

The shape of jobs to come

In some definitions, capitalism is driven by creative destruction: the processes, inventions and adaptations that make the best use of resources push out the less efficient. Such upset can, of course, have painful short-term consequences. The makers of typewriters, for example, have no particular reason to warm to Dell and Microsoft. Until recently, UK retail banking had not been particularly exposed to creative destruction. For nearly four decades, banks have managed payments, offered mortgages, made small business loans and run current accounts with the market carved up between a few large players. The advent of telephone online banking and, more recently, mobile banking has, arguably, done little to change that.

As Andy Davis points out (page 42), the UK regulator had long taken exception to the dominance of a few market leaders, but was at a loss for a remedy. Most consumers do not switch banks. What opened the door to potential change was digitisation, and the wedge the regulator chose was open banking. That may not work out quite as the regulator intended, partly because of interplay with PSD2, but a drive to free up access to customer account data, and to standardise the way data are presented and transferred, is still a revolutionary move. It is also part of wider, accelerating change in how data are analysed and deployed – and in the ability of small players to use online channels to take business from incumbents. The online threat has long been present in other sectors but banking, too, is a data business that could fragment as new players come in. (See pages 32-24 for a look at ClearBank and Klarna.)

A central question, as banks start to deploy artificial intelligence (see Patel, page 14), streamline their core systems (Moyle, page 19), and other players are allowed into payments (Green, page 16, and Tyson, page 38), is not whether banks will continue to exist, but what the changes in the way that resources are deployed will mean – particularly for bank jobs.

Banks will shed up to 30 per cent of roles over the next five years, according to Vikram Pandit, who was brought in to run Citi post-crisis and is now CEO of investment firm Orogen Group. Pandit expects artificial intelligence, natural language processing and robotics to enable banks to cut staffing costs. He also expects the industry to lose some functions to specialised competitors.

As Sarah Butcher points out (below), the overall picture is likely to be complicated, as banks “destroy” what has been familiar for so long and make room for entirely new roles. ■

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Win some, lose a lot

Sarah Butcher analyses how the financial crisis led to widespread job losses in the financial services sector but also saw the growth of new areas of employment

Ten years ago, the UK financial services industry was swept up in the biggest financial crisis of modern times. For those working in the sector, the pain was severe. In the five years following 2008, US banks and insurers slashed 400,000 jobs, according to the US census. Over the same period, the UK's four biggest banks (Barclays, Royal Bank of Scotland, Lloyds and HSBC) cut 189,000 jobs globally.

It was not just individual UK banks that suffered. Figures from the Office of National Statistics (ONS) show that 94,000 UK-wide finance jobs disappeared when the turmoil was at its height between 2008 and 2010. During those two years, 56,000 finance jobs went in London, according to TheCityUK, a financial sector lobby group. P45s were endemic and bankers bearing placards proclaiming their availability to work stood outside Liverpool Street station.

But now, the City of London, Canary Wharf included, appears to have bounced back. In April 2017, TheCityUK proclaimed that the number of people working in banking and its related professions of accounting, law and consulting in London was 12 per cent higher than before the crisis struck. Under this broad-based definition of financial services employment, it calculated that there were 751,000 people working in the City last April. This was 78,000 more than at the end of 2008 and 115,000 more than were employed in the City during the nadir of 2010. By early 2017, the implication was that UK finance jobs were booming again.

That may not, however, reflect reality. In 2017, the notion of a rekindled banking job market would probably sound alien to any unemployed London equities salesperson, much as it would sound absurd to an ex-bank cashier in the north-east.

“ *As online services grew, retail and business banking began to bear the brunt of the job cuts* ”

A narrower definition of finance employment across the UK as a whole paints a less promising picture. In March 2017, the ONS suggested that the UK's financial and insurance industries specifically (not counting the booming accountants and consultants in London) employed 1.1m people nationally. This was 119,000 fewer than in 2008. After the crisis, the ONS figures suggest UK banking employment recovered some of its lost ground between 2010 and 2014, only to fall back again thereafter.

While London financial services employment, broadly defined, may be back on top, someone has clearly lost out. Who?

Headcount figures for Lloyds offer a clue. In 2009, the newly nationalised bank, after absorbing HBOS, employed 125,109 people in the UK. By the end of 2016, the figure was just 79,606. It is not just Lloyds: at RBS, headcount in UK retail and business banking went from 44,600 in 2008 to 20,300 at the end of 2016. If you are looking for the lost UK financial services, retail and business banking is a good place to start.

The cause of the retail banking pain will be evident to anyone with a bank account. In 2007, only 32 per cent of UK adults used the internet for banking. By 2016, this had increased to 60 per cent. As online banking spread, thousands of branches were closed and traditional

customer-facing jobs disappeared. Branch staff were replaced by a smaller number of customer roles focused on areas such as “web chat” in centralised service centres.

Just as banking's retail sector has seen customer-facing staff evaporate, so too has the wholesale sector. Here, the unemployed cashier's counterpart is the unemployed equities salesperson. The equities salespersons who once peddled their products to pension funds and hedge funds have been replaced by electronic trading systems allowing clients to place trades directly and, increasingly, to access algorithms that do the trading for them.

But the mechanisation process has not been wholly negative for finance employment. Although technology has encroached upon tasks traditionally done by humans, it has also given rise to a whole class of new jobs across financial technology, data analysis and quantitative engineering, and to a new class of firms selling technology into banks: the fintech sector.

Last year, KPMG estimated that the UK fintech sector employed 61,000 people across areas including payments infrastructure and online banking, data and analytics, financial services software, and trading and lending platforms. The sector has swollen since the crisis: between 2008 and 2013 alone, the value of fintech investment in the UK and Ireland increased eight times, according to a report for the former UK Trade and Investment (now the Department for International Trade).

Just as employment at fintech firms has grown, so too has banks' employment of technologists in-house. In the years since the financial crisis, US banks with large London offices, such as Goldman Sachs and JPMorgan, have taken to boasting of their technological prowess. At Goldman Sachs, for example, chief executive Lloyd Blankfein regularly describes the bank as a “technology firm”. Nine thousand of Goldman's global employees – 25 per cent of the total – now work in “engineering”. At JPMorgan, \$9.5bn a year is now spent globally on technology, 17.5 per cent of the bank's total annual spend.

Banks need technologists to help them migrate from outdated legacy systems (Deutsche Bank has 33 and wants to cut this to four), to build new user interfaces, to tend and improve new electronic and systematic trading systems, and – crucially – to work in cyber security.

Not all of these tech jobs are in London, or even elsewhere in the UK. Goldman Sachs, for example, has been migrating European technology roles out of London to Warsaw since 2015 and RBS announced in August this year that it planned to cut 40 per cent of its IT staff in London, or around 650



roles by 2020 – jobs that could move offshore. In 2016, for example, HSBC cut 840 IT roles in the UK and sourced support in India, China and Poland. But that approach is not universal. JPMorgan maintains large technology hubs in Glasgow and Bournemouth, and Citi employs around 1,500 predominantly technology-focused staff in Belfast. In 2017, Barclays announced plans to add another 2,000 technology jobs at its technology centres of Radbroke, Northampton and Glasgow in the next two years.

“ *There’s investment in people, but it’s not like before. Margins are much lower than they used to be* ”

It is not just roles for technologists that have multiplied in UK financial services since the crisis. Banks have also increased the number of people employed in the so-called “control” functions of compliance, risk and accounting. Recruitment companies testify to the change. Between 2011 and 2013, London banks made large numbers of “regulatory hires” to meet the demands of the then Financial Services Authority, says James Findlay at recruiter Selby Jennings.

The same trend played out globally. By 2015, Citi, for example, had increased its global compliance headcount to 26,000 from 14,000 seven years earlier.

Finally, no story of evolving employment in the UK financial services sector since the 2008 crisis can be complete without considering the fate of the structured credit professional. After all, it was the structured credit sector – and specifically the notion that complex structured credit products could mitigate risk – that precipitated the crisis in the first place.

Global figures provide an idea of the ravages of fixed income sales and trading desks post-crisis. In 2009, research firm Coalition estimated that there were 23,500 people working in large banks’ front-office fixed-income, currencies and commodities trading businesses. By March 2017, this was down to 17,400 – a drop of 26 per cent.

There are no figures for fixed income jobs lost in the UK specifically, nor for structured credit jobs in particular, but London’s position as the centre for over-the-counter (OTC) fixed income derivatives trading meant it suffered disproportionately. In the aftermath of the crisis, securitisation teams were badly hit and people working on complex structured products disappeared. Deutsche Bank clung on to a London team of single-name credit default swap traders until 2014 before succumbing to the new reality. (Single-name credit default swaps derive from the credit risk of a single borrower such as a corporation or sovereign. The International Swaps and Derivatives Association has published a paper analysing the various reasons for the sharp contraction of this market.)

It has not all been bad in fixed income. Like the rest of the market, the business has evolved. While people working

with complex structured credit products are now rare, the trading desks that help clients hedge against changes in interest rates were re-staffed in 2017. At the same time, rising securitisation revenues have encouraged a revival in jobs in that area. Banks such as Goldman Sachs have also bolstered electronic credit trading as revenues rise.

"There's investment in people, but it's not like before," says Russell Clarke at London-based fixed-income headhunter Figtree Search. "Margins are much lower than they used to be, distribution technologies have changed and the ECB's bond buyback programme has distorted the market. Banks

are hiring, but it's less about responding to short-term changes in the market and more about looking for long term sources of growth and value." ■



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Come the revolution

Keyur Patel discusses how the increasing use of artificial intelligence will bring profound changes to the financial workplace and alter the way people plan banking careers

The first industrial revolution saw mechanisation transform the world, with machines powered by steam and water not only replacing individual craft workers but also building new machines. In the second industrial revolution, electricity made power widely and instantly available and drove a further step forward in mechanisation: the production line. The third, starting in the mid twentieth century, ushered in the digital age. Now we are on the precipice of a fourth – and, for better or for worse, it will fundamentally change our livelihoods. Once the domain of futurists with feverish imaginations,

“ **About a third of UK financial and insurance jobs are at high risk from AI-driven automation by the 2030s** ”

it is a narrative that has become ensconced in mainstream thinking: artificial intelligence (AI) could take over a huge chunk of the work humans currently do within a generation.

Why the sudden surge in attention? AI – in all its various guises, such as machine learning, deep learning and natural language processing – is evolving much faster than most observers expected even a decade ago. Traditional thinking

assumes that the jobs vulnerable to automation are low-skilled. But the breadth and complexity of activities that are now within the reach of AI will present a formidable challenge to virtually every profession: medicine, engineering, law – even art and music.

It should come as no surprise that financial services, a sector that has been entirely transformed by technology over the past few decades, is considered especially ripe for disruption. According to a recent report by PwC, just under a third of UK financial and insurance jobs are “at potential high risk” from AI-driven automation by the early 2030s. That is a higher proportion of jobs than across the economy as a whole, the study finds.

So far, these disruptive forces have been somewhat subdued. Large banks are not generally inclined to be early adopters of AI. They are hamstrung by their organisational complexity, regulatory restrictions and dependence on legacy systems that are hugely expensive to overhaul.

But such cautiousness is unlikely to persist for much longer. As the technology continues to improve, there are applications for which AI-based systems are clearly superior to human brainpower alone – for instance, the detection of fraud and money-laundering. Perhaps even more pertinent are economic factors. While AI is becoming cheaper to implement as it becomes more widely used, banks' payroll

costs are mounting. Compliance costs are a much-discussed example. Citi recently estimated that the world's biggest banks had doubled the number of people they employ to handle compliance and regulation. This was costing the industry \$270bn a year, it said, accounting for 10 per cent of operating costs. Forecasts suggest that these costs will continue to increase.

A potential solution is regulatory technology, known as regtech. A slew of regtech start-ups are using machine-learning tools to streamline and simplify complex regulatory rules and automate compliance. For smaller financial companies without the resources to employ an army of compliance officers, this could be the difference between life and death.

The crucial question – to which we can only guess the answer – is the extent to which banks will use AI to replace their employees rather than augment them. In corporate and investment banking, for example, a recent study by the consultancy McKinsey posited that “cognitive technologies” could have a substantial impact on 60 per cent of jobs. Within these jobs, 30 per cent of activities are “technically automatable”. But McKinsey also pointed out that “often the efficiency impact of technology does not correlate directly with headcount reductions... because automation applies to tasks rather than positions”. In other words, AI could lead to job cuts, but it could equally free up humans to focus their energies elsewhere within their jobs.

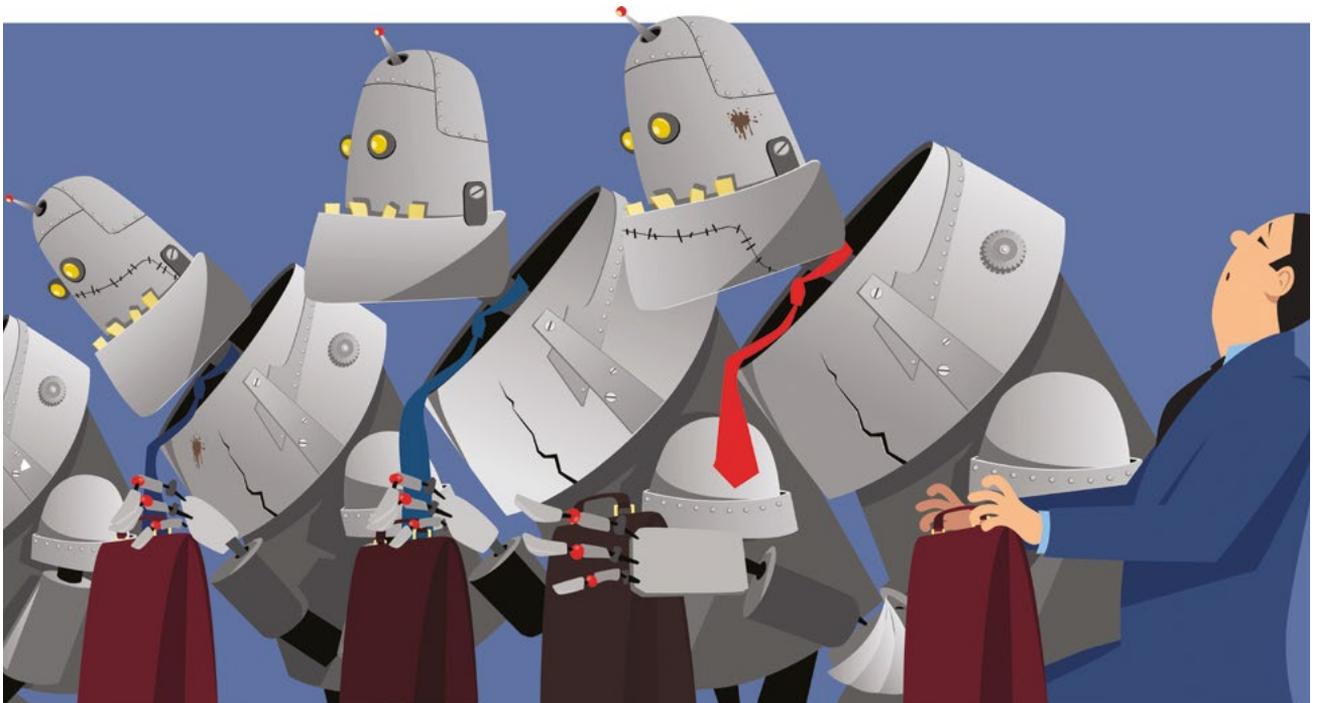
The extent to which employment is threatened varies and depends on the role in question and its skillset. Back-office jobs that involve managing processes are more intuitively at risk of being replaced than, say, customer-facing jobs at retail banks.

But is that the case? Retail banks in some countries have, for example, begun to deploy “chatbots” – automated text chat systems that can “understand” dialogue with customers and the context in which it is delivered, and even mimic human empathy. A chatbot can process basic tasks such as money

“ *A chatbot can process basic tasks but it constantly learns and improves itself* ”

transfers or lost card queries. If unable to understand a request, it will refer the customer to a member of staff, but it constantly learns and improves itself as it gathers more data and is expected to become much more sophisticated over time. And it is available 24 hours a day as well as being unfailingly patient and polite.

David Shrier, Associate Fellow at Oxford University's Saïd Business School and co-convenor of a new online programme on financial technology and innovation, says: “We think the middle and back office is under significant





threat from automation. Retail banking and the branch tellers are also under significant threat. But we also believe there are areas of banking and financial services where human ingenuity and creativity married to AI analytics – what is called centaur intelligence – is going to prevail.”

Shrier believes that one of these areas is in advancing trading strategies, where human-machine hybrids will be able to uncover areas of opportunity. Another is relationship-oriented aspects of asset management. “For example, while a lot of mass consumer asset management is being replaced by robo-advisers, ultra-high-net worth individuals are not, by and large, going to trust an algorithm when making financial decisions,” he says. “The majority of that market is going to want to work with a human portfolio manager, whose recommendations and decisions are likely [to be] augmented by sophisticated machine intelligence decision-support systems.”

In a global survey of retail banking executives last year by the Economist Intelligence Unit, half of respondents thought that customers would be willing to forgo human contact if services were cheap or free. But there are also many others who push back against this idea and say that technologies such as chatbots are only good for helping with simple tasks you can already do yourself through online or mobile banking. Algorithms may be able to automate back office processes or develop a winning trading strategy, but only a human, they argue, can understand the nuances and context of your personal circumstances and life goals to ensure you choose the right financial products.

The difficulty of predicting the role humans will have at the bank of the future – or, indeed, in any industry – lies in trying to envisage just what AI might be capable of in even a few years’ time. The pace at which machines are mastering erstwhile human-only skills is dizzying.

Proponents of the idea that automation will create more jobs than it replaces often point to the example of ATMs in the US. An explosion in the prevalence of these machines in the late twentieth century led to a sharp increase, rather than a reduction, in the number of bank cashiers. While fewer cashiers were needed to operate any given branch, the argument goes, lower costs meant banks were able to open more branches and employ more cashiers in total. Freed up from some of their duties dispensing cash, they could spend more time selling products.

But what if AI continues to reduce the scope of activities humans can move into until there is little or nothing left to do apart from devising new tasks and programmes for such machines? And, even if there will always be a place for humans in the workforce, how can young people who want to work in the banking industry plan their careers over the next half century if they do not know whether their skillset will be made obsolete by machines in the next few years?

“I would tell a young person starting off today to develop the capacity of lifelong learning,” Shrier says. “Ten or 20 years from now, that person is going to have to acquire a new skill every year to keep up with the rates of change in business. Young people will have to be able to create new value and have a more entrepreneurial mindset than just expecting to work for a big firm in the City.”

“ *A person will have to acquire a new skill every year to keep up with the rates of change in business*

He adds: “There are still a significant number of people on the planet not participating in the financial system. If a young person learns how to build businesses and serve the 3.5bn people who are underbanked or unbanked, there’s plenty of room for economic expansion.”

Shrier argues that the individual financial services company might be vastly more efficient in the future, but it will be serving larger numbers of people.

“So there is absolutely the opportunity to have meaningful employment over an extended period of time in expanding the economic base of financial services,” he says. “There are 245m small businesses in the world; 95 per cent of them have insufficient access to credit. Serving that market is worth trillions of pounds of growth opportunities.” ■



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When analysis pays

Tim Green asks whether the formation of new intermediaries and open banking APIs will create or destroy jobs in UK financial services

A 2016 Citigroup report predicted that European and US banks will cut 1.7m jobs in the next decade as fintechs chip away at their core operations. This is over and above the 730,000 jobs already lost since “peak bank”.

Citigroup found that lending had been the key battleground to date, with investors releasing \$19bn into this area of fintech over the past six years. Second was payments. But, thanks to new legislation (in Europe at least), payments is now set for a fresh wave of disruption. This is down to the Payments Services Directive 2 (PSD2), which opens up the European payment space to more participants by mandating that “account-servicing payment service providers” – in practice, traditional banks – provide third parties with access to data on customer accounts if the customer so wishes.

This will be done via application programming interfaces (APIs). With this access to customer data, these new entrants will, in principle at least, be able to provide services that make financial decisions better informed, easier and potentially faster. That could also mean a massive upheaval in the jobs market. The big questions regarding the effect PSD2 could have on employment are: what kind of new entrants will enter the market, will they gain traction and what will they offer?

There are two principal groups. One comprises the account information service providers (AISPs). Consumers can give these companies access to their bank accounts so they can make better, or faster, financial decisions. There is already movement here. For example, Hamburg-based fintech company Deposit Solutions lets people open accounts at multiple institutions without having to switch banks. The

company is not large enough to make a real dent in the market – or employ many people. It has raised just €6.5m in funding, but it shows that disruption is possible and that major disruption can come from relatively small workforces.

Price comparison sites such as MoneySupermarket have a much higher consumer profile than start-ups like Deposit. They are also expected to enter the market soon. Indeed, the job board of MoneySupermarket (as of end August 2017) listed four roles that specifically called for skills around APIs.

“*Expansion is challenging because skills are scarce and everyone is chasing the same engineers*”

One (‘product development analyst for data acquisition and innovation’) listed prerequisites such as: “researching for data sources that various teams can make use of. This can be as diverse as air pollution levels to annual vehicle mileage.”

As this suggests, the new world of payments may well be less about moving money around than about making the best use of the data that payments generate in financial services more widely.

The other PSD2 innovation is Access to Accounts (XS2A). XS2A companies give merchants an alternative to card payments. Merchants will be able to re-route customers to the company’s internet banking site where it “pushes” the payment to complete it. A few of these intermediaries are

already active in Europe. They include Sofort, Ideal and Trustly. XS2A should make business easier for them.

The liberalising of payments in Europe has been shuffling the market for some time. The first PSD broadened the scope of who could handle payments. That led Facebook to acquire an e-money licence and to Orange setting up Orange Bank. That makes it harder to define exactly where the financial services sector begins and ends. These outsiders could come to dominate the front end of payments, as WeChat has in China, where users spent \$5.5tn via mobile payment platforms last year.

Meanwhile, the first wave of fintech innovators, which PSD1 also helped to create, are sensing new opportunities from PSD2. A good example is GoCardless. This UK start-up launched in 2011 on a mission to simplify recurring direct

“ *Talent is not necessarily going to the big tech companies. They are losing people to smaller start-ups* ”

debits. It noticed how hard it was for small businesses to set them up, so it created a layer between these businesses and banks. It lets users set up a direct debit online in seconds, while GoCardless does all the integration in the background with the banks.

In 2015, GoCardless had 50 employees. Today, it has 140. But by 2019 it wants to double that number. The company believes there is a huge opportunity to help businesses such as Netflix move away from card subscriptions to more cost-effective bank debits via GoCardless – and that XS2A can make this happen. Ahmed Badr, head of legal at GoCardless, says: “If a firm like Netflix wants to do bank payments now, it would have to make lots of individual deals across lots of different countries. That’s not feasible. But we could offer one API layer for access to any bank wherever they operate. It’s a huge opportunity for us.”

That will mean finding more employees. This is not easy. “Expansion is challenging because skills are scarce and everyone is chasing the same engineers,” Badr says. “That said, I think fintech is pretty attractive at the moment.”

The figures reflect this. Innovate Finance, the UK fintech trade body, said UK-based fintech start-ups raised £433m in the first six months of 2017. That was up 37 per cent from the first half of 2016. Recruiters tell the same story. 360Leaders, one of London’s biggest executive search companies, says fintech has come to dominate its business. “We started handling

our first fintech projects about six years ago when they were mostly in mobile payments. Now, around 40 per cent of hires are fintech-related,” says Martin Falch, MD of 360Leaders.

Falch says he has seen a shift in the job types more recently – thanks largely to PSD2 and also the General Data Protection Regulation, which revises data privacy law in the EU. “The chief information officer roles are becoming chief data officer roles,” he says. “People are looking at the changing interface between banks and third parties, and who’s controlling access and the flow of data. There’s a parallel in the way that app stores have to find people to manage that interface with third party innovators.”

Jonathan Vaux could be described as one of these people. He is executive director of innovation partnerships at Visa Europe and believes the explosive immediate impact of PSD2 is being overstated. “I’m not being complacent, but I’m sceptical of how sustainable this gold rush is. I think the bigger changes will come outside of what we think of as traditional financial services – things like Alexa and Amazon Dash and Uber. That’s where the disruption will come.” (See page 34 for an analysis of Klarna, one of the alternative payment companies that Visa has invested in.)

That said, Vaux does acknowledge that the traditional players face a stiff challenge in attracting talent. “We’re all trying to find people with scarce skills like data management, user interface and design. You don’t find these people in traditional banks, not least because so many use old mainframes as opposed to open web platforms.” But the talent is not necessarily going to the big tech companies either. Google, Facebook and Amazon are also losing people to smaller start-ups that promise more dynamism. “In a sense, Google and the rest are on the same journey as Microsoft,” says Tony Willis, chief executive of Renaissance Leadership, a tech recruitment company. “They are the new mainstream, and people who have a more entrepreneurial mindset would rather go to a start-up. They might also get better stock options at smaller companies, which helps.”

As the line between financial services and other industries blurs, so will the traditional career demarcations. Just how that will play out around payments is unclear. What is certain is that, given the focus on customer data, an ability to make use of that flood of information could be a useful skill. ■



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