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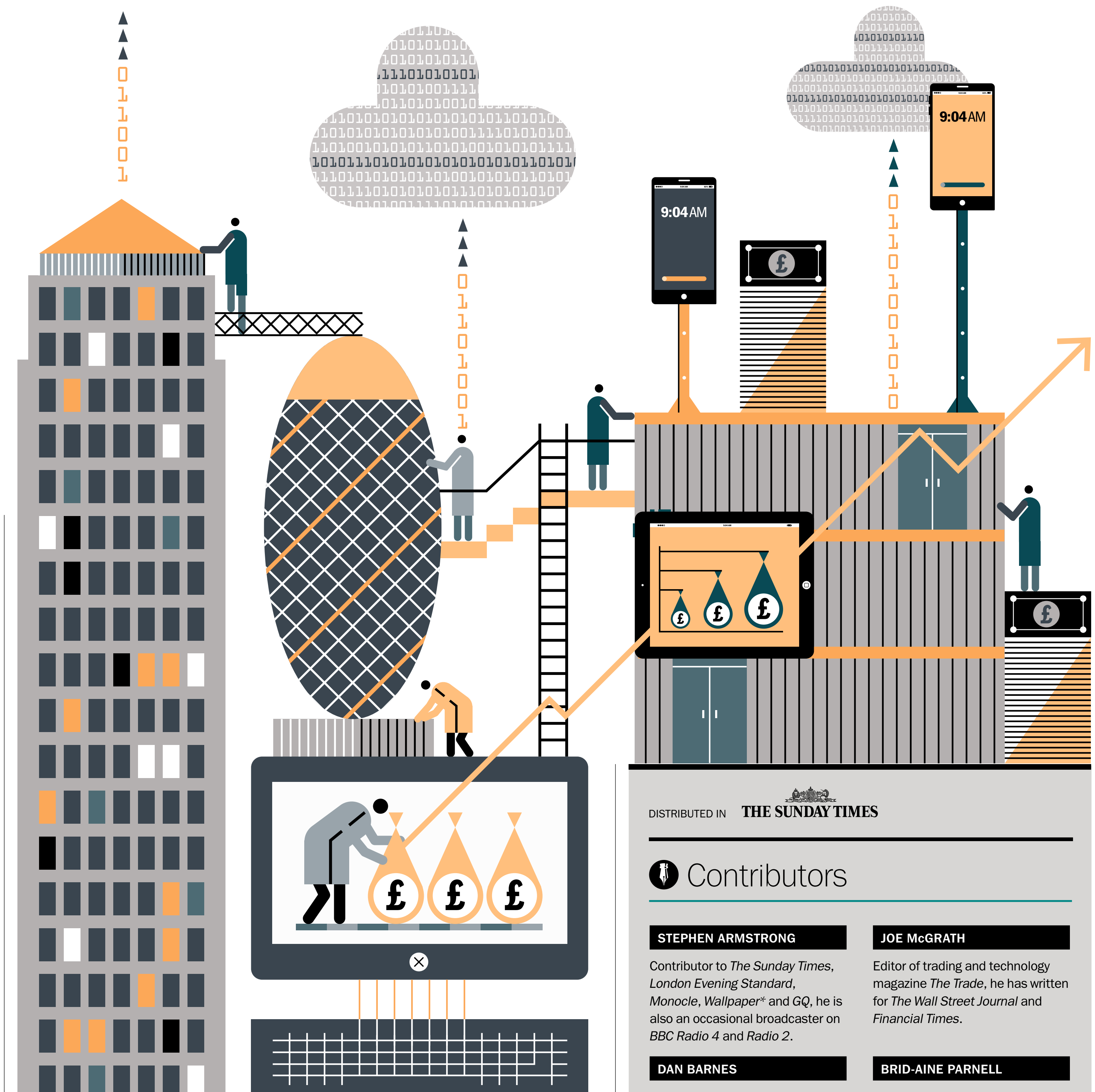
Financial Services Technology

Overview

FUTURE IS BRIGHT FOR UK FINTECH

The UK can lay claim to being the world leader in the financial technology sector as investment and business opportunities flood into the capital, writes **Joe McGrath**



The buzz around the UK's burgeoning financial technology scene, estimated to be worth £20 billion in annual revenues, has increased in volume at the start of 2015.

In January, the Canary Wharf Group, responsible for creating London's iconic 97-acre financial district, announced it would be opening a third dedicated space for tech startups as part of its Level39 initiative.

It came just days after a similar announcement from consultancy group Accenture which said it would be running its FinTech Innovation Lab programme for a third time in 2015. The programme gives chosen startups access to venture capitalists and angel investors for 12 weeks to get a better idea of how their innovations can make money.

The two announcements are further evidence, if it were needed, that established companies see huge potential in the UK financial technology (fintech) sector. Figures from UK Trade & Investment estimate that the total amount invested in fintech companies in the UK was more than £342 million in 2014.

> Investment from the venture capital community is one of the biggest indicators that London is winning the battle for fintech supremacy globally

LONDON AHEAD

The reason is simple, according to Dan Ridsdale, technology analyst at Edison Investment Research. "The close proximity of the London cluster of fintech companies with the investment community naturally creates a strong gravitational pull for investment" he says. "For some, the regulatory environment is also more attractive than the United States, for example, where regulation changes from state to state."

Mr Ridsdale believes that the weight of incoming investment from the venture capital community is one of the biggest indicators that London is winning the battle for fintech supremacy globally.

He adds: "The key challenge for London will be to nurture more fintech companies through the startup phase, and to provide the funding environment for them to progress to IPO [initial public offering] and then global leadership."

His comments are a challenge recognised by the fintech community. The sector's trade group, Innovate Finance, is offering advice on fintech funding and how companies can successfully transition from "bootstrap to IPO".

ACQUISITION SPREE

The excitement around the sector isn't limited to funding, however, as it is also witnessing an increasing number of acquisitions of smaller companies by large technology, telecoms and media companies.

Charlotte Walker-Osborn, partner and head of telecommunications, media and technology (TMT) at law firm Eversheds, says London can expect to see even more mergers and acquisitions in 2015 from TMT companies that have amassed large cash balances in recent years.

"Add-on companies, which complement their businesses and take them to the next level, will continue [to acquire] with speed, particularly in the areas of social media, cloud, mobile commerce and payment, as well as security," she says. "Traditional telecoms, media and tech companies will continue to become companies which offer all three areas, as true convergence becomes fully realised."

FINTECH ADOPTION

Financial services institutions have been keen to take advantage of the explosion in fintech innovation in the capital.

In the lending community, alternative finance platforms and peer-to-peer lenders have created another investment and borrowing channel.

Asset managers, meanwhile, have employed technology to help them improve investment strategies and navigate market liquidity concerns arising from regulatory changes.

Andy Morgan, corporate finance partner at Grant Thornton UK, explains: "Financial institutions are using the fertile London fintech community to get flexibility into their business models and accelerate the speed with which they can bring new solutions to market or address their needs in operating infrastructure of compliance.

"Key areas of adoption have been in achieving improved client intelligence and analytics, and driving a more flexible and real-time enabled operating model. The Holy Grail of a truly customer-centric, agile solution that brings the benefits of straight-through processing and is transparently compliant is gradually coming into view across a number of segments of the industry."

WHAT'S TRENDING?

As witnessed in the previous two years, the focus on back and middle-office trading technology at banks and asset managers will continue in 2015, although some believe that fintech groups are likely to see greater interest elsewhere in the sector.

Edwina Johnson, chief operating officer at Startupbootcamp FinTech London, says: "Greater investment will lead to more confidence and an increased number of new fintech startups being developed, particularly around innovation of the back office, financial inclusion, the usage of blockchain for financial services, and a greater focus on security and identification.

"We will start to see greater transformation internally within financial institutions in order to become more agile, for example IT functions starting to become decentralised."

Until relatively recently, asset managers had been willing to let the banks lead innovation on big data projects, particularly when it came to analytics. However, with both business types at a stage where they are beginning to see the value in such data trends, analysts believe this will be a growth area once again in 2015.

Eversheds partner Ms Walker-Osborn says: "Financial institutions, like any sensible company, have multi-faceted technology strategies with a stable of larger tech companies supporting them for core technology needs as well as a number of smaller tech businesses.

"Most tech companies are embracing selling tech products and services around the ever-popular big data area. However, the new stream of smaller startup and fast-growth companies can offer interesting add-ons and often have a real thirst for innovation in one or two areas of strength for them."

Mr Ridsdale adds: "Big data analytics has been up and down the hype curve over the course of 2013 and 2014, but as trials mature, we expect to see financial institutions start to invest meaningful amounts into these projects. This is likely to be the start of a multi-year investment growth cycle."

£20bn
UK financial technology sector

£342m+
investment in UK fintech companies in 2014

Source: UK Trade & Investment

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What data knows about customers

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Contributors

STEPHEN ARMSTRONG
Contributor to *The Sunday Times*, *London Evening Standard*, *Monocle*, *Wallpaper** and *GQ*, he is also an occasional broadcaster on *BBC Radio 4* and *Radio 2*.

JOE McGRATH
Editor of trading and technology magazine *The Trade*, he has written for *The Wall Street Journal* and *Financial Times*.

DAN BARNES
Award-winning business journalist, he specialises in financial technology, trading and capital markets.

BRID-AINE PARNELL
Science, technology and business writer, currently on the staff of *The Register*, she also contributes to *Forbes.com.*

HAZEL DAVIS
Freelance writer, she contributes to *The Times*, *Financial Times*, *The Daily Telegraph* and *The Guardian* on a wide variety of subjects, but specialises in small businesses.

EDWIN SMITH
Writer and editor, he has contributed to *The Guardian*, *The Independent*, *The Independent on Sunday*, *The Sunday Telegraph*, *London Evening Standard*, *City AM* and *Private Eye*.

RACONTEUR

Publishing Manager
John Okell

Head of Production
Natalia Rosek

Managing Editor
Peter Archer

Design, Infographics & Illustration
The Design Surgery
www.thedesignsurgery.co.uk

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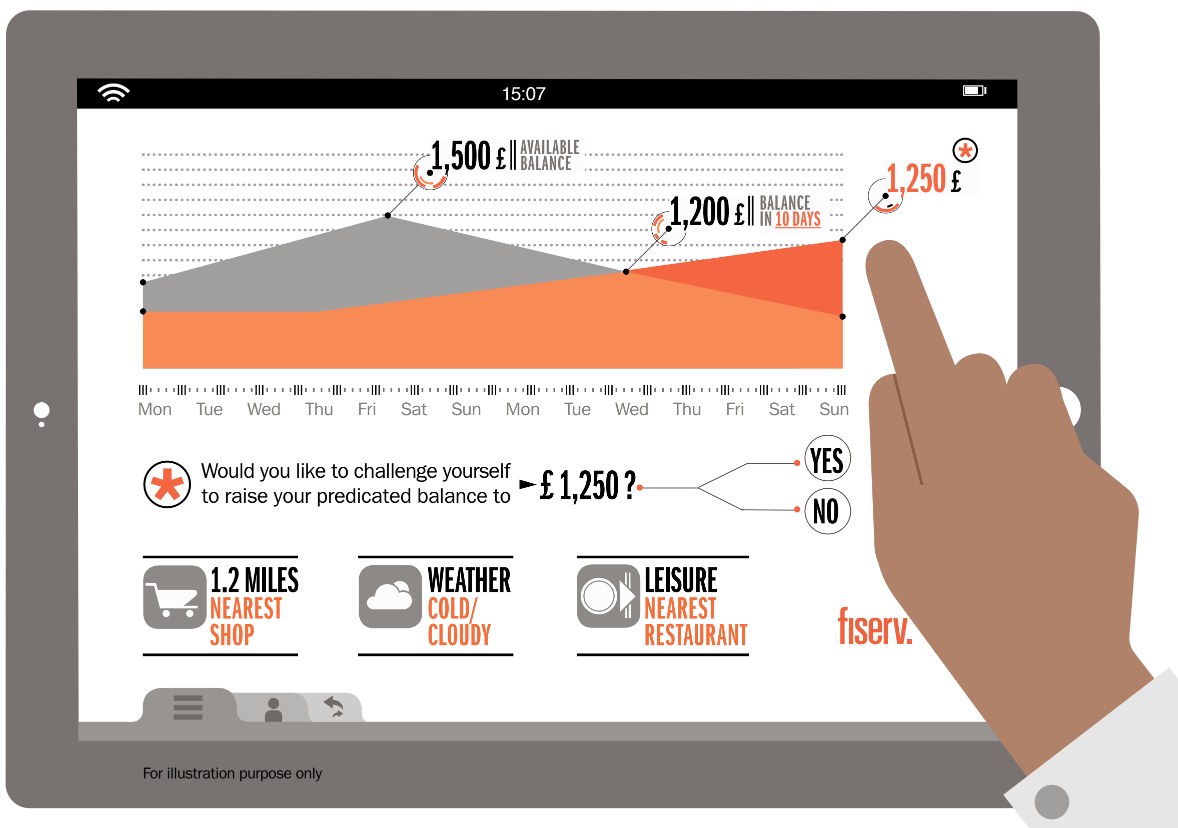
COMMERCIAL FEATURE

Predicting the future of financial services

Better use of technology and customer data can give financial institutions a valuable competitive edge, says **Fiserv**

fiserv.



In the early years of the internet, the emphasis was very much on functionality, whether it was to find information, make a purchase or communicate with others without having to resort to writing a letter.

Now, though, people increasingly look to use the power of the internet to gain additional insight into habits and trends, and link up with devices, such as Fitbit, to drive behavioural change. Predictive services based on a user's browsing or buying habits, demographic data or geographic location are becoming more common. More forward-thinking companies are already using this kind of service to differentiate themselves from the competition.

The banking industry lags behind other industries in leveraging the potential that comes from such insight-based activities. "Banks have historically served the huge amount of data they have about customers back to them in a relatively benign fashion, giving people at best a rear-view lens around how much they spend," says Travers Clarke-Walker, chief marketing officer, Fiserv International.

The technology exists for banks to use this information, with customers' permission, in a much more incisive manner. One example of this would be to allow customers to see how much money will be in their account in a week's time, once any regular payments have gone out and salaries or other income come in. "Even that isn't so relevant, until you add a use case – so will there be enough money in the bank on Saturday to take the kids to the amusement park or do I have to take them to the local park?" says Mr Clarke-Walker.

Another way in which banks could better engage with customers would be to use their location to provide additional services or even offer relevant financial products. "If I were to open a banking application on the forecourt of a car dealership, there's a pretty good chance that I'm there to look at vehicles," he adds. "The banking application could allow customers to photograph a vehicle identification number in a windscreen and value that car for them, and then give them a decision around whether or not they would be able to take out a loan.

"A good example of a Fiserv client who is already thinking this way is America First Credit Union. In 2014, the credit union implemented capabilities that enable mobile banking app users to receive location-based offers for retail purchases or apply for a loan from their smartphone. Benign data that is served up in a straightforward way can facilitate a great degree of interaction between a customer's financial life and their real life."

FINANCIAL DNA

Mr Clarke-Walker introduces the concept of "financial DNA", where banks can use the information they have about individual customers to provide a range of services based on their customer profiles and spending history.

> Engagement driven through insight and prediction is an enormous market opportunity that can deliver a much richer, deeper and more sustainable experience for the customer

Location-based activity could also be extended to ask customers proactively if they want to change their preferences when they travel overseas. "If you open an app in a different country, it's perfectly reasonable that the app might ask if you want to limit spending on your card," he says. "In the United States, they still don't have chip and PIN particularly well embedded, so you might want to limit it to less than $100."

These types of location and insight-based activities can be extended to the fraud management process both behind the scenes and with the customer. A push notification that asks if the customer is actually in a certain city making a specific transition provides reassurance to a customer. The same goes for the simple idea of an app running geo-locational services in the background. The app can confirm to the fraud engine whether or not the customer's phone is also at the same location, thereby reducing the likelihood of placing a hold on a legitimate transaction.

Banks could even get involved in the kind of behavioural change activities that are now becoming commonplace in other areas. For example, people compete against themselves or others to become fitter, eat more healthily or change their lifestyle. "Fitbit doesn't do an enormous amount of prediction, but it is incredibly good at nudging you into a behavioural change by saying 'people like you did more of this yesterday'," says Mr Clarke-Walker.

"That is also relevant in financial services. It could just be knowledge. It could say, 'You'll have £200 left at the end of the month, but if you spent £5 less a day you'd have this amount more left at the end of the month'. Customers could accept the challenge and the app would monitor spend patterns then provide push notifications to help them stay on target."

The advantages to banks of getting involved in this kind of activity are clear. Firstly, there's more and better engagement with customers, which in the longer term means more customer loyalty and greater uptake of products. "Most banks would recognise that engagement is born out of the quality of the experience the customer has," he says. "So if you give customers great experiences, particularly in their mobile banking services, their engagement will be higher."

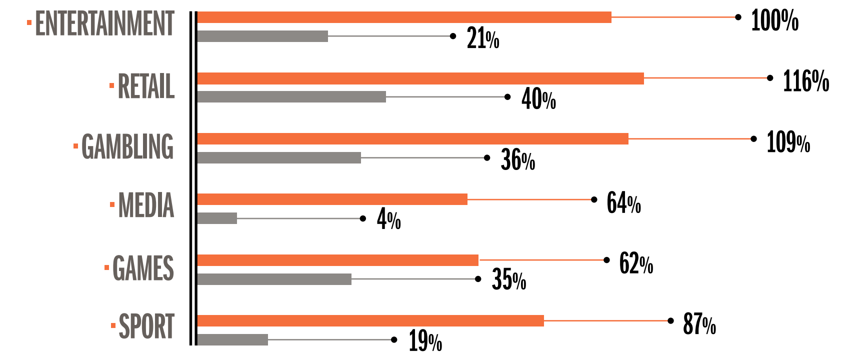
Increasingly, banks will also have to offer such services if they are to remain relevant to customers. Mr Clarke-Walker suggests the typical customer may have as many as 50 or 100 apps on their mobile devices, but only regularly use ten. One of these is likely to be a mobile banking application, but these will start to compare unfavourably with more engaging apps if such additional activities are not possible.

"Banking apps are resilient, efficient and fantastic with fraud management. Their growth has been amazing and banks have had to manage that expansion," he points out. "But if we're going to start to think about what is next, then engagement driven through insight and prediction is an enormous market opportunity that can deliver a much richer, deeper and more sustainable experience for the customer."

The good news for most banks and financial institutions is that the technology to engage in such activities already exists, and typically it can be tailored to different budget and resource levels. "Technology can give financial institutions an enormous competitive advantage," Mr Clarke-Walker concludes. "Most of the experiences we value have in some way already addressed supporting behavioural change, insight or prediction, so this is clearly the direction of travel. The possibilities for financial institutions and their customers are tremendous."

For more information on how Fiserv can help your business, visit www.fiserv.com

THE IMPACTS OF USING PUSH NOTIFICATION ON CONSUMER ENGAGEMENT



USERS WHO RECEIVE PUSH NOTIFICATIONS OPEN APPS MORE FREQUENTLY AND ARE MUCH BETTER RETAINED
RESEARCH FROM URBAN AIRSHIP ABOUT THE IMPACTS USING PUSH HAS ON CONSUMER ENGAGEMENT

Digital Disruption

SHAKEN FINANCE IS AT LAST STIRRING

New entrants are shaking up the online financial sector with better deals and innovative services, but banks are beginning to fight back, as **Stephen Armstrong** discovers

Image: Getty

The theory of disruptive innovation isn't quite as controversial as the theory of intelligent design, but it's getting pretty close. On the face of it, simple enough – unexpected innovations reach new customers and lower prices. The kick comes in the tail. Clayton Christensen, who pitched the theory back in 1995 in *The Innovator's Dilemma*, argues that disruption is usually fatal and old-school incumbent companies either shrink or die. If it's true, that's bad news for banks.

"Finance is ripe for disruption," according to Rachel Botsman, author of *What's Mine Is Yours: Collaborative Consumption Is Changing The Way We Live*. "It fulfils all four of the key criteria: there are fees that can be cut out of the process and people will benefit; it's unnecessarily complex; trust has broken down; and people who have been excluded from the system are getting new access. It's where the media industry was five years ago or the music industry just as Napster hit."

She has a point. Banking hasn't really changed since the days people would send livestock to market and get a piece of paper in exchange, according to KPMG's UK head of payments Mark Hale.

But 2014 was pretty much the year of disruptive innovation, from new online banks, such as Fidor, and the rise of the robo-investment adviser, including Wealthfront, Motif Investing and Betterment, using software to build portfolios in minutes at a fraction of the cost of a professional.

Then there was the spread of crowdfunding into the venture capital arena and a new form of child-focused pre-pay debit card, Osper, aimed at teaching kids sound budgeting, but inevitably eating away at banks options in recruiting future clients.

Ms Botsman's four reasons – fees, complexity, trust and new access – hold good across the board.

UNDERCUTTING BANKS

"You've had that experience when you get your money at the airport and think, 'I'm sure I haven't got the best deal here'," says Michael Laven, chief executive and co-founder of The Currency Cloud, a rapidly growing London-based startup undercutting banks on the currency exchanges. Founded by experienced foreign exchange traders and payments experts, its XBP Connect API platform shaves as much as two thirds off transaction fees for business clients, buying on the capital markets and disclosing its price to clients then charging a fixed fee.

Currency Cloud is business-to-business, but disruptive consumer currency startups, such as Azimo and Transferwise, are clients and pass savings on, according to Transferwise co-founder Taavet Hinrikus, who helped launch Skype.

"No telecom companies took Skype seriously at launch," Mr Hinrikus points out. "But ten years later it handles 30 per cent of international calls."

Complexity, meanwhile, has traditionally been the financial world's defence against uneducated intruders, argues Philipp Moehring, head of all things Europe at Syndicates, launched last year by AngelList, a venture capital introduction site.

Syndicates resembles the original investment clubs gathered in London coffee houses in the late-1600s. The site lets accredited investors co-invest with sophisticated angel investors who know how to pick a good deal. The venture capital community hasn't welcomed him with open arms, Mr Moehring admits. "The VCs want to have their own proprietary info because they don't want anyone else to see where they are investing. Our philosophy is that there is no proprietary information anymore, there is no black box. That's how it works these days. Welcome to the new age of investment," he says.

TRUST ISSUES

As for trust? "You might expect consumers to trust long-standing brands such as banks when it comes to new technology like m-commerce," says Aunkur Arya, general manager mobile at mobile payments processor Braintree, which handles payments for Rovio, Airbnb and Uber. "But really it has been startup merchants introducing the consumer and building trust."

There's a reason for this, argues Trustev chief executive Pat Phelan. "There is essentially no exact determination that you are who you say you are on mobile, because your handset doesn't have an IP address," he explains. Cork-based Trustev looks at 280 different data points in every mobile transaction, including biometrics, typing speed and location, to build up a "digital fingerprint". His target? Verified by Visa.

Founder of Osper, former maths teacher and ex-Spotify executive Alick Varma, is less aggressive. He secured £6 million in funding in June and is currently rolling out his shiny pre-paid orange debit card, aimed at eight to eighteen year olds, across the UK. But his stated aim is encouraging young people to save money. "Kids aren't saving, they don't understand how to budget and one in five eight to eleven year olds use their parents' credit cards without permission," he says.

Osper's app is downloaded to parents' and kids' phones, allowing everyone to keep an eye on spending. By undercutting bank debit cards on age – banks issue to 11 year olds – he's snapping up consumers earlier than his rivals.

> Complexity has traditionally been the financial world's defence against uneducated intruders

Under conventional disruptive innovation theory, incumbents struggle in the face of nimble newbies, like woolly mammoths lumbering to their doom in a shower of tiny arrows launched by marauding hunter gatherers. But there's some evidence to suggest this isn't necessarily what will happen in finance. Some startups, such as London-based PayLiquid, have been launched specifically to help finance companies adapt. Chief executive and founder Sanjay Sondhi has built a mobile-first order-to-cash cloud-based sales solution that back Barclaycard Anywhere, which allows startups, trades people and small businesses to take card payments on their smartphone.

GENERATIONAL CHANGE

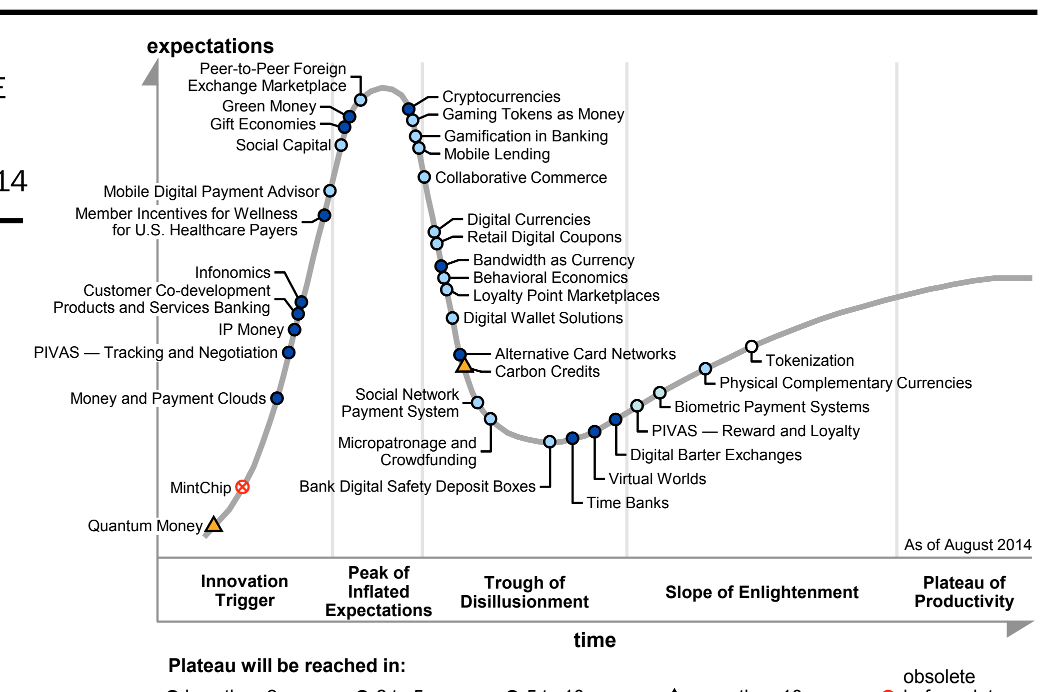
And there are signs that banks are catching on. Research by New City Agenda, a think-tank, claims Britain's largest banks will take a generation to change their cultures. But Barclays' recently launched fintech accelerator programme has already seen its first startups emerge and Lloyds is backing a "startup-bootcamp" scheme, suggesting innovation culture is spreading within some banks.

"Anthony Jenkins [Barclays chief executive] has been pushing the bank to embrace the technological revolution," says Darren Foulds, Barclays managing director, mobile banking and Pingit. "Three years ago we had no native apps. Typically change programmes take two-and-a-half years to push through, but we produced Pingit in seven months."

Launched in 2012, by 2014 it handled £609 million in payments and one homebuyer used it to pay a £23,000 deposit. The bank now updates its mobile app every six weeks. "Our customers check their mobile app 26 times a month compared with six times a month for phone banking and going into branches twice a month," says Mr Foulds.

Is it enough to keep Clayton Christensen happy? Maybe it doesn't matter. Disruptive innovation is currently facing serious academic challenges in the United States, led by Harvard's Professor Jill Lepore, who questions whether the theory has been oversold. Looks like someone's disrupting the disruptors.

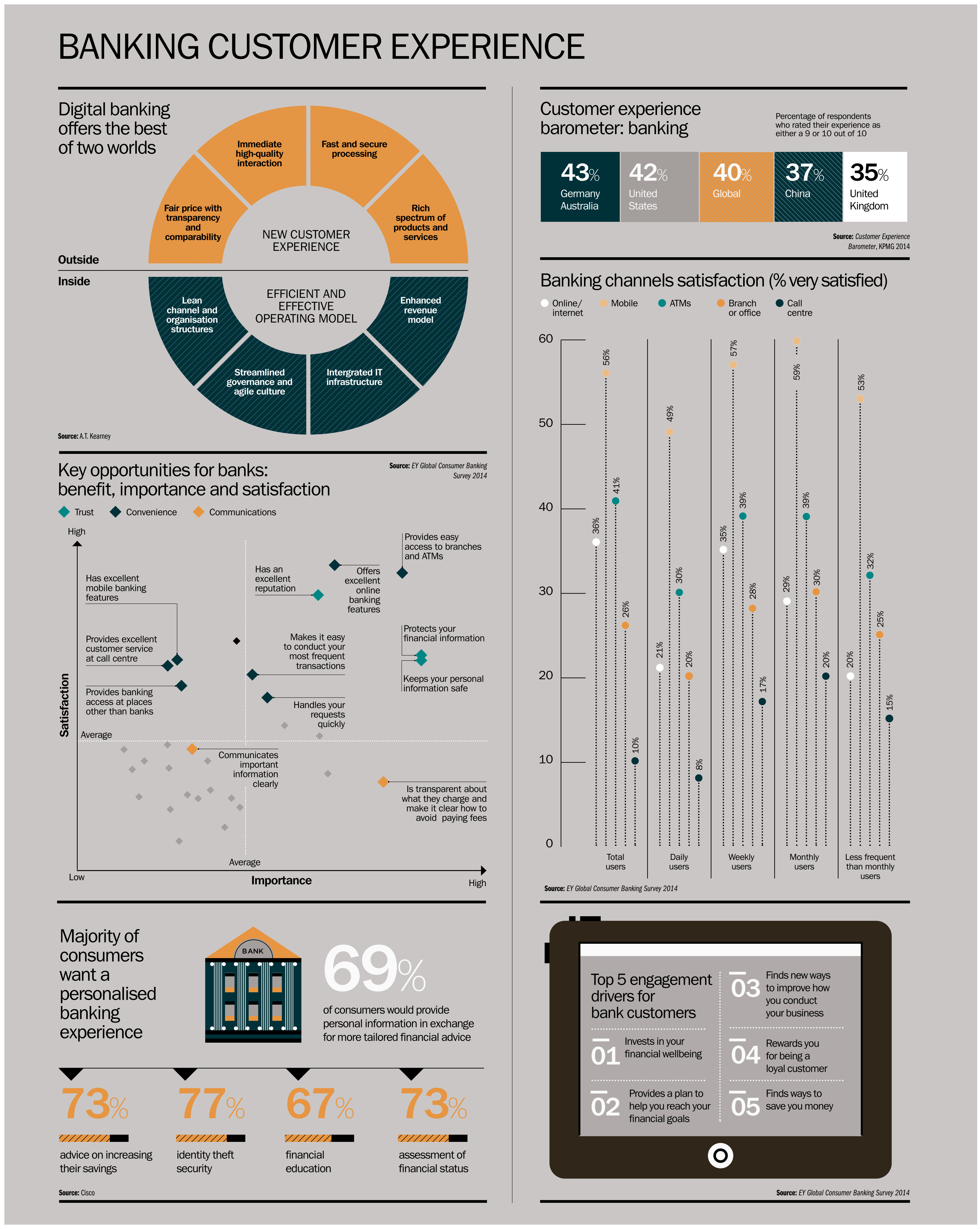
GARTNER HYPE CYCLE FOR THE FUTURE OF MONEY, 2014



Customer Experience

IT'S TIME TO CATCH UP WITH TECHNOLOGY

There is no other sector in such need of a customer experience overhaul as financial services, as **Hazel Davis** reports



Financial institutions are under increasing pressure to close the gap between the experiences they provide and what consumers have come to expect.

It's well documented that becoming more customer-centric is a proven driver for growth and profitability.

"Many customers already interact with their bank online for basic services and banks need to allow customers to explore more complex needs online, such as mortgage options, where they may have dealt with a member of staff in the past," says Steve Davies, head of retail banking at PwC.

Barclays has led the way in financial services technology. In 2007, it pioneered contactless technology in banking and in 2012 it launched its Pingit mobile payment service. Then in September 2014 it launched its free bPay wristband, which works with the entire London transport network, requiring nothing more than a quick wave of the wrist to work.

Last year Barclays Mobile Banking won two prizes at the FStech Awards, one for enabling customers to call the bank directly from its app and the second for introducing instant lending on a mobile device.

While other banks are catching up with these innovations, Mr Davies says that technological tools such as gamification – the use of game mechanics to digitally engage people – are on the rise and are "an important part of meeting increasing customer demand for more refined and intuitive digital products and services".

In its *Gamification 2020* report, Gartner predicts that gamification, combined with other emerging trends and technologies, will have a significant impact on the emergence of customer engagement platforms and personal development.

The report suggests that by 2020 emerging technologies, such as gesture control, head-mounted displays and augmented reality, will mean gamification is integrated seamlessly in many domains. It says that gamification's "sweet spot" is customer loyalty: "Consumers are tired of participating in dozens of brand-based loyalty programmes where the rewards are small and the investment in time is significant."

> Customers prefer the online experience and want to be able to look interactively at different scenarios using alternative methods

INTERACTION

Mr Davies agrees. "An increasing majority of customers prefer the online experience and want to be able to look interactively at different scenarios using alternative methods," he says. "Banks are taking their cue from customers, as well as learning from other industries, such as media, mobile and retail, and setting expectations based on their experiences in those other industries."

These days there's really no excuse not to be tapping into this. "In 2014, 49.5 per cent of all online searches for life insurance and 42.1 per cent for over-50s life cover came from mobile devices," says Alex Koslowski, head of proposition in the consumer division at Royal London, the UK's largest mutual insurer.

"Consumers are faced with very complex products which are embedded in poorly designed online journeys that are just as complex and typically not optimised for mobile devices."

In response to this, Royal London created a "truly simple" life insurance product which replaces complex, dozens-of-questions-long medical underwriting with a few smart questions that are always relevant to the applicant and lead to a price the company honours. The whole thing takes a few minutes, compared with 45 minutes with a conventional product.

ONLINE JOURNEY

Interestingly, the product is supported with an online application journey that was designed for mobile phones first and then built out for tablet and desktop channels afterwards. Mr Koslowski adds: "We put great effort into creating better and more engaging help functionality than any other provider, so that customers can learn more about how the product can fit into their families' financial lives – without getting bamboozled with technical insurance jargon."

Sarah Weller is London managing director at enterprise and consumer mobile app development company Mubaloo. The company has designed hundreds of mobile apps across a range of sectors, including financial. "There are still too many financial institutions in the UK that are stuck in the past," says Ms Weller. "Some only allow customers to see minimal information about their finances or require a secondary pin-generator device that is easy to lose and break.

"When looking at the current state of the market, there is a massive difference between those who lead with innovation and provide their key audiences with what they need and those at the bottom who are struggling to respond to expectations.

"Consumers expect a constant experience, regardless of the device they pick up. They expect accessibility to information that relates to their lives and to help them make sound financial decisions in the omnichannel world."

But it's not just the consumer-facing element that suffers as a result of this risk aversion within the finance industry, says Ms Weller. "It's the employees or stakeholders who need access to information and the right tools in their hands to understand the needs of the clients. Customers expect tools that help them make decisions. They want to make quick decisions and expect to be able easily to understand the impact certain decisions will have on them."

Satisfy the Regulators
Page 05

Mubaloo acts first as a consultancy to see what improvements can be made, before creating apps. The company has worked with a number of financial companies, including Aviva, Hargreaves Lansdown, Schroders and Equiniti, to mobilise customer or employee-facing operations. Often these are apps that need to be securely integrated with back-end systems or third-party data sources. Mubaloo also helps companies to innovate with technology, such as utilising hyperlocation technologies, such as wi-fi or beacons, and extending apps to wearable devices.

LIVE MOBILE TRADING

In 2011, Mubaloo worked with Bristol-based Hargreaves Lansdown to launch the first live trading mobile app for shares and funds. The app helped customers to manage their accounts from their mobile phones or get access to the information they needed to make better-informed decisions.

In December 2013, following a 17-fold increase in traffic from iPad users to Hargreaves Lansdown's website and iPhone app, Mubaloo created HL Live for iPad.

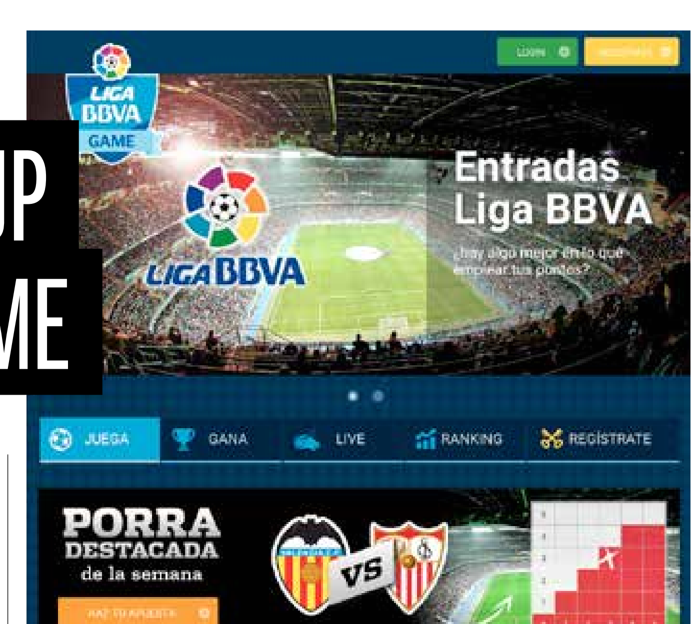
"By focusing on the design and usability, the app went straight to the top of the free finance apps in its first week and remained in the top ten throughout 2014," says Ms Weller. "On Christmas day alone in 2013, 10 per cent of all fund trades took place in the app. As the app provides in-depth data analysis and insight for any person who downloads it, it also delivers value to people who aren't a Hargreaves Lansdown customer. This provides the company with a huge competitive advantage, especially if people who aren't their clients use it for information."

Ms Weller believes that financial institutions need to prioritise their audience, and understand the most important tools and investments that will give them the best advantage. "At the moment, it just seems that in the banking sector, they are all struggling to keep up with Barclays," she says.

One of the major sticking points for any kind of technology reform in financial services is regulation around mobile. "There is a need for financial lawyers and legal teams to catch up to technology," says Ms Weller. Over the next year, EU legislation could see big changes to data protection and privacy. "Understanding this, and adapting to consumer demand and requirements is a challenge, but one that is worth trying to master," she concludes.

Gamification

HOW TO UP YOUR GAME



Spanish bank BBVA initially employed gamification to encourage customers to use its online banking service.

Bernardo Crespo, BBVA's digital marketing manager, says: "At first the idea was to transform tutorial tips and videos into a fun way of learning how to use the BBVA online banking platform."

As part of BBVA Game, the bank has created a number of challenges, and users are rewarded with points and badges based on how often they use the online platform.

Customers learn the lesser-known functions offered on the platform, such as electronic tax payment, modification of personal information, banking products and service applications.

"By learning how to use the online banking platform, BBVA Game users share more and more data with us. This allows us to launch user-targeted challenges and rewards," says Mr Crespo.

"We discovered that users were going down an extraordinary unexpected path. Our learning was encouraging users to co-create challenges with us and evolve the game with other players. It has become a lever for new customer acquisitions by incorporating challenges related to football, such as quizzes, video games and a lottery."

BBVA Game has now evolved, he says, into a simple way to get closer to the bank's potential customers' conversation on social media.

The bank is the sponsor of one of the most popular soccer leagues in the world, Spain's Liga BBVA. Mr Crespo says: "Using Liga BBVA as a marketing hook, we were able to transform what we learnt from gamification into an acquisition platform for potential customers. That is how we came up with the name Liga BBVA Game."

It seems to have worked a treat. Mr Crespo estimates that on average 25 per cent to 30 per cent of Spanish bank customers access their accounts online and BBVA has surpassed this figure by more than 5 per cent.

Moreover, he adds: "The consumption of online tutorials regarding the various BBVA online banking platform functions has increased 24-fold in a year after the launch of BBVA Game."

Now game users share their quiz answers in online forums through content generated by BBVA Game. "Would we have been able to encourage our users to generate BBVA content without BBVA Game?" asks Mr Crespo. "Perhaps, but we would have never been able to increase the usage of the BBVA online banking platform."

Top 25

FINTECH COMPANIES SET FOR STARDOM

Edwin Smith takes a look at 25 of the hottest financial technology companies in the world

PAYMENTS

GoCardless
London
What it does: Processes direct debit payments in a cleaner, simpler, quicker way.
Why it's hot: Having become the UK's leading direct debit provider, the company is launching new products, and focusing its attentions on larger businesses and foreign markets, starting with Europe.
https://gocardless.com/

Transferwise
London
What it does: Transparent, low-cost money transfers across currency boarders.
Why it's hot: Has transferred £1 billion of its customers' money. Investors already include Peter Thiel, Richard Branson, Index Ventures and Seedcamp. Recent speculation suggested that possible investment from Sequoia Capital could value the company at close to $1 billion.
https://transferwise.com/

Stripe
San Francisco
What it does: Online payment technology that allows companies to accept payments through their app or website.
Why it's hot: Working on e-commerce with Apple, Facebook and Twitter. Closed a $70-million funding round late last year which valued the company at $3.5 billion, more than double what it was worth less than a year ago.
https://stripe.com/gb

Venmo
New York and San Francisco
What it does: App links to users' bank accounts and allows them to send money to contacts instantly, and for free.
Why it's hot: Although payments are currently free and only between consumers, the app could be used to transact payments to merchants who would pay a fee for the service.
https://venmo.com/

Adyen
Amsterdam
What it does: Payments platform that claims to enable businesses to accept almost any type of payment, anywhere in the world.
Why it's hot: Closed a $250-million funding round at the end of last year that valued the company at $1.5 billion.
https://www.adyen.com/home/

Tipalti
Israel and Palo Alto
What it does: Streamlines and automates the way companies make payments to large numbers of payees.
Why it's hot: Designed to take care of regulatory and tax requirements, even when payees are in multiple countries. Currently serves more than 250,000 payees globally and processes over $1 billion annually.
www.tipalti.com

Ant Financial
Hangzhou and Shanghai
What it does: A range of technology-based financial services. Formerly known as Alipay, an affiliate of the now-public Chinese e-commerce giant, Alibaba.
Why it's hot: Currently has a user-base of 300 million, controls half the Chinese e-commerce market and processed $519 billion in payments during 2013. Has 100 million users of its mobile wallet and is reportedly eyeing international expansion.
https://www.alipay.com/

Astropay
London
What it does: Pre-paid virtual card technology and cross-border payment services.
Why it's hot: Already the largest company of its type across Latin America, it has now completed a successful test in China and is targeting expansion there. It will offer Chinese consumers the ability to make international online payments, something that many currently lack.
https://astropaycard.com/

COMPANY INFORMATION

Digital Shadows
London
What is does: Provides business with protection and advice regarding the digital footprint they leave behind.
Why it's hot: Monitors millions of data sources, including social media in 26 languages, to identify and mitigate security threats. A graduate of the fintech innovation lab at Level 39, the company will close a Series-A funding round and open offices in San Francisco and New York this year.
www.digitalshadows.com

DueDil
London
What it does: Publishes and contextualises private companies' information.
Why it's hot: Offers users the ability to understand the financial performance of their competitors, suppliers and customers, and already offers data about private companies in 20 countries. Has partnered with Investec to launch an index of the fastest growing mid-size companies in the UK.
www.duedil.com

PEER-TO-PEER

Funding Circle
London
What it does: Platform for peer-to-peer (P2P) or marketplace lending.
Why it's hot: Has facilitated more than $500 million of loans. Company has also struck a deal with a US investment group that will lend £132 million to small UK businesses via the platform in one of the first international deals in alternative finance.
www.fundingcircle.com

Market Invoice
London
What it does: The platform provides companies with access to invoice finance services, without forcing them to commit to long-term contracts.
Why it's hot: With £1.5 million in seed funding, it has gone on to lend more than £300 million, act as a conduit for UK government funding, do a deal with PwC and partner with FTSE 100 software provider Sage.
www.marketinvoice.com

LendInvest
London
What it does: P2P mortgage lending for buy-to-let investors and property entrepreneurs.
Why it's hot: The first and biggest P2P real estate platform in the world. Provides fast loans of up to 75 per cent of the value of a property to borrowers and returns of 5 to 8 per cent for investors. Has lent more than £170 million to date.
www.lendinvest.com

Lending Club
San Francisco
What it does: Various types of peer-to-peer lending.
Why it's hot: Floated on the New York Stock Exchange at the end of last year and currently has a market value of around $7.5 billion. Recently announced a deal with Google, one of its largest investors, to facilitate small-business loans to the tech giant's partners.
www.lendingclub.com

Lendico
Berlin
What it does: P2P lending.
Why it's hot: Comes from the Rocket Internet stable of companies, founded by the controversial Samwer brothers. The business has had huge success by replicating proven internet business models and rolling them out in new markets.
www.lendico.com

Kreditech
Hamburg
What it does: A credit bureau for the digital age, offering highly individualised loans to smartphone users, based on algorithms and big data.
Why it's hot: As long as someone uses a smartphone, the company should be able to establish their creditworthiness. As a result, emerging markets present a huge, as yet untapped, opportunity.
www.kreditech.com

DIGITAL CURRENCY

Bitreserve
San Francisco
What it does: Allows bitcoin to be held as real-world currencies.
Why it's hot: Backed by a reserve of real money, Bitreserve aims to eliminate the risk and volatility of bitcoin, but retain its benefits. Raised £6.3 million in funding via Crowdcube and Venovate, smashing Crowdcube's previous record of £1.9 million.
https://bitreserve.org

Coinbase
San Francisco
What it does: Makes it easy for people to buy, sell and use bitcoin.
Why it's hot: With 2.1 million consumer wallets, it is thought to be the most widely used bitcoin wallet in the world. Also processes bitcoin payments for 38,000 merchants and is fully operational in 19 countries.
www.coinbase.com

Epiphyte
San Francisco
What it does: Provides enterprise software that enables banks and other financial institutions to take advantage of digital currency.
Why it's hot: Could help established institutions to fend off the startups that have been threatening to lure customers away with significantly cheaper fees for currency transfers.
www.epiphyte.us

INVESTMENTS

Up Investments
London
What it does: Platform to allow investors to manage and keep track of all their crowdfunding and P2P investments.
Why it's hot: With alternative finance in the UK growing by around 150 per cent each year, a free supermarket-cum-dashboard makes perfect sense.
www.investup.co

Nutmeg
London
What it does: Accessible wealth management for anyone with £1,000 or more to invest.
Why it's hot: Being a web-based platform allows it to charge significantly lower fees than its traditional competitors.
www.nutmeg.com

Betterment
New York
What it does: The "robo adviser" automates personal investment based on individuals' specific preferences and requirements.
Why it's hot: Only four years after being founded, it already has $1 billion of assets under management and charges only 0.15 per cent to 0.35 per cent in fees.
www.betterment.com

STARTUPS TO WATCH

Starling
London
What it does: Branchless mobile banking for the iPhone generation.
Why it's hot: Led by a former Allied Irish chief operating officer and backed by WPP, the startup will set out to be more like Google or Amazon than a typical bank. Expected to launch late this year.
http://starlingbank.co.uk/

Lendable
London
What it does: P2P lending platform that gives borrowers personalised rates.
Why it's hot: Lendable uses information about would-be borrowers to match them with investors. Even people with less-than-perfect credit ratings can borrow, if they pay a higher rate.
www.lendable.co.uk

Tink
Stockholm
What it does: Helps users to monitor their personal finances via an app.
Why it's hot: Claims to have 200,000 users in Sweden – 2 per cent of the country's total population – and has sights set on European expansion following $4-million Series-A funding round and "best in show award" at industry expo Finovate
www.tinkapp.com/en/

Cyber Security

THE HACKERS MEAN BUSINESS

Image: Getty

Cyber security is no longer a mere matter of compliance and is now one of the primary business imperatives that financial services firms must address, as **Brid-Aine Parnell** discovers

Target, JPMorgan, Sony – ask anyone who keeps up with the news what these firms have in common and they'll probably be able to tell you. They've each been the victim of a major cyber attack, resulting in high-profile resignations, regulatory fines, loss of revenue and, above all, an embarrassingly public blow to their reputation.

This reputational risk is one of the main drivers that have pushed cyber security up the agenda of financial services firms.

"Going back to the financial crisis of 2008, when you thought of the top ten risks, it didn't come as number one. But today it's moving up to the top slot. We're talking more and more about cyber security as more than just risk management," says Said Tabet, governance, risk and compliance strategy lead at EMC.

There was a time when such reputational risk could almost be dismissed, since clients tended to stick with the financial firm they knew, which was often the first one they banked with. But these days that loyalty has disappeared as customers have more choice and more ease in voting with their feet, says Andrew Rogoyski, head of cyber security services at CGI UK.

"The easier it is to change banks or retailers, the more sensitive those organisations become to the reputational impact of an online attack," he says. "That's increasingly true with generational changes – when I look at graduates today, they're pretty merciless towards their providers."

These changes, along with accelerated adoption of new technologies, such as mobile and the cloud, and the threat of tech-savvy market entrants, have propelled cyber security out of the compliance tick-box zone and into a foundational business strategy. Financial services firms need a cyber-security policy that covers every aspect of transactions, whether online or on a mobile app, and that protects data wherever it's held, whether that's deep in the company servers or off in the cloud.

The financial industry's legacy IT systems are still a problem for cyber security, but that's not the only reason why covering transactions is such a challenge. Frequently, larger institutions are a conglomeration of mergers and acquisitions that have taken in tens of firms, all with their own IT systems and cloud contracts.

One way to try to build a security strategy around all these systems is to focus on the transaction itself, explains Rashmi Knowles, chief security architect at insurers RSA.

"We used to try to protect everything, to put a shield around legacy systems, cloud, mobile, social media, but now the thinking is very much around protecting the transaction itself," she says, adding that the key is to increase the security for each additional risk – is it a transaction on a mobile; is that mobile operating overseas?

> Financial services firms need a cyber-security policy that covers every aspect of transactions

But service providers are also doing their bit to cater for the high-security demands of financial services firms. Both Ms Knowles and Mr Tabet say that cloud providers are starting to include security in their service level agreements, offering a guarantee of protection on data that helps, even if the responsibility still ultimately resides with the financial firm.

In addition, there is more collaboration between service providers, financial firms, governments and regulators. Information-sharing with initiatives such as the US Financial Services Information Sharing and Analysis Center have been going on for some time, pooling not just the knowledge of cyber attacks, but the intelligence necessary to try to avoid them. And now solution-sharing is on the agenda as well.

"When one institution, particularly a large one, is affected, the whole industry is weakened. It creates a problem that's systemic. So we have to deal with it at that level and because of this there's more and more discussion of solutions," says EMC's Mr Tabet.

Although compliance still helps to drive the adoption of security measures and the establishment of standards, cyber security is now about so much more. And the threats are the same, whether you're a traditional institution and or a tech-savvy startup.

Regulation and Compliance

SYSTEMS TO SATISFY THE REGULATORS

Technology is playing an ever-increasing role in regulatory compliance among financial services firms, as **Michael Dempsey** reports

Image: Getty

When Swiss-based banking systems house Temenos published its latest annual banking survey, one statistic leapt off the page. After quizzing 198 senior bankers worldwide, the company found that regulatory pressure was viewed as a major driver behind technological change.

More than half, 53 per cent, of the respondents believed that regulatory pressure would force banks to update their older computer systems. And a quarter of those bankers cited regulation as the biggest challenge they face.

The causes for this are not hard to find. The banking crisis of 2007-8 and the ensuing global recession have left deep scars. As the Temenos report states: "Governments and central banks have tried to atone for a perceived lack of regulation leading to the credit crisis and to put in place the safeguards to prevent another crash."

A more brutal assessment comes from Lee Meyrick, director of information management in Europe at Nuix, a software house that allows accounting firms and similar bodies to dig out the data regulators need. "There is a public mood that the regulators should go after the banks with gusto," he says. Popular emotion may not always have figured highly in the calculations of bankers, but the current climate is not giving them much choice.

Banks' Legacy
Page 06

Nuix's software is used by bodies such as the new Financial Conduct Authority and the Serious Fraud Office. It reaches into massive amounts of financial data and allows investigators to ask specific questions, and then develop a line of inquiry based around that initial request. Mr Meyrick says technology matters much to regulators because "it allows them to have a lot more confidence that what they are getting is right for their inquiry".

Well-organised information can be presented to the regulator without any delay. And Mr Meyrick points out that this means an institution can avoid antagonising compliance officials. "Saying 'It's a problem to retrieve this data' is not the way to respond to a request from a regulator, it means you get a fine," he warns.

Lawyers refer to unveiling documents as a process of discovery and products such as Nuix's are part of a family of programs known as e-discovery systems. The appetite for effective e-discovery can be gauged by the pressures on one bank Mr Meyrick is familiar with. "They had 3,500 requests for information from regulators around the world in the course of just six months," he says.

Financial institutions have implemented their own e-discovery frameworks to keep regulators happy. The result of giving rapid responses to requests for data is that regulators become confident that everything is in order and reduce the scale of such requests. In theory, the e-discovery software pays for itself. If the regulators know that any query will meet with an extremely prompt and accurate response, they are far less likely to resort to the more onerous scrutiny they reserve for any organisation suspected of keeping poor records.

SECURE SOFTWARE

Munich-based software company Brainloop stores information in a secure part of the cloud and assigns very specific access rights to sensitive data. By detaching these files from the bank's IT infrastructure, it creates a highly secure environment where only a handful of authorised people can decide who gets to see what information. In turn this lets the bank demonstrate to regulators that information is being correctly managed and shared. Brainloop has more than 200 users in the financial services sector, including Société Générale bank and insurance giant Allianz.

Johannes Hertz, a former London investment banker, now works as chief financial officer for Brainloop. Despite widespread scepticism about the ethics of banking, Mr Hertz is adamant that his customers care deeply about getting things right. "In the City, people are incredibly serious about compliance. You have a very short career in banking if you're not careful with confidential information," he says.

Technology is clearly part of the solution to increased regulation and scrutiny. But it can also create problems. Simon Appleton is in charge of regulation at Kinetic Partners, a consulting firm specialising in financial services. He notes that while the right technology is essential to get reporting in shape, the rise of computerised trading systems has raised serious worries about a robotic crash taking place before human intervention can prevent it. "Trading is becoming more automated and the regulators are particularly nervous about this," he says.

COMPUTER CONTROLS

These automatic trades are under the control of sophisticated algorithms and Mr Appleton singles out this trend as a new danger. He says: "Regulators fear that computer-generated orders could crash a market, so it is very important to have controls in place and to test those algorithms for any flaws."

> Technology is clearly part of the solution to increased regulation and scrutiny

Reporting on the back of such complex systems is not as daunting as it might seem. The creation of a central data hub, where all trading information is collected, should go a long way to reassuring regulators, says Mr Appleton. Such an exercise might cost more than £1 million, but in the context of keeping regulators happy, this is small beer.

With the arrival of new challenger banks and the rise of purely online entrants in the retail banking space, the financial services sector has plenty on its plate. But critical judgments from regulatory bodies will only lower the public standing of this already battered sector. As the Temenos report concludes: "In the end, it may be that it is the regulator, rather than economics, that forces banks to renovate their IT estate." The smart money is on introducing technological change before it is imposed from the outside.

FIVE TOP TIPS

1. Organise information so it can be turned over to the regulators in an instant. All new IT systems and upgrades to existing systems should be designed with compliance in mind

2. Embrace new trends such as mobile computing. Rather than seeing the advent of personal devices as a threat to existing procedures, they should be regarded as inevitable. And potentially unorthodox technologies can be used to enhance productivity

3. Keep things simple. If systems are too complex, users will have a greater incentive to ignore or to find ways around them. When that happens compliance becomes an even greater problem

4. Implement software that limits access to all sensitive material to authorised staff only. Respecting the privacy of client data and maintaining the highest standards of information security goes hand in hand with compliance

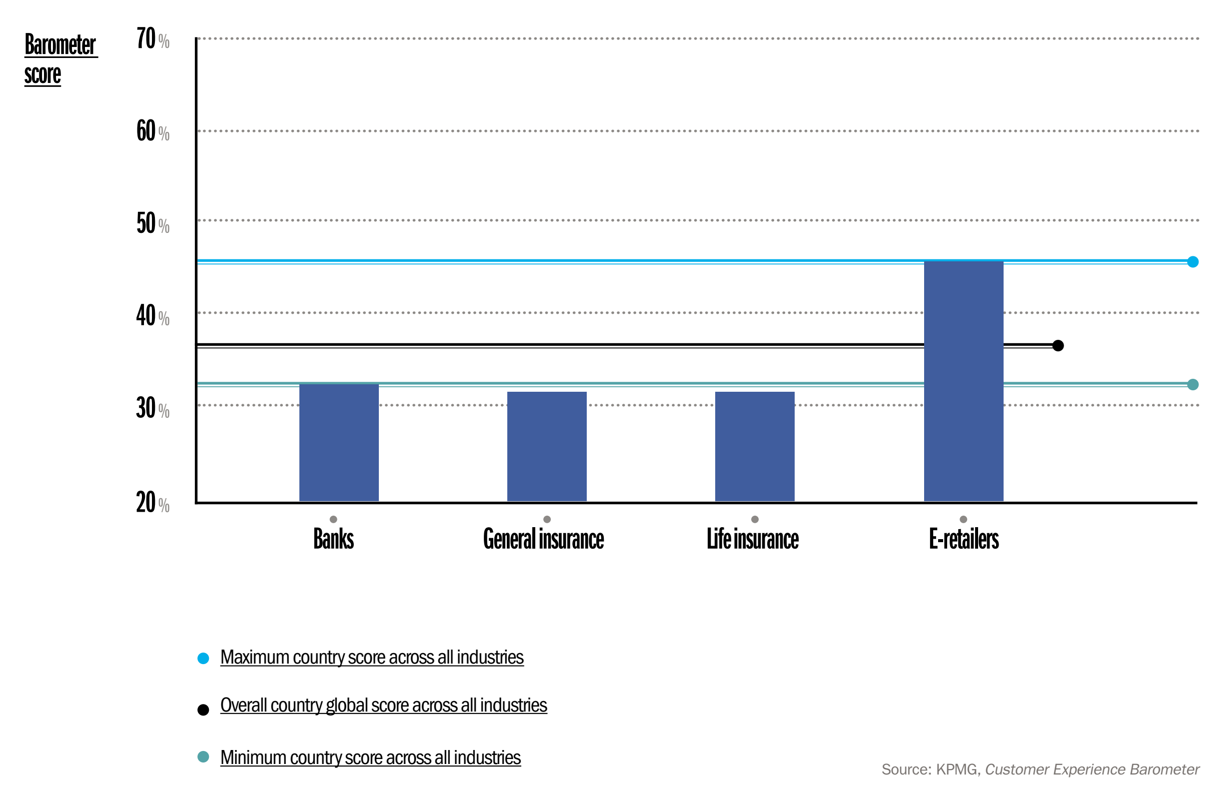
5. Remember that having the right systems in place will allow you to report any suspicions of irregular activity before the regulators apply for information. This will always mean a better relationship with the authorities

COMMERCIAL FEATURE

User experience: banks need to focus on their staff too

Branch and call centre customers are being let down because banks have not invested enough in the systems their staff use – and that needs to change, says **KPMG**

CUSTOMERS BELIEVE THEIR BANKING EXPERIENCE HAS IMPROVED, BUT THEY RANK ENGAGEMENT WITH FINANCIAL SERVICES STAFF FAR BEHIND E-RETAILERS



Source: KPMG, *Customer Experience Barometer*

Mark Guinibert,
Partner at KPMG

It's a pretty safe bet that the last time you paid your electricity bill, cancelled a standing order or checked your bank balance you did so online, either via desktop, tablet or mobile phone. Banks have invested hundreds of millions of pounds to create smooth and intuitive customer journeys online.

However, in these days of omnichannel, customers expect the Martini principle with their banking available anytime, anyplace, anywhere. Unfortunately, when you pick up the phone or visit a branch, the experience will probably not be as quick and simple as it was online. You might well be referred back to the website or be asked to repeat your name, account number and sort code to a number of representatives.

Call centre banking staff will have multiple applications open on their computer screen at any point and they retype information from one to another. "Onboarding" new customers can be even more clunky, protracted and error prone. It's hardly surprising that in KPMG's international *Customer Experience Barometer*, UK banking customers returned the lowest score for customer satisfaction.

Why is the online customer experience so often so much better than the branch or call centre customer experience? KPMG believes that it is because banks have invested heavily in the customer-facing digital customer journeys, but much less in transforming the operational journeys available to their own staff.

"They know that customers who are familiar with fast, efficient and intuitive online experiences in the home now expect the same in their workplace," says Mark Guinibert, a partner in KPMG's Customer and Channel Management Practice. "But the problem is that occasionally customers will still want to speak to human beings either face to face or on the phone. When those human beings can't help them as easily as the bank's digital solutions, then customer satisfaction suffers.

"You can't blame banks for spending money on their customer-facing online technology. Customer focus often has more mindshare from the C-suite compared to the way budgets are allocated to transform internal solutions."

However, KPMG believes that it's time for banks to start investing in the kind of fast, integrated and intuitive technologies for their employees that they have started offering their customers. Only by doing this can the banks provide real end-to-end solutions for their customers.

"Banks need to invest in reskinning old systems to make them fit for purpose and to think more about the employee journey to transform the business operation", says Mr Guinibert. "Interactions will often be 25 per cent to 50 per cent faster following these changes and there are significant reductions in errors and customer complaints. So all round, very good news for customers, staff and the banks."

"They don't have to be complicated, either," adds Mr Guinibert. "Something as simple as collating all the pre-existing relevant information from several systems into a single, intuitive employee journey can make a huge difference."

> It's time for banks to start investing in the kind of fast, integrated and intuitive technologies for their employees that they have started offering their customers

Having a secure, transactional website is already seen by customers simply as a hygiene factor and what's adequate today certainly won't be so in two or three years. Mr Guinibert points out that now is the time to act as the economic returns and customer satisfaction improvements from improving employee journeys are often better than investing in customer-facing solutions.

According to KPMG those banks that are already investing in better systems for their staff are seeing an almost immediate return on investment as customer satisfaction improves rapidly. Employee engagement, alignment and buy-in also increase, while simpler, more intuitive systems mean that staff need less training and can become productive more quickly.

By joining up the offline and online customer experience to create faster, more co-ordinated and seamless systems, staff can spend more time supporting customers and "the art of conversation".

With their digital footprint and data from branches and call centres, banks already know a considerable amount about their customers' finances, creditworthiness and spending habits. All of this information should be available at a single reference point to a staff member who is helping a customer with a loan or mortgage, for instance. Ideally, not only should they not have to ask again for this information, but the system should have auto-filled appropriate fields and carried out the necessary calculations and risk management protocols.

Banks can learn from successful omnichannel retailers. Amazon and John Lewis make shopping faster and easier (can you imagine filling in five screens of data just to buy a sofa?), and their joined up systems and operations mean that what they know about their customers is more co-ordinated and usable.

Similarly banks need to be able to personalise their online customer experiences. "They can make a customer's website appropriate to their income, circumstances and time of life," says Mr Guinibert. "For instance, the version for an older, more affluent client might have more on savings, investments and pensions, while for a young graduate it will focus on cash in and cash out. Based on this, staff can then have more meaningful conversations with customers."

KPMG acknowledges that banking faces particular challenges, such as demands by regulators and observing the fine line between offering helpful suggestions and giving financial advice. "From our experience and research we believe that following the rapid growth of online banking for customers, the next development in financial technology will be a similar improvement for bank staff," says Mr Guinibert. "Those who start making these changes now will see real benefits in terms of employee engagement, customer satisfaction, economic return and market share."

For more information on some of the topics discussed here, please visit www.kpmg.co.uk/banking

KPMG
cutting through complexity

Big Data

WHAT DATA CAN TELL YOU ABOUT CUSTOMERS

With no physical products to manufacture, data is the financial services sector's most important asset, writes **Michael Dempsey**

Image: Getty

Big data is a concept that arrived with an appropriately enormous amount of hype. We all know the digital age has generated huge amounts of information and that this mountain of data is especially prominent in the financial services industry. But the ways in which this avalanche of detail is being exploited are many and varied.

Carmine Gioia is a visiting professor at the Massachusetts Institute of Technology (MIT). Although he is a resident of Copenhagen, the Italian academic spends a lot of time in the United States working with MIT's Big Data Initiative. This is not abstract research as his work bears fruit in the world of investment banking where Professor Gioia also operates as chief data scientist at Denmark's Saxo Bank.

Saxo Bank has 27 offices worldwide trading currencies, stocks and bonds. Professor Gioia is concerned with learning how to give Saxo's clients the best possible experience when they deal with the bank. Every time they log on to the bank's website their clicks are analysed to try and work out just what it is that would most meet their needs.

"We want to make the experience of dealing with the bank as relevant to them as possible, so we can offer them information based on their previous search options," says Professor Gioia. He is dealing with what he terms "rich data", information that flows from multiple sources including social media. The algorithms Professor Gioia and his colleagues devise are intended to pull out trading options that dovetail exactly with the personal profile of each client.

CHEAPER DATA

The key to the boom in data analysis is that analysing information has become cheaper. Cloud computing allows banks to store and assess data at infinitely lower rates than was previously possible. But this brings its own risks. If an institution doesn't give enough thought to how it goes about this exercise, it can still get overwhelmed with information that stifles decision-making. "Big data can mean paralysis," Professor Gioia cautions.

US software business Birst writes analytic programs that take data and pull out valuable insights for clients such as the Royal Bank of Canada in Toronto. Southard Jones is in charge of product strategy at Birst and points out that tasks which once required scarce skills are now accomplished by the software his business rents to clients over the internet using the cloud model. "In the past you needed data scientists to run the algorithms for data analysis. Hiring them was very expensive," he says.

ANALYSING TRANSACTIONS

Today Birst can analyse the characteristics of account transactions and queries using 40 different aspects of a customer's behaviour, and identify the most profitable customers its banking clients should concentrate on.

The economics of this data analysis operation are best understood in the context of data science costs. Birst can run a data analysis project for a bank for between £100,000 and £500,000. The dedicated software packages that banks once employed for data analysis could cost well over £1 million and the accompanying team of data scientists could expect to earn more than £100,000 a year each.

If these figures illustrate how data analysis costs have plummeted, the other side of the coin is the explosion in the scale of the data that needs analysing.

Kx was founded in 1993 to address the single problem of how to explore and exploit mounting quantities of data held in computer systems. The technology available to the financial services sector then is antiquated by the standards of an online world where millions of people check their bank balances using mobile devices. Simon Garland, a British mathematician who is chief strategist with the US company, talks of how data volumes have risen in a very sharp curve.

Citing records, each of which represents one trade or price quote, he describes the kind of information the New York Stock Exchange (NYSE) generates. "Since 1993, the NYSE has created one trillion records. But that volume started relatively low and then rose sharply from the late-1990s onwards. Today the NYSE can create a billion records in just one day," he says.

> The key to the boom in data analysis is that analysing information has become cheaper

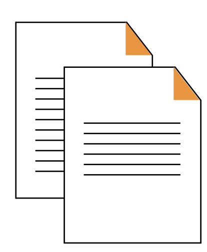
Kx collects massive amounts of data and then presents it in a way that other systems, such as data analysis programs, can work on. "We provide a very, very fast data base so people can act on interesting movements in the market," says Mr Garland. Speed is of the essence in the world of trading systems and Kx is the high-performance engine that keeps a whole raft of other clever software products on the road. The velocity at which Kx works reflects the fact that traders need to react to events inside seconds.

The reach of big data work extends from the giddy activity on Wall Street to high street banks in the UK. Harvey Lewis, research director at business advisers Deloitte, explains that financial institutions have an appetite for analysing customers however large or small they may be. "The point about big data is that you can use it to understand your customer, and target them based on what products and services they really want," he says.

The traditional bricks-and-mortar bank branch can be just as important to sophisticated data analysis exercises as any amount of online interaction, according to Mr Lewis. "Physical and online presences feed off each other. The branch can drive more digital business," he says.

Combining data gathered on the internet with details of customer transactions in the bank branch is a rising trend. For financial services, there is no end to the data that can be profitably analysed.

1trn
records created by the New York Stock Exchange in 20 years



1bn
records can now be generated by NYSE in just one day

Source: Kx

Legacy Systems

BANKS NEED MORE THAN FASTER HORSES

Antiquated technology is hindering established banks and financial firms who are failing to provide customers with the services they demand, as **Dan Barnes** reports

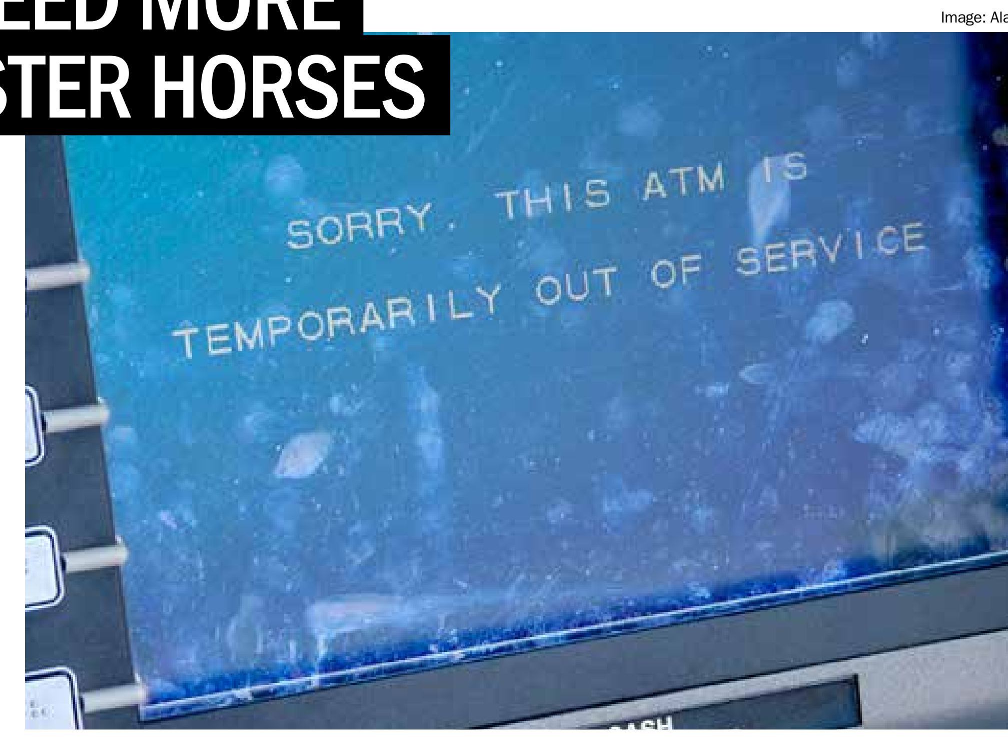


Image: Alamy

The apocryphal Henry Ford quote, "If I asked people what they wanted, they would have said faster horses," applies to technology investment by banks. Most do not want to alter their underlying core technologies because they fear change.

Consequently most banks are riding "faster horses" when what they need is a car. Their last-generation technology is antiquated, according to the Prudential Regulatory Authority (PRA), the Bank of England's supervisory arm for financial firms. Banks struggle to offer modern services as a result and are struggling to manage the cost of maintaining many, ageing technology platforms.

Aymen Saleh, partner at consultancy Boston Consulting Group, which benchmarks bank IT spending, says: "Among the banks, only a small handful have made an investment to simplify their technology and make it modular. They are now in a far better position than the others in addressing the three priorities of regulatory pressure, service provision and cost."

TECHNOLOGY FAILURE

For those that have not invested, the risk of technology failure from poor integration or mismatched performance levels is a threat that regulators are taking seriously.

"It is like a ticking time bomb," says Alex Kwiatkowski, senior marketing strategist for banking and digital channels at banking system provider Misys. "You have ageing legacy systems that are asked to do things they were never designed to do. Core banking systems that were adequate in the era before online banking, smartphones and tablets are expected to deliver new services, new products and new features."

Authorities are pushing banks to change. Following a service outage in 2012 at Royal Bank of Scotland Group that affected 6.5 million customers for several weeks, UK regulators the Financial Conduct Authority (FCA) and the PRA began a joint exercise to examine the critical infrastructure and technology platforms of the largest eight deposit takers.

The PRA, launched an assessment with the FCA in October 2014 after identifying "a lot of issues which were not satisfactory", according to a source close to the regulators. The new review, expected to conclude in July 2015, will assess progress and increase the scope to investigate the state of systemic technology, rather than limiting itself to individual firms alone.

Boston Consulting Group estimates that technology costs anywhere from 15 to 20 per cent of operating expenditure, which increases to 30 to 40 per cent for middle and back-office operations.

Mr Saleh says: "It is a sizeable part of the bank P&L [profit and loss statement]. Pre-crisis banking had relatively inefficient technology set-ups because banks were profitable enough to carry inefficiency. Today the situation is different"

> Pre-crisis banking had relatively inefficient technology set-ups because banks were profitable enough to carry inefficiency

Mainframes, which since the 1960s have been the core storage and processing computers used to manage accounts, are very reliable, but also very expensive. Technology services firm GFT says that mainframe running costs, including those of mainframe applications, represent around 30 to 40 per cent of the total IT budget in banks.

Enrique Perez Fernandez, mainframe optimisation specialist at GFT, says: "This running cost keeps growing at the rate of 5 to 10 per cent a year, forcing organisations to look for initiatives in order to reduce costs and compensate the normal growth. The consequence is that the percentage of budget available for strategic projects increases. Replacing mainframe infrastructures with more cost-efficient architectures can reduce the costs associated with mainframes by 50 per cent."

If every bank maintains a similar level of service they can all maintain a similar rate of technology refresh. However, if service levels are exceeded by one competitor, the others will strain to catch up.

NEW PLAYERS

New players in payments, fund management and basic loans in emerging markets, such as China's Alipay, have lower cost bases for technology and are leapfrogging traditional banks in speed to execution and quality of data management, says Mr Saleh.

"One would expect some of those new players to migrate to mature markets which are more competitive," he says. "It is harder to fight a competitor if your cost income ratio is 60 per cent and theirs is 20 per cent."

Opinion

NO SIGN YET OF 'UBER BANKING'

The smartphone revolution has radically restructured every industry from booking a trip (TripAdvisor), a room (Airbnb) or a taxi (Uber), but where's the Uber of banking? There isn't one yet and consumers will soon defect to new players unless high street banks wake up, says **Chris Skinner**, chairman of the Financial Services Club

Technology is changing every aspect of our daily lives and its march is getting louder, faster and stronger as each day goes by. You only have to look at the total immersion of people in their smartphone screens on the train or street to see the impact of consumer technologies. The imminent arrival of wearables, such as Apple iWatch and the Volvo helmet to keep cyclists safe, will have even more impact this year.

However, it is not these technologies themselves that make them so immersive and persuasive, but the apps that run on them. If you have not used Uber yet, it is the usual app focused upon by innovators as the gold standard of disruptive innovation. The reason it is cited so often is because it has emerged from nowhere as the app everyone loves. This app finds your nearest taxi, tells them you need picking up and where you want to go, and pays them, all within the app. That takes away two big barriers to people with a busy city life: finding a taxi and paying them. The app does it all. It takes away the friction.

That is what disruptive innovators have achieved in travel and related markets, but what is happening in banking? Not a lot. Most large banks have just taken their internet services to a mobile screen or, as I like to think of it, they've taken a big-screen banking system and converted it to a small screen. That is not particularly innovative thinking. For example, when the French insurance group AXA launched their mobile banking app, they invested in specifically making it a mobile-app-oriented experience. Similarly, new startups overseas, such as Moven in American, are creating new bank services with easy sign-on, touch-screen navigation, integration with other mobile apps and using fingerprints for authentication.

SMELL THE COFFEE

These are things we are not seeing from most mainstream banks, as most mainstream banks have to evolve their old systems to keep up with these innovations, rather than innovating themselves. In fact, it may surprise you to find that the most innovative financial app out there comes from Starbucks, the coffee company. Starbucks chief executive Howard Schultz, speaking about mobile payments during the company's January 22 investors' update, said: "Today, in the US alone, over 13 million customers were actively using our mobile apps and we are now averaging more than seven million mobile transactions in our stores each week, representing 16 per cent of total tender. That's more than any other bricks-and-mortar retailer in the marketplace."

And it's also more than most banks, although in Britain we have seen a strong take-up of mobile banking apps. According to the *It's In Your Hands* report, released last summer by the banking industry's representative body, the British Bankers' Association, we are downloading more than 15,000 banking apps a day and making almost £1 billion in payments per day via mobile and internet.

That is all well and good, but do you see your bank as an innovator? Are their apps as cool as Songkick or as informative as Flipboard? Have you found the Uber of banking: the one that removes all the friction from dea ling with your money and makes it easy and fun to keep up with your spending? I'm guessing the answer is probably not, but two startups will address this challenge during 2015.

The first is founded by a team that comprises the former chief executive of First Direct and the co-founder of Metro Bank. It's called Atom Bank, based in Durham, and launching as a pure-play digital bank. What this means is that the bank is geared for mobile-first access. There is no call centre, apart from one for technical support, as you should not need to call a call centre for financial queries. Those are all answered by the app.

> They offer preferential interest rates based upon the number of Facebook likes they receive

The other is Starling Bank that describes itself as the "Facebook for finance". Embedding its service in a cool structure that is social as well as financial, Starling expects to be one of the killer players in UK banking this year.

A third player that already exists is Fidor Bank which has been operating since 2009 in Germany and plans to open its UK service in 2015 too. What is interesting about this bank – and you should note that all three of these new startups will be proper banks with proper bank licences – is it specifically wants to appeal to the post-2008 disaffected customer. It will bank money, commodities, investments, and even bitcoins and World of Warcraft Gold. This bank is different and very social.

SOCIAL MEDIA

They are proper banks that are community focused first. Their community is primarily in the social media world of Facebook and they become relevant to that community by firstly offering preferential interest rates based upon the number of Facebook likes they receive.

By way of example, last year they ran a promotion where the bank would lower interest rates on loans by 0.1 per cent and increase interest on savings by 0.1 per cent based upon gaining an extra 2,000 likes.

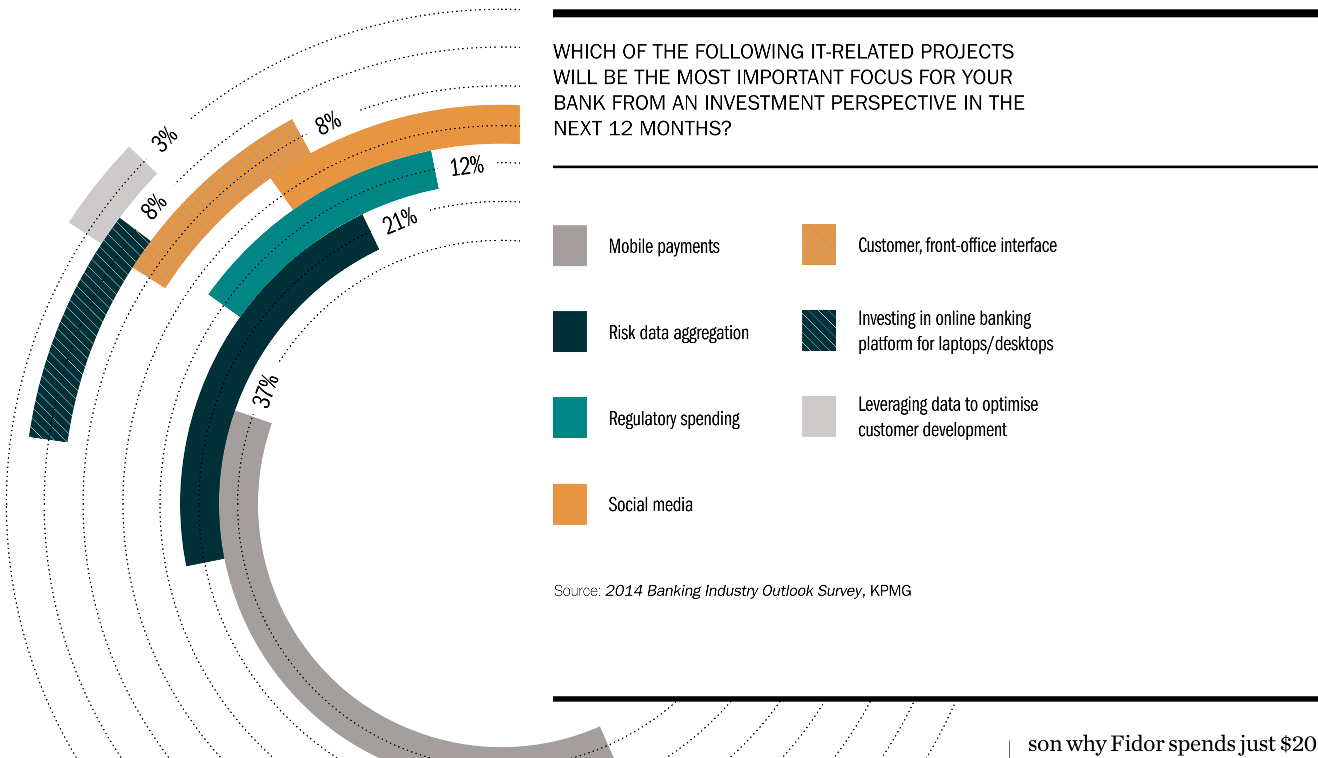
Why would Fidor do this? Because it builds community. They get 2,000 Facebook likes and that translates to 670,000 friends and family influencing the Facebook community to also like Fidor. That is because, according to Pew Research, the average Facebook user has 338 friends. So every like gets 338 people influenced to be aware of and engage with Fidor, and those influencers are friends and family.

The result is that Fidor is being exposed to thousands of people every day, and what they hear and see is that Fidor is a cool bank, engaged with their community in a social conversation about money and finance. It is the reason why Fidor spends just $20 to gain a fully KYC (know your client) on-boarded customer, compared with $1,500 for the average traditional bank.

In other words, traditional banks spend a fortune pushing products through channels by shouting at clients in the media; new banks spend a minimal amount talking to people about money through their communities of interest.

This is the key to the Uber of banking. The Uber of banking will be social, cool, transparent, trustworthy, simple, secure and reliable. There are some new ones out there today that are specifically trying to embrace these values and, if your bank is not one of them, but you want to be with one of them, then you may wish to consider taking a look at the launch plans of others soon in 2015.

WHICH OF THE FOLLOWING IT-RELATED PROJECTS WILL BE THE MOST IMPORTANT FOCUS FOR YOUR BANK FROM AN INVESTMENT PERSPECTIVE IN THE NEXT 12 MONTHS?



Source: *2014 Banking Industry Outlook Survey*, KPMG

Collaborating on compliance

Financial crime compliance is increasingly complex and expensive. By working together we can combat spiralling costs – and deliver better results.

Complying with regulation to fight financial crime is a top priority. Financial institutions have invested heavily in putting the right systems, processes and people in place, but that alone doesn't guarantee success.

There has been plenty of investment in technology to combat financial crime. The problem is that the ongoing cost of this technology is high, and it is still not always as effective as it could be. There are a number of reasons for this. One is that the related regulation varies across jurisdictions and is constantly evolving. Another is that it is hard to monitor alerts, investigate them quickly, and avoid mistakes. Plus data sets, systems and processes have been developed in isolation making them incompatible, costly and difficult to maintain.

Shared solutions

There is another way. Your firm has to comply with financial crime regulation, but doing so brings you no competitive advantage. It is therefore a perfect area in which to collaborate. SWIFT is a member-owned co-operative with a track record of more than 40 years of providing secure financial messaging and delivering shared services. Building on this, SWIFT is working with its customers to develop community-based solutions for financial crime compliance.

Our aim as a trusted partner is to help the financial industry maximise the effectiveness, increase the efficiency and reduce the cost of compliance.

For example, for Know Your Customer (KYC) compliance, SWIFT's **KYC Registry** provides a single, reliable, secure source of the information you need to perform KYC due diligence on your correspondent banking counterparties. **The KYC Registry** reduces complexity, increases standardisation and transparency and cuts out duplication of effort.

Governments' increased use of financial sanctions is making transaction screening and sanctions list management more challenging than ever. If you need an easy-to-use solution, SWIFT's **Sanctions Screening** provides cost-effective real-time screening by a centrally-hosted system – so you don't need anything in-house. If you need to run your own system, and want to ensure it is giving you as much protection as possible, SWIFT's **Sanctions Testing** helps you measure and fine-tune that system to deliver better results. **Sanctions Testing** makes it easier to react quickly to changes in compliance requirements, and to have the assurance that your systems and processes are mitigating compliance-related risk.

Cracking the data challenge

To manage the risks you face in the financial crime area, you need to understand them – and that means better analysing your data. SWIFT's **Compliance Analytics** helps you get this understanding of your financial crime risk by leveraging your SWIFT traffic data. Built around a secure, state-of-the-art, user-friendly data mining platform, **Compliance Analytics** can help you to identify odd patterns of behaviour, hidden relationships or high levels of activity with risky countries and counterparties. It provides reliable data that you can use to adjust your systems and focus your investigation efforts where they are needed most.

The burden of financial crime compliance remains significant, but SWIFT is working together with the industry on solutions. We can address this major challenge together, reducing costs, and delivering better results.