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#### Introduction

The U.S. fintech industry continued to evolve in 2018, with funding pouring into startups, more established fintech companies rethinking strategy and incumbent financial institutions stepping up technological development.

The narrative of disruption no longer dominates fintech chatter as it did a few years ago. For some time, fintech industry observers have seen the idea of wholesale financial industry disruption giving way to partnerships between fintech companies and the financial institutions they once sought to displace.

Developments in 2018 underline that shift. Hybridization has been an important theme as scaling technological capabilities across different financial services can improve growth prospects. For example, various fintech companies are expanding from payments into digital lending and vice versa, and financial institutions are pushing to offer even more services via their digital channels.

One of the more successful fintech segments, at least from a funding standpoint, has been insurtech, where S&P Global Market Intelligence sees many companies moving straight to partnership mode. Digital lenders have actively sought partners, and partnerships have become increasingly prevalent in digital investment management. In these and other fintech segments, some startups are finding it more beneficial to license their innovative technology to deep-pocketed financial institutions. The software-as-a-service business model is not new, but more startups have embraced that strategy over the past year.

This report highlights recent trends and our outlook for insurance technology, digital investment management, digital lending, mobile payments, digital banking and blockchain.

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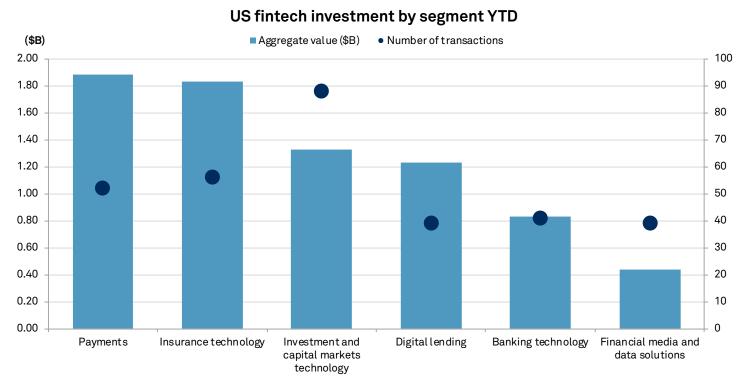
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Data compiled Dec. 11, 2018.

Includes private placements for private fintech companies, as defined by S&P Global Market Intelligence, that closed from the start of January through Dec. 11, 2018. Limited to transactions where at least one investor was disclosed.

Source: S&P Global Market Intelligence

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### Insurtech

Insurance technology was a prime destination for investor dollars in 2018, based on our review of S&P Global Market Intelligence's funding data. More than \$1.8 billion of capital had flowed into the sector as of Dec. 11, with interest focused primarily on two areas: digital agencies and full-stack companies.

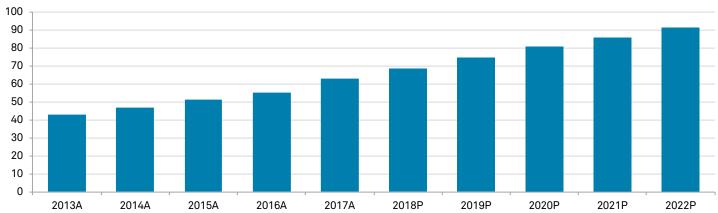
Digital agencies, which are brokers that sell policies online but do not underwrite them, attracted more interest than many other groups. Approximately half the total U.S. insurtech funding rounds in 2018 through Dec. 11 were for digital agencies.

But in terms of dollar amount raised, full-stack companies reigned supreme, with nine companies raising more than \$1 billion in combined funding. Full-stack companies handle the distribution, underwriting and servicing of their policies, giving them full control over the insurance process. Since they pay out claims, it makes sense that they would need more capital than other business models.

We do not expect insurtech startups to massively disrupt the insurance industry because many of those companies have gone straight to working with incumbents rather than trying to replace them. Incumbent insurers are avid investors in insurtech companies, and the digital agency model relies heavily, for now at least, on partnerships with established underwriters.

Additionally, we have not seen ideas that drastically alter the insurance distribution model. Selling policies online is already a well-entrenched concept in certain insurance lines, notably the private auto insurance market. We estimate that roughly 27% of total U.S. private auto premiums written in 2017 came via the direct response channel, which includes online sales, and we expect premiums written in that channel to continue to grow in the coming years.





Data compiled Oct. 12, 2018.

Based primarily on an analysis of data reported by U.S. P&C insurers in the Insurance Expense Exhibit, Part 3, of annual statutory filings submitted to the NAIC.

Source: S&P Global Market Intelligence; proprietary estimates

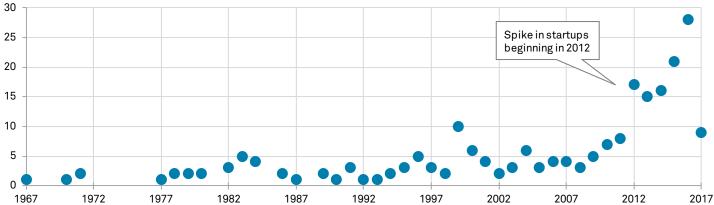
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But that said, some areas of the insurance world still rely predominantly on human agents, such as commercial lines and life insurance, and these might be more prone to disruption. A trend toward embedding insurance might also have a meaningful impact. If insurtech companies can devise ways to integrate their products into other websites, at the point when customers are more likely to want insurance, they might be able to level the playing field with incumbents that spend billions on advertising.

Even if they are not completely upending the insurance industry, there are a few key areas where we think insurtech startups are innovating: policy design, user experience and data analysis. In general, they are creating apps that simplify and speed up the buying process, with policies more tailored to certain demographics, and they are developing sophisticated models that incorporate the latest advancements in data science.

U.S. insurance technology startups are numerous and still very much in their early years. As is common with an emerging fintech segment, investor and public interest in the space is high despite the risky nature of startup investing.

#### Number of US insurtech startups founded by year



Data compiled Oct. 11, 2018.

Source: S&P Global Market Intelligence

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At this point, investors tend to be more concerned with growth than profitability, and they tend to be tolerant of startups experimenting with new ideas. Insurtech companies seem to be doing both — growing and innovating — and we think investors will continue to support them.

### Digital investment management

The investment and capital markets technology subsector was fertile ground for startup funding in 2018, producing the most transactions among the six fintech subsectors that S&P Global Market Intelligence tracks; the others are payments, financial media and data solutions, banking technology, insurance technology and digital lending.

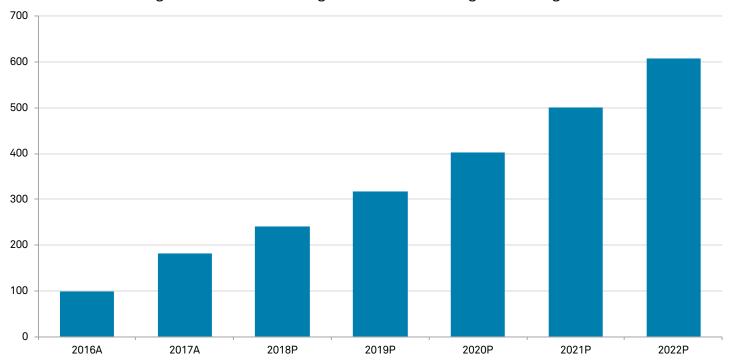
At the same time, the average round number for investment and capital markets technology companies was the lowest of the six, meaning that, on average, companies in the other subsectors had raised capital more times prior to their latest funding rounds. The investment and capital markets technology startups funded in 2018 also tended to be younger than those in other fintech areas, on average.

Taken together, these data points suggest that new ideas in the investment and capital markets technology space are getting funded, an encouraging sign for innovation.

While retail-focused robo-advisers have captured a lot of attention in the past few years, there are some troubling signs for independent startups in that space. One of these was the July news that Hedgeable Inc., which was founded in 2009, was ending its advisory business.

That said, S&P Global Market Intelligence still expects growth for the U.S. robo-advisory market. Based on our estimates, the market should grow from roughly \$181 billion in AUM in 2017 to \$608 billion in 2022, which translates to a compound annual growth rate of 27%.

### Assets of retail-focused digital wealth managers expected to reach over \$600B by 2022 Assets under management at U.S.-based digital investment managers that target retail investors (\$B)



Data compiled Dec. 3, 2018.

Based on actual and projected figures for 54 asset managers.

Sources: S&P Global Market Intelligence; Form ADV filings; company-provided information; proprietary estimates. ©2018. S&P Global Market Intelligence. All rights reserved.

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But much of this growth will likely come from large incumbent institutions such as Vanguard and Charles Schwab, which together accounted for roughly 70% of the estimated industry AUM figure in 2017.

The influx of retail-focused robo-advisers has been beneficial for consumers, resulting in products with reduced fees and lower account minimums. But these thin margins make it immensely difficult for the companies that cannot quickly build scale. While the larger independents such as Betterment, Wealthfront and Personal Capital will probably thrive, the future seems increasingly challenging for smaller companies that have been unable to ramp up their AUM.

The move to low-fee and even no-fee models is a common theme among retail-focused apps in the investment and capital markets technology subsector. Robinhood has achieved enormous growth since launching its commission-free trading app in 2015, and incumbents such as Fidelity and Charles Schwab have since cut their equity and ETF commissions.

The free model is, in our view, one of the truly disruptive changes in the investment technology landscape, and its impact appears to be ongoing. For instance, JPMorgan's You Invest, launched in August, offers customers 100 commission-free online stock and ETF trades.

Companies like Robinhood are willing to forego commissions if it leads to large customer bases. With a bulk of active users, they can still tap several other revenue streams available to brokers: securities lending, interest on cash held in brokerage accounts, margin lending and routing order flow to exchanges.

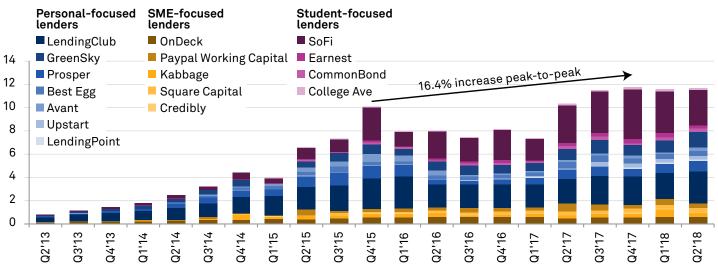
But given how young Robinhood still is, it remains to be seen whether it is a viable long-term strategy and whether it can withstand the onslaught of large incumbents going to zero-commission models.

### **Digital lending**

The digital lending industry has faced challenges of its own over the last few years but appears to have found solid footing, at least for now. Robust demand for their services helped digital lenders recover from the doldrums of 2016.

S&P Global Market Intelligence estimates that a group of 16 prominent U.S. digital lenders grew loan originations 30.1% year over year to \$41.1 billion in 2017. Growth should slow but remain healthy over the next five years. We project a compound annual growth rate of 12.4% to \$73.7 billion in annual originations by 2022, barring any major shock to the economy or credit markets. The true test of digital lender business models, which have emerged in a largely benign credit environment for most of the last decade, will arguably come once the credit cycle turns.

### Quarterly originations (\$B)

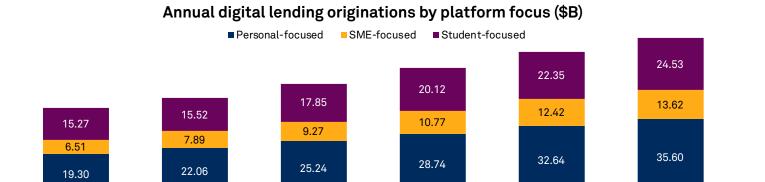


Data compiled Oct. 25, 2018

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2022P

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2020P

2017A

Data compiled Oct. 25, 2018.

SME = small and medium-sized enterprise

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2019P

In order to keep growing, digital lenders are taking advantage of opportunities to expand the scope of their activities, both in terms of funding and product offerings. For example, SoFi, which began as a student loan refinancing company, now offers personal loans and mortgages. Personal loan-focused LendingClub also offers a business loan product.

While some of the companies on our list, such as Square and PayPal, entered digital lending from adjacent fintech segments, some lenders are moving in the other direction by offering nonlending services. SoFi has been the most aggressive on this front, offering wealth management services and accepting applicants for its high-yield deposit account product, SoFi Money.

#### Breadth of services offered by digital lenders

2018P

NIAN	IANdina	COMMONO
INUII	tenunis	services

2021P

	Lending verticals			Payments					
Company name	Personal/ consumer	Mortgage	Business	Student	Patient	Card	Mobile	Processing	Asset management
Prosper	•								
LendingClub	•		•						•
SoFi	•	•		•		•	•		•
Avant	•					•			
Upstart	•								
Square	•					•	•	•	
OnDeck			•						
Kabbage			•			•		•*	
CommonBond				•					
PayPal	•					•	•	•	
Earnest	•			•					
LendingPoint	•								
GreenSky	•					•			
Credibly									
College Ave				•					
Best Egg	•								

Data compiled Oct. 1, 2018

Source: Company websites, Reuters

<sup>\*</sup> Kabbage has announced intention to offer point of sale system

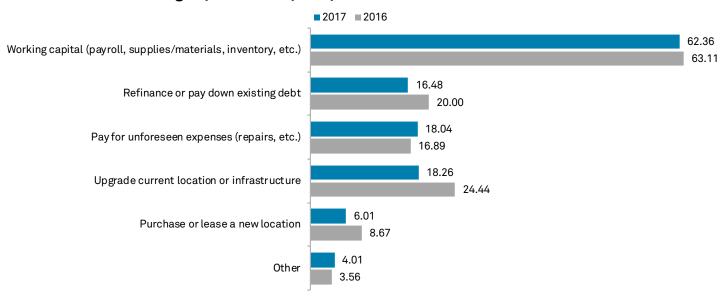
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Funding is a crucial element of the digital lending business model. A funding shock in 2016 forced several digital lenders to contract their operations. S&P Global Market Intelligence has identified three major funding models used by digital lenders. Marketplace lenders secure funding by selling investors securities that are backed by loans originated on the lending platform. Balance sheet lenders secure funding through various sources, including venture capital and traditional lenders, and retain loans on their own books. And bank channel lenders act as conduits for banks, originating loans on their behalf without ever taking up ownership of the loans themselves. Several digital lenders have been tapping multiple funding models as they grow. We expect this hybridization to continue as increasing scale and regulatory attention necessitate flexibility in financing strategy.

Bank channel-based lending drew particular attention in 2018, especially with the IPO of consumer loan-focused GreenSky Inc. The company has secured more than \$11 billion in bank commitments. Small business-focused lender OnDeck announced an expansion of its OnDeck-as-a-Service platform through which it licenses its technology to banks. The company added PNC Bank as a customer and launched a new subsidiary, ODX, to handle future bank channel-based business. Avant launched a bank partnership platform for personal lending called Amount.

Digital lenders have managed to leverage innovative technology solutions to drive down the cost of underwriting and enhance the speed of loan approvals. These factors have allowed them to attract customers, some of whom were previously underserved by traditional lending institutions. Several digital lenders have moved into the small-business lending space to fill working capital and other financing needs.

#### Working capital needs prompt small businesses to seek loans (%)



Data compiled July 13, 2018, from small-business survey results gathered in January and February 2017 and in February 2018. Reflects responses to survey questions about purpose of taking a business loan. Survey participants could select more than one response. Source: Small-business borrowing surveys fielded by S&P Global Market Intelligence. The first survey was fielded between Jan. 26, 2017, and Feb. 4, 2017, and the second was fielded between Feb. 7, 2018, and Feb. 18, 2018. The surveys questioned financial decision-makers at small businesses with less than \$10 million in revenue that had taken a loan in the previous year. The surveys have a margin of error of +/- 4.7% at the 95% confidence level, based on the sample sizes of 450 in 2017 and 449 in 2018.

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However, banking institutions retain certain fundamental competitive advantages. Arguably the most important is their access to insured deposits, which affords them low-cost capital. Regulatory concerns have likely caused banks to hesitate when adopting new technologies, but banks are increasingly looking for points of entry to the fintech space. We expect many banks will opt to partner with existing fintech companies to marry their cost advantages with the fintechs' technological capabilities. By combining their technological expertise with banks' lower cost of capital, these partnerships could enable banks to provide more efficient customer experiences at lower rates, as well as open them up to previously untapped customer segments.

### **Payments**

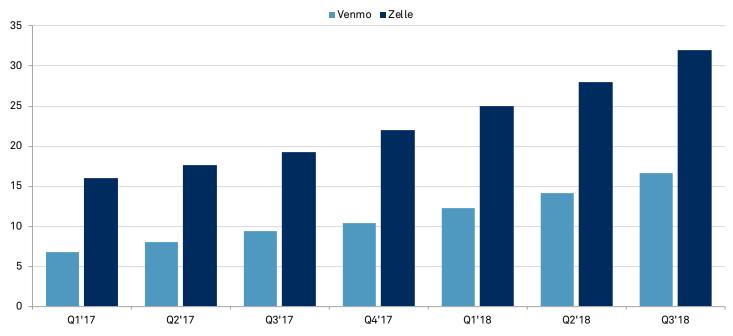
Just as digital lenders are broadening their service offerings, the largest and most popular mobile payment providers, which originally launched with a specific focus, are stretching into new use cases. Mobile payment applications serve two functions — storage and transfer of payment information. Consumers use third-party payment apps primarily for purchasing goods and services from merchants (either in store or online) or directly transferring money to other accounts via person-to-person, or P2P, transfers.

Mobile apps have been able to introduce significant innovation into the payments process, for example with the evolving portability of payment data. The interoperability of code allows digital wallet applications to make a user's payment information available across various environments. Interoperability between payment apps seems to be a growing trend. PayPal has been particularly aggressive on this front, integrating its mobile wallet into Google Pay, Samsung Pay and Facebook Messenger. Several mobile payment services — PayPal, Venmo and Square's Cash App — have begun to issue physical payment cards tied to in-app accounts. These cards can be linked to certain other payment apps while also offering an incentive for users to keep their in-app accounts funded.

The rising popularity of P2P apps caught the attention of banking institutions that officially launched the Zelle platform in 2017. Zelle allows member banks to offer an almost real-time P2P service to consumers directly from their mobile banking app or a standalone app. Zelle uses a phone number or email to send payments. And instead of depositing funds in a separate account and requiring an extra step for users to transfer funds, Zelle payments move directly into the recipient's bank account. Zelle is the banks' bet that providing a service tied directly to users' primary bank accounts, with ease of use and speeds similar to third-party payment apps, will allow them to quickly gain back wallet share.

The bet seems to be paying off. The Zelle Network has reported payment volumes of approximately \$160 billion in aggregate since the first quarter of 2017, compared to \$77.8 billion by Venmo. Zelle's potential use cases go beyond P2P money transfers. For example, certain insurance companies currently use Zelle to disburse claims payments. Other payment possibilities include direct deposits for salary payments, or a formalized channel for service businesses such as fitness trainers or private tutors to accept consumer payments.

### Venmo versus Zelle payment volume (\$B)

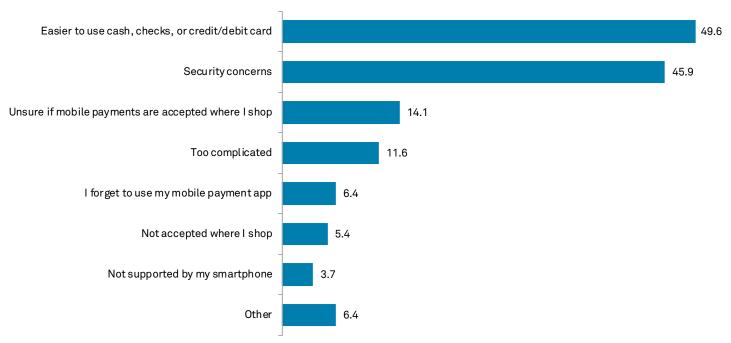


Data compiled Dec. 10, 2018

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Despite its growing popularity, customers still have certain concerns about mobile apps. In a survey conducted by S&P Global Market Intelligence in February 2018 of consumers who did not use a mobile payment app, perceptions of inconvenience and unease about security topped the list of concerns. Third-party payment providers will need to invest in shoring up their security holes and demonstrating their value add to consumers if they hope to overcome these hurdles.

#### Reasons people avoid using payment apps (%)



Data compiled Dec. 10, 2018

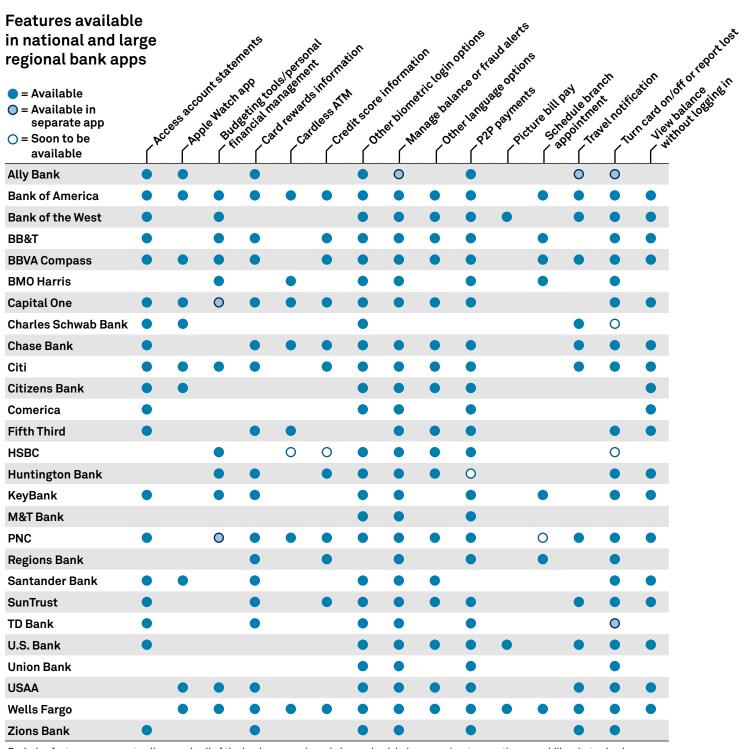
Source: S&P Global Market Intelligence 2018 mobile payments survey fielded between Feb. 8 and Feb. 14 across a nationwide random sample of U.S. individuals 18 years and older who had not used mobile payment services. Results have a margin of error of +/- 5.0% at the 95% confidence level based on the sample size of 405.

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### Digital banking

Payments are top of mind for many banks as they seek to develop digital tools that will give them an edge in a competitive environment for deposits and customer engagement.

Banks of various sizes are either planning to launch person-to-person payments with Zelle or seriously thinking about it, even if they already have a P2P solution in place. Some smaller regional banks are excited about becoming part of the growing Zelle network and are feeling customer pressure to get on board. But not all financial institutions, especially smaller ones, are sold on the value proposition. Zelle can be expensive to join, and it is not always compatible with core technology suites, which would have to allow near real-time transactions.



Excludes features common to all or nearly all of the bank apps reviewed above: check balance, review transactions, pay bills, photo check deposit, transfer money between accounts, fingerprint login, access to nondeposit account information, branch/ATM locator (not in Charles Schwab app) and tap to call customer service (not in BMO Harris app).

Source: S&P Global Market Intelligence research conducted using product descriptions on bank websites and in app stores, as well as company-provided information. Data compiled in summer 2018 and updated in November 2018. Some companies may have subsequently updated their apps. Analysis does not reflect functionality or services available through text banking, mobile browsers or secure messaging.

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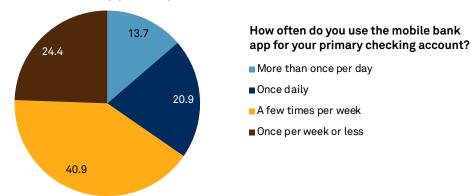
Most large U.S. banks already have feature-rich mobile apps. And institutions including JPMorgan Chase, Citizens Financial Group and PNC Financial are leveraging digital platforms to attract more customers nationwide. While not necessarily tied to the banks' primary mobile channels, these digital initiatives show that large national and regional banks are going into the battle for core deposit funding and customer wallet share with all flags flying.

Many banks are still building out a complete suite of in-demand self-service capabilities in their mobile channels. S&P Global Market Intelligence surveyed thousands of mobile bank app users in February 2018, asking them which features they would like to see added to their apps. Card controls, biometric login options, credit score information and easier access to account balance information ranked high on the list.

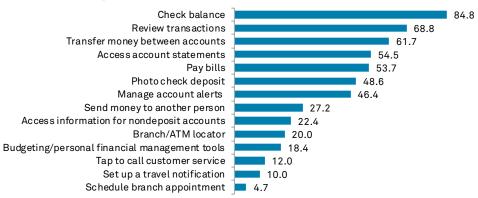
Improvements in automation and artificial intelligence technology can help supplement the transactional capabilities that already exist in digital banking channels. This is especially important as customers are increasingly holding banks to the standards set by tech-forward players in other industries, including tech giants such as Amazon and Google.

Taking banking products to customers used to mean institutions needed numerous brick-and-mortar branches.

#### Mobile bank app user priorities (%)



#### Which features of your mobile bank app are most important?\*



#### What features are not offered on your mobile bank app that you would like to use?\*



Data compiled June 1, 2018, from mobile bank app user survey results gathered in February 2018. N = 4,000. N signifies number of survey takers sampled.

Source: S&P Global Market Intelligence 2018 mobile banking survey fielded between Feb. 8 and Feb. 21, across a nationwide random sample of 4,000 U.S. mobile bank app users 18 years and older.

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<sup>\*</sup> Excludes "other" responses (1.4% for most important features and 0.5% for missing features) and "none of the above" responses (0.5% for most important features and 18.8% for missing features). Percentages sum to more than 100% when respondents could select more than one answer.

<sup>^</sup> Facial recognition, eye-based authentication, etc.

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Then it evolved into providing robust phone and online banking services. Now it may not even suffice to have a mobile-first strategy as customers expect seamless access to financial services and information no matter where they are or what device they are using.

Some banks are experimenting beyond the desktop and mobile channels. For example, S&P Global Market Intelligence identified 35 U.S. depository institutions that had Alexa skills available through Amazon.com as of Nov. 9. Alexa is Amazon's cloud-based voice service that serves as a virtual assistant through various connected devices; Alexa skills are voice-driven capabilities that add functionality to Alexa-linked devices. But only 15 of the bank and credit union Alexa skills we reviewed give access to account information, and even fewer go beyond basic account inquiries to facilitate actions including transfers and payments. Most of the Alexa skills we reviewed provide only publicly available information such as branch locations, hours, product rates and routing numbers.

While various financial institutions are integrating artificial intelligence and other developing technologies into customer service and distribution channels, even more experimentation is happening on the back end of financial services. One of the more high-profile and challenging areas in this regard is blockchain.

#### Blockchain

As blockchain projects evolve from proofs-of-concept to live implementations, so do the expectations around what the technology can accomplish. While wide-eyed evangelists still abound, in general there seems to be a growing recognition of the pros and cons that decentralized systems offer.

Based on feedback from enterprise blockchain users, a common theme seems to be that understanding the technology is not the only hard part of the equation. Developers are in demand, certainly, but integrating a blockchain into a company's established workflow can be a formidable challenge as well. A company might have to rework its internal processes for sharing information, for example, or consider the legal ramifications of smart contracts, which are digital agreements written to a blockchain that automatically execute based on certain conditions. In the end, a financial institution might be more comfortable with a centralized system where it does not have to share information with its competitors and where an intermediary can resolve disputes.

Another commonly cited issue is interoperability. A number of financial institutions have created their own blockchain projects that use permissioned networks, allowing access only to certain users. This is encouraging for the advancement and adoption of the technology, but it creates islands of information, a situation the technology was originally designed to avoid. The next logical step, it seems, is to create mechanisms for different blockchains to exchange information, or "talk" to each other.

Meanwhile, issues such as speed, scaling and security remain challenges. But a host of companies, big and small, are working on solving these. Among publicly traded financial institutions, exchange operator Nasdaq remains an avid supporter, discussing blockchain often during conference calls. In addition to working on several proofs-of-concept, Nasdaq created a blockchain-as-a-service offering known as the Nasdaq Financial Framework. This refers to the technology architecture that it offers to market structure participants like clearinghouses and securities depositories.

#### Nasdaq discusses blockchain frequently on conference calls

Limited to companies that discussed blockchain on more than 10 calls

Calls where blockchain

Company name	Industry sector	Subsector	Country	was discussed
Nasdaq Inc.	Financials	Financial exchanges and data	U.S.	32
International Business Machines Corp.	IT	IT consulting and other services	U.S.	23
Broadridge Financial Solutions Inc.	IT	Data processing and outsourced services	U.S.	18
Overstock.com Inc.	Consumer discretionary	Internet and direct marketing retail	U.S.	17
SAPSE	IT	Application software	Germany	16
Mastercard Inc.	IT	Data processing and outsourced services	U.S.	16
Visa Inc.	IT	Data processing and outsourced services	U.S.	15
SBI Holdings Inc.	Financials	Asset management and custody banks	Japan	14
Luxoft Holding Inc.	IT	IT consulting and other services	Switzerlan	ıd 12
Bank of New York Mellon Corp.	Financials	Asset management and custody banks	U.S.	11

Data compiled Sept. 18, 2018.

Based on transcripts from publicly traded companies where speakers mentioned blockchain at least once.

In addition to quarterly earnings calls, the source material included transcripts of events such as analyst/investor days and industry conferences, where available.

Source: S&P Global Market Intelligence

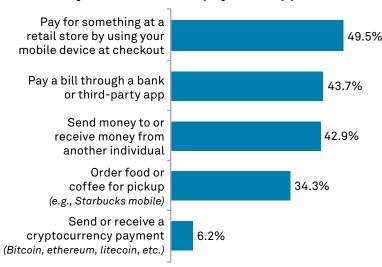
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While some ideas seem to have quietly faded away, others have made it beyond the proof-of-concept phase and into actual production. Examples include Fizzy, an app developed by AXA that automatically pays travel insurance claims for delayed flights; We.trade, a trade finance system backed by a consortium of global banks that uses smart contracts; BDS 360, an internal application from Bank of New York Mellon that backs up government bond clearing information; and One Pay FX, a mobile app for cross-border payments available to Santander's U.K. retail customers.

The massive decline in the value of Bitcoin in 2018 likely put a damper on cryptocurrency adoption. But there were still some noteworthy developments, such as Square and Robinhood each allowing customers to buy and sell bitcoin using their respective apps.

Cryptocurrencies did not have much of a foothold among mobile payment app users in February 2018, when S&P Global Market Intelligence commissioned a survey to analyze their behavior. Of the respondents who had used a mobile payment app in the 30 days prior to taking the survey, only 6% had used an app to send or receive a cryptocurrency payment. By contrast, nearly half had used a mobile device to pay for something at a retail store at checkout.

#### Did you use a mobile payment app to ...?



Data compiled March 14, 2018.

N = 499. N signifies the number of respondents that used a mobile payment service on a smartphone, table or smartwatch in the 30 days prior to taking the survey. Responses do not sum to 100% because survey takers could select more than one response.

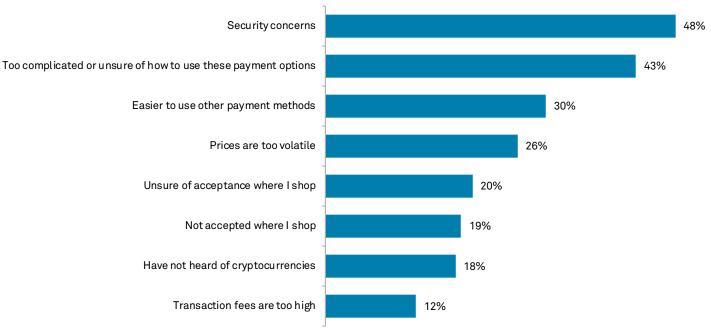
Excludes responses of "other," a response that was was chosen by 4.2% of respondents.

Source: S&P Global Market Intelligence 2018 mobile payments survey fielded between Feb. 8 and Feb. 14 across a nationwide random sample of U.S. respondents 18 years and older that had used a mobile payment service on a smartphone, tablet or smartwatch in the 30 days prior to taking the survey. Results have a margin of error of +/- 4.5% at the 95% confidence level based on the sample size of 499.

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Security concerns were the most significant reason for people not using these types of apps. This is perhaps not surprising given the string of headlines about massive hacks stealing millions of dollars.

#### Why would you not use a cryptocurrency to complete a payment?



Data compiled March 14, 2018.

N = 129. N signifies the number of survey takers who said they would not consider using a cryptocurrency to complete a payment in the future. Excludes responses of "other," a response that was chosen by 2% of respondents.

Source: S&P Global Market Intelligence 2018 mobile payments survey fielded between Feb. 8 and Feb. 14 across a nationwide random sample of U.S. respondents 18 years and older that had used a mobile payment service on a smartphone, tablet or smartwatch in the 30 days prior to taking the survey. Results have a margin of error of +/- 4.5% at the 95% confidence level based on the sample size of 499 and +/- 8.8% based on a sample size of 129.

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But confusion was also a common response, with 43% of respondents indicating that the apps were either too complicated or they were unsure how to use them. Perhaps most disconcerting for crypto app makers was that 18% had not even heard of cryptocurrencies.

Based on the survey results, crypto apps have a ways to go before reaching broad acceptance. But the hurdle does not seem insurmountable. Getting consumers more comfortable with the concept of virtual currency and how to go about using it seem like the keys to making greater inroads.

### Looking ahead

Buzzwords will come and go, but there is no end in sight for technological innovation in financial services. That innovation will become even more efficient as tech-oriented companies and financial institutions play to their strengths.

In 2019, that should translate into more partnership announcements and fintech startups pivoting toward a software-as-a-service model. Other startups and more established fintech players will likely find expansion of services gives them the most bang for their buck when it comes to taking advantage of their customer platforms and data access.



The companies that for many observers epitomize the modern U.S. fintech industry have grown rapidly during a long period of economic expansion, strong credit quality and bull markets. Their ability to sustain top-line growth and achieve or maintain profitability when the cycle turns may depend not only on the strength of their own algorithms but also on their choice of financial institution partners with reliable funding, well-established brands and experience navigating changing economic circumstances.

Meanwhile, financial institutions and fintech startups will need to remain on the alert as tech giants make further inroads in parts of financial services ranging from payments to credit to insurance to deposit accounts. Facing competition on many fronts, financial institutions will find great benefit in effective partnerships with fintech companies, as well as in the collaboration opportunities presented by blockchain and other technological developments whose possibilities are only now coming into view.

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