FUTURE OF BANKING

Banks shape up for high street battle in 2017

This is the year when big banks must embrace the digital revolution as the banking sector is blown apart by challengers offering better products and services through smartphone apps

OVERVIEW
DAN BARNES

A battle will be pitched on the high street in 2017. Competition is being forced upon banks by the Competition and Markets Authority. Customers will be able to use rival services without switching bank accounts.

Rivals to the big banks – both smaller challenger banks and financial technology firms – will be able to build services on the back of customers' existing accounts.

The Open Banking Initiative, as it is called, will affect banking for small and medium-sized enterprises and consumers. It is mandated to be in place within the first three months of 2018.

According to Andrew Hauser, executive director for banking, payments and financial resilience at the Bank of England, banks must decide "whether to take on competition with challenger firms head on or partner with them to develop and implement the most promising forms of technology internally" because "doing neither is a risky approach".

> Facing pressure from consumers and regulators, banks must embrace digitalisation

Banks have always been more like beehives than machines, buzzing with a common purpose, but little central control. When they stopped making honey in 2007-08, it became clear they were too complex to be restructured or repaired easily. Since then authorities have tried to make them more industrial by imposing waves of rules and tests upon them. They have developed a somewhat more deliberate shape as a result.

Now the pressure is coming from the consumer. In the digital age, banking's organic structure is looking positively antiquated. Facing pressure from consumers and regulators, banks must embrace digitalisation. Their capacity to do so will determine their cost base, their ability to handle risk and make a profit from tighter margins.

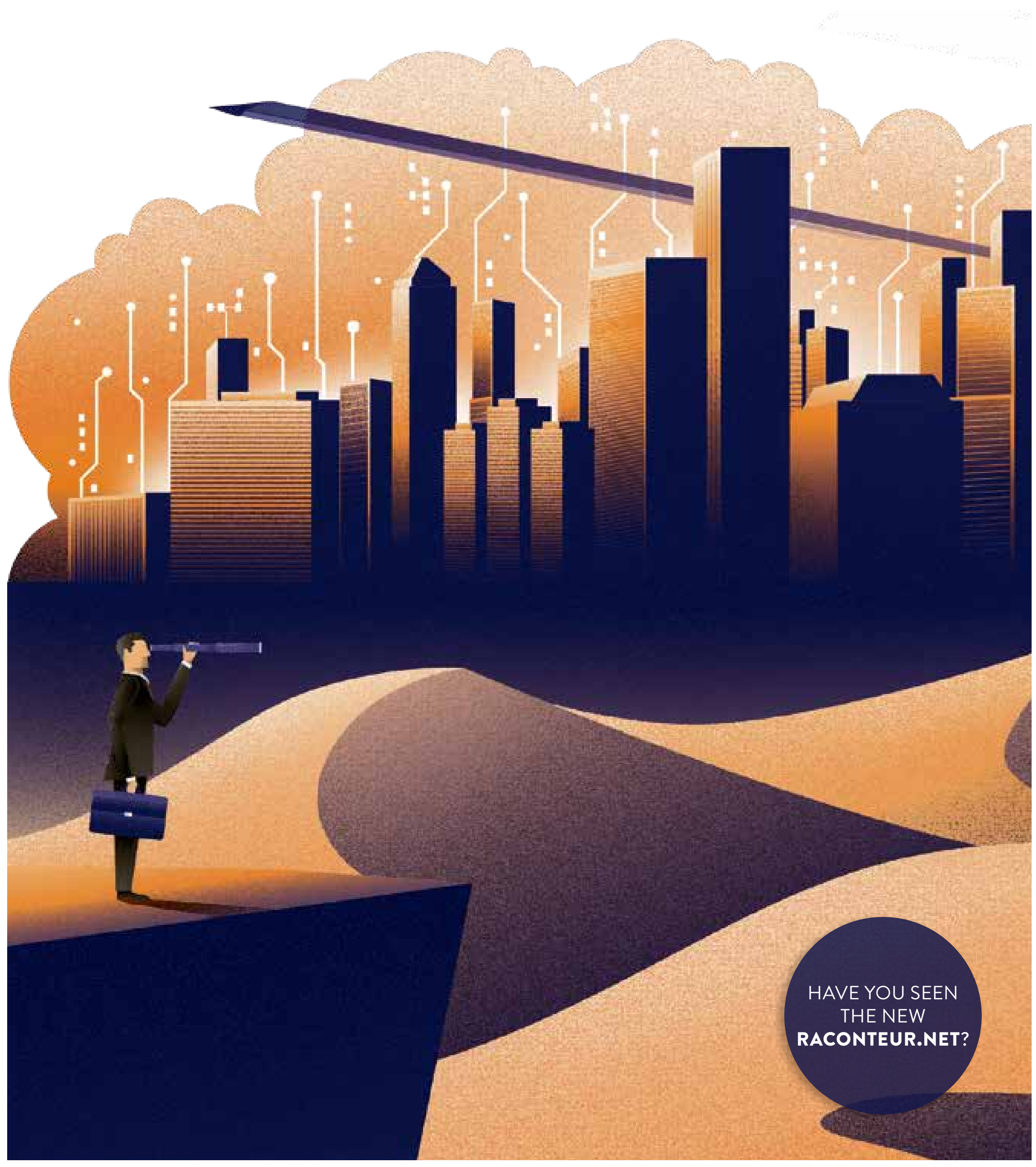
The smartphone is the weapon of choice for the bank customer of today. Research firm eMarketer estimates that, among 18 to 24 year olds in the UK, 94.4 per cent will own a smartphone while, among 25 to 34 year olds, the number is slightly lower at and 93.1 per cent. Many new banks are operating digital-only models, lowering the cost of customer acquisition significantly by reaching out to smartphones via an app, to give their customers a full range of banking services.

Banking is not an easy business to get into even with these advantages, yet challengers including Metro Bank, Virgin Money and One Savings Bank posted strong results at the end of October. Atom Bank, an app-only bank, plans to begin offering mortgages in 2017. Santander launched a 30-minute mortgage application via smartphone at the end of 2016.

Within the wholesale and investment banking business there is a growing demand for more efficient trade confirmation and settlement. Distributed ledger technology, which is used to settle trades in bitcoin automatically at the point the order is agreed, has been adapted for use with other instruments to satisfy risk reduction.

The biggest macro-economic threat to UK banks is Brexit. Access to the single market is key for many banks that trade in the UK and for many of the businesses they have as customers. The direct impact will largely be to change the way banks are regulated, their form and legal structure. All of that brings cost, which will affect the competitiveness of both UK banks and European Economic Area banks that trade here.

The great uncertainty it brings will affect mainstream banks, challenger banks and specialist lenders, with big question marks hanging over commercial real estate and the private property market.



TOP REASONS FOR HAVING ADDITIONAL FINANCIAL PRODUCTS*

WITH THE SAME BANK

Reason	%
Like to have everything with the same bank	49%
Bank offers better products/deals than others	13%
Good customer service	12%
Convenience	8%
Always had an account with them/long time	6%
Easier to manage/transfer	6%
Want to use the same online account for everything	4%
Recommendation of friends/family	4%

WITH DIFFERENT BANKS

Reason	%
Offered a better product deal	55%
Prefer not to have multiple products with the same bank	9%
Different providers for different purposes	7%
Had account with them before/always had them	6%
Minimise risk	4%

*UK current account holders chose the main reason for either having financial additional products with the same or different providers

Source: Competition and Markets Authority 2015

> Partnerships do not represent a suppression of the new, but the embrace of things to come

Investment banking will be even more significantly affected, as domestic capital markets in Europe have been broken wide open via European Commission directives and regulations to encourage pan-European competition. Those same regulations are demanding a more transparent investment process with asset managers and the banks that support them moving towards greater levels of electronic trading and more detailed reporting.

For years banks have been shedding staff and talking about breaking down silos within their operations. Now that is beginning to happen, with more consolidated views of their trading and risk positions, it is giving banks more insight into their business and this is being passed on to customers in the form of better services.

There is a cost to achieving these greater levels of insight. They are enabled by data and an increasingly digital business. The risk of data breach or loss is ever-present and the ability to handle data without placing it at risk is fundamental to maintaining confidence in the banking system. The recent account breach at challenger Tesco Bank is a stark reminder of the risks institutions are exposed to.

Taking the wealth of data that is available from an increasingly online world and using it to support customers is both a technological and cultural challenge. For large banks with legacy IT systems, replacing their technology for mortgages, loans and current accounts with an online platform to which products can be added is a nirvana.

Big data technology is making the capture and processing of different types of data far more viable, while machine-learning and algorithms can use that information to fuel everything from financial advice and investment to fraud prevention. However, the scale of the transformation needed is enormous.

A key group of influencers on the future of banking are shareholders. With incumbent banks struggling to deliver a high return on equity, shareholders will look for those banks that are able to make the move into the digital-first environment, engaging with customers on the basis of greater service, better value and importantly with home-grown technology that can help a firm differentiate itself from the rest.

Mr Hauser's advice for incumbent banks to go head-to-head or partner is already being born out. France's mutual lender Groupe BPCE announced last July its acquisition of challenger bank Fidor, which chairman François Pérol said was a key step in the acceleration of the digital transformation of the group.

Such partnerships do not represent a suppression of the new, but the embrace of things to come.

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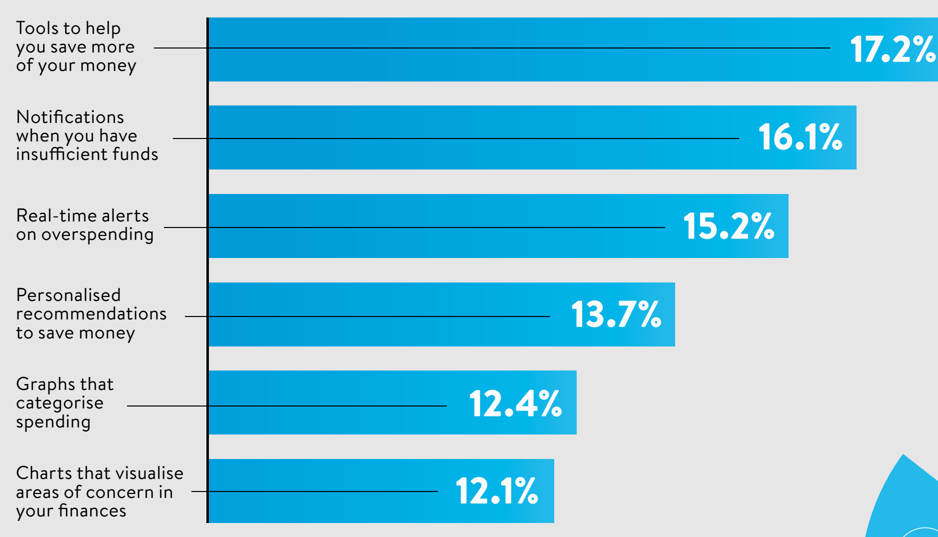
COMMERCIAL FEATURE

DATA: THE KEY THAT UNLOCKS THE BANKING ECOSYSTEM

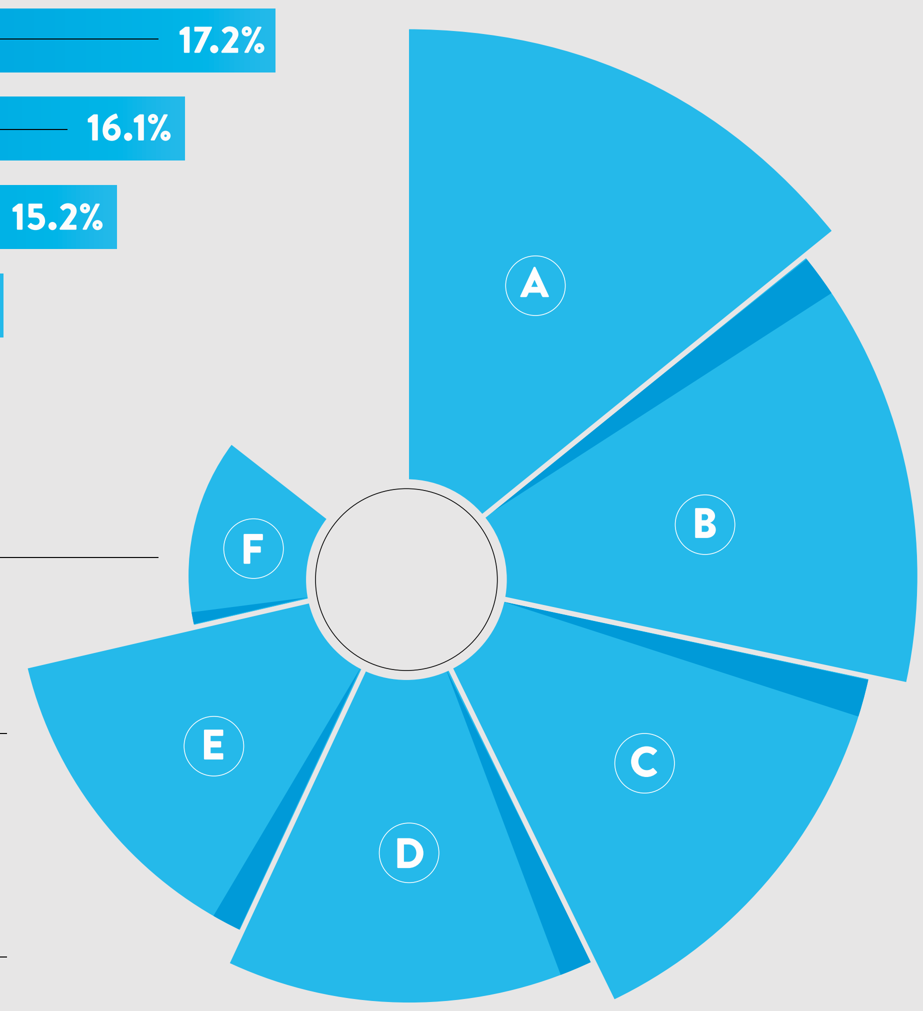
As 2017 dawns, banks must be prepared to make data available as a service to customers and third parties to unlock new revenue streams – and avoid losing business to new market entrants

MARKET OPPORTUNITIES
DIGITAL FINANCE TOOLS WANTED BY CUSTOMERS



Retail Banking Insight Survey, 2015

MARKET OPPORTUNITIES
CUSTOMER ATTITUDES TOWARDS ACCOUNT AGGREGATION AND DIGITAL FINANCE TOOLS TO MANAGE THEIR FINANCES



A 21.6% I would feel safer if my bank provided this service*

B 19.2% Aggregating all my finance would be convenient

C 18.3% I don't want to have all my finances stored in one place

D 16.4% I would like my bank to offer this type of service*

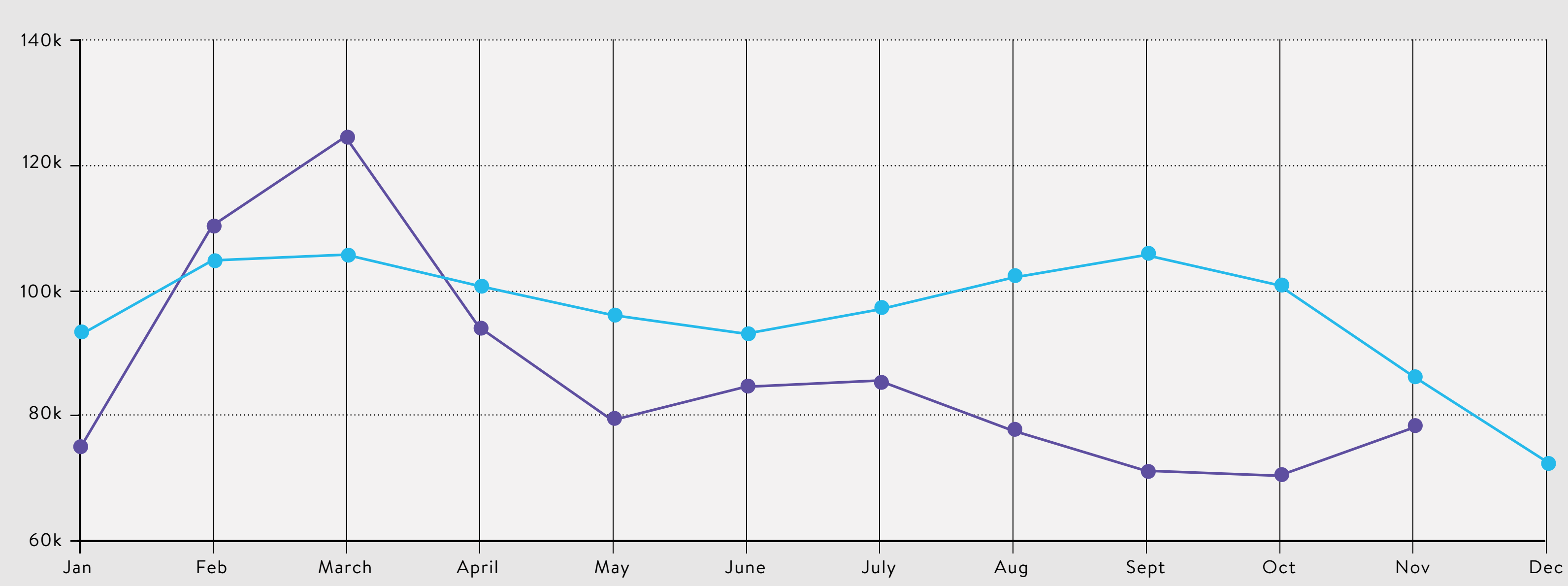
E 15.4% I would be worried about the security of my information

F 8.5% This service* wouldn't be useful to me

*Account aggregation and digital finance tools

Retail Banking Insight Survey, 2015

CURRENT ACCOUNT SWITCH SERVICE
TOTAL MONTHLY SWITCHES



Source: Bacs Payments Schemes Limited

CAPCO

Customers are going to get control of their data. That's the new reality for banks as they strive to deliver a better experience, unlock new revenues and resist the efforts of new market entrants.

As dramatic as this sounds, no one should be surprised. Low interest rates and higher regulatory costs have driven financial services firms to the point where a penny is harder to make and more valuable to hold. When competition increases, banks must work harder and smarter to meet customer expectations.

Data holds the key to this approach. "Look at a business such as Google which derives revenues based on a highly accurate view of the data associated with consumers," says Chris Geldard, managing partner at Capco. "Likewise, banks can unlock value through a smarter approach to data. And while these are early days, some challenger banks, such as Monzo in the UK, are starting to apply this sophisticated approach to their customers."

What does this mean in terms of customer services? Offering tools through smart digital offerings could prove to be a real differentiator. Research firm Verdict Financial's *2015 Retail Banking Insight Survey* found the tools most in demand were to help save more money (17.2 per cent), notification of insufficient funds (16.1 per cent) and real-time alerts on overspending (15.2 per cent).

Regulation is also a driver. "A bank's main asset is its data," says Steve Hargreaves, a partner at Capco. "Having clear lineage, clear ownership and a clear vision of data quality is very important, and the need to report that to regulators is helping to drive banks to get on top of data management."

DIGITAL-FIRST BUSINESS

E-commerce businesses like Amazon, Apple, Facebook and Google prove that smart data management can create a customer bond like no other. Across retail, wholesale and capital markets, banks are keenly aware that the digital-first model based on high-performance data analysis will create a massive advantage. Yet moving from the current situation to one of clarity can be hard.

Banks have built technology around products such as mortgages or current accounts, or teams that trade products such as shares or bonds. Data bases are organised around those products instead of the customers that buy them. Getting a complete picture of a customer that enables the bank to understand what he or she wants requires a re-engineering of their data architecture.

This presents a number of challenges. At a technical level the systems need to start with the customer and work their way out to the products; a reverse of the current model. These systems, in turn, reflect the way the organisation has built its processes, which will also need to be changed. Getting this transformation right offers enormous potential.

"It's the banks' priority to retain an overview of an individual's financial services so they can continue to work with them throughout their lives," says Mr Geldard. "Banks are investing in the user experience and making better use of customer data to retain those clients with whom they have a primary brand connection. But if this role goes to other providers, such as fintech platforms, those providers will start to get in-between."

> Now we are seeing banks trying to put their data back into the hands of the customer because that's really where the value will come from

OPEN BANKING INITIATIVE

In the UK, banks are facing the Open Banking Initiative, an effort by the Competition and Markets Authority to encourage consumers to embrace competition in banking by allowing third parties to connect directly to customers' bank accounts via a standardised interface. In Europe, a similar initiative, the Payment Services Directive 2, should also lead to greater competition. Both initiatives will enable firms, which comply with these rules, to deliver services that rival those of traditional banks.

Customer confidence is king when exploiting this opportunity. The *Retail Banking Insight Survey* found 18.3 per cent of consumers did not want their finances stored in one place, while 19.2 per cent thought it would be more convenient. Importantly, if banks were seen to be offering aggregation, 21.6 per cent of respondents said they would feel more confident with the service.

In addition, Europe's General Data Protection Regulation is due to come into force in 2018. This will give consumers more control over their data held by a bank, including data the bank has acquired from other sources.

"There will be a constant checking mechanism where, if the consumer does have more control of this data, then the institution can minimise the risk around sharing of that data," says Mr Hargreaves.

Within investment banking, regulation is making trading more expensive by raising the cost of holding certain assets for clients. Understanding the cost of trading in assets and the cost of servicing customers has become more important as a result.

CHIEF DATA OFFICER

For many senior management teams, this change in emphasis has resulted in the creation of a chief data officer (CDO). The job may be business line-specific or company-wide, but the Senior Managers Regime, driven by the Financial Conduct Authority in the UK, is creating direct accountability. To handle this level of responsibility, finance houses often look outside their peer group for expertise, with data officers drawn from the ranks of digital firms such as Google, the military and government departments.

A key role for the CDO will be to identify real opportunities and cut through the hype associated with transformation initiatives. Nic Parmaksizian, global head of digital and a partner at Capco, says: "Many banks realise that data is critical to business-model success, and turning it into valuable insights will allow them to retain and expand their customer base. Now we are seeing banks trying to put their data back into the hands of the customer because that's really where the value will come from. Equally, new banking services that leverage machine-learning and artificial intelligence (AI) are starting to emerge."

By instigating the gathering and processing of data for a sufficient period, a bank can start to build predictive models that could help it deliver value to its customers, for example in the way of recommendation and advice. Robo-advisers are already able to offer guidance on the probability of investments, which is far simpler than the execution algorithms that are used by asset manager trading desks.

Mr Parmaksizian says: "With that in mind, having a chief data officer, who brings the organisation together around this approach and adds real value, is essential."

> This new segment of customers is not lethargic – far from it, they are extremely dynamic, extremely active, and their brand loyalty is far less rigid

AI REVOLUTION

This is not such an unfamiliar land for the e-commerce giants that are already moving into the payments space using their detailed customer information. Given they already have a lot of customer information, they may be able to develop very powerful value propositions for customers that banks might not be able to compete with.

The trading environment has increasingly moved away from information that is consumable by humans. For financial services firms to succeed, they must also raise their level of analysis to bring in larger data sets, which typically need automation and machine-learning to be understood.

"With the rise of machine-learning and artificial intelligence, I think human intelligence will increasingly find it difficult to untangle the decisions that we are going to see in the future," says Mr Parmaksizian.

At the end of the day, everything depends on shifting consumer attitudes. Even today, 37 per cent of UK bank customers have stayed with their bank for 20 years or more. On average 86,300 customers switched accounts each month in the UK to November 2016, down from an average of 98,500 a month in 2014. But banks ignore the changing attitudes of different customer segments at their peril.

"Millennials demand different things from financial services providers," says Mr Geldard. "In this world where banks find it harder to make money, they are highly motivated to innovate in service and product design for these generations. This new segment of customers is not lethargic – far from it, they are extremely dynamic, extremely active, and their brand loyalty is far less rigid than with older customers."

WORKING HARDER FOR CUSTOMERS AND THEIR LOYALTY

*Q&A with **Lance Levy**, Capco chief executive*

LANCE LEVY
Chief executive, Capco

Q **Do you see a sense of fairness being brought to finance at last?**

A It is starting to happen. Customers are demanding the brilliant experiences they see with other service providers, in other industries, and this is making finance more democratic. It's making available what were once high-level services to all customers, not just institutional clients or high-net-worth clients. Small financial technology firms are taking the lead in some cases, delivering services direct to the smartphone or online, either working with banks or potentially disintermediating them.

Regulation is driving banks to open up their technology to fintech firms and to other financial institutions. As a result people are becoming less reliant on providers of traditional financial services and having one institution manage all your financial services or your entire portfolio is no longer the most viable model.

Customers will also be given ownership of their data by regulators and financial service providers will need to offer a compelling service to access it. This includes a next generation of banking that will be built around a more mobile-friendly interface which really emphasises the customer experience and focuses on user friendliness. That's why some fintech firms have become successful so quickly; they are able to provide a much faster, less expensive and more cost-effective experience.

Q **How do you think banks should handle customer ownership of data?**

A Who owns the data and how customers will be protected when data is shared is a big challenge for the financial services industry.

Take the banks, to begin with. Their valuable client data could become available to other players, including e-commerce giants such as Amazon and Facebook, that already benefit from other data sets unavailable to banks. In this environment how will the banks continue delivering the greatest value to customers? How will they maintain the bond of trust that exists between them and these individuals?

Banks will need to rethink their traditional business models. They must join up the flow of data across their business and work out how to make better use of this data to unlock new revenue streams. They may charge third parties for the interfaces to the bank's data. They may also ask customers to pay for discrete value-added services, which can be charged for individually.

Q **Are the challenger banks at an advantage over the incumbents in this scenario?**

A A lot of them have actually copied the big banks' proposition, then tried to market themselves as smaller and more agile. There is a price differential because their cost income is slightly better, but at the same time they lack critical mass.

To get over that, challengers will have to leapfrog traditional banking services and offer new ways of working that provide a better customer experience and target particular customer groups.

This a real challenge to established players. Startups, fintech and e-commerce giants are already chipping away at the financial services market, such as payments, international money transfers, lending and investments.

Therefore, challenger banks will need to compete not just with the tier-ones that currently own the customer relationships, but also new entrants that provide new, brilliant experiences for specific customer segments.

Even so it's a tough market if you want to win new customers and only a few million in the UK have used the current account switching services. That said, if you look at some of the new organisations, such as Monzo, they really try to position themselves in a different way from challenger banks. For these organisations, it's all about innovative technology and providing a much better customer experience.

Q **What do you think customers really want among all this competition?**

A People are looking for services delivered around the money moments in their lives. They're prepared to take delivery from trusted parties who may not necessarily be banks.

Millennial customers put less trust in banks than other generations, having grown up during a period of financial crisis and sluggish economic recovery. They use technology in every aspect of their lives and frankly most are more excited about a trip to the dentist than a conversation with their bank.

Successful products and services must add value to peoples' lives and needs. I believe we will see these new propositions expand in use by niche audiences, however whether they are provided by the fintech that originally created them or by acquiring banks remains to be seen.

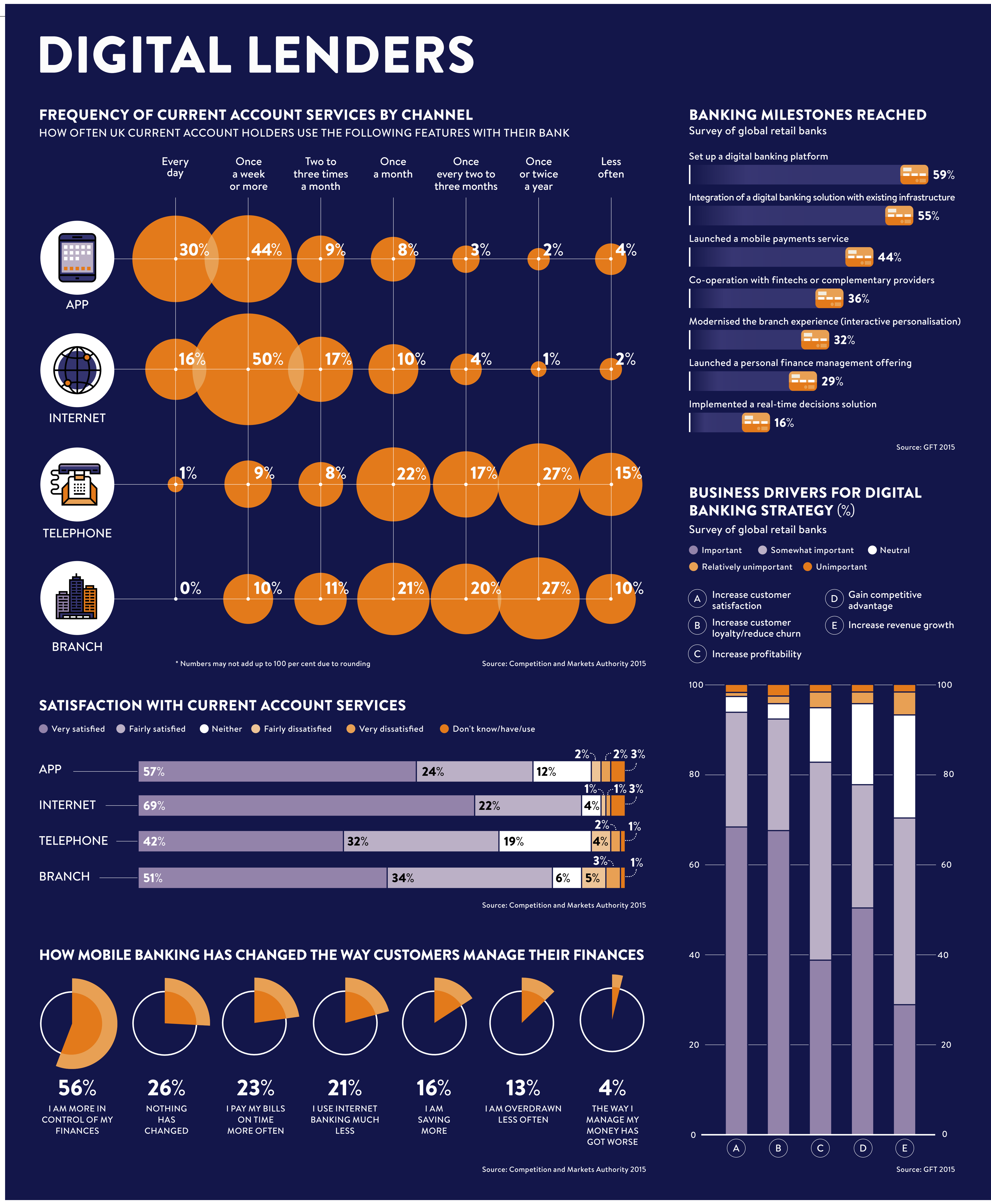
Critically, the operating model and the talent mix should change within banks if they want to get ahead. The high levels of loyalty, or low levels of switching, that have kept banks afloat for many years will start to vanish. Banks will need to work much harder for the same levels of loyalty in the future.

For more information please visit www.capco.com or contact enquiries@capco.com

Banks must adapt to the digital age or die

Financial technology startups are disrupting the big banks that now face the challenge of reinventing themselves to survive

FINTECH
OSCAR WILLIAMS-GRUT



"Software is eating the world," Silicon Valley venture capitalist Marc Andreessen declared in a famous article five years ago. After munching through advertising, media and transportation, software's appetite is now being satisfied by banking and finance.

Banks today face competition from a vast array of financial technology or fintech startups that are meeting customers' needs faster and cheaper online. The question is how do the big banks respond?

"There's no logical reason why any of the big banks shouldn't be able to turn this around," says digital banking expert Jason Bates. "But if you look at other industries that have been overtaken by technology, whether that's the music industry or newspapers, there's very few of them that you could point out that have made the turn."

Mr Bates co-founded two digital challenger banks in the last five years, Monzo and Starling, and now works for 11:FS, a startup digital banking consultancy. It's startups like Monzo, Starling and their ilk that are fuelling fears that traditional banks could be reduced to "dumb pipes", a phrase floated by Citi research analysts in a note at the start of last year.

The theory runs that innovative new fintech companies, or indeed tech giants like Facebook or Google, will win over customers with zippy websites and apps. The banks will be reduced to providing the underlying products, invisible to the consumer. The upstarts cream off the majority of the profits thanks to their direct relationship with the customer, while traditional banks compete among each other for business with these new platforms, driving down margins.

These fears are being driven not simply by new market entrants, but also by legislation. Both UK and European regulators are pushing "open banking", a new regime that would force lenders to share otherwise hidden data, making it easier for consumers to compare banks and products.

This mandated data-sharing and adoption of APIs – essentially digital ports that allow third parties to plug in to the underlying services – will allow companies to build products on top of the bank's infrastructure, as well as opening the way for marketplaces like those that have taken over the insurance market. Think GoCompare, but for current accounts or mortgages.

"Banks are going to be forced into being not just an average provider of all products," says Chris Geldard, managing partner at financial services consultancy Capco. "They have to be best in class and they'll have to switch some things off. With open banking, it's going to be a much more competitive market."

How exactly can banks navigate this brave new world? The challengers themselves may prove the best guides.

"There's always this impression that banks and fintechs are enemies, which is wrong." says Shane Williams of UBS. "Actually, the banks see fintechs as a great way to understand what they're doing and how to advance."

Mr Williams is the co-head of UBS's new online wealth management product SmartWealth, launched to compete with a new breed of investment startups dubbed "robo advisers". He developed the concept in close consultation with UBS's innovation lab, located in London fintech office hub Level39.

"What the banks have recognised is that fintech and technology companies are showing ways to operate and technologies that support the client experience," he says. "Technology for technology's sake is no good for anyone. Where you can use technology to facilitate the client experience and add benefit to the customer, this is where I think everyone will start to move to."

Building in-house products inspired by fintechs, as UBS has, is one approach to the new innovation onslaught. Another is buying the smart upstarts.

"Facebook, Microsoft, Google do that all the time," says Mr Bates. "They make acquisitions both to protect themselves and also to grow their internal capabilities, and keep that entrepreneurial culture."

Spanish lender BBVA is the most high-profile example of this model, buying US online bank Simple, Finnish startup Holvi and taking a significant stake in app-only British banking startup Atom in recent years. "BBVA decided quite early on they were no longer a bank, but a financial services software provider, as they put it," says Nicolas Parmaksizian, head of digital at Capco.

A third route is partnering with nimble new players. This is not only easier than trying to ape the startups, but also presents opportunities for cost-cutting, something banks desperately need to do in the current low-revenue environment. Mr Parmaksizian says: "I had some clients who said, of all our core competencies, the only thing we want to retain in-house is our risk function. Everything else, from front-office distribution to back office, we'll outsource or we'll partner. It's very much about understanding what are you great at?"

The most obvious area where outsourcing can cut costs is in capital markets. Dozens of startups are trying to apply distributed ledger technologies, also known as blockchain, to markets like securities and bonds. London startup SETL, for example, is developing technology to allow banks to trade directly with each other and thereby reduce costs by cutting out intermediaries.

"I think within three years the landscape will be almost unrecognisable," says Peter Randall, SETL's chief executive. "Think about what John Cryan [Deutsche Bank chief executive] said the other day. He reported that they have 5,500 separate technology platforms at the bank. Those 5,500 have to be skinnied down and a distributed ledger is an extremely good way of doing that."

> It's really about the courage, vision and leadership to change who you are

According to Capco, there is a fourth, more radical alternative, to the "build, buy or borrow" approach – the "phoenix" option. This involves carving out a new, rival organisation within the bank that aims to cannibalise it from the inside. He points to First Direct, the telephone-only bank launched by Midlands Bank, later acquired by HSBC. Again, this has precedent in the tech world – Facebook's induction handbook implores staff to build the product that will one day destroy it. Better they do than someone else.

Capco is currently working with an American bank pursuing this path, launching a mobile-only bank targeted at millennials run by an entirely separate team within the bank. Mr Parmaksizian won't name the lender.

Ultimately, there's a spectrum of approaches to digital. Different solutions will work for different problems. A bank may want to start an internal challenger to tackle the problem of current accounts, outsource back-office functions to a blockchain startup and partner with an online lender for business loans.

"The future is uncertain," says Mark Mullen, chief executive of app-only challenger bank Atom. "At a conceptual level it's more important that you engineer agility and flexibility into your business than it is for you to know the future." The important thing, he says, is that banks are willing to try and willing to fail.

The experts agree that the biggest challenge for banks when it comes to digital may have nothing to do with technology at all.

"For us, it's all about mindset." says Mr Geldard. "It's about a different way of approaching things, a different way of working."

Mr Parmaksizian concludes: "It's about a culture geared towards growth, a culture geared towards innovation, speed to market, product development. It's really about the courage, vision and leadership to change who you are."

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NATWEST: TECH DRIVES CUSTOMER SERVICE

NatWest

A bank's precise approach to digital will depend on its priorities.

"At NatWest our aim is to be number one for customer service by 2020," says Kevin Hanley, the bank's director of innovation. "A huge part of reaching this goal will depend on delivering great products and services to our customers.

"To achieve this we need the very best in cutting-edge technology and this will only be delivered by partnering and collaborating with the most innovative companies both at home and abroad."

NatWest has a network of scouts in the UK, Israel and Silicon Valley, constantly on the look out of the most promising startups that the bank could work with to meet customer needs. The bank has also partnered with tech accelerator RocketSpace in London. The tie-up lets it keep an eye on the pipeline of innovation in the sector in return for mentoring tech startups.

Mr Hanley says: "In just the last few months we have worked with Facebook, conducted trials in artificial intelligence and explored quantum computing."

He adds that NatWest recently partnered with an Israeli security firm called BioCatch that was spotted by the scouting network. "The partnership will enable NatWest to monitor how people use online and mobile banking so that we can detect the difference between genuine customers and fraudsters," says Mr Hanley.

"Our board and senior management team now meet every month to discuss the latest technological innovations within the bank. I can assure you we'll be unveiling many more exciting updates in 2017."

BBVA: SOFTWARE COMPANY AND BANK

BBVA

Spain's biggest bank by assets, BBVA was one of the earliest movers among the big banks when it came to fintech. BBVA's chairman told the Mobile World Congress in early-2015 that BBVA would be a software company in the future and not simply a bank.

To this end BBVA has pulled off a string of acquisitions in the fintech space, most notably spending $117 million on US digital bank Simple in 2014, and last year spun out a $250-million fintech-focused venture capital fund, Propel. Clearly, BBVA is a believer in the "buy" model, rather than building in-house fintech products or partnering with startups.

But chief executive Carlos Torres Vila, who ran digital banking before taking the top job, says digital transformation is about more than just nifty technology. "Transformation has to be accompanied by a cultural shift, because it is people that make it possible," he told December's IESE Business School's Banking Industry Meeting. "We are doing a lot, but we still have a lot to do."

He called for "an end to so-called management silos" and a global, rather than local, approach to banking. BBVA acquired Silicon Valley design firm Spring Studios in 2015 to work across the banks entire product line to give it a unified feel and universal logic, just one example of global thinking at the bank when it comes to digital.

"Technology and innovation are for the ultimate benefit of financial services' consumers," he concluded.

Data is lifeline for banks in sea of regulation

Data analysis can improve customer experience and be the lifeline which keeps major banks afloat in a rising tide of institutional regulation aimed at maintaining a buoyant financial system

DATA
FINBARR TOESLAND


Mclek/Shutterstock

Banks around the world are being confronted with a record number of regulations, and those falling short of institutional obligations are paying a high price for their errors.

In response, major financial institutions are grasping big data solutions in a bid to comply with often dense regulations and reduce regulatory breaches.

"Considering many banks have grown organically, often via merger and acquisition, their data is not always consistent and well organised," according to James Arnett, a partner at business and technology consulting firm Capco.

Mr Arnett believes that new tools can be created through the application of data analytics, which will transform banks compliance programmes from manual, non-scalable projects into lower-cost and automated processes.

"There is a real opportunity for banking clients to embrace data analytics to answer the underlying theme of regulation strategically rather than to treat each regulation as a 'tick-the-box' exercise," he says.

Successful big data platforms will do much more than just process all types of data, including transactions, internal documents and customer comments.

> Big data solutions can offer banks much more than just efficient regulatory compliance

"There should be a rich process-modelling capability that can be used to detect patterns based on predefined and programmed regulatory reports to quickly identify and risks," says Frank Palermo, executive vice president of global digital solutions at IT consultancy VirtusaPolaris.

In short, big data programs need to ensure banks can proactively manage compliance risks, if the banks are to harness the full potential of their data.

One of the more innovative ways banks can exploit big data is by joining together structured customer feedback with social media comments and other unstructured data to create a comprehensive customer profile.

This data may already be accessible in separate locations, but by combining all the data into a single database, it will be far easier for different departments to access and therefore any complaints or regulatory issues can be addressed efficiently.

Banks are also implementing big data projects to gain a better understanding of the relationships between disparate pieces of data, which traditional databases find difficult to analyse meaningfully.

Advanced data analytics technologies have the ability to not only reveal important relationships, but also map networks around events, places and individuals, to help firms see the wider context of complex events.

Daniel Gozman, lecturer at Henley Business School and co-author of the SWIFT Institute's recent *The Role of Big Data in Governance* report, believes that such technologies can be employed where the conduct of individuals is questioned by regulators.

"For example, in the LIBOR and FX rate-rigging investigations, big data eDiscovery tools were employed to analyse, identify and disclose documents to regulators to establish whether firms were involved. Such technologies may also be used in litigation and employment disputes," says Dr Gozman.

Similar data analysis tools could assist banks in showing regulators that trades executed on behalf of clients were performed in the most advantageous way, with the ability to examine large transaction-related data sets making the process of regulatory reporting quicker and more transparent.

But embracing big data solutions can offer banks much more than just efficient regulatory compliance, with investment in cutting-edge technology having an impact in many areas.

"In a digital economy, where the end-customer experience is everything, the ability to perform accurate, real-time analysis is vital to both compliance and competitive success," says Rowan Scranage, Europe, Middle East and Africa vice president at database platform provider Couchbase.

The Competition and Markets Authority's Open Banking Revolution programme, which will require all banks to provide a smartphone app to customers containing details of all their accounts held at any bank, is a perfect opportunity to offer an improved customer experience through big data.

"In this environment, the winners will be those banks that remain compliant, while ensuring customers don't want to leave because they receive the best possible experience whether because it's fast, personalised or gives them the best possible return on their investment. Being able to analyse and act on customer data near-instantaneously will be critical to providing this," concludes Mr Scranage.

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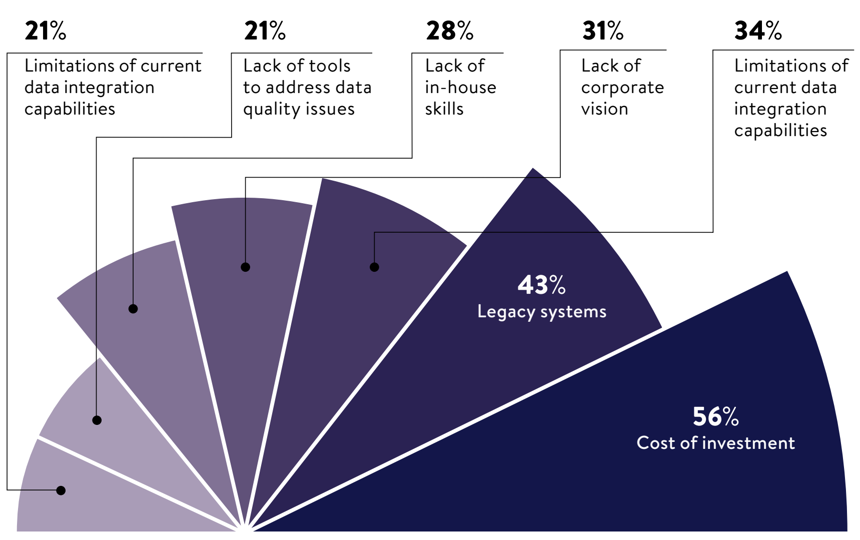
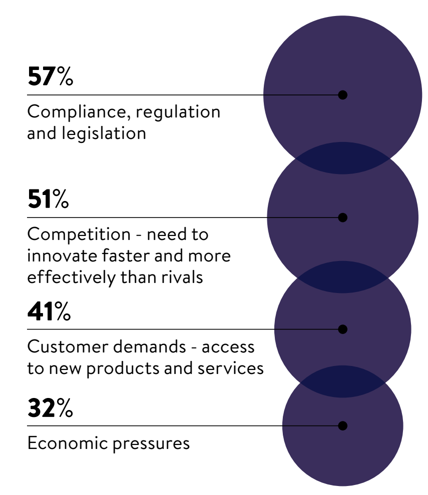
MAIN BARRIERS TO ADOPTION OF BIG DATA IN BANKING



EXTERNAL FACTORS MAKING BIG DATA PROJECTS MORE ESSENTIAL FOR BANKING



Survey of IT professionals and senior executives in UK banking
Source: Talend 2015

ARTIFICIAL INTELLIGENCE GETS SMART WITH REGULATION

Pioneering regtech, or regulatory technology, firms are creating innovative artificial intelligence (AI) solutions that have the potential to transform how banks deal with regulatory compliance issues.

Although many of these technologies are still in their infancy, banks are beginning to use AI-based software to meet regulations more efficiently.

"AI can be used to interpret regulations, codify necessary rules, and automate reporting and risk systems to make sure banks are compliant and better managing their risk," says Rahul Singh, president of financial services at IT services provider HCL Technologies.

"We are already experiencing use-cases of AI and advance analytics in the anti-money laundering function where technology is able to bring false positives down, allowing focused approaches to risk detection and avoidance."

AI could also be used to observe employee conduct and limit the opportunities to break regulations, according to Daniel Gozman, lecturer at Henley Business School. "Artificial intelligence may help to actively monitor working practices and establish where individuals require retraining or reminding of regulatory obligations, depending on their behaviours over time," says Dr Gozman.

Compliance chatbots could even be created that allow bank staff to ask questions about regulations and assist firms in making the best financial decisions, while staying within the appropriate rules. "Such bots may work by analysing existing rules and enforcement actions through big data technologies," Dr Gozman adds.

One of the most promising AI-based technologies is natural language processing as it's able to identify key wording in important financial documents and then convey pertinent regulations to the right employees far quicker than a manual search. While an actual person will need to sign off on the AI's finding to make sure they are correct, a great deal of time could be saved using this process.

Natural language processing can only become more relevant to banks as text-heavy regulations grow. "Today, banks are complementing credit analysis with behavioural analysis and other social analytics techniques, which means there is more data to be analysed and it needs to be done instantaneously. Banks have no option but to use AI-enabled smart agents and machine-learning platforms," says Mr Singh.

COMMERCIAL FEATURE

VIRTUAL TRANSFORMATION OF BUSINESS BANKING

*Revolutions in business banking don't happen often, but when they do the shifts can be seismic, says **Richard Cummings**, chief executive of Cashfac*

CASHFAC TECHNOLOGIES

Banks face immediate challenges from new regulation, agile tech-savvy competition and increasingly demanding customers, but by using technology creatively many of these threats could become opportunities. Some banks are already stealing a march on their competitors with innovations such as virtual accounts making banking easier for businesses.

Transformational events are on the horizon, whether from increasingly stringent regulations including Basel III, opening up the transactions process with the European Commission's Payment Services Directive (PSD2), or commercial challenges from peer-to-peer lenders and the latest fintech innovators, requiring large banks to respond quickly.

The focus of any response by banks has to be on customer service, the foundation that underpins the future success of the banking industry, especially business banking. With eyes opened by consistent product innovation in retail banking, business customers are more demanding than ever.

So how are large traditional banks behaving more like their agile fintech competitors and delivering products and services that customers need and are compelled to use?

While corporate finance or treasury functions have evolved consistently to comply with new legislation, business banking systems have remained relatively static. As a result the most basic activity of managing cash and understanding a company's true position is a complex and expensive process.

Traditional business bank accounts are simply not fit for this purpose for many organisations. The bank account structures sit outside the business allowing little control or flexibility. At worst this absorbs valuable time and effort to iron out its idiosyncrasies. Putting real control in the hands of corporates transforms their ability to manage cash effectively, while also helping banks to streamline their processes. Virtual accounts have become the de facto solution to this challenge for leading banks.

Though the term "bank in a box" is an oversimplification, it does help to explain the value of virtual accounts. There is no need to request that your bank sets up an account for a new subsidiary, spends time accruing different interest rates for a number of bank accounts, or sweeps or pools cash across bank accounts. These processes become self-service and consequently easy to streamline and automate. Businesses no longer need to reconcile data received from banks to fit with the way they need to report and analyse their accounts.

Virtual banking technology adoption is being actively demanded by corporates and encouraged by banks. The slow evolution of business banking to incorporate digital channels is accelerating, moving quickly from offering simple statement and transaction data to a broad array of sophisticated integrated payment and receipt services that are capable of accommodating virtual banking technology.

An early adopter of virtual accounts is one of the UK's biggest insurers LV=. Andy Young, head of finance at LV= Financial Services, explains: "With Cashfac's virtual accounts technology we've created 35,000 virtualised accounts linking to one 'real' client bank account and removed the 35,000 real bank accounts we held previously. Now we can transfer our client's money between accounts using Cashfac technology without touching the banking system.

"We don't need the bank to open additional bank accounts; we have one bank account and we split that into virtual client accounts ourselves, freeing up a lot of transactional processing from the bank. This reduces administration for each of us, while at the same time enabling us to take the overall pot of money that now resides in one bank account and diversify the risk across our bank relationships, reducing the exposure for our policyholders."

The most forward-thinking banks are embracing this technology and investing in delivering the most functionally rich cash management services to support centralised payments or collections factories, and even offer the prospect of in-house banking capabilities. So the perfect storm about to hit the banking industry doesn't signal doom, but rather offers new opportunities to provide more sophisticated services focused on the future.

Cashfac is a UK-headquartered fintech firm that works with banks around the world to deliver innovative corporate cash management solutions. For more information please visit www.cashfac.com

Michael Nagle/Bloomberg via Getty Images

Regulating the finance sector post-Trump

Maintaining stability within the global banking system looks set for further adjustments as the levers of America's financial sector are changing hands

REGULATION

IAN FRASER

Financial regulation is about to enter a whole new era. The incoming administration of President-elect Donald Trump has signalled its intention to dismantle a key aspect of Barack Obama's legacy – the Dodd-Frank Act. This vast and complex piece of legislation, passed in July 2010, was designed to purge the financial system of some of the excesses that caused the 2008 financial crisis and make bailouts history.

In November, Mr Trump's nominee for Treasury secretary, ex-Goldman Sachs partner Steven Mnuchin, indicated that the new government would "strip back" Dodd-Frank. The legislative package is "too complicated" and "cuts back on lending", he says. Republicans in Congress are already preparing legislation, which will roll back the landmark act, and are winning the support of powerful industry groups.

Professor Philip Booth, of St Mary's University Twickenham, who is editorial and programme director at the Institute of Economic Affairs, would welcome Dodd-Frank's demise. He believes the regulatory response to the crisis has, largely, failed.

"In the short and medium term, bank capital regulation has stifled lending, forcing banks to shed assets and rein in the amount lent to categories of borrowers deemed riskier by international regulators," he says.

In the UK and Europe, Professor Booth says the EU's cap on bonuses, introduced from January 2014, has distorted behaviour. "As you'd expect, pay packages have risen to compensate for that. Whereas bonuses used to be a safety valve, they can no longer be used in this way," he adds.

Speaking at the Institute of International Finance annual meeting in Washington in October, JPMorgan chief executive Jamie Dimon argued that a combination of more stringent capital rules and stress tests have taken the stuffing out of Europe's banking sector.

"European banks have been deleveraging and catching up for seven years. Let them stop, digest it and finance the economy – and that's really important for Europe, where 70 per cent of the economy is financed by banks not the capital markets," Mr Dimon says.

However, mindful of the causes the 2008 crisis, Philip Augar, a former investment banker and author of bestselling books including *The Death of Gentlemanly Capitalism*, does not wish to trash the post-crisis reforms.

> If post-crisis regulation has caused distortions, these are necessary distortions

He says: "They're making a difference. They have required banks to hold more capital, which has made them more conservative and hence safer. And they're forcing banks to restructure in ways that make it harder for banks to mix capital between different parts of their business. I would say the reforms were long overdue. In fact, I'm not sure they go far enough.

"If post-crisis regulation has caused distortions, these are necessary distortions. Banking should be a utility industry, not a growth industry, and society needs banks that recognise that."

Today's global financial system has been shaped by successive waves of deregulation since the 1980s. These included the Big Bang of 1986 in the UK, the 1999 repeal of the Glass-Steagall Act in the United States – which, from 1933, banned US banks from engaging in both retail banking and investment banking – the refusal of the Clinton administration to regulate derivatives, the gradual easing of capital rules, the Basel Accord of June 2004, and the introduction of International Financial Reporting Standards from January 2005.

The liberalisation arguably created an environment that was replete with moral hazard, when banks do not suffer the consequences of their own mistakes, as they were able to gamble crazily, while being overdependent on flawed economic and financial models, and becoming "too big to fail".

According to Professor Booth, the internationalisation of regulation between 1979 and 2008 was "monumentally irresponsible" as it encouraged herding and intensified systemic risk by ensuring that mistakes within the system were amplified on the global stage. He says internationalisation also brought "regulatory capture", as it made it impossible to hold faceless technocrats who peopled the Basel committee to account.

He adds: "In the run-up to the financial crash, the extensive international framework for bank regulation – the Basel Accords – explicitly encouraged securitisation and the development of the complex instruments that were at the seat of the crash.

"In addition, US interventions by the central banks over the 40 years before the crash stoked up moral hazard by using lender-of-last-resort facilities to support banks that should have been allowed to fail. Furthermore, as regulation becomes more complex, the methods by which regulations are gamed become more complex and the whole financial system becomes more opaque which itself increases risk."

Stanford University professor of finance Anat Admati does not believe that post-crisis capital regulations have remedied this. Writing in *Just Financial Market: Finance in a Just Society*, she warns: "Contrary to claims by many, the reformed capital regulations are overly complex, dangerously inadequate and poorly designed… The measures of financial health are unreliable and can lull regulators and the public into a false sense of safety, just as happened prior to the crisis."

In an environment of stubbornly low interest rates, in which risk-taking has been constrained by higher capital requirements, some banks are struggling. Many Italian banks are considered to be on the verge of bankruptcy. The Royal Bank of Scotland has not made a profit since 2007, with cumulative losses since the bailout of £53 billion.

RBS strategy director George Graham has argued that banks with capital rules and low rates mean the traditional banking model is obsolete. Mr Graham says: "The return on equity for the larger UK banks averaged 2.4 per cent [in 2014]. That's not a sustainable level. That doesn't build capital, doesn't support lending growth, doesn't fund IT investment and leaves open huge opportunities for competitors without the same burden of legacy costs."

Together with post-crisis "regulatory Balkanisation", which is increasingly requiring international banks to maintain capital for each of their national subsidiaries, these pressures are forcing many once swaggering global-universal banks to shrink in size. As they retreat from international markets they are also culling staff, closing branches, and prioritising newer distribution channels including mobile and digital banking at home.

So what should financial regulation look like? Many thinkers, including Professor John Kay, author of *Other People's Money*, believe it needs to be simplified and big banks should be further broken up.

In his *The Dog and the Frisbee* speech in July 2012, Bank of England executive director Andy Haldane agrees it would make more sense for the people who devise financial regulations to focus on a few simple standards based around capital and total borrowing, arguing that complexity was making it hard for authorities to spot and avert crises. "Modern finance is complex, perhaps too complex… As you do not fight fire with fire, you do not fight complexity with complexity," he says.

Professor Booth would favour a return towards the so-called "free banking" that existed in Scotland in the 18th and early-19th centuries, when bank shareholders bore more risk, and there was no lender of last resort and no bailouts. "That would force banks to hold even more capital. The collapse of an individual bank would cause a shock to the system that would make banks even more cautious. If you create a welfare state for banks, you get much worse banking," he concludes.

Chip Somodevilla/Getty Images

Barack Obama signing the Dodd-Frank Wall Street Reform and Consumer Protection Act into law in July 2010

TRUMP'S TAKE ON DODD-FRANK

Excerpt from a statement posted on Trump's official transition website

"Following the financial crisis, Congress enacted the Dodd-Frank Act, a sprawling and complex piece of legislation that has unleashed hundreds of new rules and several new bureaucratic agencies…

The big banks got bigger while community financial institutions have disappeared at a rate of one per day and taxpayers remain on the hook for bailing out financial firms deemed 'too big to fail'.

The Dodd-Frank economy does not work for working people. Bureaucratic red tape and Washington mandates are not the answer. The Financial Services Policy Implementation team will be working to dismantle the Dodd-Frank Act and replace it with new policies to encourage economic growth and job creation."

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COMMERCIAL FEATURE

NEW WAVE OF GAME-CHANGING REGULATIONS FOR BANKS: SUNSET OR NEW DAWN?

As banks and payments providers consider new European Commission regulation, along with other regulatory changes, many are moving into damage-limitation mode. Some, however, see opportunities in the opening up of customer information to others

ADDLESHAW GODDARD

The revised Payment Services Directive (PSD2) will come into force less than a year from now, but the full impact of the changes that it will bring to banks are still emerging. As banks come to terms with the huge threat the European Commission directive poses to their traditional business models, regulators are still fine-tuning their requirements and fintech startups are identifying opportunities. Meanwhile, brands such as Amazon and PayPal could be preparing to eat the lunch of banks and credit card companies.

The opportunities presented to financial aggregators will be a key factor in shaking up the market, according to Amanda Hulme, head of financial services at Addleshaw Goddard LLP, and a specialist in this field. "Aggregator firms have been accessing customers' financial information such as current account transaction information for a while, but until now they've faced legal and practical challenges when doing so," she says.

"However, under PSD2, aggregators will be regulated by the Financial Conduct Authority, and banks won't be able to prevent them from accessing this information and using it to offer their own services such as loans, savings or debt advice."

Alongside this, the new Payment Initiation Service Providers (PISPs) will be able to initiate credit transfers and faster payments. "This means a PISP can build a very user-friendly front end that the customer can use to make purchases or transfer funds," says Ms Hulme. "So banks cannot prevent other companies from delivering these services, provided they utilise a secure means of doing so, which are to be set out in agreed European standards."

Meanwhile, the UK has initiated its own reforms in the form of the Open Banking Standard, with leading banks required to agree on how they will open up services and make bank account information more easily accessible. "Essentially, it means you will be able to take your bank account data and put it into a price comparison site to see whether you're better off with another bank that would have charged you less for transactions and overdrafts, for instance," says Ms Hulme.

AG ELEVATE

AG ELEVATE

AG Elevate is a fast-track 12-month programme that enables fintechs to move quickly and effectively through the legal challenges faced by startups in the tech space. These startups get access to legal mentors and advice and training on the law by experts in this field, as well as networking opportunities.

The programme is free to those chosen to take part and consists of two options, depending on whether an early-stage fintech startup has received more than £1 million of seed or Series A funding to date or not.

Private banks might also face threats from PSD2. She says: "They enjoy a very personalised relationship with their customers based on their understanding of those customers. Another provider, perhaps an asset manager, could build a platform integrating the customer's bank account, and have access to account data that enables customers to manage a number of different investment and services in a more accessible and coherent way."

> Banks are in danger of simply becoming the network through which these customer-facing services operate

The challenge, therefore, for banks is to maintain the customer relationship, according to Fiona Ghosh, head of Addleshaw Goddard's fintech group. "Over the next few years you'll see Amazon encroaching into devices with the growth of the internet of things. For example, my washing powder container can already signal when it's running low and initiate an order for more with payment through Amazon. We'll see growing connectivity between devices, between the public and retailers when it comes to payments," she says.

Ms Ghosh cites the success of Apple Pay: "Apple's not an infrastructure provider, it's a technology company. We're seeing this cultural shift. On a more practical level banks are in danger of simply becoming the network through which these customer-facing services operate."

The future for banks might look grim as the changes brought about by PSD2 take hold, but both lawyers believe it also presents exciting opportunities for those enterprising, forward-looking institutions that are willing to exploit them.

Banks could look to buy aggregators, suggests Ms Hulme, while Ms Ghosh is already advising banks on acquiring and collaborating with new fintech startups. The firm has developed a specialism in this fast-growing sector, in particular with its fast-track programme AG Elevate.

"We act as legal mentors and advisers," Ms Ghosh explains. "We advised many issuing banks on Apple Pay, for instance. We know the implications for the banks, and we can assess the risks of going into a venture from a regulatory and transactional perspective."

Banks might have to change their mindset when working with these new tech businesses, she argues. "They're often heavily policy driven and risk averse, as they're driven by customer complaints. They want to work with startups, but they're not clear strategically about what they want to get out of it. They focus on protecting their intellectual property, whereas fintech is more collaborative. That's where we can bridge the gap between the two."

The fintech companies that can provide banks with the new technology essential for maintaining customer relationships and preparing themselves for PSD2 also have to rethink their approach. For example, although finance is heavily regulated, some fintechs will only look at the legal risk when they're quite a long way into the development journey.

"They tend to think that they're the first," says Ms Ghosh. "But AG Elevate gives us an overview so we can see other versions of their product. It's not just about having a clever idea – it's about the practicalities of bringing it to market. For those that can overcome these challenges, and for the banks they're now working with, PSD2 offers real opportunities."

For more information please visit addleshawgoddard.com

What banks have to learn from Iron Man

Battling to rebuild reputations in the wake of the 2008 financial crisis, banks must adapt to the changing culture introduced by challengers and fintech startups

REPUTATION AND CULTURE

SAM SHAW

For five years between 1996 and 2001, Hollywood actor Robert Downey Jr struggled with substance abuse, was in and out of prison, spent time in rehab, was sacked from *Ally McBeal* and denied a lead role in a hit Woody Allen movie as a result of being uninsurable.

Now clean and sober, he was *Forbes'* highest-paid actor in the world three years running, last year netting an estimated £51 million.

With such evidence that leopards can, indeed, change their spots, is the UK's banking sector undergoing its own, similar, transformation?

Tainted by repeated regulatory failings, mis-selling scandals, and climaxing with the global financial crisis yet rewarded by a perceived hefty bonus culture, corporate golf days and excessive expense accounts, something had to give.

So while Downey Jr may have had his hand forced by a prison spell, rehab and an ultimatum by his wife, banking and capital markets players have also been coerced into a turnaround.

"The troubles that the industry has had over the last eight to ten years have made everyone more humble. Bankers are no longer 'masters of the universe'," says Andy Maguire, group chief operating officer at HSBC.

Post-2008 we have seen the introduction across Europe of tighter controls on bonuses, an independent commission established to divide institutions' retail and investment banking units, a splitting of the financial regulator, and higher protection thresholds by the Financial Services Compensation Scheme.

Yet has cleaning up the industry's "bad boy" image come at the cost of innovation?

Changes to regulation pertaining to liquidity and minimum capital adequacy requirements may have played a part.

Last year Reuters reported that the top 20 global banks alone had coughed up roughly $235 billion (£186 billion) in fines since the crisis. As banks have settled such fines, or had to set aside cash just in case, or restructured their businesses towards more transparent business lines, perhaps financing new initiatives and technology applications has taken a back seat.

By their very nature, arguably banks are ill placed to lead culture and innovation. As Mr Maguire points out: "Without making excuses, we can only really get our hands on two sorts of data – customer data and financial transactions, both of which come at a very high premium around security and privacy.

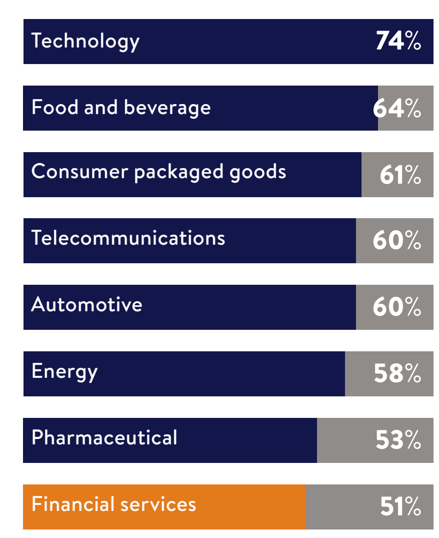
"In capital markets you have trading activity that is going on 24/7, 365 days a year, so when people ask why we can't be more like Uber, it's because there are legitimate structural differences between the nature of our businesses."

Hakan Enver, operations director at specialist financial recruitment firm Morgan McKinley, has seen manners change across multiple factors.

"Since the crisis and the high-profile collapse of Lehman Brothers, organisations have had to change their attitudes to how they operate. That might be cutting back their investment banking units and focusing on other, perceived as less risky, operations or simply an attitudinal shift. The way the traders spoke to the risk and compliance teams within investment banks 15 years ago versus today is vastly different."

GLOBAL PUBLIC TRUST IN COMPANIES BY SECTOR

Financial services still have room to improve



Source: Edelman 2016

So if risk management is taking centre stage in terms of internal recruitment drives, how is the banking sector responding to the looming threat of fintech and rising stars of Silicon Valley "eating their lunch"?

J.P. Morgan Chase chief executive Jamie Dimon has expressed this concern publicly in recent letters to shareholders. "Hundreds of startups with a lot of brains and money working on various alternatives to traditional banking" keep him awake at night.

And seemingly the banks accept their fate. Capgemini's *World Banking Report 2016* finds 90 per cent of banking executives acknowledge the need to innovate and the rising threat from fintech, with almost two thirds of them viewing fintech as partners, either through collaboration or investment.

It sounds like a win-win. Banks benefit from their creative, fleet-footed and cool younger brothers, while fintech firms enjoy the banks' stability, risk management expertise and the regulatory experience of more-established brethren.

Or as Greg Baxter, global head of digital strategy at Citi, says: "The 'industrialists' need innovation and the 'innovators' need industrialisation."

Strategically, you can see the mutual benefits. But culturally, it begs the questions around a war on talent and whether the two sides can truly integrate or if there's resistance from either side.

Mr Maguire agrees: "We are not resistant to change at all. We are trying to borrow as much as we can from the digital world and fintech. We accept there are big issues to overcome, but we also see there are bigger wins for both parties – why would we reinvent things that already exist?"

As with many of the UK's leading retail banks, HSBC has joined forces with various technology firms to develop robotics, biometric solutions and facial recognition applications for enhanced identity verification.

"We are one of biggest sandboxes in the world for fintech to play in and if they can solve our problems, they can solve anybody's," says Mr Maguire.

By advancing and collaborating with technology innovators, the draw for young talent is far stronger than it has been historically.

"We don't have to do it all ourselves, but these advancements allow us to attract the types of people who even three or four years ago wouldn't want to be anywhere near a bank. We now comfortably hire from the likes of Google, Facebook and PayPal," he says.

Perpetuated by the financial cr isis, people's motivations are evolving. Once inspired by the desire to design complex derivative products to make a lot of money, today's engineers are about problem-solving and bringing everyday technology solutions, used so commonly with lifestyle applications, into banking.

Mr Enver points out that fintech firms, often with high levels of financial backing, can afford to pay top dollar for the best people. But it's not just about money, he says. They can offer the corner office, flexible working and the casual dress code to appeal to the millennial generation who are critical to the future of the banking sector.

"This alternative, modern sector appeals to particular social groups born into technology. They have also entered their working lives after a financial crisis, so have a negative view of banking full stop, perhaps without really understanding the intricacies of the differences between investment, corporate and retail banking. Therefore startups are considered more attractive," he says.

Mr Enver suggests relaxing traditional search criteria, bringing in talent at a junior level, investing in training and development, and casting the net wider than just London and the UK.

Alastair Turner, chief executive at specialist PR agency Aspectus, says the key difference is that fintechs can sell a much simpler, clearer vision – there is no legacy to overcome.

Whether it's Metro Bank's "stores" or Virgin Money's "lounges" replacing the traditional bank branches, he says small adjustments like this will go some way to re-engaging with the customer, but also with the real economy, winning back hearts and minds.

Mr Turner recognises the all-too-common disconnect within the banking sector when it comes to communications, but has faith the reputational turnaround that has been taking place since the crisis will prove a success.

"Just look at Robert Downey Jr," he says. "Fifteen or so years ago he was in prison, now he's *Iron Man*."

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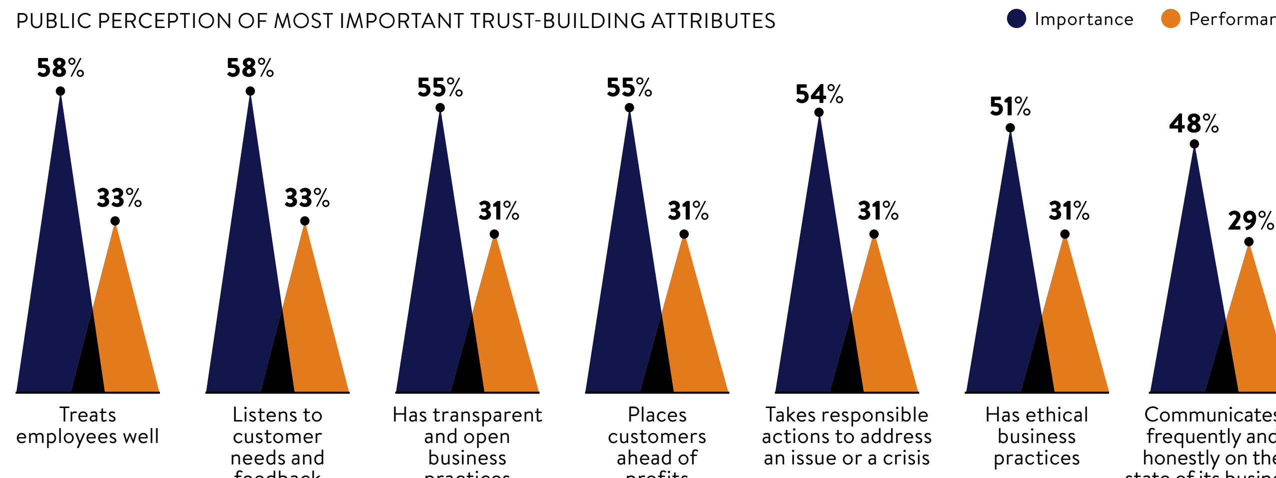
TRUST-BUILDING ATTRIBUTES

PUBLIC PERCEPTION OF MOST IMPORTANT TRUST-BUILDING ATTRIBUTES



Source: Edelman 2016

Challengers feel strong tailwinds in stormy markets

Despite their smaller size, challenger banks have survived the buffeting of Brexit and could now gather speed for take-off

CHALLENGERS
DAN BARNES

Challenger banks – small and often innovative banks that are assailing the ivory towers of the big five – have had a tough year. Low interest rates and high levels of regulation are putting all banks under pressure. For challengers, events such as Brexit were harder hitting than for their larger rivals.

Following the government's regulatory attack on the buy-to-let property market in 2015 via higher stamp duty, the need to put more capital against buy-to-let loans and a reduction in tax deductibility for such properties, many retail banks could see lending becoming tougher in 2016.

The June 2016 vote for the UK to leave the European Union led to further concern about the effect on smaller financial services firms. Shares in listed challenger banks were sold off, according to analysts at Barclays.

However, in October the analysts also observed that challenger banks have prospects. Despite the rapid expansion of lending and lack of track record, the challenger banking sector had an average loan-to-value ratio closer to 70 per cent than 60 per cent, meaning their loan books had "considerable protection" against house price corrections.

In addition, their efficient cost base and the wide difference between what they pay out to borrowers and get in from lenders make it unlikely the challengers would get into trouble, except in extreme circumstances.

They may be small, but they are resilient. They also have to be more than simply a smaller version of a larger bank. All else being equal, bigger is better, so challengers must have good idea if they want to stand out.

"The majority of challenger banks start from a customer base that is underserved and whose needs are not addressed," says Sophie Guibaud, vice president of European expansion at challenger Fidor Bank. "In order to stand out from the crowd, challenger banks create a very close link, usually digitally, with their potential customers, taking on board their feedback and seeking solutions to integrating this into product offerings and also customer service. In this way, customers are at the heart of everything that challenger banks do."

A big part of this is technology. Big banks have been undergoing a behind-the-scenes review of their technology after the Prudential Regulatory Authority described it as archaic in 2014. Banks cannot replace their IT every year and the longer they leave it, the older it gets. Since the advent of smartphones and cloud technology, it has begun to look very old indeed.

> Customers are at the heart of everything that challenger banks do

That reliance on legacy systems potentially means challengers have a window for getting services in play that larger banks would struggle to support. This is assisted by regulatory interventions that are forcing banks to allow third parties access to their customer data, if the customer wants to use another firm's service.

The first is the European Commission's Payment Services Directive, due to come into force in 2018, which creates a framework for firms offering aggregation or transactional services based existing bank data. The second is the Competition and Markets Authority's Open Banking Initiative which is pushing UK banks to develop a standardised open gateway for accessing data – an application programming interface (API) – that will facilitate the reading and use of data between banks and service providers.

A firm could make payments for a bank's customer or aggregate their account data from banks, insurers and pension providers to deliver services that banks might otherwise provide.

As the rules will open up incumbent banks and challenger banks they could see a new line of competition within financial services, and tools that have never been developed before. Banks and others may move away from fighting for the account ownership relationship and move toward wanting the aggregator relationship.

"If you are going to have that aggregator relationship with somebody then it's got to be a trusted brand," says Bevis Watts, managing director at Triodos Bank UK, a challenger focused on ethical financial products. "You can imagine all sorts of trusted brands, potentially the Apples and John Lewises and *Guardian* newspapers, thinking about entering that relationship."

Some challenger banks are already proving their mettle by building out their technical capabilities. Monzo, which was granted a restricted banking licence over the summer, is a mobile-only bank based on an app that interacts with the pre-paid MasterCards it has issued. It has opened its API to allow developers to build apps to service their customers. Fidor Bank has a range of 60-second banking loan and savings products which are designed for the digital-first approach to business.

This concept sees a bank develop its systems around the customer first, rather than around a product. It gives the bank a picture of each customer and their interaction with products. By gathering a single view of the customer, the banks can analyse the data to offer a more tailored service. The traditional approach of building systems around products only allowed the bank to know how a product was performing.

Alex Kwiatkowski, senior strategist for banking and digital channels at banking technology provider Misys, says: "We can see a landscape where the right product gets to the right customer at the right time through the right channel."

At the least challengers should be able to avoid repeats of the mis-selling scandals, such as payment protection insurance or PPI, where the wrong customer got the wrong product at the wrong time, to the cost of billions of pounds in compensation. At best they could deliver a tailored service that puts product-first banks in the shade.

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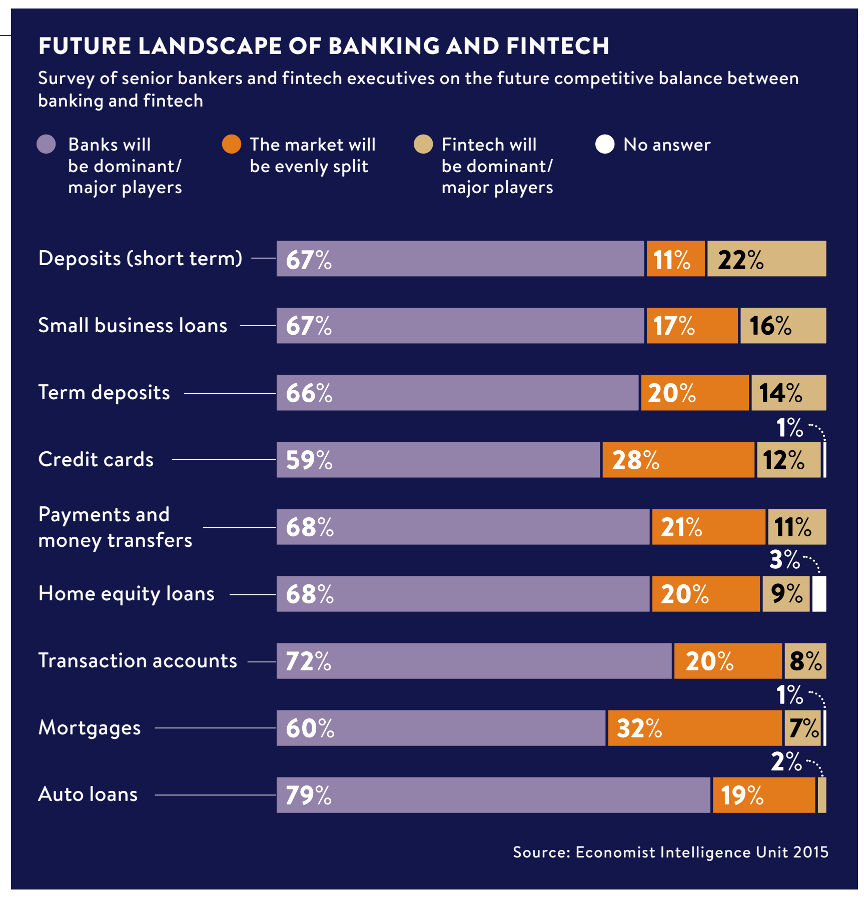

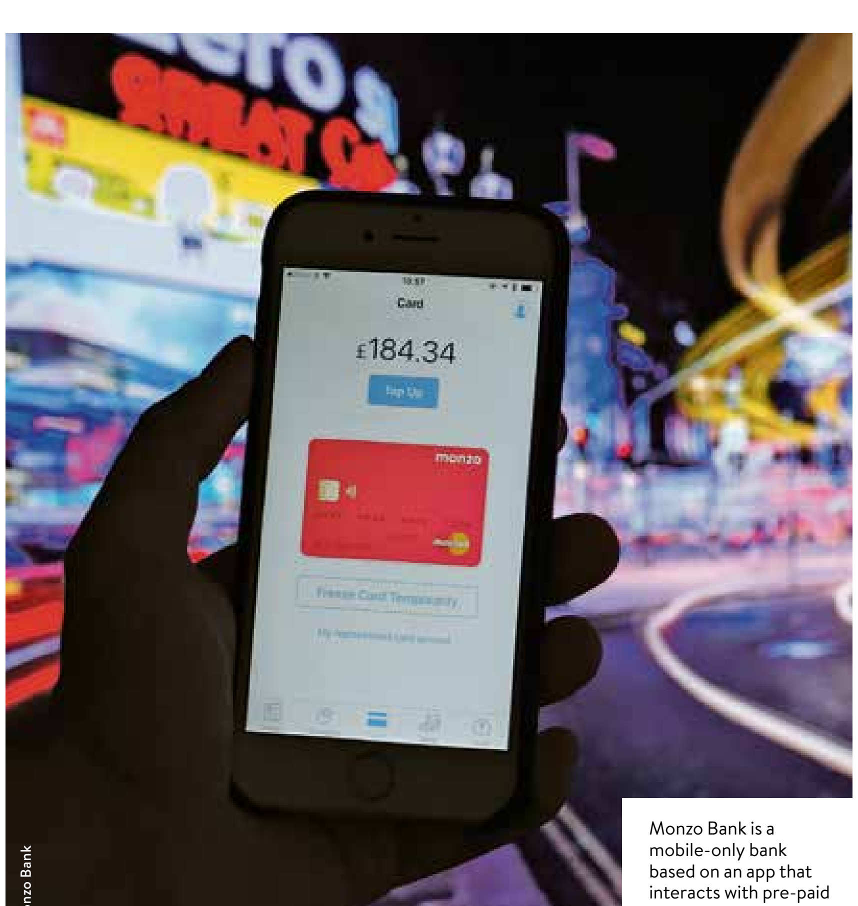

Monzo Bank is a mobile-only bank based on an app that interacts with pre-paid MasterCards

Monzo Bank

HOW CHALLENGERS ARE CHANGING BANKING

01 PACE OF CHANGE
While banks are aware of the 2018 deadline for the Open Banking Initiative, which will allow third parties to access bank customers' data to provide new services, challenger banks such as ING have already launched new services like account aggregator Yolt, putting pressure on others to compete.

02 DIFFERENT SERVICES
Challengers offer new ideas for services. These can be products that are delivered at high speed or via mobile, or have a specifically ethical bent such as Triodos's offerings, or are targeted at specific customer groups, such as Aldermore's specialist lending to smaller businesses and entrepreneurs.

03 MOBILE BANKING
Atom Bank, Monzo, Starling and Tandem are all digital-only banks with apps that offer real service via a mobile phone. Importantly those banks allowing developers to build apps based on their APIs are opening up the full potential of the developer community, keeping customers engaged.

04 COMMUNITY SERVICE
Lip service paid by traditional banks to "listening to the customer" is a common frustration. By engaging with social media at the outset, challenger banks are able to monitor customer sentiment to understand their needs. Fidor Bank uses its online community to attract new customers and also assess its offering.

05 DISRUPTION
Having a digital-first approach can allow challenger banks to offer the sort of personalisation seen in digital retail businesses, such as Amazon, and apply it to financial services This is something banks built on older legacy technology will struggle to do and turns a challenger into a contender for the banking crown.

Staying ahead of the cyber gangs

With evident online security loopholes and hackers growing evermore adept at cyber safe-cracking, can the future of banking be secure?

SECURE BANKING
DAVEY WINDER

$221
average cost of a data breach per compromised record in the global financial services industry
Source: Intel Security/ Ponemon Institute 2016

66%
of global financial services institutions have experienced at least one cyber-security attack in the last year

56%
say these types of attack are increasing compared with previous years
Source: MetricStream 2016

When Tesco Bank fell victim to a cyber breach, hackers were quick to boast on the dark web about it being a cash cow and how they were cashing out £1,000 each week without anyone noticing.

Quite clearly, banks understand the imminent threat such events pose for their businesses. Yet they continue to happen – week in, week out. What specific threats are considered "the norm" within the finance sector and how must banks respond if they are to have a secure future?

"In the past, the risk for thieves was often higher than the potential reward, but this has been turned on its head," says Nigel Bolt, vice president and UK and Ireland country manager at Intel Security. The barrier to entry for cyber criminals is extremely low and, with the kind of cybercrime-as-a-service tools that can be used to rob a bank available online at low cost, almost anyone can try their hand at it.

"Today a bank's biggest asset is not just the money it holds," Mr Bolt warns, "but the data of its customers." And it's this data that is often the target of the online attacker, which is hardly surprising given that bank and debit card data for "live" accounts, where no theft has yet been reported, can fetch more than £100 a pop within the criminal underworld.

There is big money to be made, with the Intel *2016 Data Protection Benchmark Study* revealing there are between 21 and 30 data loss incidents every day across the UK financial services industry alone.

When it comes to threat specifics, phishing is at the top of the banking danger list. This insider threat is exploited by the phishing tactics of criminals and terrorists alike. Alicia Kearns, director at Global Influence, warns that increasingly cyber terrorism is taking the form of spear phishing attacks against banks and financial services.

These target specific individuals, often using social media accounts and postings to gather intelligence to use in gaining the confidence of the employee. The win? "Sensitive data and cash," says Ms Kearns. "Despite the disparity between the size and structure of different banks, they all have one shared weakness – their employees."

Andersen Cheng, chief executive of Post-Quantum, explains that often the immediate victims of phishing are not even the ultimate target, but instead form the easiest route into an organisation. Serious criminals will take weeks or even months to plan and execute their attacks, he says.

"It's a fact of life that with greater digitalisation there also comes greater risk," says Martin Day, managing director of corporate and professional qualifications at the London Institute of Banking and Finance.

> The whole industry needs to be thinking about how they evolve to share intelligence

While the nature of the threat may change, Mr Day concludes: "We must ensure that those working in the banks are equipped with the professional skills to anticipate these risks and act accordingly with the highest of ethical standards in mind."

But are our expectations of a secure bank unrealistic as we move forward into a cyber-banking dominated future? Rob Horton, a senior product manager at BAE Systems Applied Intelligence, doesn't think so.

"We are in an arms race against the cyber criminals and fraudsters," he says, "and the good guys are working day and night to maintain the upper hand." Banks and industry partners are collaborating more than ever, securely sharing intelligence on the criminals who are seeking to attack the system. "This collaboration is increasing now on an unprecedented scale with the UK being a world leader," says Mr Horton.

Nik Whitfield founded cyber-security software firm Panaseer after meeting cyber-security leaders at the UK's biggest banks to get an insight into the key threats they face. "The question is not whether a bank is 100 per cent secure," he cautions, "but whether a bank is secure enough." This means defining a risk appetite at board level that depicts which bad scenarios a bank is likely to face and the frequency and loss they can accept.

Meanwhile Mr Cheng thinks that to succeed in building a secure bank requires rigorous application of several security technologies in parallel. What these technologies will be is open to some debate, although most forward-looking security experts include user authentication, non-repudiation and fraud deterrence along with the implementation of encryption that can survive in a post-quantum age. None of which can operate in a silo.

"The whole industry needs to be thinking about how they evolve to share intelligence," Mr Bolt insists. "Banking security is not a competition point."

What banks cannot do is allow the speed of change to catch them out. For example, today we can say that banking is largely a transactional experience where the customer is only recognised after they have logged in. As banking becomes fully mobile for more customers, then it will become about continuous validation and verification based on prior interactions.

"The bank will know who I am based on location, device, and most importantly the manner in which I bank and behave while on their systems," says Paul Calatayud, chief technology officer at FireMon. "If I appear to be operationally out of the norm, I may be able to perform limited banking functions, while losing the right to perform more advanced functions until I am reverified."

What banks must do is become more agile when it comes to riding the security curve. The fight against cyber threats cannot remain asymmetric. Currently the norm for cyber-gang bosses is to plough 25 per cent of their profits from any heist straight back into research and development. If they want to invest more, they can make that decision on the fly.

"Criminals can adapt their techniques far more rapidly than the private sector's budget and procurement cycles allow," Mr Cheng warns. This is an area in which the financial sector is improving, but there is still some way to go in updating their process to enable the adoption of emerging solutions if the bank of the future is to look like anything resembling secure.

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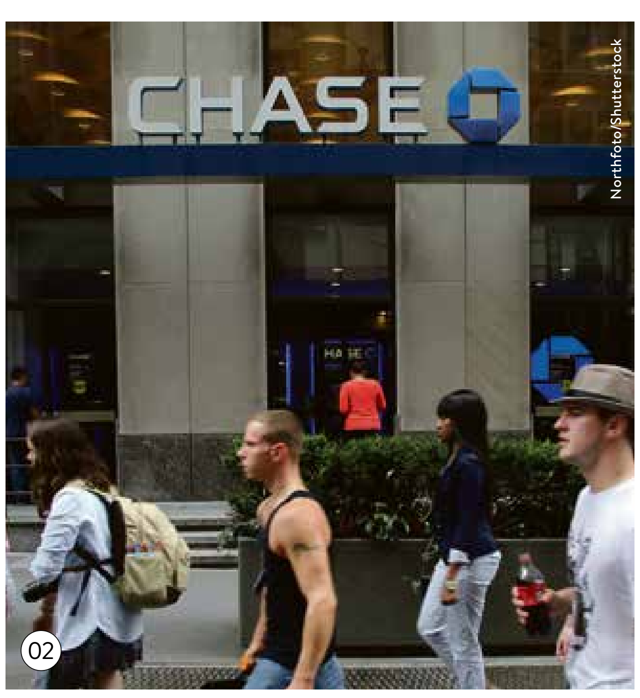

01
Tesco Bank was forced to repay £2.5 million to 9,000 customers following the November hack

02
More than seventy six million households and seven million small businesses had their information compromised in a J.P. Morgan hack in 2014 - one of the largest financial-sector cyber incidents in history

Jeff J Mitchell/Getty Images

Northfoto/Shutterstock

Is blockchain the strongest security link?

Blockchain, the public ledger associated with bitcoin cryptocurrency, has been heralded as the answer to banking security problems

BLOCKCHAIN
DAVEY WINDER

There's no doubting that blockchain technology has been on the minds of forward thinkers in the financial sector ever since bitcoin first made an appearance in 2009. The idea of such a distributed ledger has certainly made an impact, not least when it comes to banking security where many are heralding it as the next big thing.

Kim Sgarlata, a partner at Capco, is among those who see blockchain as having huge potential to move the financial sector into a more secure model. "Blockchain technology can promote security in a number of ways," she insists, "such as enabling the capability to work with a transparent single source of truth."

This enhanced visibility would allow all other users to observe any misfeasance.

A powerful sentiment when joined up with the concept of an immutable chain of entries that prevent amendments and concealed ploys. "The concept of decentralised decision-making also removes some challenges conventional systems currently endure," says Ms Sgarlata, "such as single points of failure and the operational risk posed by rogue system operators."

> There's really no doubting blockchain could disrupt payment systems on a truly global scale

Sanat Rao, the chief business officer at Infosys, points out the latest Finacle Innovation in Retail Banking report reveals 47 per cent of banks are actively exploring ways of using blockchain. Among them are Emirates NBD and ICICI Bank that, Mr Rao says, "have already carried out a successful pilot using a blockchain network for international remittances and trade finances, across the biggest remittance corridor in the world".

So there's really no doubting blockchain could disrupt payment systems on a truly global scale. Assuming, that is, the potential stumbling blocks to adoption can be overcome and the blockchain naysayers persuaded of the true security benefit.

Stumbling blocks include being associated with bitcoin and its public network. Indeed, Jerry Norton, vice president of financial services at CGI (formerly Logica), can't come to terms with any commercial bank "being comfortable to base live, in-production, transaction systems moving billions of pounds of value based on a source code developed by an opaque group of core developers that might make a hard fork [change of protocol] at any moment".

And that's before mentioning regulatory obligations in terms of system robustness. "The governance question alone," Mr Norton concludes, "means we will see the construction of new blockchains by inherently trusted entities in the enterprise space."

Such private blockchain solutions will "remove the issues of anonymity," says Lawrence Lundy, head of research and partnerships with Outlier Ventures "allowing banks to meet know-your-customer and anti-money laundering regulations, as well as the unpalatable thought of having unknown participants validate banking transactions".

Mr Lundy predicts a likely bifurcation between centralised distributed ledger technology, used by banks for back-office automation, and decentralised blockchain technology to provide trustless networks removing the need for some transactions altogether. Once we start to see a wider incremental adoption of these private or permissioned blockchains, it will become much easier to persuade the risk adverse towards reaching for an attainable return on investment.

"The business case becomes particularly difficult to refute with the release of more confirmed metrics and standards," says Ms Sgarlata. Applying the technology to the correct use-case obviously remains critical. "When we discuss this with clients, we start by considering whether the problem posed could benefit from operational simplification, risk reduction, reduced fraud, improved efficiency and the reduction of capital lock-up," adds Ms Sgarlata.

The key in this careful selection process is not to create the solution rather than search for the problem, but instead find a problem and explore whether blockchain, among other things, would be the best solution. Blockchain technology holds the promise to deliver better banking security, but it's not a silver bullet on its own.