THE FINTECH ECOSYSTEM

HOW INCUMBENTS AND STARTUPS ARE FINALLY WORKING TOGETHER TO DEFINE THE FUTURE OF FINANCIAL SERVICES

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BI INTELLIGENCE

KEY POINTS

- **Fintech broke onto the scene as a disruptive force following the 2008 crisis, but the industry's influence on the broader financial services system is changing.** By this point, the fintech industry is far more than a group of digitally native, consumer-centric startups. In many ways, fintechs are the new face of financial services, representing the direction the industry as a whole is headed.

- **The fintech industry no longer stands clearly apart from financial services proper,** and is increasingly growing embedded in mainstream finance. Eventually, "financial services" and "fintech" will become indistinguishable. And we're now seeing the initial stages of this transformation, as funding grows more internationally distributed, and startups make the necessary adjustments to prove sustainability and secure a seat at the table.

- **Most fintech segments in the ascendant at the time of our last Fintech Ecosystem report have continued to rise and grow more valuable to the broader financial system.** For instance, insurtechs are tackling more difficult areas of insurance, while regtechs are capitalizing on a slew of new regulations that incumbents are struggling to cope with. Personal finance management (PFM) services, meanwhile, are finding their propositions perfectly suited to an open banking environment. And rapid change in the payments industry continues to be a boon for fintechs in the space.

- **However, several fintechs are being forced to make adjustments for the future.** Most neobanks, for example, gained popularity by offering cheap or free services, but now face pressure to monetize, leading to business model changes. And robo-advisors are having to find increasingly creative diversification strategies to fend off growing competition from incumbents. Additionally, alt lenders in the US and UK are moving away from marketplace lending and toward balance sheet models in an effort to insulate themselves against market fluctuations.

- **Blockchain and distributed ledger technology (DLT) fintechs, meanwhile, are proliferating at breakneck speed,** driven by booming demand for the underlying technology from incumbents, enthusiasm for cryptocurrencies and initial coin offerings (ICOs), and continued discovery of financial services areas where the technology can introduce efficiencies. Moreover, a growing number of incumbents and established blockchain players are launching big funds targeted specifically at blockchain, DLT, and cryptocurrency startups, suggesting that investors believe such companies hold value for the global financial services industry.

- **This past year also brought a distinct new fintech segment to the fore — digital identity verification.** As transactions and interactions across all industries increasingly move online, confirmation of consumer identity is transitioning from analog to digital. However, with this transition comes challenges like ensuring data security, regulatory compliance, and standardization across different solutions. This is creating plenty of opportunities for fintechs to offer a helping hand.

- **Incumbents are responding proactively to the rising influence of fintech across categories,** making updates to their consumer-facing channels, back-end systems, and overall business operations. Most are realizing that the best way to adapt is to work alongside the fintechs that are transforming the financial services environment, either by partnering with them or acquiring the startups entirely.

- **As fintech continues to amalgamate with financial services, more unsolved problems are going to be detected in the status quo.** As such, we can expect to see more new fintech segments forged going forward. We are also likely to see existing major fintech segments, such as insurtech and regtech, divide into subsegments as players in these spaces identify more obscure problems within each industry.

- **The fintech industry is now on the cusp of becoming an integral component of the broader financial services ecosystem it set out to disrupt.** However, before this osmosis can happen, it's likely that the fintech industry will first have to go through a complete credit cycle, and survive an economic downturn like the one that set the stage for its arrival in 2008. Once this occurs, fintech will become fully embedded in mainstream finance.

Download the charts and associated data in Excel »

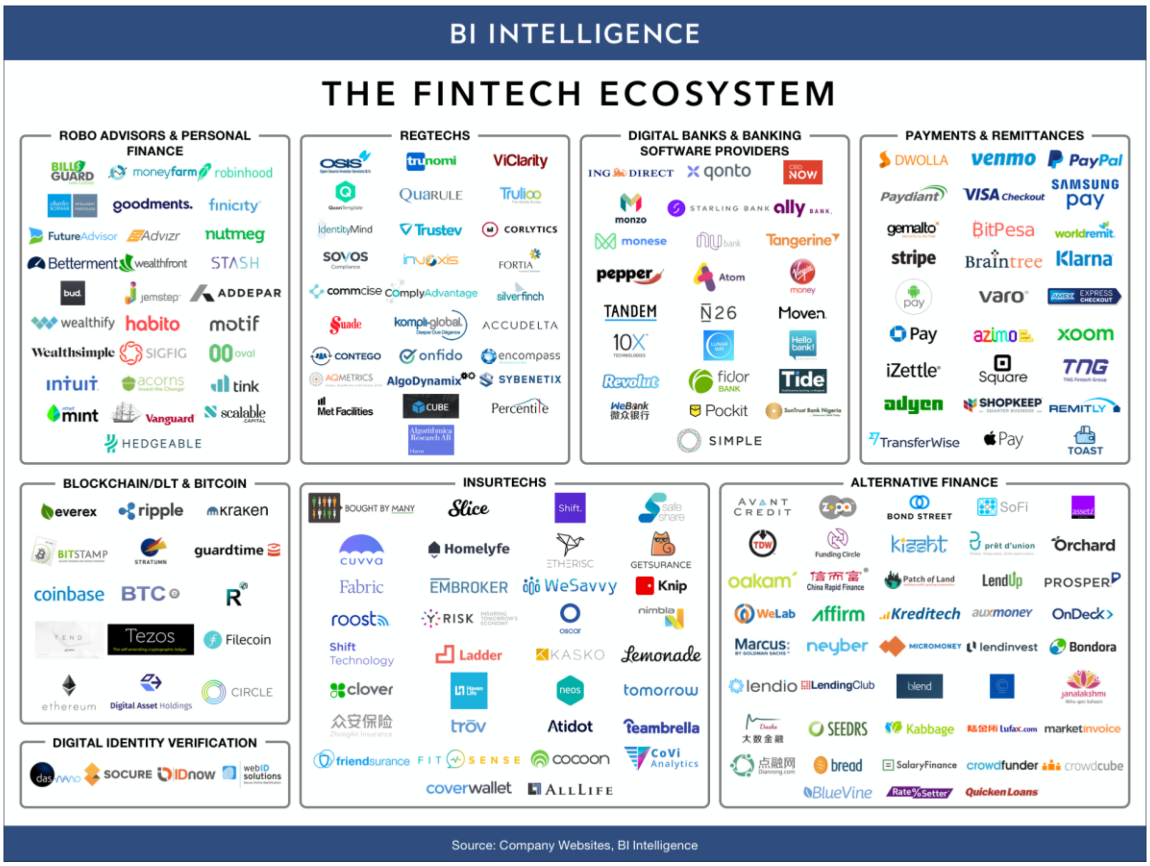
INTRODUCTION

Fintech — an umbrella term for technology that's disrupting the financial services industry — came on the global stage as a disruptive force shortly after the 2008 financial crisis, bringing a customer-centric approach to an industry that had seen little fundamental change in decades. Fintech startups accomplished this by providing cheaper, more intuitive products and services to consumers conditioned by an increasingly digital economy to expect ease from all their service providers. And while fintech is still disruptive in that it continues to challenge incumbents, the industry's influence on the broader financial services system is changing. It's worth noting that "fintech" refers to technology applied to financial services by both incumbents and startups, whereas "fintechs" are startups leveraging new technology to revamp financial services — in aggregate, these newcomers are the "fintech industry."

By this point, the fintech industry is far more than a group of digitally native, consumer-centric startups. In many ways, fintechs are the new face of financial services, representing the direction the industry as a whole is headed. Moreover, it's increasingly clear that fintech no longer stands apart from financial services proper, and is morphing into an integral part of the financial system. It will likely become increasingly embedded in mainstream finance until "financial services" and "fintech" become indistinguishable.

We're now seeing the initial stages of this transformation. Fintech funding is becoming more internationally distributed and less concentrated in just a few select hubs, suggesting the industry's growing traction across multiple geographies. Meanwhile, fintech startups are making fundamental changes to their business models to make themselves less subversive, and to secure a stable place in the broader financial system — by becoming technology suppliers or partners to incumbents, or by joining forums where they can engage in dialogue with legacy players, for example. And incumbent financial institutions (FIs) are imbibing not only the emerging technologies fintechs have introduced, but their ways of thinking and operating as well, including by initiating cultural transformations and core IT system overhauls. In short, the evolution of fintech is becoming the evolution of financial services as a whole.

In this report, BI Intelligence details recent developments in fintech funding and regulation that are defining the environment these startups operate in. We also examine the business model changes being employed among different categories of fintechs as they look to embed themselves in mainstream finance and prove sustainability. Finally, we consider which elements of the fintech industry are rapidly rubbing off on incumbent financial services providers, and what the future of fintech will look like.



SHIFTS IN THE FINTECH UNIVERSE

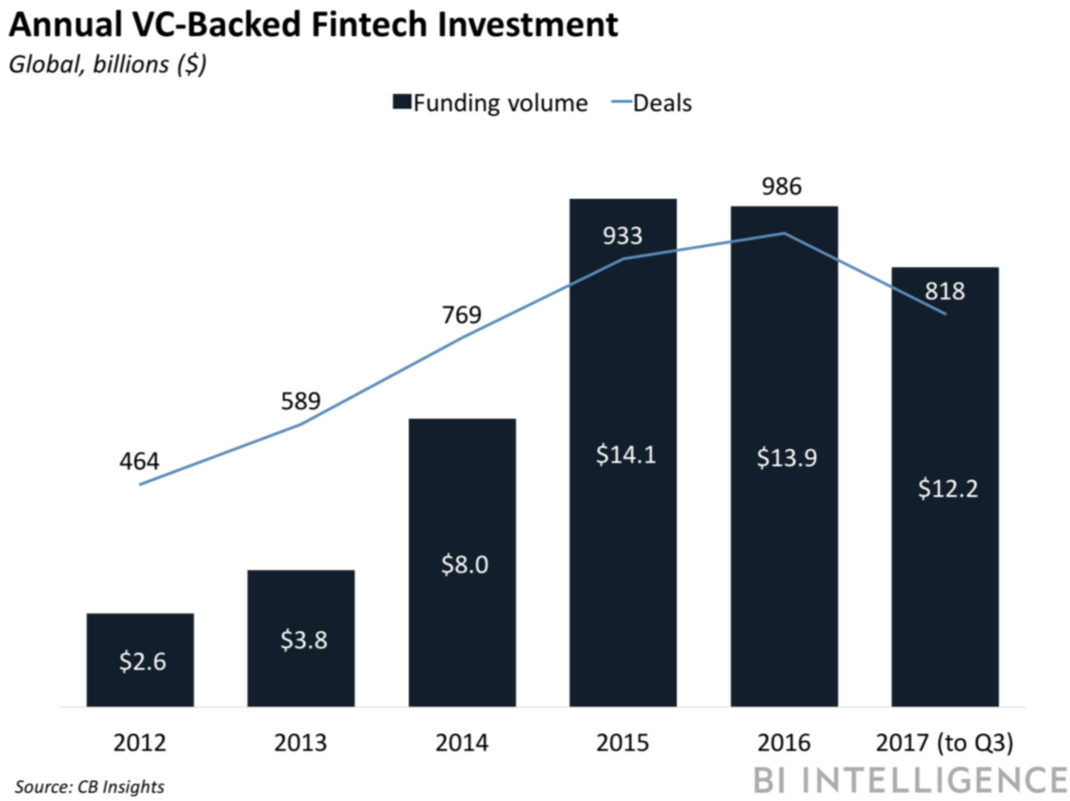
Two major factors that set the bounds for how much the fintech industry can achieve are funding and regulation, and we've seen some key shifts on these fronts in the past 12 months. Overall, developments seem to be moving in fintechs' favor.

The Fintech Funding Landscape

While last year saw a downward trend in global fintech funding from quarter to quarter, 2017 is exhibiting a reverse pattern. And there's a strong possibility that this year will overtake 2016's $13.9 billion total, with volumes at $12.2 billion by the end of Q3 2017. Moreover, deal numbers at the end of Q3 stood at 818, already close to 2016's total of 986. This uptick in investor confidence may be explained by the fact that incumbents are increasingly incorporating fintech into their products, increasing its value in investors' eyes.

Another indicator of growing investor confidence in fintechs' propositions and business models is an uptick in the number of global fintech unicorns created so far in 2017. These companies are the likeliest candidates for initial public offerings (IPOs) due to their lofty valuations, which investors believe will translate to healthy returns upon exit. To date, Europe has had no fintech IPOs, but 2018 could be the year this changes, bringing the region's tally of powerful public fintechs closer to those of leaders like the US and China. The first fintech IPOs we'll see in Europe will probably come from alt lending or money transfer sectors, with Funding Circle and TransferWise, both UK-based, at the top of the list.

Please note that the annual global numbers displayed below may not add up to funding volumes listed for individual continents and regions, as the annual figures include rest of world (RoW) investment.


Annual VC-Backed Fintech Investment
Global, billions ($)
Funding volume
Deals
464
589
769
933
986
818
$2.6
$3.8
$8.0
$14.1
$13.9
$12.2
2012
2013
2014
2015
2016
2017 (to Q3)
Source: CB Insights
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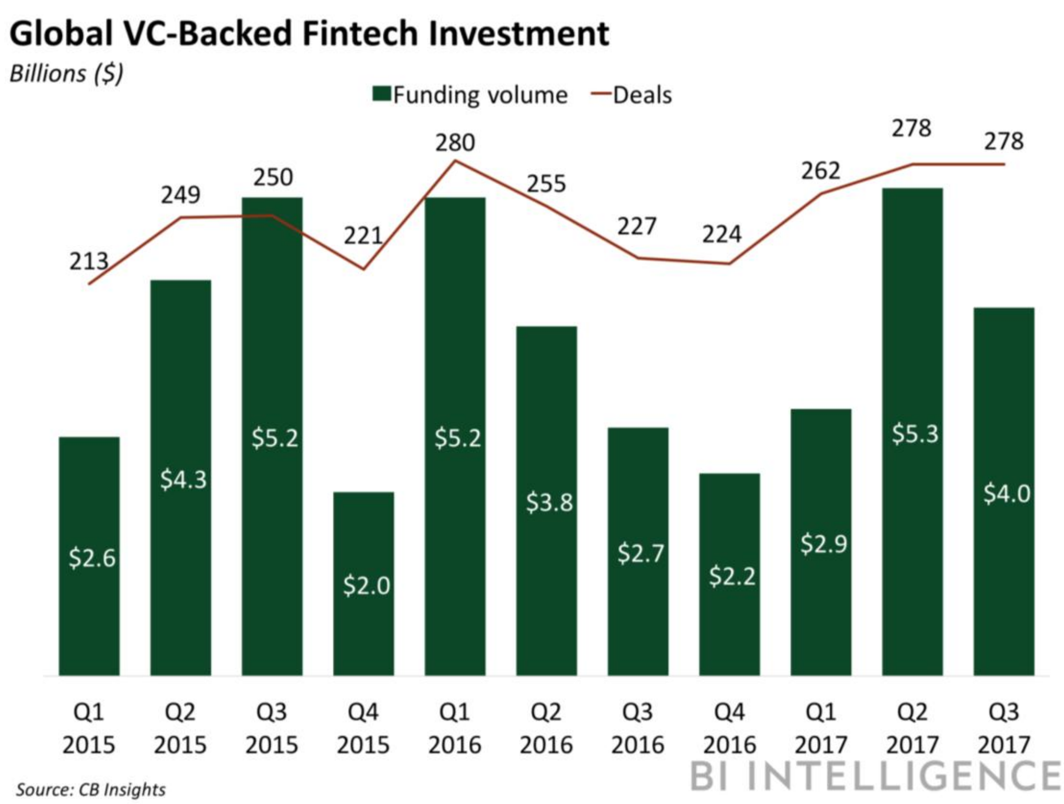
Global VC-Backed Fintech Investment
Billions ($)
Funding volume
Deals
213
249
250
221
280
255
227
224
262
278
278
$2.6
$4.3
$5.2
$2.0
$5.2
$3.8
$2.7
$2.2
$2.9
$5.3
$4.0
Q1 2015
Q2 2015
Q3 2015
Q4 2015
Q1 2016
Q2 2016
Q3 2016
Q4 2016
Q1 2017
Q2 2017
Q3 2017
Source: CB Insights
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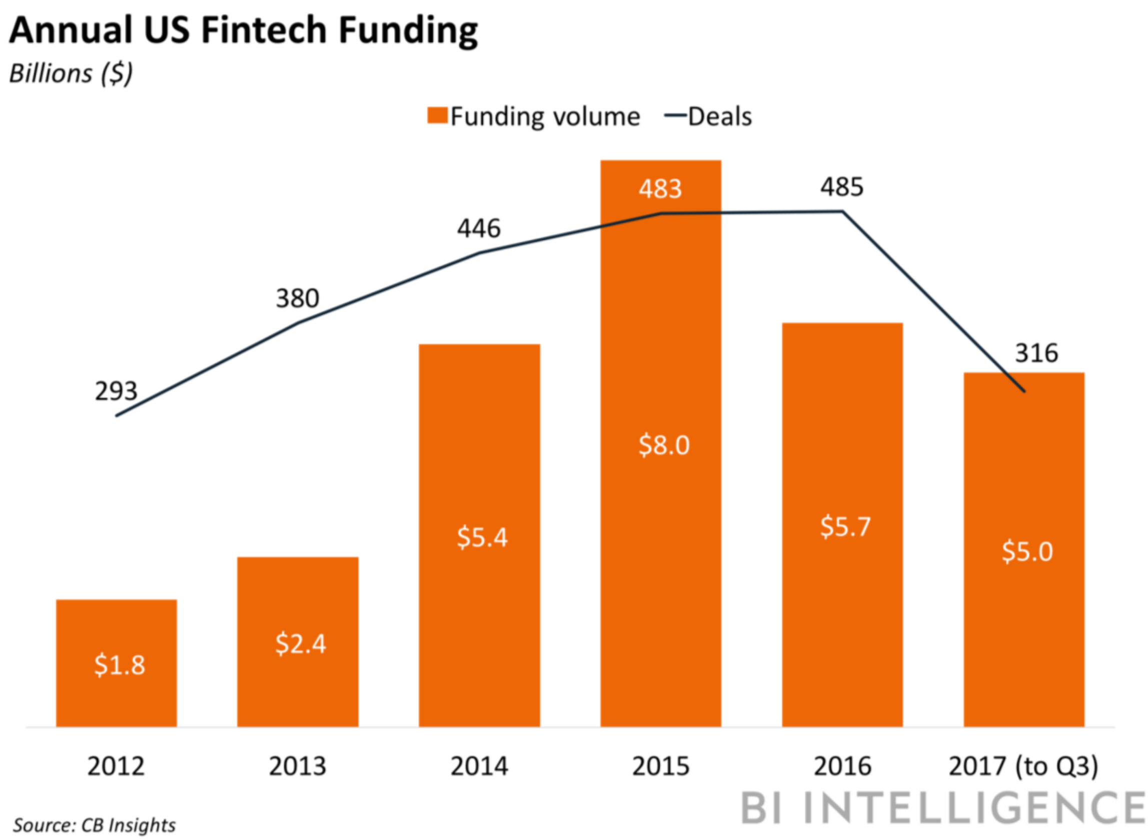
US

US fintech funding decreased 29% between 2015 and 2016, compared with the 48% growth it saw between 2014 and 2015. But there have been positive signs so far in 2017; through the end of Q3, US fintechs raised $5 billion across 316 deals, and 2017 year-to-date (YTD) funding volumes are already comfortably close to 2016's total of $5.7 billion, suggesting we could see a marked increase from last year.

US fintechs raised $1.9 billion across 111 deals in Q3, comparing favorably with Q2's $2 billion total, but also marking a five-quarter low in deal numbers. That suggests more funding is going to fewer companies, as investors are increasingly drawn to established firms that are proving themselves in the market. Overall, despite this Q3 boost, the US looks unlikely to match its record $8 billion of funding in 2015. This could mean that the industry's novelty is wearing off for investors, but it could also be a reflection of the geopolitical uncertainty, both in the US and abroad, that's making investors more cautious.

That said, there have been some notably large fintech funding rounds in the US in 2017:

- **Addepar,** an investment management platform for wealth managers, raised $140 million in a Series D round in June from backers including Valor Equity Partners.
- **Robinhood,** a stock-trading app, raised a $110 million Series C round led by DST Global in April, and secured a $1.3 billion valuation, making it a unicorn.
- **Coinbase,** a cryptocurrency exchange, raised $100 million in a Series D round led by Institutional Venture Partners (IVP) in August, and attained a $1.6 billion valuation, also joining the unicorn club.



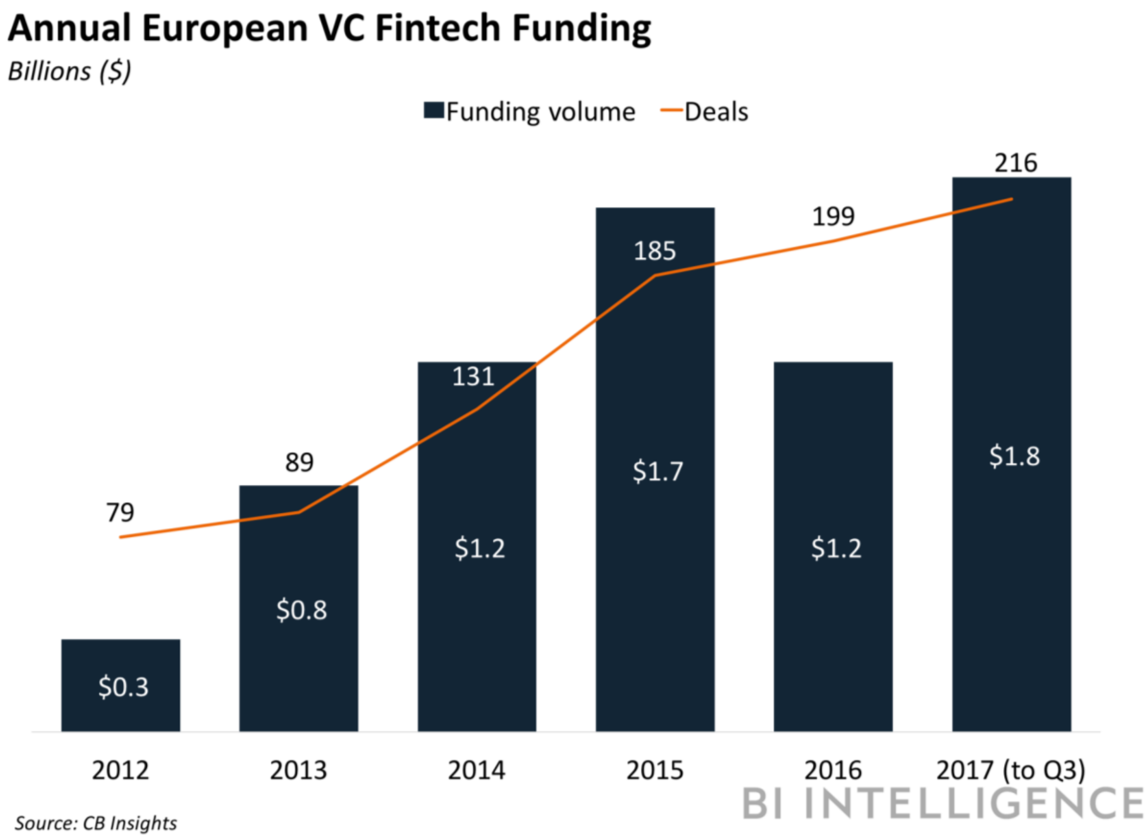
Europe

European fintech funding also dropped 29% from 2015 to 2016, versus 33% growth between 2014 and 2015. However, 2017 has brought considerable improvement: As of the end of Q3, European fintechs had raised $1.8 billion across 216 deals, with CB Insights predicting that funding could pass $2 billion in 2017 to reach an all-time high.

Until Q3, there were also indications of a more distributed funding model across Europe, with less activity concentrated on well-established locations like the UK. Germany overtook the UK in funding terms for the first time in Q2, raising $177 million across 12 deals, compared with the UK's $164 million across 15 deals, for example. However, the UK reasserted its dominance on the European fintech scene in Q3, accounting for half of the region's total fintech funding despite a contracting economy and Brexit concerns. That said, it seems inevitable that we'll see more distributed funding across European fintech going forward, as more countries step up their innovation efforts and regulatory pushes to attract startups.

Europe is far behind the US and Asia when it comes to individual mega-rounds ($50 million-plus), but there have been a few notable deals in 2017:

- **Neyber,** a UK-based salary-deducted alt lender, secured $133 million from Goldman Sachs in September.
- **Kreditech,** a German online lender, raised $120 million in May from Indian payments giant PayU.
- **10x Future Technologies,** a provider of modern back-end systems for banks, raised $46 million from Chinese fintech behemoth Ping An in a September Series A.



Asia-Pacific (APAC)

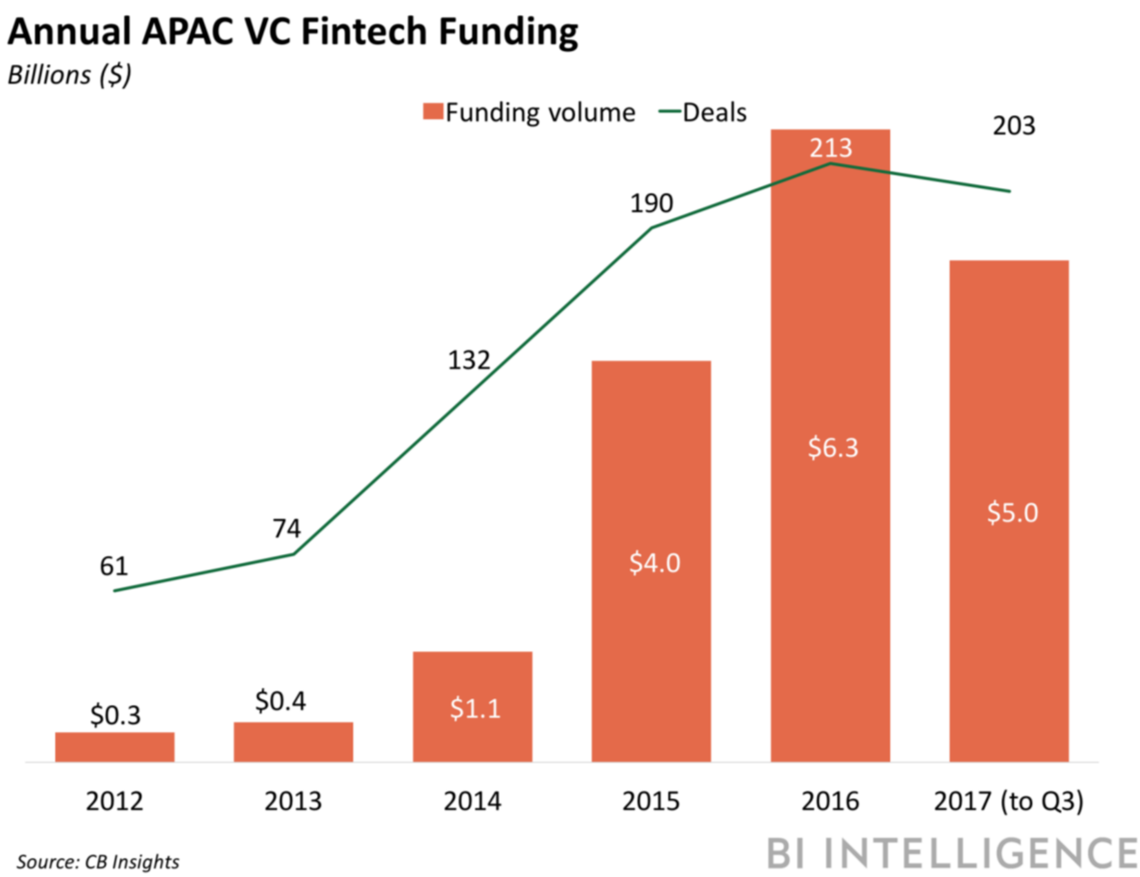
APAC saw fintech funding volumes decline (by 21%) for the first time between 2015 and 2016, after posting the largest year-over-year (YoY) growth of any active fintech region a year earlier. However, as of the end of Q3 2017, Asian fintechs had attracted $5 billion across 203 deals. Additionally, funding is expected to overtake 2016's $6.3 billion total by year end at the current run rate, according to CB Insights. This prediction is certainly supported by the 238% funding increase between Q1 and Q2, when funding rose from $800 million to $2.7 billion.

It's worth noting, though, that a whopping $1.4 billion, or 40%, of total Q2 funding came from SoftBank's investment in One97 Communications, which owns Indian payments fintech Paytm. APAC, and more specifically China, continues to see deal sizes not observed in any other geography, significantly skewing growth rates.

These massive deal sizes and dynamic growth suggest that APAC's fintech industry is still in its early growth stages, especially compared with the US and Europe, where investors have become more cautious due to political turmoil and continued doubts about fintechs' ability to make a profit. We're likely to see such growth in APAC continue for at least a few more years, with China continuing to lead. As the biggest Chinese fintechs — like Lufax and Dianrong — intensify their regional expansion, investors may be even more inclined to invest in them, which could cause current activity levels to pick up even further.

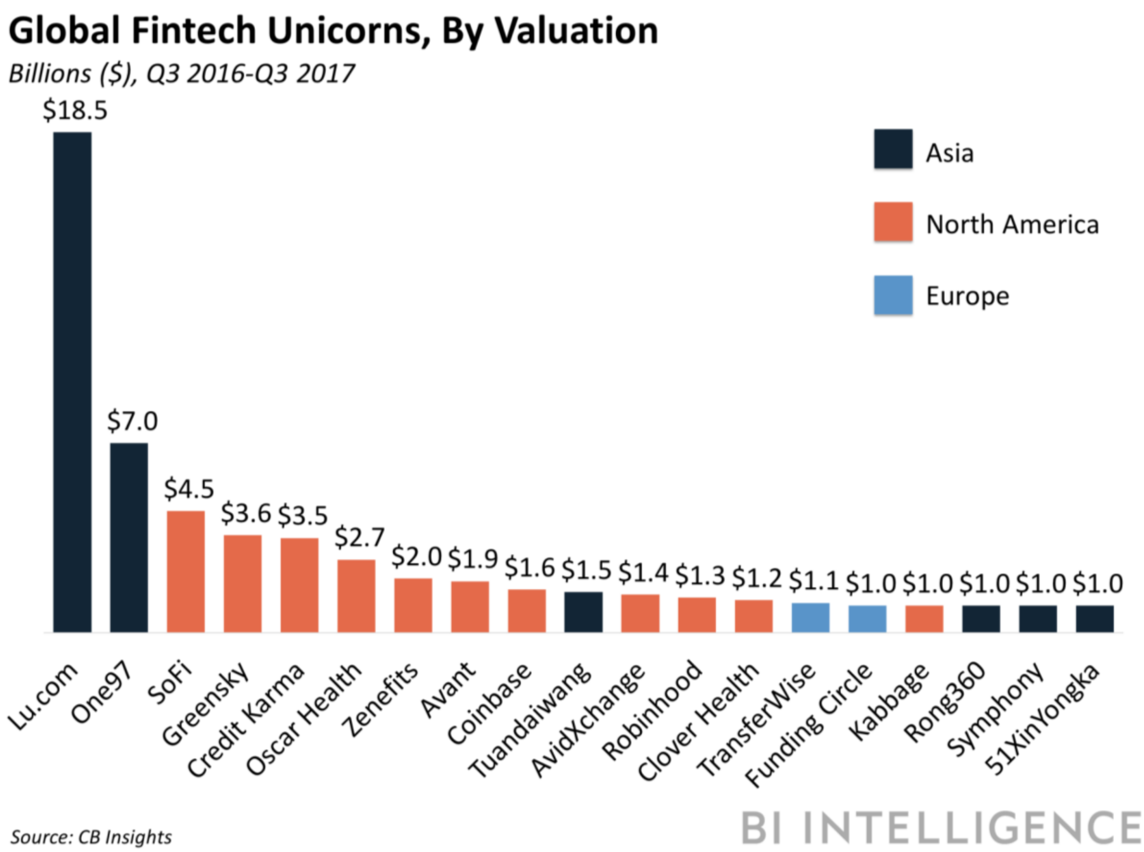
Many of the biggest APAC deals so far this year went to Chinese players:

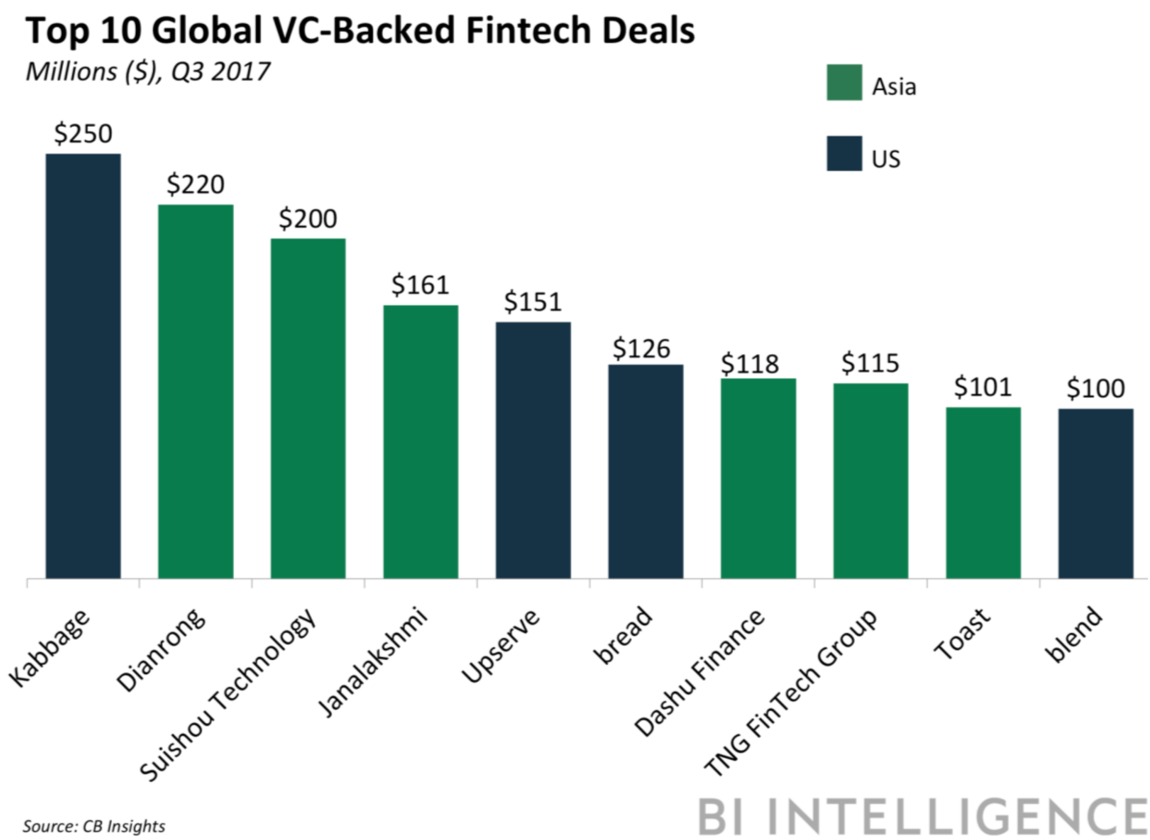
- **TDW.cn,** a Chinese online lender, raised $292 million from Minsheng Investment in May.
- **Dianrong,** a Chinese marketplace lender, raised $220 million in a Series D round led by GIC Private Limited, Singapore's sovereign wealth fund, in August.
- **Zhong An,** a major Chinese online insurer, secured around $72 million from Japanese tech giant SoftBank in September, with the latter buying a 5% stake in the fintech via its IPO.



We may soon start seeing more fintech IPOs globally, likely led by the UK and US. Tech startups more generally boasted 14 IPOs in 2017 as of September, well ahead of the four they saw in both 2016 and 2015, a trend which could soon extend to fintechs. The industry welcomed several new unicorns this year, including Coinbase and Robinhood, indicating that venture capitalists (VCs) are confident these startups will be able to exit at lofty valuations. The UK and US are the likeliest candidates for leading the fintech IPO wave, for two reasons: First, many of the companies joining the unicorn club hail from these countries, and second, although China has seen the most fintech IPOs so far in 2017, with alt lender Qudian becoming the latest player to list in mid-October, its regulatory crackdown on the online lending sector could end up preventing many companies from listing. At the very least, this is likely to push Chinese fintechs that want to list to overseas exchanges like Hong Kong or the US.

Meanwhile, US-based consumer lender Prosper [lost its unicorn status] in September, but raised $50 million, suggesting that many fintech valuations were originally too high, and are now being revised. As this happens, we could see more fintechs contemplating IPOs — similar to what we saw with alt lenders Lending Club and OnDeck in 2016 — because there will be less risk of not meeting sky-high private valuations on the public market. Fintechs may be further emboldened by the success of [Zhong An's Hong Kong IPO], which was priced at $1.5 billion and saw the company's stock boom.





The Fintech Regulatory Landscape

Over the past year, there has been a definite trend of increased regulatory activity around the fintech industry globally. The regulatory environment is essential for both young and established fintechs, as well as incumbents keen on implementing new solutions, as it determines the bounds within which a company can innovate and act, and how much it has to spend on regulatory compliance.

Active regulators seem to be taking four principle approaches to fintech regulation, with certain geographies manifesting these trends particularly clearly. Please note that these classifications have been created for convenience and clarity specifically for the purposes of this report:

- **Regulators taking a "liberal" approach** pass initiatives that make it easier for the domestic fintech industry to flourish, in an effort to boost competition in financial services more broadly.

- **Regulators subscribing to a "rules-based" approach** focus on a particular segment of fintech, and specialize in passing legislation that fosters that specific sector. This is usually driven by a desire to stimulate an area of fintech that tallies with the country's broader economy.

- **Those pursuing a "theoretical" approach** take an active interest in the development of fintech, but tend to focus their efforts on exploratory or self-educational projects. This often delays actual legislation being passed.

- **"Reactionary" regulators,** on the other hand, severely restrict the growth of extremely high-growth fintech segments, or ban them altogether, often citing the need to maintain financial (and sometimes social) stability.

UK

The UK's Financial Conduct Authority (FCA) has continued to set global standards for fintech regulation in 2017, and is perhaps the leading example of a regulator pursuing a liberal approach to fintech. In April, the agency outlined far-reaching goals for fintech supervision for the coming year, including encouraging discussion about emerging technologies, supporting fintech growth outside of London, and promoting international fintech standards. It also expanded its touchpoints with the industry in June by accepting 31 fintechs to its second sandbox cohort, compared with 24 in its previous one.

Significantly, in November 2017, the Bank of England (BofE), the central bank and watchdog, included the impact of fintech growth on incumbent banks for the first time in its annual "stress tests," hypothetical scenarios devised to ensure that major banks can withstand an adverse turn in the economic environment. Although the BofE concluded that banks face serious threats to their bottom lines from increased fintech influence on the broader financial services industry, it nevertheless reiterated that it sees the industry as essential to the UK's economic prosperity, and reaffirmed that it would continue to support fintech going forward.

Europe

In continental Europe, Swiss national regulators have arguably been the most active on the fintech front in 2017. Switzerland, and especially the Zug Valley — a nickname given to the city of Zug for its fostering of cryptocurrency initiatives — has come to specialize in regulating cryptocurrencies like Bitcoin and Ether, with the Swiss Financial Market Supervisory Authority (FINMA) taking the lead. In July, the regulator approved incumbent Falcon Bank's range of new cryptocurrency services, and in September, it shut down a cryptocurrency operator on the grounds that its tokens weren't stored on a distributed ledger. The latter incident especially shows that FINMA has a technical understanding of the matter and can knowledgeably call the shots in such cases. Cryptocurrency firms, however, aren't Swiss regulators' only card trick: In February 2017, the federal government introduced a revision stating that companies can legally hold public deposits of CHF$1 million ($1 million) without applying for a banking license, and in March, FINMA established a wide-reaching fintech sandbox.

US

The theoretical approach has been particularly pronounced in the US, where multiple regulators claim fintech under their mandate but fail to cooperate effectively with each other. As a result, despite the US boasting one of the world's most dynamic fintech industries, its federal regulators are still dragging their feet when it comes to passing legislation, or even issuing guidelines on how fintechs may fall under existing regulatory frameworks.

This isn't to say that federal regulators express no interest in fintech, but their efforts to date have been exploratory. When the US Federal Reserve published the results of an extensive blockchain research project in December 2016, it held no actionable insights, and despite starting on its "fintech charter" proposal in December 2016, the Office of the Comptroller of the Currency (OCC) was still deliberating the move in Q4 2016, after being sued over the matter twice. Notably, one of these lawsuits was filed by a state regulator, the New York Department of Financial Services (NYDFS), ostensibly on grounds that the OCC was overstepping in remit, but in reality, at least to some extent, because the NYDFS felt the OCC was infringing on its own power. This is arguably but one manifestation of a broader and persistent problem plaguing the US fintech regulatory environment: variations between state regulations, and a lack of coordination between state and federal regulators.

That said, there have been promising signs that a more proactive approach may be taking shape. In Q2 and Q3 of this year, the Securities and Exchange Commission (SEC) and the Commodities Future Trading Commission (CFTC) took definite stances on regulating initial coin offerings (ICOs), a form of crowdfunding in which investors buy digital tokens for a stake in a company's existing or future product. Additionally, the Conference of State Bank Supervisors (CSBS) added 33 startups, many of them leading fintechs, to its fintech advisory panel in October.

APAC

Due to its geographical spread and economic, ideological, and cultural variety, the APAC region is producing many different approaches to regulating fintech, with dramatic differences between countries, ranging from the most progressive to the most conservative.

The Monetary Authority of Singapore (MAS) has become conspicuous for the diversity of its fintech projects and the range of sectors it seeks to promote, from cultivating regional fintech talent to fighting cybercrime to developing digital identities. It supports startups, for example, by making it easier for them to provide financial advice online in June 2017, and also facilitates innovation among incumbents; in June, the MAS started allowing banks to conduct nonfinancial business activities to help them innovate. This double-pronged approach seems like a sound way to ensure fintech becomes an integral part of the financial services ecosystem.

Meanwhile, Australian state and national regulators are also vying to be known for their liberal APAC fintech attitudes. Australia got off to a slow start on the fintech regulation front, but has certainly made up for lost time in the past year — for instance, in May 2017, the Australian government published a very fintech-friendly annual budget. State regulators have also picked up the baton: In July, Sydney announced plans to launch the country's biggest fintech hub in late 2017, with the New South Wales government pledging to invest A$35 million ($27.3 million) in the facility.

Japan is another supportive APAC jurisdiction for fintech, though it has taken a slightly more measured approach, led predominantly by the Japan Financial Services Authority (JFSA). Japan has an even stronger record in regulating cryptocurrencies than Switzerland, dating back to the Mt. Gox incident in 2013, the biggest Bitcoin theft in history, when Japan introduced rigorous regulation for its domestic Bitcoin market and cryptocurrency exchanges to mitigate further damage and reassure traders. In March 2017, the JFSA recognized Bitcoin as legal tender, and in September, the body published its final guidelines for cryptocurrency exchanges wishing to operate in Japan. In October, it approved 11 new exchanges under its new laws.

On the most conservative end of the fintech regulatory spectrum are China, and to a lesser extent, South Korea and Russia. The People's Bank of China (PBOC), the central bank and regulator, shut down all Chinese cryptocurrency exchanges in September 2017, and banned all ICOs in China later that month. Another Chinese regulator then made it harder for online lenders to obtain licenses and operate in November. South Korea's Financial Services Commission banned ICOs shortly after China in September. Meanwhile, the Central Bank of the Russian Federation hinted at outlawing ICOs in October.

Efforts By International Regulators

International regulators are also increasingly turning their attention to the fintech industry, and acknowledging its expanding influence on the global economy. This recognition is prompting them to weigh the potential systemic risks of fintech disruption and to seek ways to mitigate them. It's also pushing them to explore ways to accommodate these players and leverage their technologies:

- **Financial Stability Board (FSB).** The FSB, established with a mandate to prevent financial crises like the one in 2008, published a report in June 2017 concluding that fintech presents more opportunities than dangers to the global financial system, including greater competition and transparency within financial services, as well as broader financial inclusion. However, the FSB then published a follow-up report the same month discussing potential fintech risks — including systemic risk and vulnerability to cyberattacks — indicating that the watchdog is still on the fence about how to regulate the burgeoning industry.

- **European Central Bank (ECB).** The ECB published draft guidelines in September 2017 for fintechs seeking to become licensed as banks, in which it floated the possibility of requiring neobanks to hold more capital than incumbent institutions, on the grounds that young startups may be at greater risk of financial losses than more established businesses. Although this move indicates the regulator still has doubts about these players' business models and sustainability, it nevertheless is also an acknowledgment of the traction such companies are gaining in its jurisdiction.

- **European Banking Authority (EBA).** The EBA included the fintech industry in its work program for 2018. This document sets out the EBA's goals, priorities, and focus areas for the coming year, so fintech's inclusion suggests the industry is top of mind for one of the EU's most powerful legislative bodies. In particular, the EBA said it will focus on areas such as establishing which firms are, or should be, formally regulated; understanding the risks and opportunities of fintech for incumbent FIs; and fintechs' ability to comply with anti-money laundering (AML) laws. The EBA has also been heavily involved in finalizing the guidelines for the Second Payment Services Directive (PSD2), regulation that will, among other things, mandate incumbent banks to share their customer data with third parties, including fintechs.

There are an increasing number of fintech agreements being signed across national borders, which suggests we may see more cohesion between countries' fintech regulation. The FCA signed a fintech bridge agreement with the PBOC in November 2016, and inked a similar deal with Hong Kong's regulator, HKMA, the following month. Such agreements usually involve referral programs, collaborative innovation projects, and exchange of regulatory and other fintech-relevant information. The MAS, meanwhile, signed fintech deals with France and Abu Dhabi in March, one with Denmark in July, and the Singapore Fintech Association struck a deal with Hungary in September. These are only some of the countries to strike fintech deals in the past 12 months, and the sheer variety of this list suggests regulatory cooperation is becoming increasingly international, as established and rising fintech centers partner to leverage each other's strengths and insights. Additionally, we could see countries with more forward-thinking regulatory approaches to fintech start to influence slower-moving partners.

THE EVOLUTION OF KEY FINTECH SEGMENTS

Most fintech segments that were in the ascendant at the time of our last Fintech Ecosystem report have continued to rise and grow more valuable to the broader financial system. That's evidenced by the increasing number of partnerships incumbents are striking with startups in these segments, as well as generally strong ongoing funding. However, some of these startups have been forced to make changes to their business models to ensure their sustainability and stability.

Insurtechs

Insurtechs leverage new technology to disrupt the legacy insurance industry. Overall, insurtech funding has calmed from the levels observed between 2015 and 2016. A surge in Q2 2017 seems to have been an outlier, with a subsequent drop in Q3 to 2016 volumes indicating that funding is tapering to more sustainable growth levels and will continue to advance steadily, rather than drastically, in the future.

The majority of insurtechs are business-to-consumer (B2C), though a growing number are either launching as business-to-business (B2B) players, or pivoting in that direction from a previously B2C model. These moves are a result of competition in the B2C space intensifying, as well as new opportunities being discovered in the broader insurance industry beyond distribution. The main trend both B2B and B2C insurtechs are exhibiting in 2017 is general expansion, which they are accomplishing in several ways, discussed below:

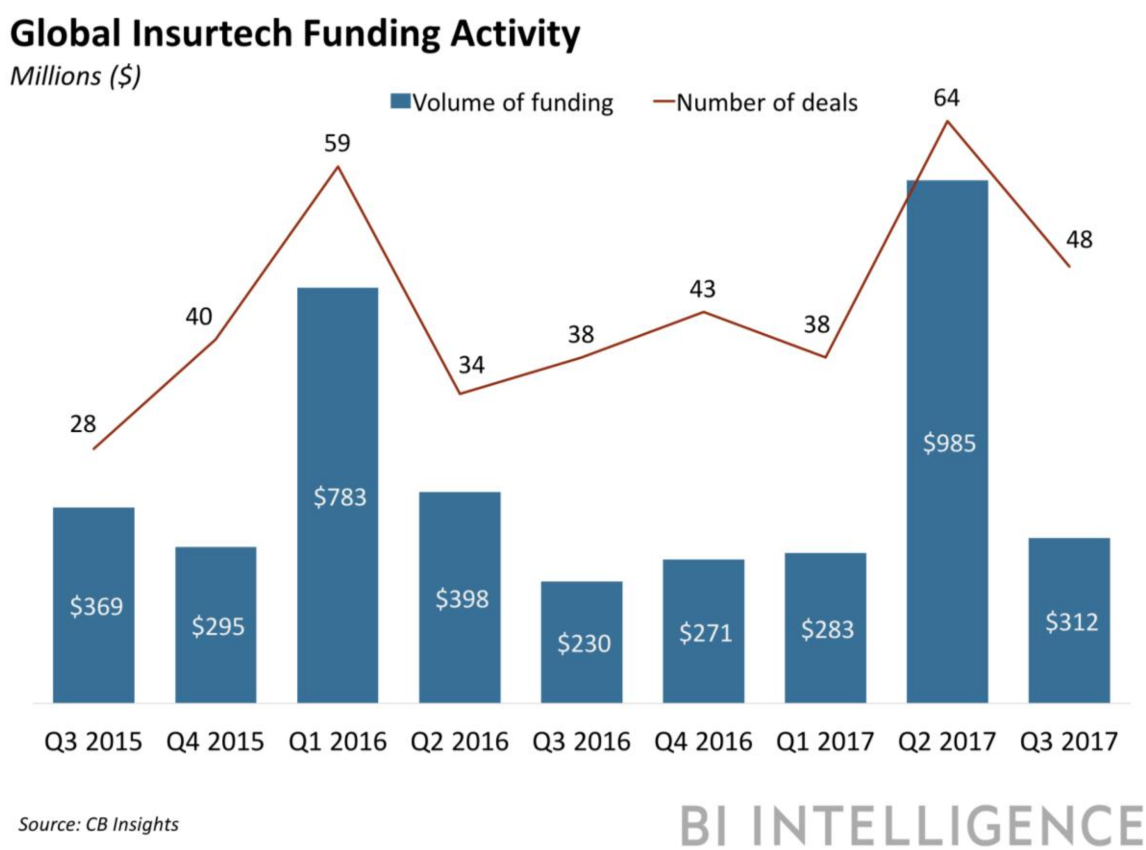
- **Serving more types of customers.** Insurtechs initially focused heavily on distribution, partnering with incumbent counterparts to create new, intuitive digital channels for their products. However, many insurtechs are now identifying and directly catering to the unmet needs of a growing range of customer types, such as small- and medium-sized businesses (SMBs) and renters in big cities. While this translates to zeroing in on specific customer niches for individual companies, in aggregate, it means insurtechs are now serving a wider range of client groups.

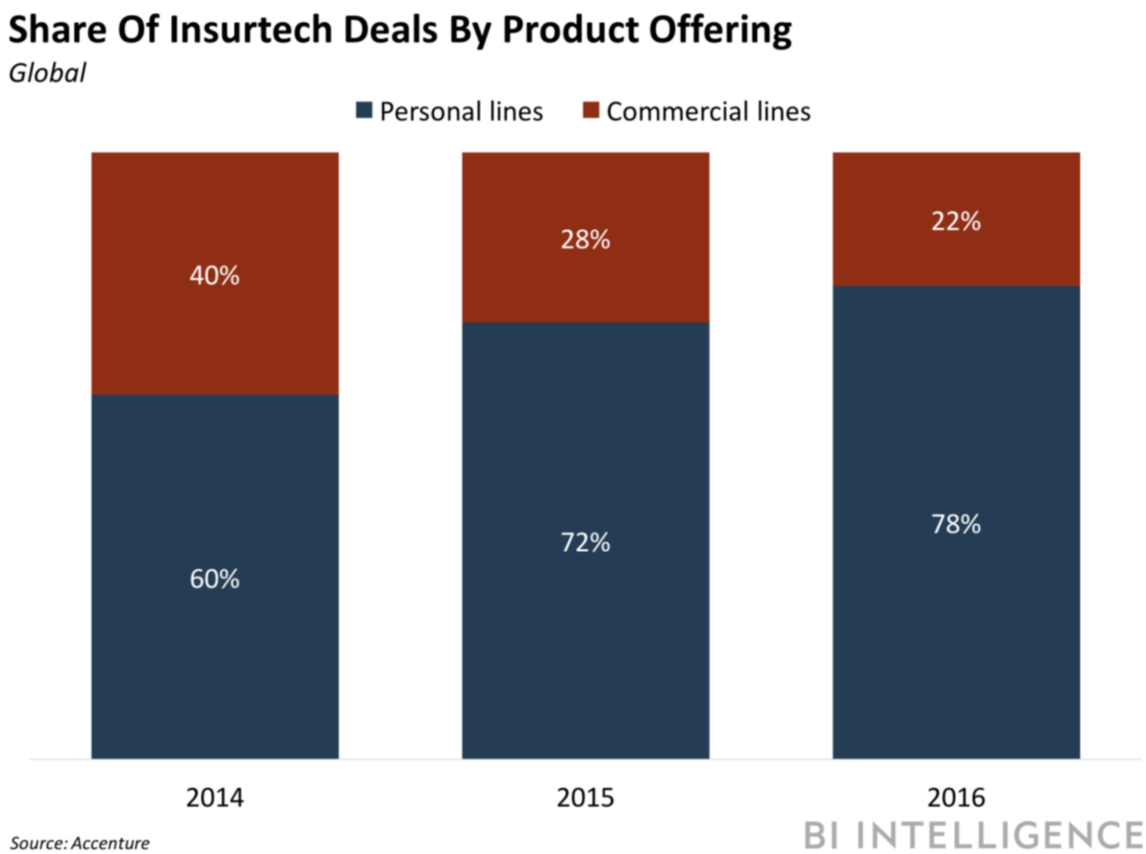
- **Tackling more complex areas of insurance.** Insurtechs are expanding beyond their original offerings, like contents and travel insurance, to more complicated forms of coverage, such as life insurance. Life insurance is a fundamentally hard product to sell, as it requires people to think about their deaths and promises no immediate benefits. Moreover, the way life insurance is sold makes it doubly unattractive, as consumers must go through a paper-based, lengthy application process and an inconvenient medical exam, with little guidance from their providers, and often high costs. However, consumer-facing life insurtechs like Haven Life and Ladder are trying to boost the appeal of such coverage, and make it simpler to obtain. Other examples of this expansion include Embroker in fleet insurance, Etherisc in flight-delay insurance, and Stratumn in insurance switching and regulatory compliance.

- **Increasingly becoming partners to incumbents.** Insurtechs that launched with a B2C proposition are increasingly partnering with incumbents to broaden the distribution of their products, or to act as suppliers, enabling incumbents to provide new services underpinned by cutting-edge technologies. A notable example is AllLife partnering with incumbent Royal London to enable the insurer to better serve the chronically ill by leveraging the startup's technology platform.

- **More insurtechs are also launching as suppliers.** The number of new insurtechs focused on mid- and back-office processes increased from just 33% between 2013 and 2015 to 61% in 2016, according to recent research. Many of these players are helping incumbents make better use of their data to personalize products and process claims more accurately. Examples include Atidot in life insurance, and Tractable developing AI solutions for claims processing.

Although insurtech launches are still frequent, some players in this space are emerging as clear leaders, especially US-based Lemonade. The startup, which provides renters' and homeowners' insurance, is racking up clients, including those who have switched from incumbents. Its rapid success has allowed it the luxury of making some truly disruptive changes in the insurance space — it became the first insurance company to completely do away with deductibles in September 2017, getting rid of a profound consumer pain point. As consumer-facing insurtechs' solutions tend to bring about changes that are more immediately felt, it seems likely that B2C insurtechs like Lemonade will keep getting the lion's share of insurtech funding for the time being.





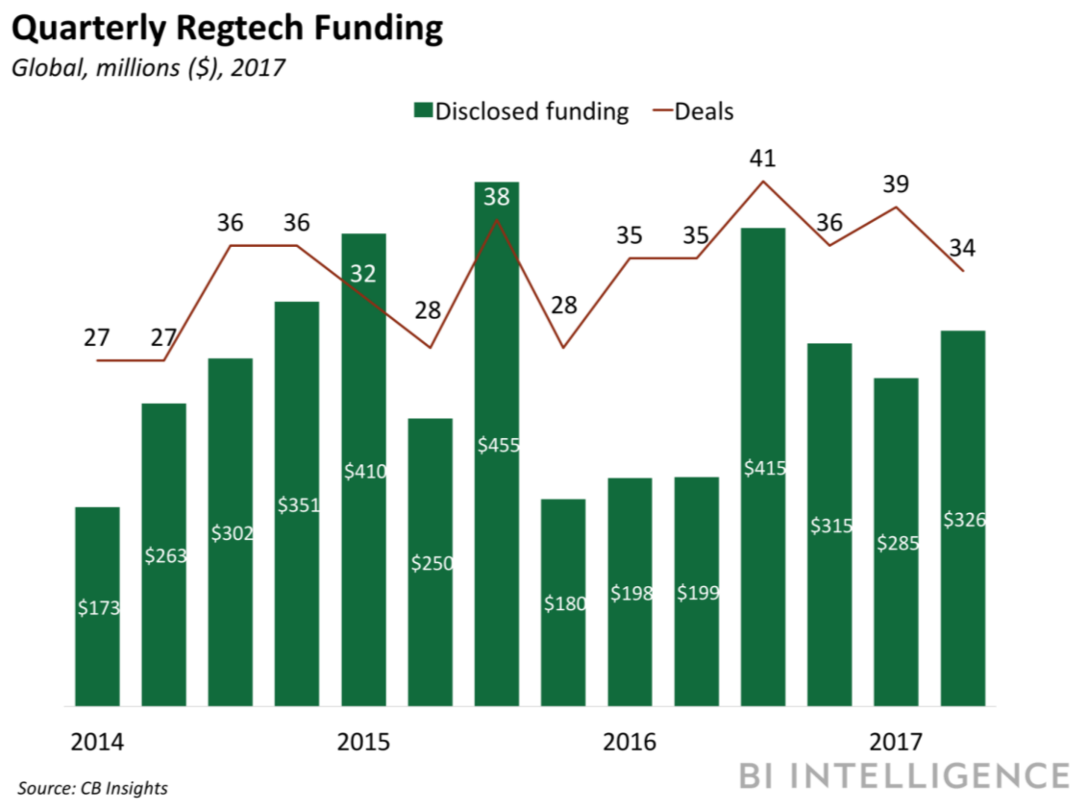
Regtechs

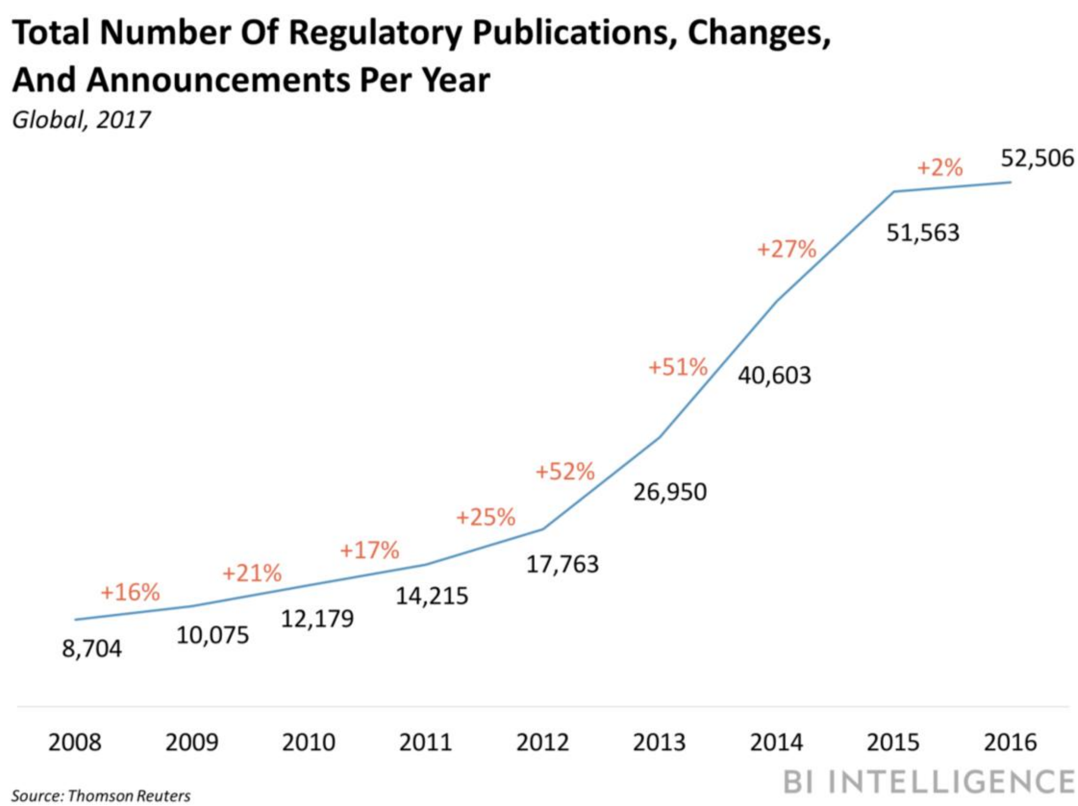
Regtechs, firms specializing in technology that helps FIs better comply with regulation, have had a busy and high-performing 12 months, not least due to an impending avalanche of new legislation that FIs will have to comply with by the start of 2018. The volume of regulatory publications and amendments being issued is showing no sign of abating, so growth opportunities for regtechs are only likely to increase.

A slew of new legislation is creating a bigger market for regtechs. Last year, we saw regtechs mostly specializing in one specific piece of legislation — like GDPR or anti-money laundering (AML) rules — a trend that continued into the past 12 months. This marks an ongoing shift away from older compliance solutions that address a wide range of regulations, but don't have the capacity to deal with them effectively. What we are seeing now is that early entrants are facing more competition, as more regtechs have latched onto the same pieces of regulation and launched rival solutions to their predecessors'. For example, at least three regtech solutions specifically for MiFID II compliance have been rolled out in the past year, from players Baymarkets, AQMetrics, and Thomson Reuters.

Some regtechs' success likely stems from their ability to solve a very fundamental problem for FIs — data processing. Much of FIs' compliance efforts boil down to effectively analyzing, using, and visualizing data — for reporting, keeping up with new sources of customer data, and staying on top of new types of regulation — which most incumbents' legacy IT isn't capable of. Updating these systems is complex and lengthy, so most prefer to outsource data processing to fintechs with more agile systems. One such example is UK digital identity verification regtech Onfido, whose agile back-end systems help process and store data in a way that ensures FIs' compliance with GDPR, as FIs' own systems aren't capable of doing so. The regtech's product only went live two years ago, but already serves 1,500 companies — largely FIs — across 132 countries.

We've also seen regtech funding remain healthy in 2017, staying far above 2016 levels, as well as a wave of mergers and acquisitions (M&A) as incumbents rush to scoop up these firms ahead of their 2018 compliance deadlines. Given that incumbents will continue to struggle to handle data effectively across their businesses, and how few incumbents feel prepared for their 2018 compliance deadlines, it seems that both regtech funding and M&A activity will stay strong into 2018.


Quarterly Regtech Funding
Global, millions ($), 2017
Disclosed funding
Deals
27
27
36
36
32
28
38
28
35
35
41
36
39
34
$173
$263
$302
$351
$410
$250
$455
$180
$198
$199
$415
$315
$285
$326
2014
2015
2016
2017
Source: CB Insights
BI INTELLIGENCE


Total Number Of Regulatory Publications, Changes, And Announcements Per Year
Global, 2017
8,704
10,075
12,179
14,215
17,763
26,950
40,603
51,563
52,506
+16%
+21%
+17%
+25%
+52%
+51%
+27%
+2%
2008
2009
2010
2011
2012
2013
2014
2015
2016
Source: Thomson Reuters
BI INTELLIGENCE

Personal Finance Management (PFM) Services

PFM apps are seeing a spike in activity, largely due to the rise of open banking, by which proprietary data (usually large FIs') is made available to anyone with the owner's permission to access it. Regulations like Open Banking in the UK and PSD2 in Europe will mandate incumbent banks to share their data with third parties if requested to do so by their customers. And due to the complexity and breadth of these laws, incumbents' compliance efforts are already well underway. This is happening mostly through application programming interfaces (APIs), which create a secure connection between two parties' systems. This easier, safer access to troves of customer financial data has led to a spur of PFM innovation. However, this bonanza has also led to increased competition in the space, pushing PFM apps to specialize.

Investment-Focused PFM Fintechs

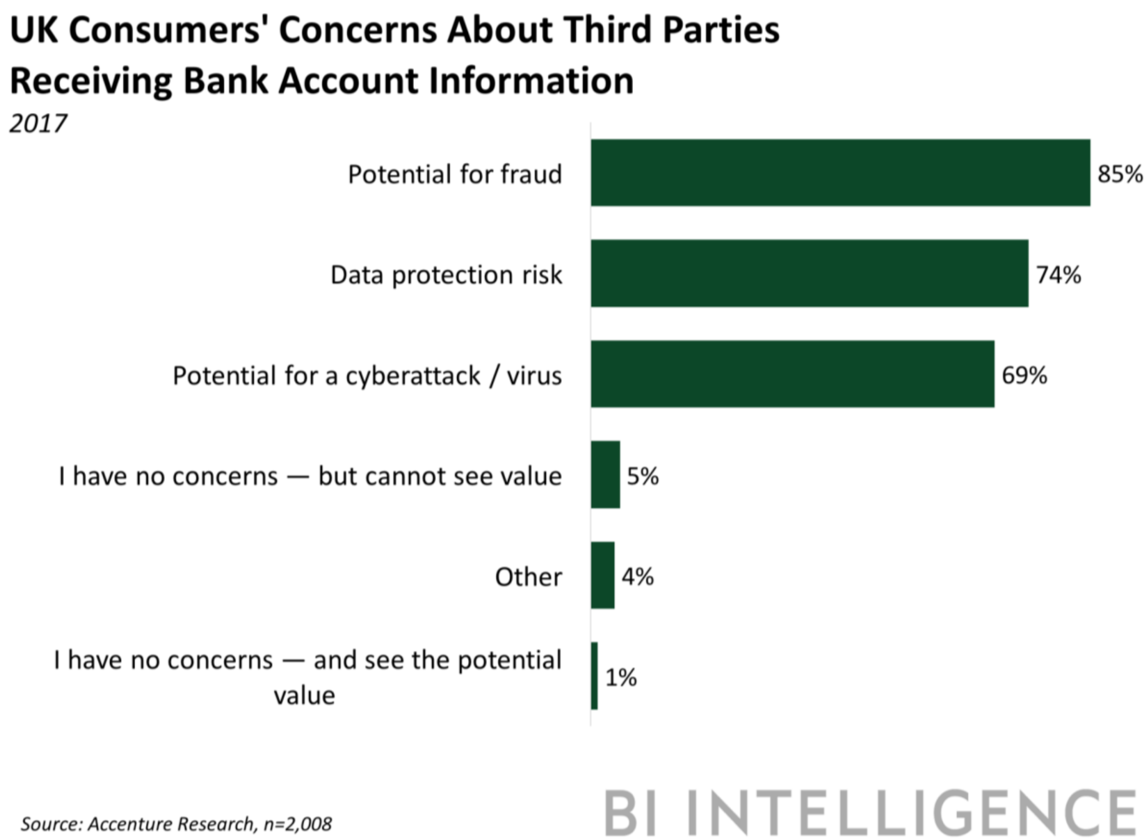
PFM fintechs focused on helping people make the most of their money by investing small amounts frequently have begun specializing by identifying large but underserved markets. One area these players are turning to is ethical investing, a particularly popular option for millennials. Australian player Goodments, for example, launched an ethical investment offering in July 2017 that matches individual investors to shares in accordance with their own environmental, social, and ethical standards. It does this by cross-referencing businesses' financial data against Goodments' sustainability ratings using an algorithm. The app then generates a list of recommended national and international shares for the user to choose from. The sustainable investment market is estimated to be worth as much as $2 trillion, so we will likely see many more fintechs entering this space in the future, especially as ethics-focused millennials accumulate wealth to invest.

Retirees are another underserved market that investment-focused PFM fintechs are targeting. Acorns is planning to launch Acorns Later, a new retirement account, in 2018. This consumer niche promises to be lucrative: Almost half of US consumers don’t have retirement savings at all. Meanwhile, US-based Stash applied for a banking license in October 2017 after raising $40 million in July, suggesting another way that microinvestment players can gain an edge.

Savings-Focused PFM Fintechs

PFM fintechs that specialize in helping people save money almost exclusively target cash-strapped, financially immature millennials. So they've had to find other, more varied strategies for carving out a niche for themselves in this increasingly crowded market. UK-based Oval Money, for example, struck a deal with Facebook in October to introduce a money-saving feature that leverages the social platform. It will also have access to the social media behemoth's API, a first among its peers. Meanwhile, Plum, an artificial intelligence (AI)-powered savings chatbot that operates through Messenger, partnered with leading UK alt lender RateSetter in February 2017, giving customers the option to transfer the money they save with Plum into a RateSetter account. UK neobank Monzo also entered the space in November 2017 with a savings feature called Pots. Although Pots resembles other PFM offerings, Monzo plans to gain an edge by later giving its users the option to turn their pots into individual saving accounts (ISAs), and by making third-party digital wealth management services available through its app.

There has also been a spike in partnerships for PFM apps — HSBC UK's mobile banking subsidiary, first direct, partnered with PFM app Bud in October, for example. Additionally, M&A activity in the sector is intensifying, with Nordea acquiring an equity stake in Swedish PFM app Tink recently. We're likely to see similar deals emerge as PSD2 and Open Banking roll closer to their January 2018 implementation deadlines, and as incumbents become increasingly willing to share their data. Although this will present PFM apps with more growth opportunities, a stumbling block could be consumers' reluctance to give up their data in the first place. However, as consumers acclimate to the new environment, this barrier is likely to fall away.


UK Consumers' Concerns About Third Parties Receiving Bank Account Information
2017
Potential for fraud
85%
Data protection risk
74%
Potential for a cyberattack / virus
69%
I have no concerns — but cannot see value
5%
Other
4%
I have no concerns — and see the potential value
1%
Source: Accenture Research, n=2,008
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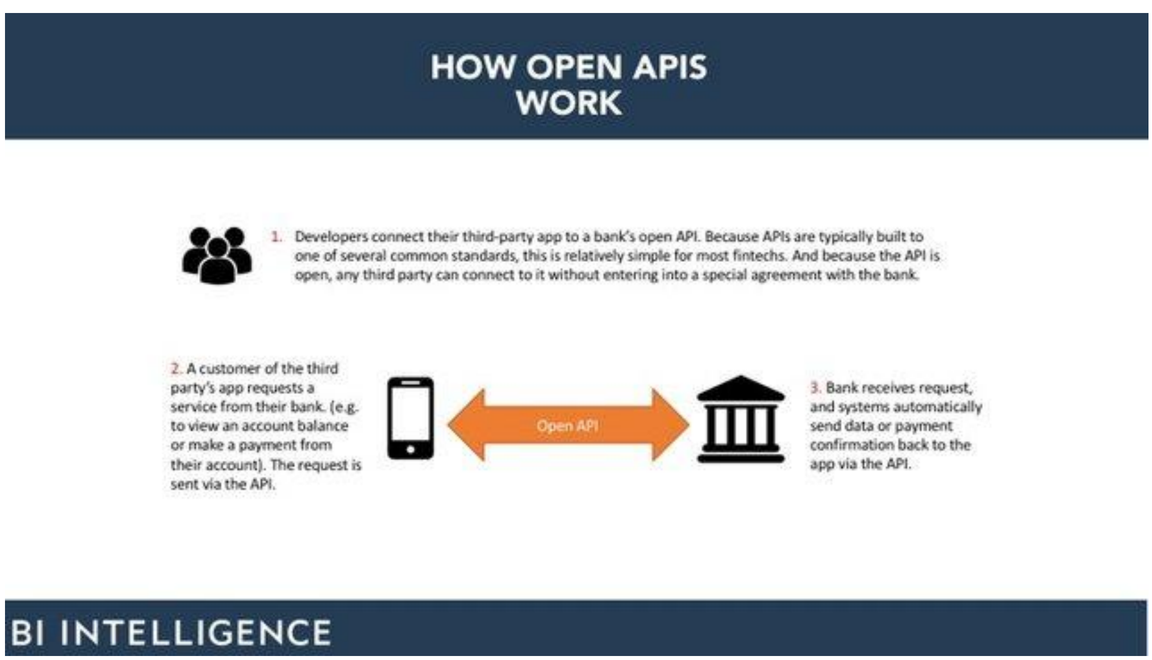
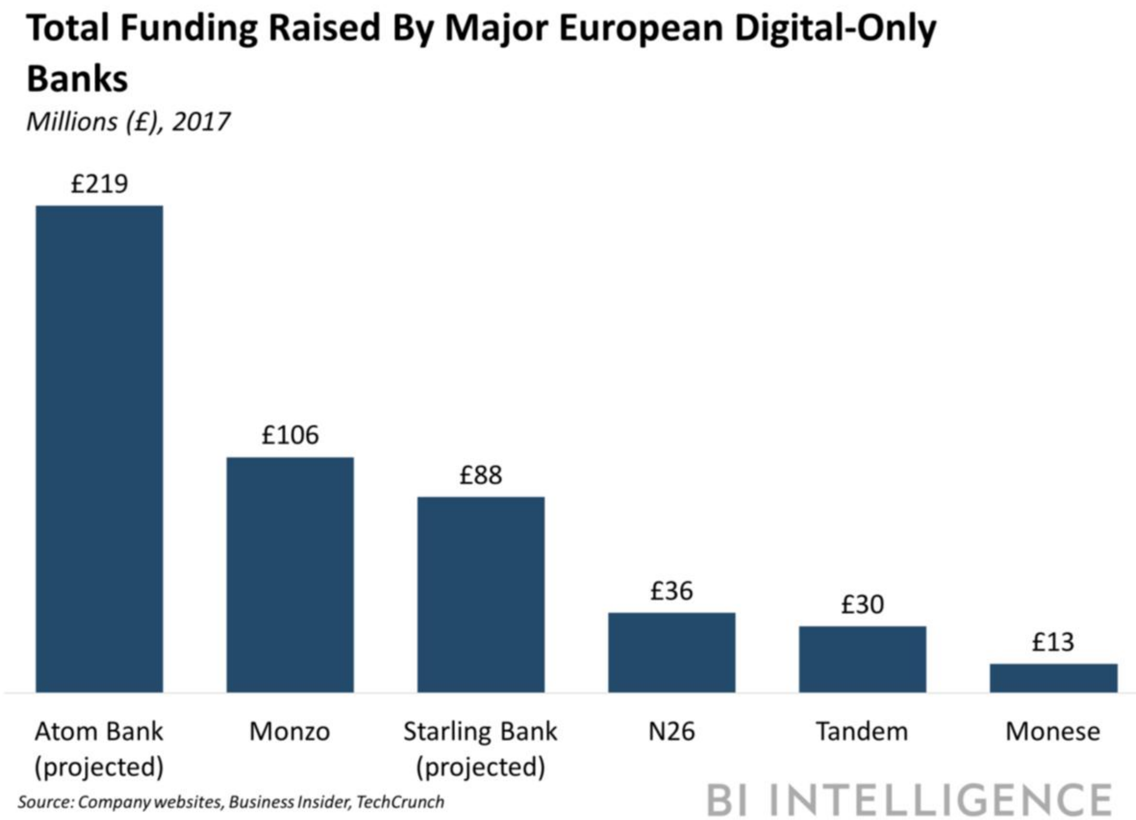

HOW OPEN APIS WORK
1. Developers connect their third-party app to a bank's open API. Because APIs are typically built to one of several common standards, this is relatively simple for most fintechs. And because the API is open, any third party can connect to it without entering into a special agreement with the bank.
2. A customer of the third party's app requests a service from their bank. (e.g. to view an account balance or make a payment from their account). The request is sent via the API.
Open API
3. Bank receives request, and systems automatically send data or payment confirmation back to the app via the API.
BI INTELLIGENCE

Neobanks

Digital challenger banks, or neobanks, initially came on the scene as disruptors threatening incumbent banks by offering superior, customer-centric services and products, usually at lower (or no) prices. While this is still the ambition of many, neobanks are now increasingly threatening to pull the rug out from under incumbents by becoming more like legacy players, namely by offering an ever-broader range of services. UK-based Monzo rolled out its current account, for example, and UK-based Starling is rapidly broadening its services through a range of deals. Additionally, neobanks are partnering with incumbents to broaden their product suites, as evidenced by Starling's deal with ING's Yolt app in November.

Despite their broad success, several neobanks have also encountered problems with their original business models, and are now being forced to tweak them. Atom, the UK's best-funded neobank, took a hit from offering high interest rates on its savings products, and may now have to lower them. Monzo, meanwhile, had to introduce ATM fees after losing a lot of money on its most popular product. This highlights a fundamental problem for these players — for now, they have accumulated loyal customers with products that make them little, or no, revenue. At the same time, competition is intensifying in the neobank market. A slew of fintechs — including US-based Varo Money and Revolut in the UK, and payments giants like Square in the US and Klarna in Sweden — have applied for banking charters and licenses, which will allow them to hold deposits and offer a wider range of services. Additionally, nonfintechs like foreign exchange firm Travelex are launching their own neobanks, making the market even tougher to survive in.

However, neobanks are still landing major funding rounds, especially in the UK. Some recent major deals include Monzo's $93 million round in November, UK-based Pockit's $3.7 million raised in April, and US-based Chime's $18 million round in September. The sustainability of this funding trend is uncertain though, and will likely depend on how well neobanks can balance their customer-first ethic with the pressure to make money.



Robo-Advisors

Robo-advisors — investment or financial advice products that include any element of automation — continue to disrupt and enhance the wealth management industry. They're increasingly offered by both startups and incumbents, and come in B2C and B2B form. While most promise to streamline the investment process itself — via portfolio management and adjustment, for example — others focus entirely on financial advice. As such, the term "robo-advisor" is becoming increasingly inappropriate, and "automated advice" or "automated investment" fintechs may be more accurate terms. In aggregate, they can be called "digital wealth managers."

North America still leads with the largest number of robo-advisors, as well as those with the most assets under management (AUM). This largely comes down to the size and maturity of the wealth management industry in the US — AUM in the country hit $33 trillion in 2016, accounting for around half of global AUM. In the UK, on the other hand, we're increasingly seeing consolidation, with players dropping out of the market and lowering their minimum investment thresholds. This is largely because self-directed investment isn't as widespread in the UK, making it hard for these companies to garner AUM. M&A is also picking up in the UK, suggesting we'll see even more winnowing in the near term. Meanwhile, APAC is experiencing an uptick in automated investment offerings; Standard Chartered launched a hybrid offering in the region in October 2018, and German startup Ginmon announced plans to expand into APAC in November 2018, for example.

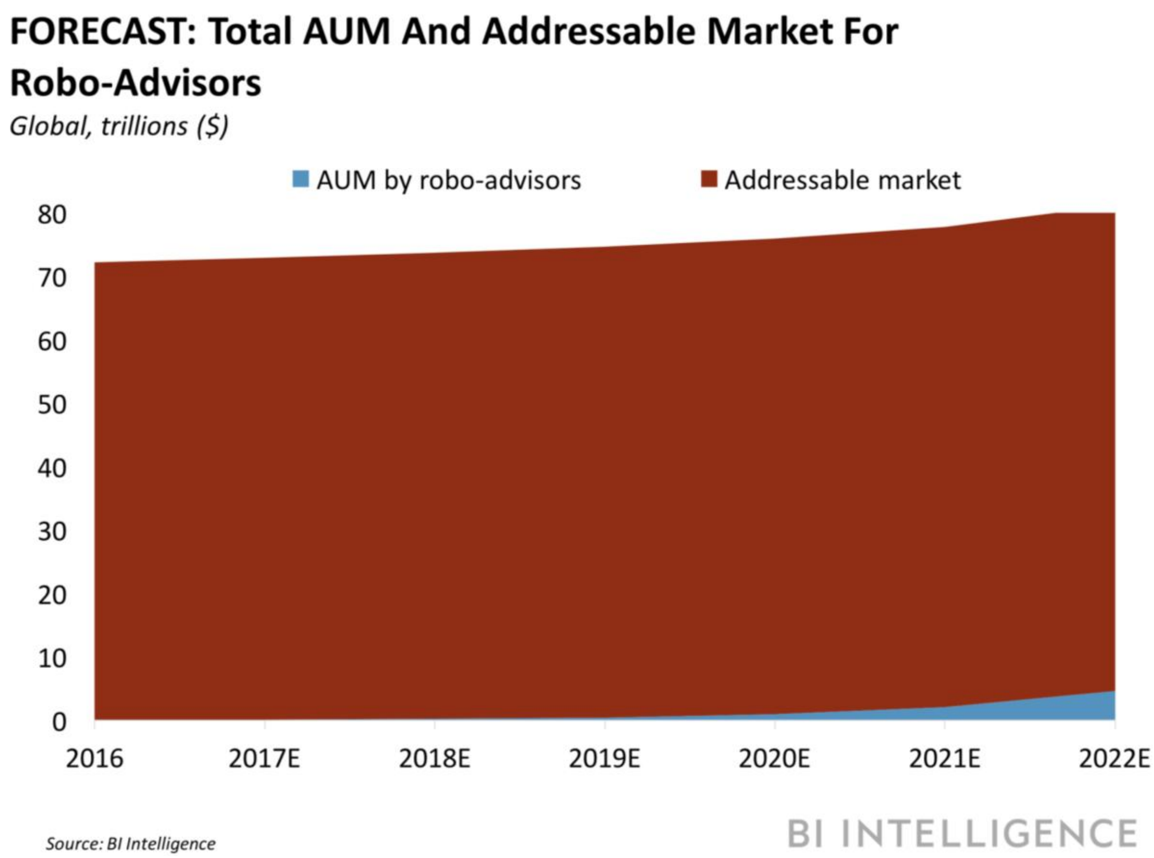
The market for digital wealth products, particularly investment solutions, is now very crowded, and consumer uptake isn't matching expectations. That's made it difficult for startups with robo-advisor products to attract the AUM they need to build sustainable businesses. And competition is becoming especially intense as more incumbents launch their own automated investment products. As a result, startups are employing a number of strategies to increase competitiveness and boost AUM:

- **Many now offer a variety of products, and continue to expand their product suites.** Betterment — the US' biggest automated investment fintech by AUM, with over $9 billion as of June 2017 — recently introduced new features including new portfolio strategies from BlackRock and Goldman Sachs, a human advice element, and an ethical investment option. Wealthfront, another major B2C US player, similarly expanded its offerings, introducing a personal line of credit for existing customers as well as a product for saving toward children's college tuitions. In this way, these players are meeting a wider range of their customers' needs, making themselves increasingly indispensable while also adding new revenue streams.

- **Some are white-labeling their technology in order to act as third-party suppliers to incumbents.** In January 2016, Betterment launched a 401(k) savings product targeted at employers, and in December 2016, it announced that the offering was boosting AUM. Meanwhile, FutureAdvisor, a US player owned by BlackRock, is now providing technology for products from US Bank, BBVA Compass, and LPL Financial. Additionally, US-based SigFig is working with UBS, Santander, and Wells Fargo, which rolled out its automated product in November 2017, while UK-based Wealthify added a B2B element to its business model in February.

- **In addition, a number of startups are partnering with large firms,** not necessarily in the wealth management industry, to scale more easily. European Scalable Capital, for example, struck a partnership with ING to broaden distribution for its service, and inked deals with electronics giant Siemens and BlackRock to provide its service as a workplace benefit for both companies. This seems to be an effective strategy for boosting AUM, as Scalable Capital hit $588 million in November 2017, up 150% from $235 million in March.

Ultimately, it seems that only a few startups will emerge as winners in this space. Despite attempts to differentiate and bolster business models, there will be a winnowing among digital wealth manager startups. Incumbents will use this to their advantage, acquiring the technology startups falling by the wayside to launch their own products at low cost. This consolidation will likely happen fastest in Europe and the UK, and most slowly in the US, where the market for self-directed investment is larger.



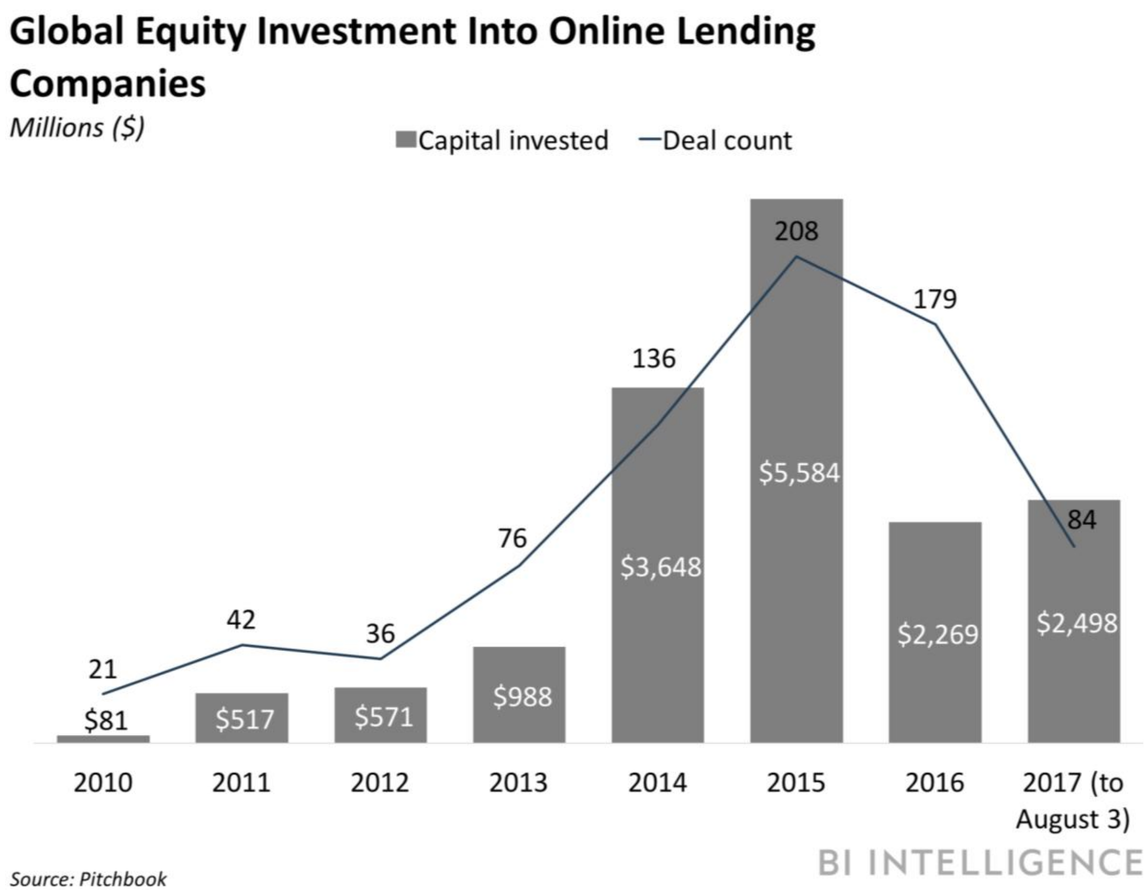
Alternative (Alt) Lenders

Alt lenders operate digital lending platforms that either match investors with borrowers — known as marketplace or peer-to-peer (P2P) lending — or extend loans from their own balance sheets. They target both individual borrowers and businesses, usually SMBs. Over the past year, however, we've begun to see alt lenders in the US and UK move away from marketplace lending to balance sheet models, and in doing so, they've become more like legacy lenders. This is largely to protect themselves against the vagaries of market fluctuations, as a balance sheet model reduces their dependence on investor confidence.

In the US, alt lenders have now moved beyond the trouble caused by Lending Club's management scandal in 2016, and are focusing on making their businesses sustainable. Lending Club itself, for example, posted positive Q3 2017 results in November, and seems to have a sensible plan for the future in place. US SMB-focused alt lender OnDeck, meanwhile, is seeing success from its cost rationalization strategy. US-based consumer lender Prosper has also posted healthy results in 2017, and attracted a $50 million funding round in September.

In the UK, clear leaders have emerged when it comes to sustained loan originations, most notably SMB-focused Funding Circle and consumer-focused Zopa. However, the UK's economy is contracting rapidly, which will make things more difficult for consumer-focused lenders. Partly in response, Zopa recently partnered with a building society to build out a physical presence and up its customer base. In this climate, we may see more alt lenders pivoting toward SMB borrowers, as businesses have so far been less impacted by changing economic conditions in the country. Moreover, the UK government will be anxious to ensure UK businesses are healthy as the political and economic climate grows more uncertain, which could mean it continues to extend capital facilities to SMB-focused alt lenders.

At the same time, innovation doesn't seem to be slowing in the segment, with new alt lending categories emerging in the past year. These include mortgage techs and auto loan techs, both of which have proliferated rapidly in the US and UK, and they're scooping up funding and partnering with powerful incumbents to expand their distribution. This flurry of activity and attention from incumbents could ensure that the alt lending segment keeps attracting funding, even as the novelty wears off of early entrants.



Blockchain And Distributed Ledger Technology (DLT) Startups

Blockchain/DLT fintechs were already on the scene in early 2016, but they're now proliferating at breakneck speed. This appears to be driven by three main factors: booming demand for the underlying technology and solutions built on it from incumbents, consumer enthusiasm for cryptocurrencies and ICOs, and continued discovery of financial services areas where the technology can be applied to introduce efficiencies.

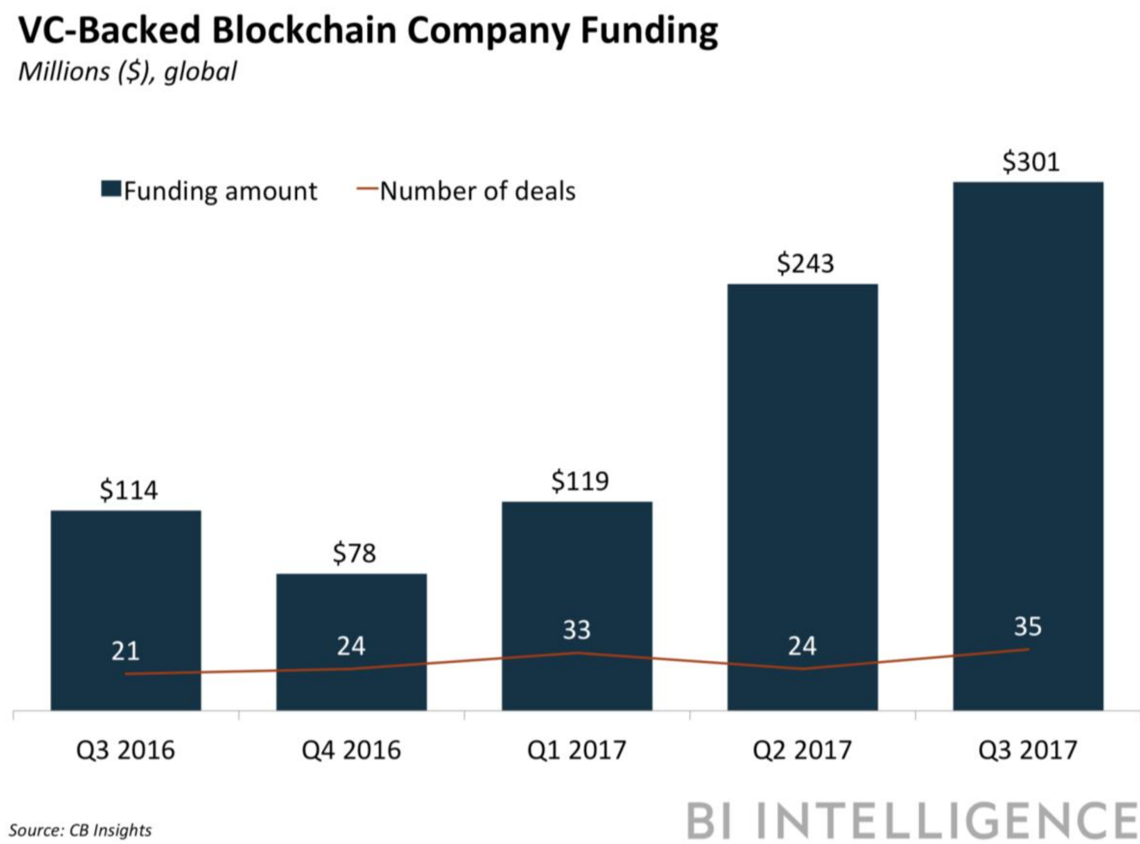
Blockchain and DLT fintechs generally fall into one of three main subcategories:

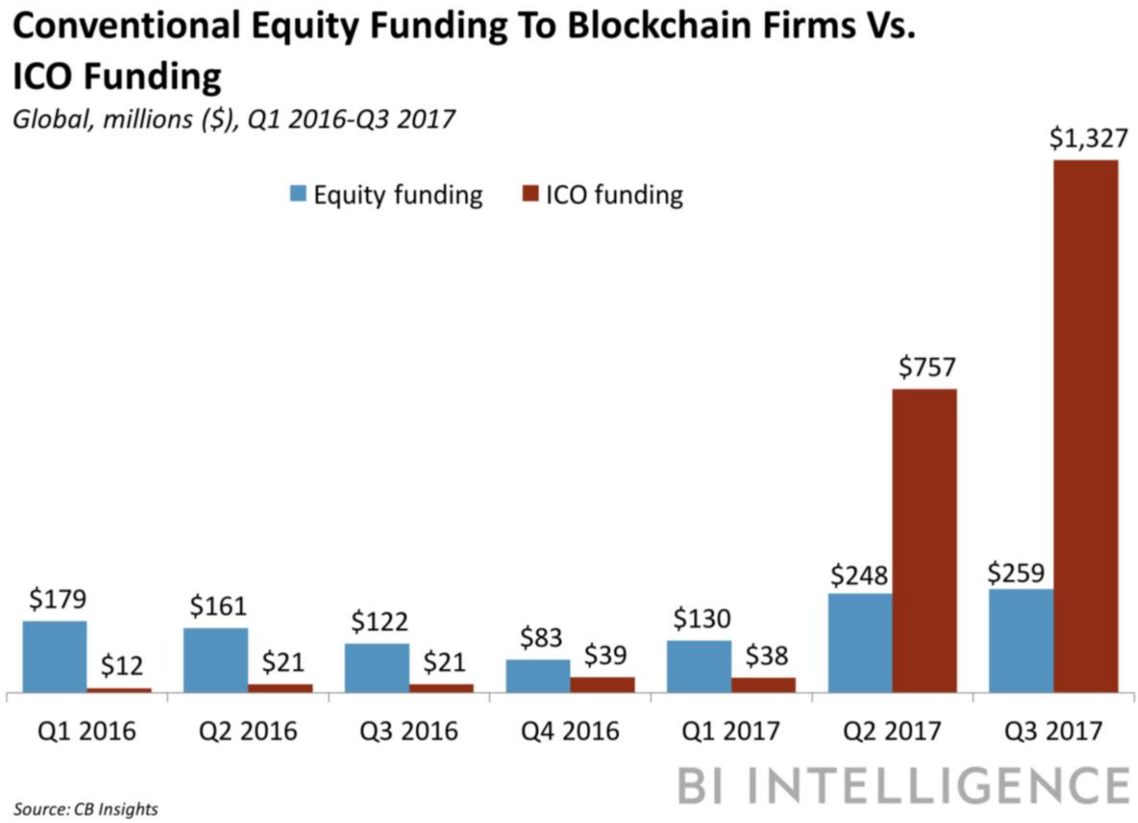
- **Stand-alone companies launching their own, usually consumer-facing, products and services based on the technology.** Some recent examples include Singapore-based alt lender MicroMoney partnering with its US-based peer Celsius Network to develop a global blockchain lending system in October, and Switzerland-based blockchain investment platform TEND launching in November. TEND is an Ethereum-based platform that uses self-executing smart contracts to enable users to buy and sell shares in unusual investments like classic cars and vineyards.

- **Companies supplying the underlying technology on which incumbent FIs can build their own blockchain/DLT products or ready-made blockchain/DLT solutions.** An example of the former is when blockchain consortium R3 finally launched its Corda platform, on which FIs can build their own solutions, in October, and partnered with the FCA in September to build a regulatory solution for the mortgage market. Meanwhile, in November, French blockchain technology startup Stratumn trialed a blockchain-based proof of concept (POC) designed to help French insurers with regulatory compliance.

- **Cryptocurrency-focused fintechs benefiting from a boom in Bitcoin prices and sustained enthusiasm for ICOs.** Tezos, a Swiss blockchain technology startup building a new blockchain framework, raised an ICO of $232 million in July. This marked a record ICO amount until September, when Filecoin raised $275 million. However, despite their current success, cryptocurrency-focused startups may be treading on thin ice. Bitcoin's price hike has been sparking fears of a bubble, and several influential figures like JPMorgan Chase CEO Jamie Dimon are advocating against the cryptocurrency. Moreover, regulators' warnings about ICOs, as well as legal battles and technical difficulties at the companies conducting them, risk turning investor sentiment sour.

Funding to blockchain/DLT companies has been rising steadily since Q4 2016, both from VC sources and increasingly via ICOs, due to the growing number of industry use cases, projects with big names, and the cryptocurrency boom. Moreover, a growing number of FI incumbents and established blockchain players are launching big funds targeted specifically at blockchain, DLT, and cryptocurrency startups, suggesting that investors firmly believe in the potential and value such companies hold for the global financial services industry. As such, we can expect to see these startups continue to attract considerable attention and funding for at least the next year.





Payments Fintechs

From the customer experience to back-end systems, the payments industry is going through a period of rapid change. Digitization, globalization, and regulation are transforming the payments ecosystem, and transactions are getting faster, cheaper, and more convenient as a result. Payments fintechs are helping to lead this charge and include acquirers and processors, card networks, card issuers such as Gemalto, payments gateways like Stripe, remittance firms like TransferWise, and mobile wallets like Mobikwik, to name a few.

In the past 12 months, we've seen several types of payments fintechs in the ascendant:

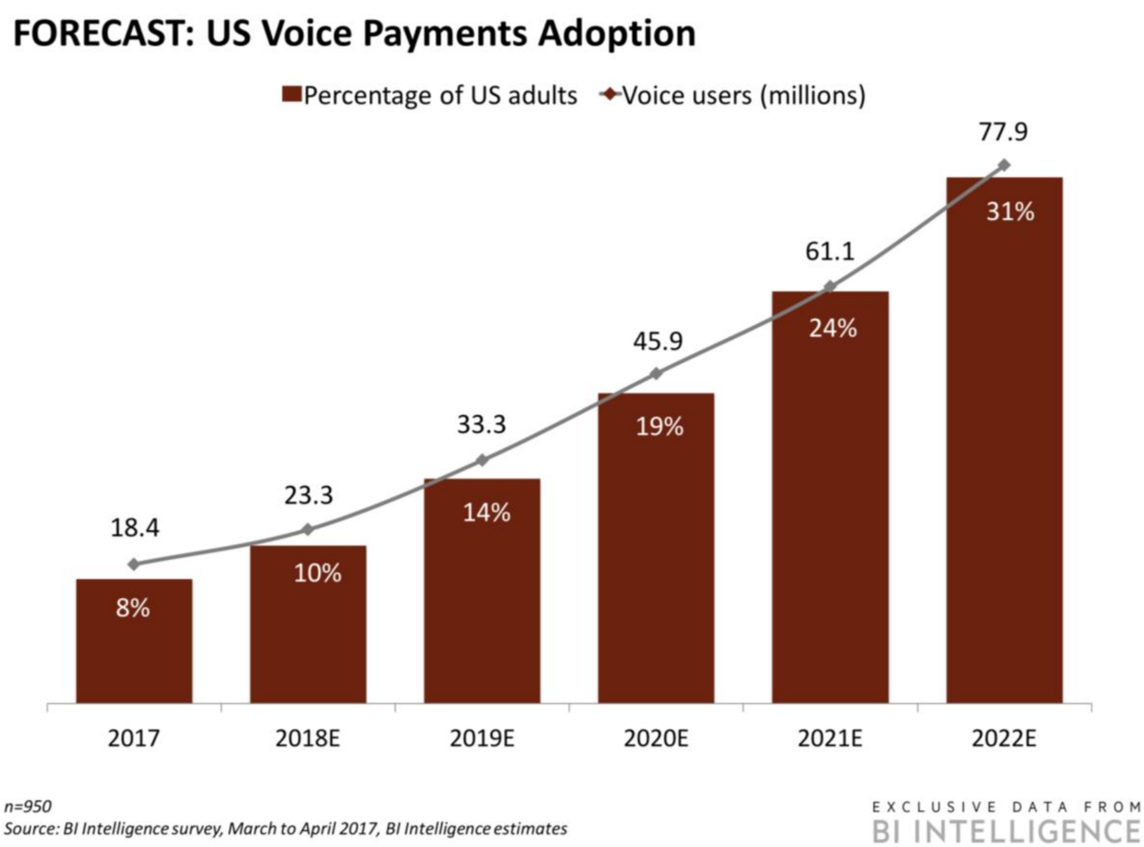
- **Card manufacturers.** Players like Gemalto have capitalized on a year beset by data breaches at FIs, as these events force banks to reissue cards to customers whose details have been compromised. Such data breaches show no sign of slowing, increasing the number of cards to be reissued. High-profile breaches over the past year that have been a boon to such companies include those at Chipotle, Brooks Brothers, Kmart, and a group of hotels including Hyatt, Marriott, Sheraton, and Westin.

- **Digital wallets.** Even as consumers become increasingly dependent on their smartphones, mobile payments often still entail the hassle of entering card information on small screens. Digital wallets that ease this consumer pain point are proliferating in response. These solutions allow users to make payments instantly online in a browser, and can also be used to make purchases at the point-of-sale (POS) with a mobile device, or within apps for greater convenience. PayPal, a payments provider fintech, is only one of several payments players to introduce such a solution.

- **Chatbots and voice payments.** As consumers come to expect more intuitive checkout processes, chatbots and voice assistants are gaining traction. UK-based remittance firm TransferWise, for example, integrated a chatbot for international transfers within Facebook's Messenger service. Meanwhile, voice assistants — like Amazon's Alexa — are increasingly being leveraged by payments fintechs because they allow users to make payments when they need to have their hands free. Venmo, for instance, integrated with Apple's Siri voice assistant to help users make P2P transfers with the payments company's app.

- **Remittance fintechs.** Digital-first remittance challengers use the lower overhead of digital infrastructure and technologies like blockchain to undercut the competition and grow. And they're seeing considerable success: Remitly roughly doubled its annualized volume from 2015 to 2016, reaching $2 billion in transfers; WorldRemit processes over 500,000 transactions a month; and TransferWise now processes over $1 billion per month.

There are two trends worth keeping an eye on in this space over the next year. First, blockchain technology is gaining traction in the segment. That's because blockchain-based systems can remove the need for a trusted third party to serve as an intermediary in transactions and can therefore reduce fees and transaction times, which has sparked interest among payments companies. Also, partnerships and acquisitions will become more common. In order to compete against digital wallet threats, unlikely bonds, like the ones between PayPal and card networks, will only continue to form.



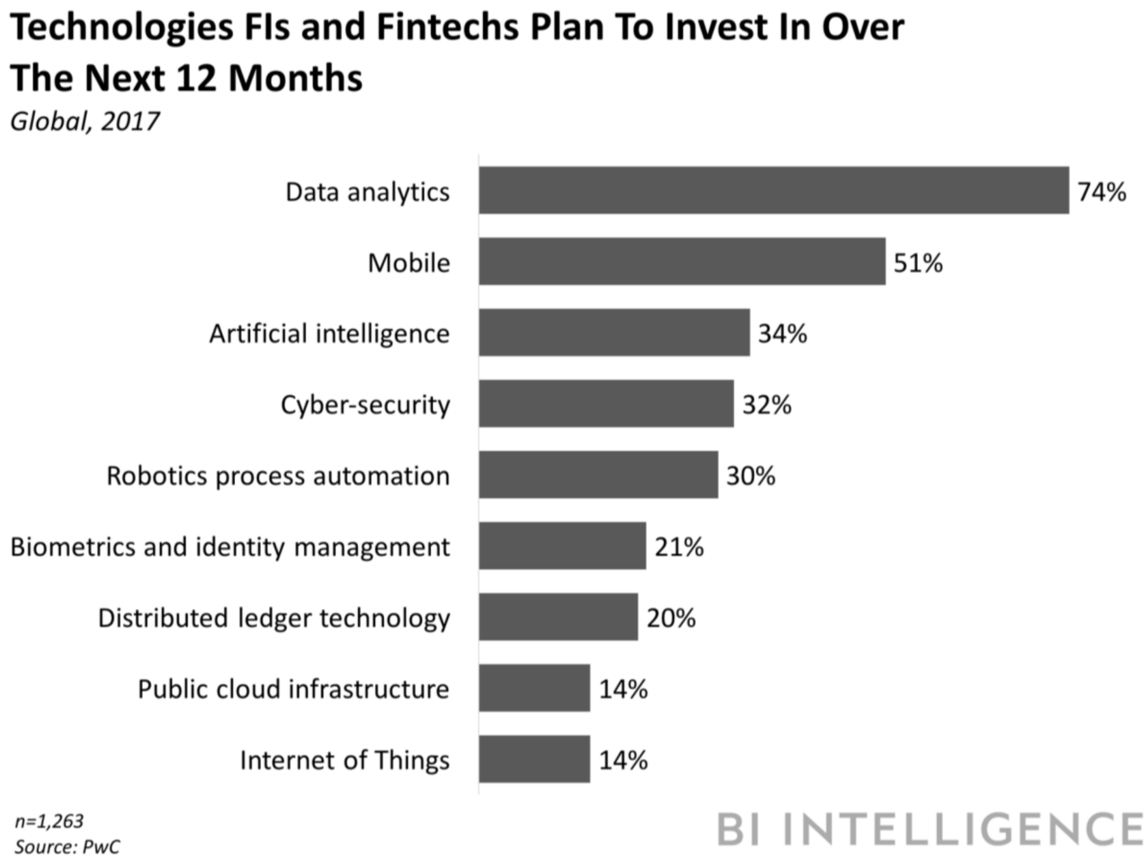
Digital Identity Verification Startups

This past year also brought a distinct new fintech segment to the fore — digital identity verification. As transactions and interactions across all industries increasingly move online, confirmation of consumer identity is transitioning from analog to digital. However, with this transition comes challenges like ensuring data security, regulatory compliance, and standardization across different solutions. This is creating plenty of opportunities for fintechs to offer a helping hand. Here are a few trends we're seeing in the burgeoning digital ID space:

- **Big banks are expressing interest in these companies.** Spanish biometrics and identity solutions startup Das-Nano partnered with banking giant BBVA in June to co-launch Veridas, a new tech company specializing in digital identity tools. Veridas is under the leadership of Das-Nano's cofounder, Esteban Morrás. Veridas will research and develop software that can be used to verify customers' identities online, leveraging Das-Nano's expertise in face, voice, fingerprint, and document recognition technologies.

- **Such startups are also securing healthy funding.** Socure, a US-based digital identity startup, secured a second investment of $13.9 million in a Series B round from Santander Innoventures, the Spanish bank's $200 million fintech VC fund, in August 2017. Socure uses consumers' digital data, including from social media profiles, to verify their identities in real time as they create accounts with institutions like online banks.

However, such startups' proliferation could prove self-defeating for the space. As with blockchain technology solutions, in the digital ID space, it's important for a single solution, or a very select number of solutions, to gain widespread adoption with as many players as possible. This is because the point of a single online digital ID is primarily convenience. However, the market is heading toward saturation, and as such, there is only so much room for proliferation in this segment. That means we will likely begin to see consolidation and the dissemination of just one or two leading digital ID solutions. And, given the growing number of big banks' digital ID verification projects, the successful startups will most likely be those that make themselves valuable to such initiatives.


Technologies FIs and Fintechs Plan To Invest In Over The Next 12 Months
Global, 2017
Data analytics
74%
Mobile
51%
Artificial intelligence
34%
Cyber-security
32%
Robotics process automation
30%
Biometrics and identity management
21%
Distributed ledger technology
20%
Public cloud infrastructure
14%
Internet of Things
14%
n=1,263
Source: PwC
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INCUMBENTS ADAPTING TO A CHANGING LANDSCAPE

The rapid growth and rising influence of fintechs are having a dramatic effect on incumbent FIs, from banks to insurers to wealth managers, pushing them to respond proactively. In particular, there are three key drivers behind incumbents' reactions and adaptations. The first is changing consumer expectations — as fintechs find more ways to serve customers more conveniently and cheaply, customers are voting with their feet and switching to these new providers. The second is the tech-savvy nature of many startups, whose agile infrastructure allows them to cut costs and serve customers more efficiently. And third is a changing macroeconomic environment where data is becoming the central resource, and service provision is growing more distributed, forcing incumbents to reconsider their roles to avoid becoming obsolete. Incumbents are reacting to these drivers on three key fronts: the front end, the back end, and in their core business operations.

The Front End

As consumer expectations shift, incumbents are increasingly looking for ways to better serve their customers and boost loyalty. To that end, they are launching initiatives that both make their services more convenient and valuable for customers, and have the potential to increase revenue for the companies themselves. These include:

New apps and products. Rolling out new apps, products, and services to consumers served as incumbent FIs' earliest response to fintech competition, and has continued over the past 12 months. Most big banks now have mobile banking offerings, and are looking to supplement them with additional features. Areas where incumbents have been rolling out such supplemental services include digital wealth managers, PFM tools, and digital payments.

Streamlined applications and accessibility. FIs are also paying more attention to how conveniently consumers can access their offerings by simplifying application processes. This is especially the case when it comes to more complex financial products, such as mortgages and life insurance, where consumer pain points like a lengthy application process and lack of understanding are rife. Multiple incumbents have begun trying to alleviate these obstacles: Commerzbank, NatWest, and Santander UK all launched digital mortgage application and execution services in the past year. UK bank TSB, meanwhile, is catering to growing consumer demand for biometric logins with its iris and face recognition options, launched this past fall.

New distribution channels. Incumbent FIs like banks and insurers have come to realize that partnering wiith fintechs can be an effective way to broaden distribution for their products. In particular, legacy players are increasingly distributing their products and services through third-party platforms, where their own products and services are likely to be aggregated alongside competing offerings from other providers, rather than through bilateral partnerships with a single fintech. Examples of this approach include HSBC UK partnering with aggregation platform Bud, and growing numbers of insurers working with insurance aggregation platform Worry and Peace.

The Back End

In response to intensifying competition from digitally native startups with cutting-edge back-end systems, incumbents are upping their efforts to make themselves more efficient. As such, they're increasingly launching initiatives and using technologies that enable meaningful cost-cutting, including:

Core banking system overhauls. Legacy software systems' low processing power and siloed structures have left FIs unable to respond to the growing volumes of data in real time, making it difficult to adjust regulatory compliance procedures or personalize products effectively, for example. This inefficiency is pushing more incumbents to invest in new, modern core systems designed for a data-dependent, digitized environment. Some examples include: the Bank of Ireland's $588 million end-to-end overhaul, Japanese banking giant Mizuho's $2.8 billion holistic overhaul, and Russian banking giant Sberbank's $12.1 million revamp of its retail and corporate banking arms' software. Such overhauls promise to deliver tighter security via a system calibrated to the latest forms of cyberattack, as well as seamless integration with third parties.

Some banks are also seeking to improve their data management capabilities by leveraging fintechs' superior technology on the back end. For instance, both NatWest and JPMorgan Chase are using technology from SMB alt lenders Ezbob and OnDeck, respectively, to conduct risk assessment on SMB loan applicants to better meet these companies' needs and add new revenue lines. Arguably, this can be seen as a stopgap measure, but one that may prove effective in achieving a particular end, and which may embolden banks to take on greater overhauls.

Rapid automation and job cuts. Incumbents are increasingly finding areas where they can replace expensive human labor with an automated workforce, typically by introducing technologies like AI, which eliminates salary costs and extends working hours, enabling them to be more agile. This trend is conspicuous in insurance, where players like Suncorp and Ageas have begun leveraging AI to process insurance claims more quickly, accurately, and cheaply. Big banks are also getting in on the trend, with Japan's Mizuho Financial Group planning to cut 19,000 jobs over the next 10 years as it increasingly turns to AI and other automated solutions. It has already developed robots that can help customers in branches and sort through documents in Mizuho's offices. Additionally, National Australia Bank and Nordea have announced plans to cut 4,000 and 6,000 jobs, respectively, in the near future as they turn to AI-driven automation.

Regtech. FIs are also increasingly leveraging fintech to cut costs in one of their biggest areas of expenditure: regulatory compliance. BNP Paribas' Securities Services division bought a minority stake in Fortia Financial Solutions, a regtech, in January 2017 to help ensure compliance with new AML, know your customer (KYC), and reporting standards by leveraging Fortia's Innova platform. Meanwhile, Irish Funds (IF), an investment fund industry association whose members include BlackRock, HSBC, and Vanguard, took a different approach by building and successfully testing a blockchain POC for improved regulatory reporting and compliance in March 2017. And most recently, Mizuho Bank started testing IBM's latest AI-based regtech solution, Financial Crimes Due Diligence with Watson, to improve its ability to prevent and detect financial crime like money laundering (ML) and financing of terrorism (FT).

Blockchain technology. Blockchain and DL technologies are attracting incumbents' interest by promising to eliminate friction between the many parties typically involved in transactions like capital markets trades, claims processing, and tracking of assets and information. Although no major Western FI's blockchain tech-based solution has yet gone live, the massive proliferation of use cases in a vast range of financial services areas suggests that critical mass will soon be reached, and solutions will enter deployment stage. A few examples of FIs' blockchain tech use are: AXA's flight delay insurance platform; Allianz's captive insurance solution; and BBVA, HSBC, US Bank, and Scotiabank's collaboration with R3 to create a trade finance app. Meanwhile, other FIs are working to make the technology more secure and easier for incumbents to deploy; ING's Zero-Knowledge Range Proof (ZKRP) solution, for example, launched in November 2017, and is designed to allow FIs a degree of confidentiality when using a blockchain platform.

Behavioral analytics technology. As incumbents seek more ways to introduce efficiencies and make the most of existing resources, their human capital has also come under scrutiny. FIs, especially large investment banks, are increasingly leveraging behavioral analytics technology to maximize their employees' productivity to boost their bottom lines. For example, Swiss bank UBS' fintech fund acquired majority ownership of Sapience Analytics, an Indian fintech that develops software to allow companies to monitor employees' work patterns through devices like mobile phones, tablets, and laptops, in September 2017. The goal is to ensure employees' workloads are evenly distributed for maximum productivity. Meanwhile, Citigroup became the latest FI to join the trend in November by investing in Behavox, a London-based startup that uses natural language processing (NLP) to improve employees' customer interactions and boost revenue.

Where Banks And Other FIs Are Using AI

Global, 2017

Source: TCS

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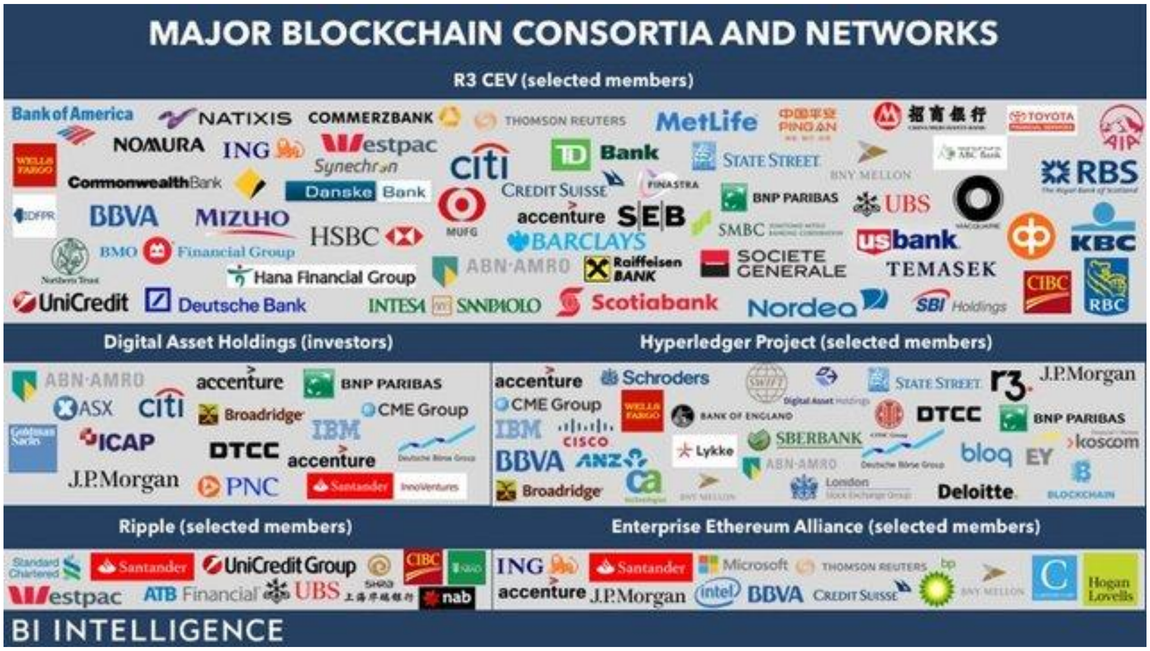


Business Transformations

In a financial services system increasingly influenced by agile startups, incumbents are having to rethink their own roles in this system from the ground up to ensure they stay relevant. As such, the vast majority of leading FIs have embarked on holistic business transformations. These business overhauls consist of four main ingredients:

Infrastructure changes. Fintechs have the advantage of boasting no branches to maintain, modular and agile IT infrastructures, and data centers that can be updated almost instantly, and incumbents are scrambling to recast themselves in a similar mold by shedding the physical parts of their businesses. As of December 2016, 1,045 UK bank branches had closed in the preceding two years, with HSBC shuttering 27% of its branches and Lloyds closing 14%. BNP Paribas announced a €3 billion ($3.6 billion) digitization project in February, which has already seen the group buy alternative financial services provider Compte Nickel in April and robo-advisor Gambit in September 2017. In the US, Bank of America (BofA) has closed 1,597 branches in 253 counties across the country since 2009. These closures have been concentrated on BofA's rural outposts, which bring in $1.4 million in yearly revenue, on average, compared with $2.5 million for an urban branch.

Operational model changes. In addition to adjusting how their organizations interact with customers, FIs have started altering the way they're organized internally. Global insurer AXA announced a major structural overhaul in November 2017 to help the organization better meet the needs of clients in its individual markets, for example. As part of the restructuring, AXA is establishing five geographical arms — France, Europe, the US, Asia, and International — which will report to a single Corporate Center, affording each arm more autonomy. These changes indicate that AXA is looking to cater to increased demand for personalization, and is willing to pivot to a customer-centric model, rather than implementing innovation from the top down. Citi Fintech, the bank's innovation unit, is taking a similarly decentralized approach by involving the whole organization in innovation initiatives to fix actual problems it identifies, and liaising closely with a dedicated governance committee, floating all ideas past it to get projects rolling faster.

Cloud technology is also playing a significant role in incumbents' changing business operations, as FIs can leverage the cloud to make data storage and systems maintenance cheaper. Despite lingering concerns about the cloud's security risks, we're seeing more institutions committing to the technology. Lloyds Banking Group announced a tech outsourcing deal with IBM in March 2017, under which the account details of 20 million Lloyds customers will be migrated onto a private IBM cloud. More recently, Singapore's DBS partnered with US-based data center provider Equinix to make one of the bank's core data centers "cloud optimized," which will allow the bank to move its data center to premises 75% smaller than the ones it currently occupies, cutting costs by the same amount.

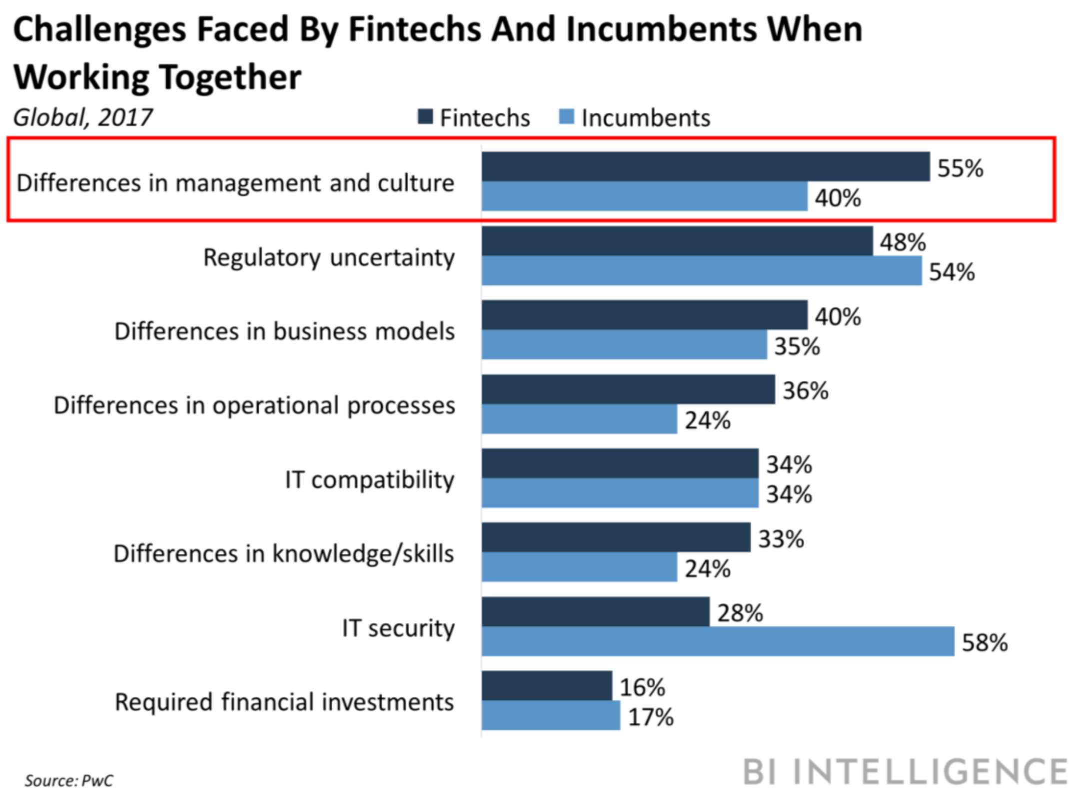
Cultural transformations. Although FIs are by now fully invested in effecting change within their organizations operationally, most still face the difficulty of addressing a broader type of transformation: uprooting a conservative working culture. This type of overhaul is arguably more difficult than operational and business model changes, as it requires established institutions to question and discard deeply ingrained habits. Failure to reassess the entire organization's mentality can hinder innovation and adjustment to a digital, fast-paced economy, where standards are increasingly being set by disruptive startups. However, incumbents have begun to realize the importance of such holistic change, and a few early movers that managed to identify the problem early on are already seeing positive results from changes they've implemented to address it:

- **ING,** for instance, keeps its innovation projects targeted by forming focus teams to deal with each challenge, and validating each stage of a new service or product development with customer feedback to ensure it really adds value for its target audience. It's also launched an Innovation Bootcamp to encourage employees to brainstorm and think outside the box to challenge the status quo.

- **DBS,** which operates in APAC, closely researches the values of the different markets where it operates, so that it can adjust its products and services to better meet customers' needs, for example, through outreach calls to customers. It also holds cross-sector, multilevel hackathons to identify inefficiencies in the organization’s processes and design a replacement, and promotes healthy competition between employees to come up with the best idea.

Seeking fresh talent. Banks have long struggled to attract employees with the technology skills essential for bringing their businesses into a modern economy, but as the influence of fintechs mounts, they have intensified their efforts to lure such talent in, or bring it to the fore among their existing workforce. Some banks are trying to emulate a "startup" culture to make themselves more attractive to younger workers: DBS, for instance, has introduced an open-plan working environment to encourage a collaborative atmosphere and attract young talent. Other banks have introduced elements more commonly seen in the offices of tech giants and startups, such as beanbag chairs, post-its, and ping-pong tables. Several FIs, meanwhile, are sourcing talent from more diverse sources: Citi, for example, has formed a collaboration with Cornell Tech, the university's graduate campus that focuses on business and computer science, to get access to graduates before they're poached by tech startups.

Some FIs, however, are making efforts to capitalize on their existing workforce to generate ideas for new fintech products and services. BNP Paribas launched an internal innovation program in October 2017, and Societe Generale followed suit in November. Both initiatives encourage the banks' existing employees to submit ideas in areas such as data analysis, digital banking, automation, AI, and the sharing economy.


Challenges Faced By Fintechs And Incumbents When Working Together
Global, 2017
Fintechs
Incumbents
Differences in management and culture
55%
40%
Regulatory uncertainty
48%
54%
Differences in business models
40%
35%
Differences in operational processes
36%
24%
IT compatibility
34%
34%
Differences in knowledge/skills
33%
24%
IT security
28%
58%
Required financial investments
16%
17%
Source: PwC
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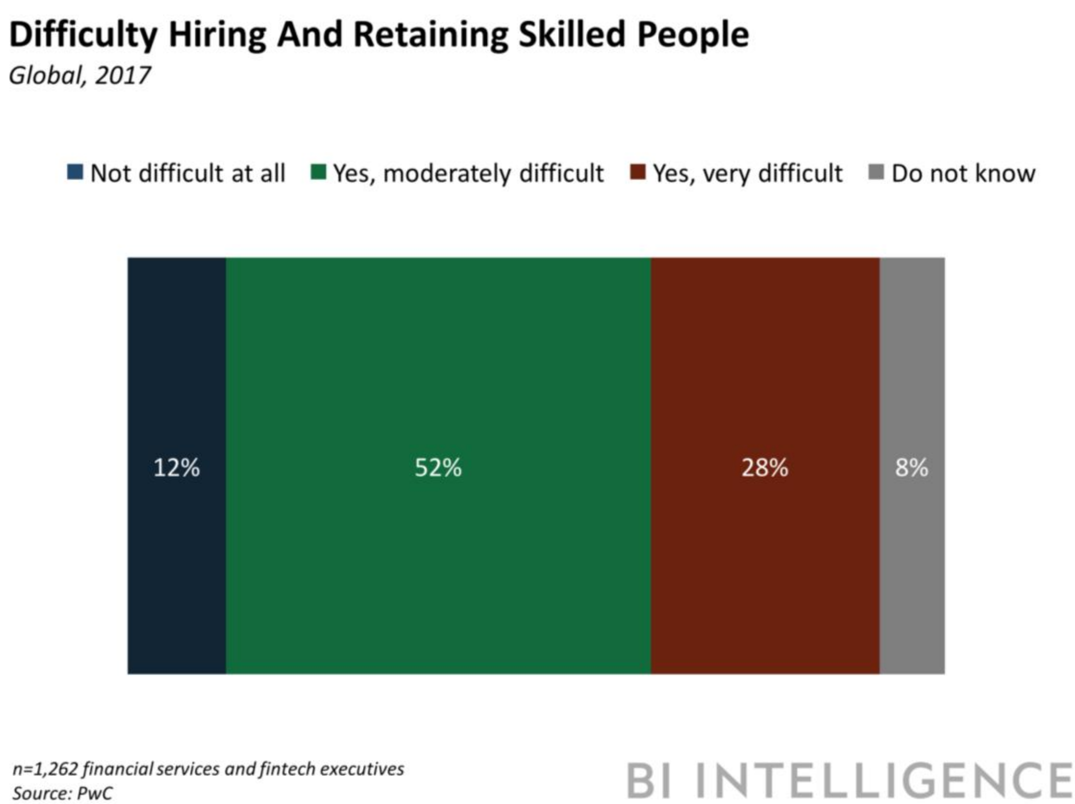
Difficulty Hiring And Retaining Skilled People
Global, 2017
Not difficult at all
Yes, moderately difficult
Yes, very difficult
Do not know
12%
52%
28%
8%
n=1,262 financial services and fintech executives
Source: PwC
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THE FUTURE OF FINTECH AND FINANCIAL SERVICES

As fintech continues to amalgamate with financial services, more unsolved problems are going to be detected in the status quo. As such, we can expect to see more new fintech segments forged going forward. We are also likely to see existing major fintech segments, such as insurtech and regtech, divide into subsegments as players in these spaces identify more obscure problems within each industry. Fintech funding will continue to grow annually for the next few years as fintechs' propositions continue to amass value for the broader financial services system. However, looking further ahead, investment volumes and deal numbers will eventually slow from levels seen historically, largely because many fintechs are still struggling to turn a profit, making it harder for them to draw in the large deal sizes they saw around 2015. Moreover, as the industry matures, a more tempered pace of investment is to be expected.

Other key trends to expect in the fintech space in 2018 include:

- **We'll see more M&A activity between incumbents and fintechs, as well as among fintechs themselves,** as competition winnows the fintech landscape and leading companies emerge. These survivors will have proven themselves to an extent where incumbents regard them as valuable acquisition targets, and will likely be in a financial position to buy up their smaller fintech peers. Partnerships between incumbents and fintechs will continue to proliferate as both parties grow to regard each other as collaborators rather than adversaries. It's unlikely that incumbents will revert to the complexity and expense of building solutions in-house, even as they become more familiar with new technologies. Instead, we will probably see a growing proportion of incumbent-fintech partnerships transitioning into acquisitions.

- **Emerging technologies like blockchain/DLT and AI will become more sophisticated.** The current plethora of blockchain and DLT POCs will start going live, while AI solutions will be applied to increasingly complex processes as they come into contact with more data sets and learn from past interactions. As this happens, and these technologies begin to appear in a vast range of financial services areas, they will become "basal" technologies, an industry standard, as opposed to the subject of experiments by a few early movers. This will be prefaced by a phase of blockchain technology developers — from startups to incumbents to consortia — refining peripheral issues around the technology, such as interoperability and regulatory compliance.

- **Incumbents will continue to accelerate the overhaul of their corporate cultures and introduce efficiencies using new technologies,** as they seek to remain relevant in a rapidly changing financial services landscape. However, they may find themselves running into a new challenge: ensuring the best for their bottom lines while building enthusiasm within their workforces. This is because, when new technologies are introduced on the back end, it often results in large job cuts or closer monitoring of employees' productivity, which could create internal friction and make wholesale overhauls of organizations more difficult.

The fintech industry is now on the cusp of becoming an integral component of the broader financial services ecosystem it set out to disrupt. However, before this osmosis can happen, it's likely that the fintech industry will first have to go through a complete credit cycle, and survive an economic downturn like the one that set the stage for its arrival in 2008. This will highlight the weaknesses in fintechs' business models and force them to consider how to make themselves sustainable, viable enterprises, which will ultimately benefit the industry itself, the broader financial ecosystem, and consumers. Once this happens, the trajectory for the future looks inevitable: Fintech will be fully embedded in mainstream finance.

THE BOTTOM LINE

- Fintech broke onto the scene as a disruptive force following the 2008 crisis, but the industry's influence on the broader financial services system is changing.
- The fintech industry no longer stands apart from financial services proper, and is increasingly growing embedded in mainstream finance.
- Most fintech segments in the ascendant at the time of our last Fintech Ecosystem report have continued to rise and grow more valuable to the broader financial system. These include insurtechs, regtechs, PFM services, and payments fintechs.
- However, a number are being forced to make adjustments for the future. Neobanks, robo-advisors, and alt lenders are among those tweaking their business models to stay ahead.
- Blockchain and DLT fintechs, meanwhile, are proliferating at breakneck speed, driven by demand for the technology from incumbents, enthusiasm for cryptocurrencies and ICOs, and continued discovery of financial services areas where the technology can introduce efficiencies.
- This past year also brought a distinct new fintech segment to the fore — digital identity verification. As confirmation of consumer identity transitions from analog to digital, these startups are being flooded with opportunities to lend a helping hand.
- Incumbents are responding proactively to the rising influence of fintech across categories, and are making updates to their consumer-facing channels, back-end systems, and overall business operations. They are also increasingly working with fintechs themselves.

- As fintech continues to amalgamate with financial services, more unsolved problems are going to be detected in the status quo. As such, we can expect to see more new fintech segments forged.

- The fintech industry is now on the cusp of becoming an integral component of the broader financial services ecosystem it set out to disrupt. However, it will likely first have to go through a complete credit cycle, and survive an economic downturn like the one that set the stage for its arrival in 2008.

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