal requirements, spending a lot of time and consideration over the design phase to achieve this outcome. Others may focus less attention on the exact form of the solution and more on the strength of their investment in and control over the utility that may be built by the consortium to operate the solution, seeking to obtain a dominant position compared to the other members concerning the management of the utility and the potential financial return that may be made from the successful exploitation of the technology. The remaining institutions may have joined to obtain a seat at the table, looking to hedge their bets on the success of the competing initiatives in the marketplace, unwilling to make difficult decisions or make anything other than essential contributions to the decision making process and the financing of the initiative. The service providers meanwhile may be interested in creating, marketing and launching the solution as quickly as possible in order to establish themselves as the preeminent players within the industry, to maximise the return on their investment and to provide themselves with a springboard to expand their business into other areas with or without the partner banks. These differences can often create tension over the direction and operation of the consortium between members, slowing progress and in some cases, causing fragmentation within the industry, with financial institutions leaving to create rival consortia, pursuing different solutions and standards. So it is very important for the goals of the initiative, the number of likely participants, levels of investment and the roles each member will be able to play in its governance to be made clear in a memorandum of understanding executed at the start of the project.

Establishing ownership and exploitation of the technology

Agreeing who will own and will be able to exploit the developed technology is critical to the success of any initiative. While the foundations of blockchain and similar technologies may be built on open source software which allows users to quickly and freely develop code based on it, provided they do so in accordance with the open source licence requirements (which may require any code developed from it to also be made freely available), consortia will frequently require their members to contribute their own software, materials and know-how to the project. As a result, complex and thorough negotiations between the participants must be concluded to agree the basis under which each member can use each other's intellectual property and confidential information for the purposes of running the consortium and other projects as well as the terms under which any technology that is developed from it, or that of other members, will be owned and can be used by the participants. Otherwise consortium members risk losing control over their intellectual property, with rivals potentially able to use it and free to develop, monopolise and exploit the technology created from it, to the detriment of the contributing participant and others in the industry and the success of the initiative.

Understanding the regulatory environment in which the technology will operate

Banks and other financial institutions cannot outsource their responsibilities to regulators and must ensure that the technological solutions that they adopt are suited to the laws and regulations to which they are subject. So understanding how new technology can be adapted to be used by banks in compliance with the broader, existing regulatory framework is key. For example, while blockchain may allow financial institutions to share, validate and update information about the identities of the ultimate shareholders of common clients, it is important to recognise that individuals may have a right of privacy under the laws of different countries, such as the right to object to the distribution of information about them and to have irrelevant, inaccurate or excessive information recorded about them deleted (the so called "right to be forgotten") in the European Union, which may restrict the ability of market participants to store, share and edit that information. Similarly, although financial institutions may be willing to share information about the identity of its clients to other financial institutions, a bank may not be able to accept any liability to other banks for any inaccuracies in the information it has provided, preventing those other banks from relying on it for anti-money laundering, client onboarding and other compliance purposes.

So while there are many potential benefits of using blockchain and other similar technologies in the financial services industry, there are also a number of strategic and legal challenges which the consortia developing them will need to overcome.

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Parth Desai,
the founder and CEO
of Pelican

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LEVERAGING AI TO OVERCOME LEGACY CHALLENGES

In an increasingly digital world, many incumbent banks and large corporations face the same challenge: their technology is outdated, sometimes drastically so. Can innovation and legacy systems comfortably co-exist in banks, and deliver suitable service to customers?

Many incumbent banks struggle with legacy systems. This is particularly prevalent when it comes to their core platforms, many of which were rolled out decades ago, long before the rise of internet-based communication as we know it today. These typically clunky, mainframe based systems were built to be robust and reliable, not nimble and adaptable. They were designed to work on a predominately batch basis during business hours, in stark contrast to today's consumer who expects access to their accounts on portable devices around the clock, with the ability to pay someone in a matter of seconds.

As factors such as technology, customer expectation and the transaction banking industry itself have evolved over the years, banks have in the main favoured building 'add-on' extensions to their core platforms rather than replacing them. They usually now have scores of other middlewares and gateways that have been bolted onto their technology architecture – either right into their core systems or elsewhere in their infrastructure. A considerable number of these are also legacy, and sometimes no longer supported by the vendors which originally supplied them. So the result is a Frankenstein's melange of various satellite systems orbiting an also dated core.

Unsurprisingly, this heightens the risk of IT failure both individually and collectively, with some well documented events having been seen in recent times.

What can be done?

The pace of change from both a technological and regulatory stand-point has increased. Competition in the banking sector is also on the rise, with the regulators in some locations actively encouraging new players into the market in the form of challenger banks, fintechs and PSPs.

So how can the incumbents, saddled with these patched-up legacy systems hope to compete against the newer, more agile competition with shiny new technology stacks, just as we embark into an era of new technology and open banking?

This was highlighted in a recent survey we undertook with more than 120 payments professionals. Participants overwhelmingly replied that responding to legacy system transformation is challenging, with six percent going as far as to say it's impossible.

In the current climate of geopolitical uncertainty, high levels of risk and other priorities, it's not an option for many banks to replace their core system. Given the amount of time, resources and disruption involved, such a project may take years when account-

ing everything from planning to execution. However, what can and should be addressed are ways to rationalise the large numbers of 'satellite legacy systems' which surround the core.

A tried and tested way to achieve a scalable system that provides the flexibility to merge middlewares and remove old systems as and when required is to deploy an open platform which includes a hub architecture. This is then able to intelligently process, convert, enrich, validate, reconcile and route any type of financial transaction. The open payment management platform should also be capable of linking many separate data sources to varying end-point destinations.

To tick all these boxes, Artificial Intelligence (AI) can be leveraged to the bank's advantage. Modern AI platforms encompass machine learning and knowledge-driven systems which enable rapid deployment. Banks can achieve radical system overhauls and holistic improvements while plugging the gaps left by the legacy banking core.

Ideally, the software should stand up to all these requirements, whilst also offering useful additions for compliance functionality – such as sanctions screening. Banks expect this software to be customised to their needs and offer local and cloud deployment.

All these elements combined will give the bank a modern system, without the need to completely replace the banking core. Cost effective, versatile AI systems will give the bank a competitive advantage in the future.

Delving deeper

There are three disciplines of AI which can be leveraged to address the legacy challenges. The first of these, Natural language processing (NLP), enables computers to read and understand human languages by creating the ability for machines to interpret information presented by humans in unstructured or uncoded free-format text. Once understood, the machine can process this information.

Machine learning then gives computers the ability to learn without being explicitly programmed. This focusses on the development of computer programs that can teach themselves to grow and change when exposed to new data. The third ingredient is a Knowledge-Based System, which is a computer program that reasons and uses a knowledge base to solve complex problems.

Time to market and innovation

Challenges in introducing new, innovative products in a timely fashion is an acute symptom of legacy systems. There will typically be a requirement to process data in a specific way, send or receive information to or from different or new destinations and correspondents, and apply a different pricing structure that may need to vary, based on content, destination, etc.

An AI-based system reduces time-to-market because it eliminates the need to programme everything from scratch. AI systems are knowledge-based, i.e. rules and data-driven, and can encompass multiple specialised software AI engines. By altering the knowledge base, the functionality of the AI engine can be changed.

The computer program therefore becomes data-driven rather than code-driven, which significantly reduces time to market. For example, by simply specifying the requirements of a new product into the AI system, a bank can automatically create and deploy it in less than two weeks. The increased revenue and profitability will mean return on investment (ROI) can be realised soon after rolling out the AI-based solution.

Payments routing

Banks can achieve cost savings by routing suitable payments via a local ACH network instead of RTGS. Considering the entire payments life cycle where each bank can play a different role per transaction, it can be difficult to identify which items should be routed differently from others.

In addition, banks wish to route cross-border payments via more complex combinations of correspondents, which are determined by certain criteria within the payment message. However, legacy systems usually lack the flexibility to route based on content. NLP and a knowledge-based learning system can assist with understanding the full context of the payment within its life cycle and derive the role the financial institution has to play.

By understanding the payment environment, its connectivity to clearing and settlement mechanisms and international correspondent banking networks, an intelligent system can automatically plot the optimal route for the payment, balancing the cost and speed depending on the client requirement.

Repairs and exceptions

While simple errors can be corrected with basic levels of automated repair, more complex errors need human intervention, creating higher costs. Even when working at optimal efficiency, there is a distinct limit to the level of repair existing legacy payment systems have the capacity to undertake. NLP enables machines to understand free format text and unstructured data in context, mirroring human reasoning. Computers can then covert the data into coded information, delivering more complex and intelligent repair capabilities, thereby enabling the bank to achieve the next level of efficiency.

Furthermore, when a transaction is manually repaired using machine learning, the system can start understanding the gaps in its knowledge base and enhance this in a controlled manner. After gaining sufficient confidence in its understanding, and upon approval, the machine can start using the newly acquired knowledge to automate previously manually completed repairs.

Time to Act

Incumbent banks in particular have the benefit of possessing an abundance of digital data on existing customers. AI technologies such as machine learning can use this to generate insights, which will lead to product innovation and improved service levels. This can also help long-established institutions take full advantage of their heritage to gain a competitive edge over the new challengers and entrants from the fintech community, who lack the comprehensive volume of data these banks have amassed.

AI is here to stay, and gradually becoming more mainstream. Businesses in the transaction banking industry have a rare opportunity to provide a superior user experience to customers by seizing the chance to leverage AI before their competitors do. The longer they wait, the further they will fall behind and risk ending up an irrelevant organisation in a highly competitive world.


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CEO, Computop

VIRTUALLY REAL – PAYMENTS THROUGH A HEADSET, REALLY?

Tech gadgets are looking like they'll once again be top of the list for Santa again this year. Last year it was the Apple Watch that dominated wish lists, paving the mass adoption for contactless payments through Apple Pay. This year it would appear, virtual reality headsets are taking pride of place. The Oculus Rift, HTC Vive, and PlayStation VR are all popular but come with a princely price tag. They are bought and used mostly by enthusiastic gamers. However, in recent months we've also seen product launches for a range of more affordable VR gadgets as smartphones become capable of virtual displays. For instance, there's the new Samsung Gear and the Carl Zeiss VR One Plus, both with price points of around £50. This year, virtual reality has become affordable and available to the masses rather than just the gaming elite.

As access to this shiny new electronic world is now within reach of a wider audience, big business is wising up and looking for ways to capitalise on this sales opportunity. While the media mostly covers virtual reality from an entertainment perspective, trade sectors are already taking a wider view. The leisure, hospitality and retail sectors are all looking for opportunities to commoditise virtual worlds with virtual shop shelves and 3D product views.

China's e-commerce giant Alibaba is ahead of the game. Its financial division recently demonstrated a payment service that works hand in hand with virtual reality shopping. Expected to be launched by the end of this year, VR Pay, as the service is called, will allow virtual reality shoppers to browse through virtual reality shops and malls and pay for things simply by nodding their head. There's no need to remove the headset and reach for their cards. Shopping identity will be able to be verified through authenticated account logins on connected devices with passwords, or using voice identification technology designed to recognise unique voice patterns of a person.

So, virtual reality is no longer the stuff of 90s sci-fi movies. These technologies can provide real opportunities to bring visual representations of goods more in line with their physical reality. A particular plus for mail-order and e-commerce companies. For instance, at its most basic level, with 3D glasses on a customer can simply walk around a mannequin in an online store. They can inspect a garment in detail, from all sides.

However, there's much more to offer than simply that. For instance, if a customer is refurbishing their home and can't quite picture how a new armchair will look in their living room, they can simply upload a photo of the room. The rendered environment will then select the right colours and virtually add the new furniture to the room. Voila.

Applications like these open up new possibilities for online purchases, but also present new challenges at the checkout: entering billing and delivery addresses is far from plain sailing in a virtual space and media disruptions are to be expected. Straightforward navigation and easy shopping also call for simplified payment processes. The integration of one-click checkouts seems perfectly suited to the virtual shopping experience. Payment with wallets such as Amazon Payments, MasterPass or PayPal Express are intended to enable payment with one-click, which includes importing billing and delivery addresses.

This is why one-click buttons are becoming more and more prevalent. By positioning them in the shopping cart or even at item level, innovative payment schemes are hoping to appear on the screen as early as possible in the payment process and stay one step ahead of other payment schemes. And, at the same time, the customer benefits as the payment process becomes easier for them. By clicking once on Amazon Payments, MasterPass or PayPal Express, customers avoid the laborious process of entering large amounts of data, as their address and preferred payment method, including card number, are already stored there. Shopping in a virtual environment where the push of a button or the nod of a head will suffice for authorisation is simply the next step on from this.

This might seem like a giant step for industry and consumers, however, many of the more innovative retail outlets have long been seeking opportunities for digital enhancement. Many already bridge the gap between shop and e-commerce. High street stores such as Monsoon and Accessorize already offer their customers the option of ordering items they do not have in the store via tablet on the shop floor. With no queuing at an order desk or the checkout, this can be done at the customer's leisure. Other retailers offer the service in a seated area next to the changing room, payment included, with tea and coffee. I don't believe it will be long before we see this variant of online shopping offered in the changing room itself. The customer will be able to use their virtual reality headset to view a 3D representation of a freshly ironed summer collection, while the slightly crumpled, genuine article lies limply next to them on floor.

Multichannel as a virtual payment experience can work, as long as the processes are cleverly coordinated. They need to be straight forward, frictionless and secure for customers and merchants alike. Merchants need to make the investment in devices and apps for virtual rooms that provide security through tokenisation and encryption. Real world card payments require secure payment handling with P2PE (point-to-point encryption) certified POS terminals, which have been developed to meet today's data security requirements even on mobile devices like tablets and smartphones. Merchants will also need to adapt logistically. If a business wants to attract customers to the shop for online shopping, they must also be prepared to deal with the customer potentially wanting to exchange items delivered to their home in store, including payment.

In order to help bridge this gap and process these cross-channel payments, payment service providers are reorganising themselves. PCI P2PE secure connections between the point-of-sale terminal and the payment service provider is key to freeing the merchant from the costly responsibility of running PCI security audits and to prevent fraud. They are consolidating payment methods. Standardised reconciliation files across all methods makes bookkeeping easier. Uniform reporting of all transactions gives management an overview of all sectors of their trading operations and enables them to react swiftly to changes in sales and demand, in the real world, with or without glasses.

Whether you're a fan of virtual reality or not, what's clear is that virtual reality is by no means simply the stuff of movies. It will become a new sales channel. Businesses, and the payments ecosystem supporting them, must transform in order to offer safe and easy to use virtual shopping experiences for customers.

As Brian Shuster, one of the initial pioneers of the internet recently said, 'VR is arriving, and VR will not remain in the virtual realm for very long. Very soon, the difference between what is real and what is virtual will be a question whose answer will solely depend on your philosophical outlook; but in the real world, virtual reality will become more real than reality ever was.'

Interview with Jamie Graves, CEO of ZoneFox.

CONFRONTING THE THREAT FROM WITHIN

Many organizations have firewalls that provide effective protection against malware and attacks against their systems from outside. How can they counter the threat of theft or abuse of data from within the organization?

Financial IT: Please introduce the company.

Jamie Graves: ZoneFox was officially launched in 2012 in Edinburgh. However, I started working on the concept and the core technology in 2008 when I completed my PhD at Edinburgh Napier University.

ZoneFox is an intuitive threat detection software that helps companies to protect critical data and intellectual property (IP) from malicious and accidental threats from insiders. We focus on policy compliance monitoring, data and intellectual property protection and protective monitoring of user risk. Our customers range from financial services to the healthcare sector. Most of our clients are based in the UK and the USA: many of the clients have an international footprint.

Financial IT: How does ZoneFox help?

Jamie Graves: We give better visibility to chief security officers (CSOs) around financially sensitive or personal data as well as user behavior. We do that in a clean, precise and accurate way. We are offering clients our augmented intelligence solution that can help organizations to have a bird's-eye view on data records, detect any data breaches and to manage risks. The number of records often run into hundreds of millions: they could not be monitored by human eyes alone.

We also help clients to improve their operational business process models based on augmented intelligence technologies.

One of the things that I would stress is that the human factor can cause a lot of threats to an organization. While applying our solutions, we have been coming across a lot of cases of theft of data by employees for financial gain. We have also encountered situations where corporate data has been accidentally misused. This is usually due to a lack of knowledge of, or total absence of, security procedures within the organization. Most organizations don't have any monitoring or alerting capabilities in place to protect their data.

We also help financial institutions to comply with new regulatory pressures to ensure that data breaches are reported quickly: this means that they can avoid huge fines.

Financial IT: Can you give other examples of the benefits of ZoneFox?

Jamie Graves: In one sentence, we dramatically reduce the time needed to identify and deal with the implications of an internal data breach. Many is the time that we have come across customers with a fortress of firewalls that are very effective at keeping out malware and other external threats: however, the firewalls have little to say about abuse of key data within the organization. Without a solution like ZoneFox, a data breach can take 200 days to detect: over that time, anything can happen to the data.

Financial IT: How would you categorize ZoneFox?

Jamie Graves: ZoneFox is a software solution. The software is detecting anomalous activities leading to identification of a staff member and providing the evidence that theft or abuse of data was in progress.

It has two components. One does the analysis. It is typically hosted on the client's systems. Alternatively, it can be based in the cloud. Installation takes about two hours. The second component involves the agent and security procedures that are installed on the desktop computers of each employee. We have a pre-defined list of rules for the system that ensure that it can be up and running quickly.

Usually it takes us two weeks to onboard, to train and handle the clients' staff so that they can use ZoneFox. The product is easy to customize and can deployed on Windows, Linux, or Mac, as well as on various cloud servers and databases. Reporting is simple and flexible: customers can quickly set up insights or alerts to comply with regulatory requirements. The software can be also easily integrated with third party solutions and security engines.

Financial IT: What are the trends that you are seeing in the industry today and what are your predictions for the future?

Jamie Graves: First of all, I'd note that there is a lot of hype about augmented intelligence, machine learning and big data. In relation to the last of those, it appears that some organizations are collecting huge amounts of data. They don't necessarily know what to do with it, but they think that it might be useful at some stage in the future.

Therefore, I think that there will be a move towards better definition of data collection policies. That, in turn, will imply a move towards better understanding of the risks from internal users of that data. As a result, augmented intelligence and machine learning will become more widely used in the management of those risks.

Jamie Graves is the Founder and Chief Executive Officer of ZoneFox, which was established in 2013. He had founded (and has also served as CEO of) Inquisitive Systems, an Edinburgh-based company that aims to rapidly become a world leader in building information security software. Inquisitive Systems is a spin-out from Edinburgh Napier University. It started trading in September 2010 after being founded by Jamie Graves and Professor Bill Buchanan in 2008. Jamie Graves had previously been a Research Fellow at Edinburgh Napier University, and completed his PhD in 2008.

ZoneFox is an award winning Endpoint Monitoring & Threat Detection software that helps its clients protect their business-critical assets: data and intellectual property (IP) from malicious and accidental insider threats. ZoneFox has a proven track record of protecting reputation, sales revenue, and competitive advantage by providing next generation data monitoring, security analytics and endpoint security, enabling: policy compliance monitoring; data and IP protection; and protective monitoring of user risk.

Dan Sommer,
Senior Director, Qlik

WILL 2017 BE THE YEAR OF DATA LITERACY?

Over the past twelve months we've seen an explosion of data, an increase in processing it and a move towards information activism. This means the number of employees actively able to work with – and master – the huge amounts of information available, such as data scientists, application developers, and business analysts, have become a valuable entity.

Unfortunately, however, there still aren't enough people with the expertise to handle the ever-increasing, vast levels of data and computing. You would assume, with all the information currently being produced and held by businesses, that 2017 would see us in a new digital era of facts. But, without the right number of specialists to consume and analyse it, there's a gap in resources. Data is, unfortunately, growing faster than our ability to make use of it.

For many business leaders then, this means a reliance on gut instinct to make even the most important decisions. Unable to hone in on the most important insights, they're presented with multiple – and sometimes conflicting – data points, so the most important ones seem unreliable.

The situation needs to change. Yes, that will mean upskilling more data scientists in 2017, but there will be a greater focus on empowering more people more broadly. That will go beyond information activists and towards providing more people with the tools and training to increase data literacy. Just as reading and writing skills needed to move beyond scholars 100 years ago, data literacy will become one of the most important business skills for any member of staff.

So, what will change to see culture-wide data literacy become a reality? Here are my predictions:

1. **Combinations of data** – Big data will become less about size and more about combinations. With more fragmentation of data and most of it created externally in the cloud, there will be a cost impact to hoarding data without a clear purpose. That means we'll move towards a model where businesses have to quickly combine their big data with small data so they can gain insights and context to get value from it as quickly as possible. Combining data will also shine a light on false information more easily, improving data accuracy as well as understanding.
2. **Hybrid thinking** – In 2017, hybrid cloud and multi-platform will emerge as the primary model for data analytics. Because of where data is generated, ease of getting started, and its ability to scale, we're now seeing an accelerated move to cloud. But one cloud is not enough, because the data and workloads won't be in one platform. In addition, data gravity also means that on premise has long staying power. Hybrid and multi-environment will emerge as the dominant model, meaning workloads and publishing will happen across cloud and on-premise.
3. **Self-service for all** – Freemium is the new normal, so 2017 will be the year users have easier access to their analytics. More and more data visualization tools are available at low cost, or even for free, so some form of analytics will become accessible across the workforce. With more people beginning their analytics journey, data literacy rates will naturally increase — more people will know what they're looking at and what it means for their organisation. That means information activism will rise too.
4. **Scale-up** – Much a result of its own success, user-driven data discovery from two years ago has become today's enterprise-wide BI. In 2017, this will evolve to replace archaic reporting-first platforms. As modern BI becomes the new reference architecture, it will open more self-service data analysis to more people. It also puts different requirements on the back end for scale, performance, governance, and security.
5. **Advancing analytics** – In 2017, the focus will shift from "advanced analytics" to "advancing analytics." Advanced analytics is critical, but the creation of the models, as well as the governance and curation of them, is dependent on highly-skilled experts. However, many more should be able to benefit from those models once they are created, meaning that they can be brought into self-service tools. In addition, analytics can be advanced by increased intelligence being embedded into software, removing complexity and chaperoning insights. But the analytical journey shouldn't be a black box or too prescriptive. There is a lot of hype around "artificial intelligence," but it will often serve best as an augmentation rather than replacement of human analysis because it's equally important to keep asking the right questions as it is to provide the answers.
6. **Visualization as a concept will move from analysis-only to the whole information supply chain** – Visualization will become a strong component in unified hubs that take a visual approach to information asset management, as well as visual self-service data preparation, underpinning the actual visual analysis. Furthermore, progress will be made in having visualization as a means to communicate our findings. The net effect of this is increased numbers of users doing more in the data supply chain.
7. **Focus will shift to custom analytic apps and analytics in the app** – Everyone won't — and cannot be —both a producer and a consumer of apps. But they should be able to explore their own data. Data literacy will therefore benefit from analytics meeting people where they are, with applications developed to support them in their own context and situation, as well as the analytics tools we use when setting out to do some data analysis. As such, open, extensible tools that can be easily customised and contextualised by application and web developers will make further headway.

These trends lay the foundation for increased levels of not just information activism, but also data literacy. After all, new platforms and technologies that can catch "the other half" (i.e., less skilled information workers and operational workers on the go) will help usher us into an era where the right data becomes connected with people and their ideas — that's going to close the chasm between the levels of data we have available and our ability to garner insights from it. Which, let's face it, is what we need to put us on the path toward a more enlightened, information-driven, and fact-based era.

Stéphane Barberet,
Vice President EMEA – Enterprise Content Division at Dell EMC

WHY IT'S DO OR DIE FOR EUROPEAN FINANCIAL SERVICES: THE CRITICAL ROLE OF DATA IN RESHAPING THE INDUSTRY

Despite the number of articles, studies and research on the digital journey, findings of a McKinsey report state that 90 percent of European banks invest less than 0.5 percent of their total spending on digital. As a result, most have relatively shallow digital offerings focused on enabling basic customer transactions.

The journey towards digital transformation started by offering omnichannel banking, but with this comes more touch points, an expansion of complicated IT systems and increasing amounts of different data. The varying channels means that lots of different types of data sit on different platforms – with many organisations not even realising what information they have.

There has also been a continual rise of "digital first banks", such as Monzo. Born without the legacy provided to them by established customer models, the economics of a digital bank will give it a vast competitive edge over a traditional incumbent. Whilst legacy banks are investing in the fintech industry, they also need to think about their own transformation journey. It's fair to say that getting digital banking right is a do-or-die challenge.

The FS industry must begin to transform their business and the products they offer. In order to successfully keep pace with disruption in the market, banks must:

1. **Put customers first** – In the FS industry, customers are usually long-standing and loyal and tend to stick with one bank for years. But with this, customers have an expectation that banks have all of their information. FS organisations can now get value from a customer's data content such as mortgage contracts, history of transactions on spending behaviour, as well as audio conversations. By changing their mentality and taking a more customer-centric rather than product-centric approach, and using customer data to help deliver new services, banks can drive a more successful, customer centric approach to banking over the long-run.
2. **Break data out of its siloes** – As mentioned above, information is trapped in all sorts of different file formats. FS organisations must work on implementing solutions that pulls all of this information out of the relevant silos. This should be an essential priority in order to get a 360-degree view of a customer. Extracting intelligence from the data and content they hold will help to enable new and more personalised services to customers, as you obtain a more complete 360-degree view of the customer. In addition, it also means that businesses can improve customer targeting, attracting both new customers as well as old, through tailored pricing and product building. However, this data needs to be 'clean' and in a usable format before any real value can be derived from it.
3. **Use all data** – Information fluidity is key to helping develop new services. FS organisations usually should keep hold of data over long durations for compliance reasons. However, FS organisations should also be able to leverage the historic data that they are holding. Like the term "you can't run before you walk," organisations must go back to basics and combine old data with new data – to move forward FS organisations should capitalise on the key principal information asset, i.e. their customer data and knowledge that they already hold and own. By doing so, organisations will be able to then use this with emerging technology such as artificial intelligence (AI), to better predict future patterns. AI can transform the FS industry, but for organisations to realise the benefits, they must make sure they have cleaned up their data and can extract knowledge and information from it.

There are currently strong discrepancies between customers' expectations and the actual way information is managed. Streamlined, integrated systems, a single customer view and omnichannel, personalised services are all objectives that FS organisations must work towards.

Key to this is putting the information they already have to work. In essence, banks must take out the intelligence from all data to tailor new services and offer a more personalised approach for customers. The need for managing this data in the right way will influence new innovations in the industry.

Solutions such as InfoArchive automate and help FS organisations to better manage this data in non-intrusive ways, whilst also having the net benefit of saving cost. Having a single, consolidated repository of information and/or metadata helps to store all related structured data and unstructured content.

Data must be at the heart of any future business strategy, as it continues to disrupt traditional retail-banking business models, in many cases overnight. The good news is that there is plenty of upside awaiting those FS organisations willing to embrace it (see points one to three). The bad news is that change is coming whether or not banks are ready.

connexica
Search Powered Business Analytics

When faced with a challenging question, most people will turn to Google. In the age of smartphones and widespread internet access, search engines have become the digital equivalent of an agony aunt, tasked with delivering answers to our questions. Here, Greg Richards, Sales and Marketing Director of business analytics expert Connexica, explains what search engines can teach us about business intelligence.

Traditionally, using business intelligence software has meant that businesses need to employ people with the right technical skills. While it is certainly possible to navigate most software without prior knowledge of specialist programming languages like SQL or MDX, users do so at the cost of analytical functionality.

This limitation has hindered the adoption of a data-driven culture. Due to the lingering view that data analytics software is reserved for a specialist few, business intelligence software is widely perceived as just that, software designed for businesses with the resources to employ specialist staff.

Analysing accumulated data is critical for devising effective strategies, particularly now that we generate more data than ever before. What's more, data insights are not just beneficial to any one type of business.

Public sector organisations, such as local authorities and banks, can also draw great results from actionable insight. For example, many financial institutions are using cloud computing to host software platforms and to store data. However, the analysis itself is still reserved for specially trained individuals, typically data analysts rather than bank managers.

This approach limits the functionality of a bank's data. One of the most valuable characteristics of big data is that it gives banks a real-time insight into multiple data sets. For example, places where customers regularly use their cards can be analysed to highlight opportunities for additional revenue streams by partnering with relevant retailers. Business leaders can use this to give customers targeted cashback offers or to gain anonymised commercial insights into customer buying-behaviour.

Despite these benefits, not many banks actively invest in this technology. When operating in an industry that thrives by minimising risk and making carefully calculated business decisions, choosing to handle high-value sensitive information with what may simply be the technological flavour of the month is not a decision many rush to make.

Yet, the Financial Conduct Authority (FCA) does not mirror this reluctance. In fact, the FCA cited investment in technology as the top priority of its 2015/16 business plan, a clear sign that the sector needs to be making a more conscious push towards digitisation.

Even with this push, data analysis or business intelligence software is seldom the first thought financial businesses have when presented with the idea of digitisation. The reason such organisations have traditionally steered clear of business intelligence software is because hiring specialist staff, or training existing employees, would put too much of a strain on resources. However, this does not have to be the case.

A lesson from Google

Search engine technology has revolutionised the way that everybody, whether technically adept or otherwise, navigates the web of information that is the internet. This same technology can be used to simplify the data analysis process and demystify intelligence software for front-line employees.

This is possible with search-based analytics software. Data is first unified irrespective of the source system or file type and is then made fully accessible to users through natural language search. In practice, if a user can search the internet using Google, they can search their data using software such as Connexica's CXAIR.

However, this new approach to analytics offers more than ease of interaction. By having the data available as a searchable index, users can identify, navigate and incorporate suboptimal data entries that do not match across all systems, regardless of anomalies.

This gives users real flexibility, a stark contrast to legacy business intelligence technologies that were modelled using online analytical processing (OLAP), an older method that only offers rigid and limited reporting on a single source of matching data entries. If the integrity of a data set is questionable or not uniform, those results will not display correctly in legacy system reports.

Similarly, search-based analytics software addresses the rising volume of unstructured data that organisations collect. If you think of a Google search, it doesn't only return text-based results. It also delivers an array of images, videos and all manner of other media.

In a business context, this unstructured data is less computer-friendly due to the necessary programming code embedded into the program structure. As such, legacy systems do not incorporate it into analysis. Yet this information allows far more insight into behaviours that simply cannot be measured using traditional data sets, such as detailed customer sentiment reporting.

Data expiration

However, the timeliness of the information gathered is critical. After all, a bank cannot make highly informed decisions based off data that is several weeks old. It is therefore important that bank managers have quick access to data so they can gather insights in real-time.

This trend is occurring in almost every sector. The "best-before" date on data is constantly shortening thanks to the constant stream of new data being generated across the world. This means that business leaders need to understand which data sets are vulnerable to this shortened shelf life and act appropriately. Often this involves a self-service approach to data rather than relying on specialist staff.

It is no surprise that, since its inception, search engine technology has fundamentally stayed the same, notwithstanding minor algorithm adjustments along the way. It is easy and effective at navigating the wealth of information that the internet has to offer. To truly democratise data, businesses need to choose their intelligence software carefully. It seems that with search-based analytics, the next stage of business intelligence will be far more prepared for the modern data challenges facing business users.

A BREATH OF FRESH AIR

WHAT CAN SEARCH ENGINES TEACH US ABOUT BUSINESS INTELLIGENCE?

About Greg Richards:

Greg Richards is the Sales and Marketing Director of business intelligence and search-powered analytics specialist Connexica. Greg joined Connexica in 2007, a year after the company was founded, and is a firm advocate for the democratisation of business intelligence.

MANDATES

CHROME Federal Credit Union Taps NYMBUS for Digital Transformation

Date: *30.11.2016* ***#Core Banking***
Provider: *Nymbus*
Client: *CHROME Federal Credit Union* ***Mandate value:*** *Undisclosed*

NYMBUS Inc., a provider of the world's most current mission-critical core banking technology, today announced CHROME Federal Credit Union selected NYMBUS SmartCore to help the company realize its digital-first transformation. NYMBUS will enable CHROME to deliver compelling, modern digital services – from secure online and mobile banking, to rapid digital on-boarding, lending, and remote deposit capture – to its more than 18,000 customers nationwide. CHROME, formally Washington Community Federal Credit Union, is in the process of transforming its business to a digital-first credit union, addressing the rapid shift in consumers' needs and growing competition from outside the financial services industry.

Bank of Jordan Deploys Wolters Kluwer's Risk Software

Date: *24.11.2016* ***#Core Banking***
Provider: *Wolters Kluwer*
Client: *Bank of Jordan* ***Mandate value:*** *Undisclosed*

Bank of Jordan has chosen Wolters Kluwer's OneSumX to provide its risk software after a competitive tender process. The bank has specifically signed up to use OneSumX for Risk to manage its Liquidity Risk and Asset and Liability Management (ALM)requirements. Bank of Jordan will use the OneSumX for balance sheet modeling, risk measurement, risk management and regulatory compliance. The solution is based on Wolters Kluwer's integrated data architecture and is a truly enterprise-wide risk solution. OneSumX Liquidity Risk Management, meanwhile, combines a risk management/stress engine and regulatory reporting platform which will enable Bank of Jordan to monitor, manage and report liquidity risk.

ICCREA Banca Taps Misys to Boost Transformation and Innovation Across its Trading Business

Date: *21.11.2016* ***#Trading Systems***
Provider: *Misys*
Client: *ICCREA Banca* ***Mandate value:*** *Undisclosed*

ICCREA Banca, a holding of the Iccrea Banking Group, has selected Misys FusionCapital to drive transformation and innovation across its Italian trading business. This new project provides front office and consolidated post-trade processes to improve straight through processing (STP) and improve risk management. Under the agreement, ICCREA Banca expects to reduce operating costs by €5 million over 10 years. The bank will also be able to extend its Misys software licence across the Credit Cooperative bank network (BCC), as it provides enhanced services to these organisations.

Landesbank Hessen-Thüringen Relies on iQbonds 4.3

Date: *29.11.2016* ***#Trading Systems***
Provider: *iCubic*
Client: *Landesbank Hessen-Thüringen* ***Mandate value:*** *Undisclosed*

Trusted and reliable partnership: After more than 3 years of strong cooperation, Landesbank Hessen-Thüringen (Helaba) has decided to increase their selection of services from the icubic AG portfolio by adding iQbonds 4.3. Following the most recent deals with NORD/LB and Erste Group Bank, Helaba has now also chosen to rely on iQbonds and the expertise of the Magdeburg software professionals. Along with the flexible and clear contract terms, in which supplementary mandatory updates are covered under the maintenance agreement, the short implementation times as well as customised and innovative customer adaptations motivated a speedy release upgrade to the new iQbonds Version 4.3.

Dinosaur Merchant Bank Limited Opts For Ancoa Surveillance

Date: *22.11.2016* ***#Compliance***
Provider: *Ancoa*
Client: *Dinosaur Merchant Bank Ltd.* ***Mandate value:*** *Undisclosed*

Ancoa, provider of contextual surveillance and insightful analytics for exchanges, regulators, buy & sell-side firms, announced that Dinosaur Merchant Bank Limited has deployed Ancoa's surveillance platform to monitor their equity trading activity for instances of market abuse and to meet their obligations under MAR (Market Abuse Regulation). Ancoa's contextual approach reconciles siloed data sets, from trading data to electronic communications, financial news and social media channels in order to construct a comprehensive picture of trading activity. Only by having this contextual view, can Dinosaur Merchant Bank Limited investigate suspicious transactions or orders, and report them to regulators.

Banco Neon Selects Gemalto to Deliver Innovative Visa Quick Read Card in Brazil

Date: *10.11.2016* ***#Payments***
Provider: *Gemalto*
Client: *Banco Neon* ***Mandate value:*** *Undisclosed*

Gemalto was selected by Banco Neon, a millennial-targeting smartphone-based Brazilian bank to deliver innovative Visa Quick Read debit cards to its customers. This innovative card design groups together important information, including account number, expiration date and security code, simplifying online payment with one unique entry. Gemalto's one-of-a-kind Visa Quick Read design for Banco Neon leverages a striking bright blue PVC card, serigraphy lettering and image that appears whenever there is UV light, an attractive hologram, camouflaged magnetic stripe and a colorful signature panel on the back.

DEALS

Sopra Banking Software Acquires Cassiopae MEA

Date: *01.12.2016*

Sopra Banking Software, a subsidiary of the Sopra Steria Group (Euronext Paris: SOP), announces its acquisition of Cassiopae MEA. Sopra Banking Software today announced its acquisition of outstanding shares in the Cassiopae MEA joint venture, and is thus increasing its stake from 45% to 100% of capital.

Cassiopae MEA was until now jointly owned by its CEO, Mr Jemil Benromdhane, and the Tunisian Group Wevioo. The French-Tunisian joint venture was established in 2010 with the aim of accelerating deployment, and ensuring the long-term presence, of Cassiopae's products in fast-developing African and Middle Eastern markets.

IBM Completes Acquisition of Promontory Financial Group

Date: *25.11.2016*

IBM announced it has completed the acquisition of Promontory Financial Group, a global market-leading risk management and regulatory compliance consulting firm. The firm's expertise and offerings directly address the standards for compliance implemented to ensure the integrity of the financial system, protect consumers and build trust through transparency.

Promontory, combined with IBM's deep industry expertise and Watson's cognitive capabilities, will directly address the massive operational effort and manual cost of constantly changing regulation and risk management requirements. With the completion of the acquisition, Promontory will help accelerate IBM's development of cognitive solutions for risk and compliance.

EverBank Financial Corp Announces Stockholder Approval of Merger

Date: *10.11.2016*

EverBank Financial Corp announced today that the Company's stockholders voted to approve its acquisition by Teachers Insurance and Annuity Association of America (TIAA) at a special stockholder meeting held in Jacksonville, FL today. Out of the votes cast at the meeting, 99.8% were in favor of the acquisition.

TIAA announced an agreement to acquire EverBank for $19.50 per share of common stock in cash pursuant to an agreement and plan of merger, dated August 7, 2016. Acquisition closing is still subject to customary regulatory approval and is expected to occur in the first half of 2017.

Lexmark Completes Acquisition by Apex Technology and PAG Asia Capital

Date: *30.11.2016*

Lexmark International, Inc. announced the successful completion of the acquisition by a consortium of investors (Consortium) led by Apex Technology Co., Ltd. (Apex) and PAG Asia Capital (PAG). Under the terms of the merger agreement, which was announced on April 19, 2016, Lexmark shareholders will receive $40.50 per share in cash. Legend Capital Management Co. Ltd. (Legend Capital) is also a member of the Consortium.

"I'm incredibly excited about Lexmark's future," said David Reeder, Lexmark's new president and chief executive officer. "Lexmark has employees across the globe who are truly passionate about technology and helping customers better manage their imaging and output needs.

Independent Bank Corp. Completes Acquisition of New England Bancorp

Date: *11.11.2016*

Independent Bank Corp. (Nasdaq Global Select Market: INDB), parent of Rockland Trust Company, today announced the closing of its acquisition of New England Bancorp, Inc., parent of Bank of Cape Cod.

"This acquisition strengthens Rockland Trust's Cape Cod presence," said Christopher Oddleifson, the Chief Executive Officer of Independent and Rockland Trust. "We look forward to introducing Bank of Cape Cod customers to all that Rockland Trust has to offer."

The legal closing occurred today, pursuant to which New England Bancorp will be merged with and into Independent, with Independent the surviving entity, and Bank of Cape Cod will be merged with and into Rockland Trust, with Rockland Trust the surviving entity.

ION completes acquisition of Reval

Date: *08.11.2016*

ION Investment Group announced today that it completed its acquisition of Reval, a global provider of cloud-based solutions for treasury and risk management, on November 1st. Financial terms were not disclosed.

Reval's award winning software-as-a-service platform is now part of ION's corporate treasury division, which also includes the Wallstreet Suite, IT2, City Financials and Treasura solutions.

ION provides Reval the stability of long-term ownership, enabling focus on product innovation and customer success. To learn more about Reval, visit www.reval.com.

PEOPLE MOVES

PayU Welcomes Former PayPal Senior Director as Global CCO

Date: *23.11.2016*

PayU, the global online payment service provider, today announces the appointment of Matthias Setzer as its global Chief Commercial Officer.

Matthias brings extensive knowledge of business development and partnerships to PayU. He joins the company having spent 12 years with PayPal, latterly as PayPal's Senior Director of Strategic Partnerships & Business Development EMEA. Prior to that, Matthias worked for Lycos Europe and Bertelsmann.

In his role as PayU CCO, Matthias will be based in Germany, responsible for leading PayU's global sales and managing its business development and strategic partnerships.

SETL Welcomes Martin Clements to its Board

Date: *10.11.2016*

SETL, the London based financial blockchain specialist, has appointed national security expert Martin Clements CMG OBE to its board.

SETL was launched in July 2015 to deploy a multi-asset, multi-currency institutional payment and settlements infrastructure based on blockchain technology. The SETL system will enable market participants to move cash and assets directly between each other, facilitating the immediate and final settlement of market transactions.

Martin Clements joins the SETL board having recently retired from his role as Director General responsible for Technology and Transformation at the UK Foreign and Commonwealth Office.

Ingenico Group's Suzan Denoncourt Joins Board of ACT Canada as Co-Chair

Date: *10.11.2016*

Ingenico Group, the global leader in seamless payment, announced that its Managing Director of Canada, Suzan Denoncourt, has been named co-chair of the board for ACT Canada. As an educator, enabler, influencer and advocate for its members, ACT Canada is an internationally-recognized authority, trusted knowledge resource and catalyst for change in payments and secure identity. As co-chair, Suzan will be responsible for co-leading the member-elected board of directors that oversees the association's activities and initiatives.

ACT Canada is a non-profit association, federally incorporated in 1989 as a trusted, objective, world-class knowledge resource and catalyst for change for its members.

Wells Fargo Appoints Monica Cole as Head of North Region for Middle Market Banking

Date: *01.11.2016*

Wells Fargo & Company announced that Monica Cole has succeeded Laura Oberst to head Middle Market Banking for the North Region. Oberst was tapped in September to lead the company's Business Banking Group. Cole has led the Southern Division of Wells Fargo Middle Market Banking since 2014, managing more than 100 team members at regional offices in Arkansas, Kansas, Missouri, North Texas, and Oklahoma. In her new role, Cole, who is relocating to Chicago, oversees more than 350 team members in six states, including Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. She will report to John Adams, head of Middle Market Banking, which serves mostly privately held, family owned businesses with annual sales of $20 million or greater.

Wells Fargo Appoints Monica Cole as Head of North Region for Middle Market Banking

Date: *01.11.2016*

Wells Fargo & Company announced that Monica Cole has succeeded Laura Oberst to head Middle Market Banking for the North Region. Oberst was tapped in September to lead the company's Business Banking Group. Cole has led the Southern Division of Wells Fargo Middle Market Banking since 2014, managing more than 100 team members at regional offices in Arkansas, Kansas, Missouri, North Texas, and Oklahoma. In her new role, Cole, who is relocating to Chicago, oversees more than 350 team members in six states, including Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. She will report to John Adams, head of Middle Market Banking, which serves mostly privately held, family owned businesses with annual sales of $20 million or greater.

Advicent Expands Leadership Team With New Appointments

Date: *01.11.2016*

With the new Department of Labor (DOL) fiduciary standards set to take action in less than six months, financial services organizations are taking major steps to comply. Advicent, a leading financial technology firm, provides a product suite that empowers firms and advisors with tools that can greatly improve the effectiveness of compliance strategies in anticipation of the rule. In an effort to continue the enhancement of these products and services, Advicent continues to invest in high-caliber talent. George Fischer fills the role as the vice president of product strategy, and the company is thrilled to leverage his veteran experience and visionary talent. In his new role, Fischer will define and drive the Advicent business plan, growth strategy, investments, and positioning for the global product line.

Financial IT

Financial Technology Buyers' Guide

December 2016 Issue

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

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

COMPANY CONTACT DETAILS	
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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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China Systems is the leading Trade Services Solutions vendor in the world, with offices throughout Europe, the USA, Asia, and the Middle East. Established in 1983, China Systems has gained extensive experience in international banking systems by exploiting the functional adaptability and development capabilities of Eximbills, its renowned toolkit for Trade Services within the banking industry.
Apart from our rich technical heritage, we also offer true global product implementation as well as support and maintenance services. We have worked with banks to implement our products throughout their global branch network.

COMPANY PROFILE	
Company type	Private Company
Annual turnover	Undisclosed
Number of Customers Total	+200
Number of Employees	Undisclosed
Inception	1983
Geographical coverage	Europe, the USA, Asia, and the Middle East

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

COMPANY PROFILE	
Company type	Corporation
Annual turnover	$10 billion
Number of Customers Total	Undisclosed
Number of Employees	68,000
Inception	1976
Geographical coverage	Americas, Europe and Asia Pacific

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

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

COMPANY CONTACT DETAILS	
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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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Established in February 2006, with the sole objective of delivering fast, agile and functional business software to the Investment Management sector, CYMBA Technologies, from its very inception has concentrated exclusively on the delivery of such products within the Front Office environment and has successfully delivered on this objective as evidenced by its ever increasing global customer base. The Company's detailed knowledge of Hedge Funds and Investment Management processes has enabled the development of leading edge Investment Management systems for Algorithmic Trading, Execution Management, Real-time Profit and Loss (CYMBA Athena IMS), and Compliance (CYMBA Centurion).

COMPANY PROFILE	
Company type	Private Company
Annual turnover	Over £ 1 Million
Number of Customers Total	over 15
Number of Employees	Less than 10
Inception	2006
Geographical coverage	UK, US & Asia

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

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

COMPANY CONTACT DETAILS	
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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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Elliptic is an established authority on blockchain compliance. The firm provides AML technology to the leading European and US Bitcoin exchanges, assessing risk on more than $1 billion in Bitcoin transactions every month. In addition to providing data and analytics services to financial institutions and law enforcement agencies around the world, Elliptic advises governments on blockchain regulatory matters. In 2016, the firm was selected by KPMG as a "Top 10 Global Emerging Star" among Fintech startups and in March this year, went on to secure $5m Series A funding lead by Paladin Group and Santander InnoVentures.

COMPANY PROFILE	
Company type	Privately held
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	Undisclosed
Inception	March 2013
Geographical coverage	UK, Europe, US

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

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

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

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

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

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

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

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

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

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

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

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

COMPANY CONTACT DETAILS	
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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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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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Pegasystems develops strategic applications for sales, marketing, service and operations. Pega's applications streamline critical business operations, connect enterprises to their customers seamlessly in real-time across channels, and adapt to meet rapidly changing requirements. The solutions offered by Pegasystems are available on-premises or in the cloud and are built on its unified Pega 7 platform, which uses visual tools to easily extend and change applications to meet clients' strategic business needs.

COMPANY PROFILE	
Company type	Public Company
Annual turnover	Undisclosed
Number of Customers Total	2000+
Number of Employees	3000
Inception	1983
Geographical coverage	Asia, Europe and North America

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

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

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

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

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

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

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

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

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

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

COMPANY CONTACT DETAILS	
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SunTec Business Solutions is the leading provider of revenue management and business assurance solutions to financial services and digital and communications services industries. With deployments in 58 countries, SunTec's highly functional and technology-agnostic product suite Xelerate™ empowers the clients to create real-time personalised offerings to improve profitability and customer experience while optimising customer lifetime value. The product suite enables service providers to develop, launch and monetise innovative offerings quickly. Xelerate has helped create products and services for over 300 million end-customers today.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	Undisclosed
Number of Customers Total	40
Number of Employees	800+
Inception	1990
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Tagetik provides intuitive, enterprise-scale performance management software solutions that drive business results, improve efficiency and reduce risk. Tagetik offers the simplicity of the Cloud and the power to unify financial and operational planning; shorten the consolidation and close process; immediately analyse results, model and compare full financial statement impact of business scenarios; adjust strategic plans; update rolling forecasts; produce formatted and auditable financial statements and management reports and automate disclosure and board reporting. Tagetik's built-in financial intelligence allows finance and operations executives to orchestrate multiple processes in one software solution.

COMPANY PROFILE	
Company type	Privately Held
Annual turnover	Undisclosed
Number of Customers Total	850+
Number of Employees	425+
Inception	1986
Geographical coverage	Global

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

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

COMPANY CONTACT DETAILS	
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ZoneFox is a market leader in User Behavior Analytics, providing critical insights around data-flow to secure organisations against the Insider Threat. Driven by Machine Learning, ZoneFox is the most advanced UBA platform on the market, with a global customer base including Zenith Bank, Rockstar Games & Nucleus Financial. ZoneFox unobtrusively monitors, records, and analyses user behaviour around business-critical information. Taking only the data it needs, ZoneFox identifies user patterns and immediately alerts on any risky behaviour, accidental or malicious, turning your big data problems into valuable, actionable insights.

COMPANY PROFILE	
Company type	PLC
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	20
Inception	2010
Geographical coverage	Worldwide

COMPANY CONTACT DETAILS	
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