DIGITAL BANKING REPORT

ISSUE 245//DECEMBER 2016

2017 Retail Banking Trends and Predictions

"Nobody wants a prediction that the future will be more or less like the present, even if that is, statistically speaking, an excellent prediction."

— **Nathan Myhrvold**
Founder and CEO
Intellectual Ventures

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admin@digitalbankingreport.com.

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Publisher: **Jim Marous**, *jmarous@digitalbankingreport.com*
Graphic Designer: Carol Ann Ryan
Customer Support and Circulation: Jim Booth

Letter from the Publisher

DIGITAL BANKING REPORT
Jim Marous, Owner and Publisher
jmarous@digitalbankingreport.com
8803 Brecksville Rd.,
STE 7-223, Brecksville, OH 44141
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Over the past 12 months, the banking industry has seen more transformation than at any time in its history. While many of these changes were predicted by our crowdsourced panel of more than 90 industry influencers a year ago, few, if any, anticipated either the Brexit or the US election outcomes.

Both events will have a yet unknown impact on the financial services industry, as regulations continue to evolve. The influx of new fintech players, introduction of new technologies, and debate around authentication, security and cybercrime will challenge governments globally.

As we look to the year ahead, data, advanced analytics, personalization and improving the customer experience are at the forefront of many experts' predictions. In fact, the impact of improved use of customer insight is the foundation of most of the trends in 2017.

Expansion beyond traditional products, services and channels is also predicted, as open APIs, the Internet of Things (IoT) and more fintech/banking partnerships are expected. There will continue to be a balancing act, however, as organizations prioritize innovation while trying to continue their cost cutting.

For the sixth consecutive year, we have surveyed a panel of close to 100 global financial services leaders for their thoughts around upcoming retail banking and credit union trends and predictions. The crowdsourced panel includes bankers, credit union executives, industry analysts, advisors, authors and fintech followers from Asia, Africa, North America, South America and Central America, Europe, the Middle East and Australia.

These exclusive interviews were combined with a first ever global survey of over 800 banks, credit unions and solution providers/suppliers, as well as in-depth analysis and case studies around each trend to make this year's Retail Banking Trends and Predictions report the most comprehensive ever.

We would like to thank Kony, Inc., who sponsored this year's report development and distribution for the second straight year. Their partnership enabled us to provide deeper insights than ever before.

We hope this year's projections are helpful with your planning and implementation processes.

Jim Marous
Owner and Publisher,
Digital Banking Report

DIGITAL BANKING REPORT

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Executive Summary

The Top 10 Digital Banking Trends and Predictions for 2017 were collected from a panel of over 100 global influencers including bankers, credit union executives, industry analysts, advisors, authors and fintech leaders from Asia, Africa, North America, South and Central America, Europe, the Middle East and Australia. These insights were the foundation for a survey of more than 800 organizations worldwide that helped to prioritize these trends.

For the sixth consecutive year, the Digital Banking Report has surveyed a crowd-sourced panel of global financial services leaders for their thoughts around upcoming retail banking and credit union trends and predictions. For the first time, we also surveyed the industry, including banks, credit unions and solution providers (suppliers) worldwide.

Beyond looking ahead, our market survey also included an opportunity to review last year's projections to determine which ended up being the most impactful. We also collected insight into the strategic priorities and fintech players that are believed to be the biggest players in the future.

By collecting insights from leading influencers, ranking the trends using market data, and including additional insights about the future of banking, we can provide the most comprehensive analysis in the industry.

For the second consecutive year, this effort was sponsored by **Kony, Inc.**, allowing us to perform more extensive research and analysis and to publish a market-leading report.

METHODOLOGY

The foundation of the research conducted for the *2017 Retail Banking Trends and Predictions* report was a collection of interview responses from a crowdsourced panel of more than 100 financial services industry leaders and influencers, including bankers, credit union executives, industry analysts, advisors, authors and fintech leaders from Asia, Africa, North America, South and Central America, Europe, the Middle East and Australia.

Supplementing these interviews was a survey of more than 800 financial services organizations as well as suppliers/solution providers. There were over 500 financial organization respondents and slightly more than 300 vendors who responded.

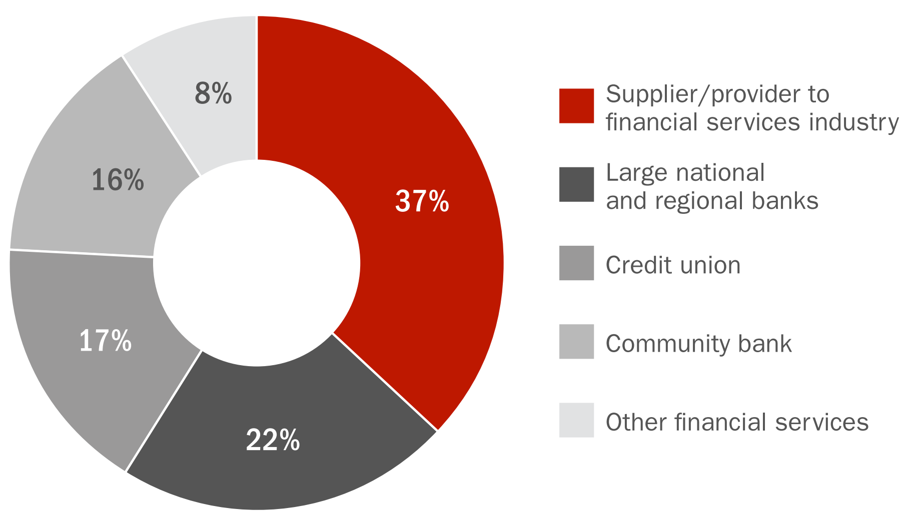
The breakdown by location indicated that 56% of the survey respondents were from the US, 13% from Western Europe (other than the UK), 6% from both Asia and Canada, 5% from the UK and 4% from Australia. 10% of the respondents were from other countries (Eastern Europe, Central and South America, Africa and the Middle East).

Among survey respondents, 37% were from suppliers, 22% are from large national or regional banks, 15% are from community banks, and 17% are from credit unions.

Roughly 12% of respondents are from FIs with more than US$10 billion in assets, with 31% having US$1 billion – US$10 billion in assets and 57% representing firms with less than US$1 billion in assets (Chart 2).

CHART 1: RESPONDENTS BY TYPE OF ORGANIZATION

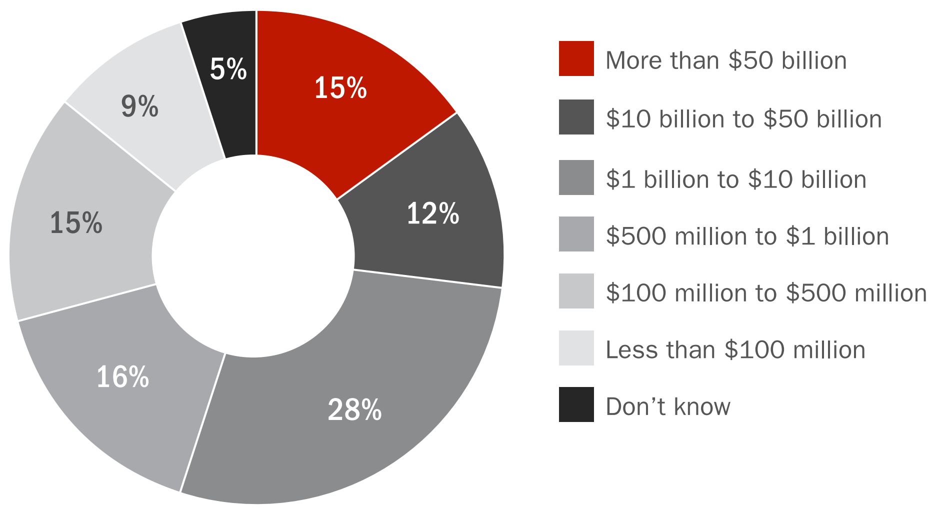
What type of company do you work for? (n=813)



Source: DBR Research © December 2016 Digital Banking Report

CHART 2: RESPONDENTS BY ASSET SIZE

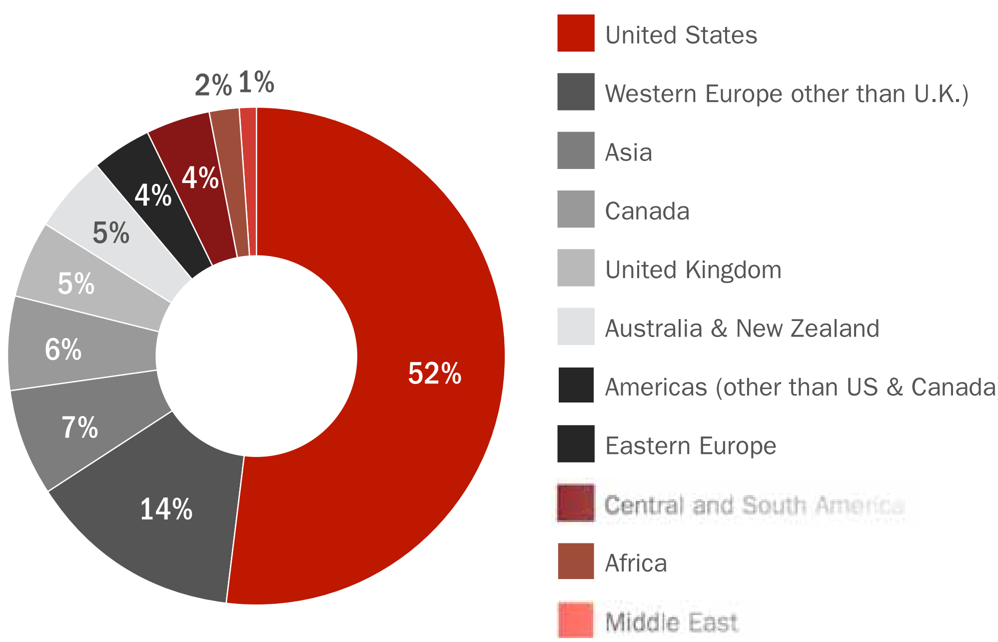
What is the asset size of your institution? (in US$) (n=510)



Source: DBR Research © December 2016 Digital Banking Report

CHART 3: RESPONDENTS BY LOCATION

Where is your company headquartered? (n=813)



Source: DBR Research © December 2016 Digital Banking Report

TOP 10 RETAIL BANKING TRENDS & PREDICTIONS FOR 2017

This year's projections were determined by interviewing over 100 financial services industry influencers worldwide. (See appendix for crowdsource panel.) We compiled and collated the takeaways from these interviews to provide a list of trends that were used as the foundation for a global survey of banks, credit unions, insurance companies, wealth firms as well as solution providers/suppliers.

The top 10 trends and predictions included many of the trends from previous years as well as new trends for 2017. Some of the trends increased in importance, such as the use of data, building fintech partnerships, exploring advanced technologies and the emergence of a new breed of competitor. Other trends fell compared to 2016, including digital payments and investment in innovation.

Most surprising was the emergence and importance given to the opportunity of open banking APIs, which was only mentioned by a few industry leaders last year. This trend will certainly be one of the most important to watch.

Overall, the feeling from our crowdsource panel was that 2017 would be year of significant change, but with priorities focusing on improving how we take care of our customers. It was believed that legacy banks will need to be aware of the competition that surrounds them, while taking stock of what this competition can provide as a partner.

Finally, there was a realization that the digitalization of lifestyles will change how we deliver services and talk to consumers, and the impact of regulations, higher interest rates and the need to provide financial education will increase. Not all of our crowdsource panel agrees with each other, but their insights are invaluable.

"The speed of digitization and automation, the rise of fintech and regulatory initiatives will encourage all financial institutions to become more transparent and nurture richer ecosystems of data and partners. It will also force them to better foster internal and external collaboration, accelerate culture change and truly empower their workforce. It will urge them to balance tech investments for customers and employees and furthermore, create a need for open, cognitive systems which not only understand, reason and learn, but also interact with people, entities and other systems."

– **Christophe Langlois,** Executive Consultant at IBM

"Looking at last year's predictions it seems we are all the eternal optimists in the financial services industry. New competition is still developing, big data is still underutilized and banking experiences haven't improved. It is my hope that we will start evaluating our collective 'innovation efforts' – the labs, the funds, the departments and people – and start seeing some of the transformation the industry needs."
– **Duena Blomstrom**, Fintech and Digital Experience Consultant at DB Consulting

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"Consumers will take more control of their financial relationships and will look for digital tools for advice and insight. Banks will come to realize that fintech is not a threat, but rather an opportunity, and while a focus has been on millennials, Gen X and Boomer segments will become increasingly important to financial institutions."

– **Bryan Clagett**, CMO at Geezeo

"Consumers will be increasingly exposed to financial shocks in 2017. Uncertainties around health care insurance, government funding of social services, and possible loosening of government regulations will expose more people to income and expense volatility. Banking will need to respond to these consumer needs."
– **Jennifer Tescher**, President and CEO of CFSI

"Hold on tight because 2017 promises to be an uncertain one. With loosening regulatory controls, a crackdown on big banks, and tightened controls on fintech, it will be a year filled with ups and downs. Expect banks and fintech firms to batten down the hatches. Instead of developing new products and services, firms will focus on perfecting the products and services that they've created over the last 3 years."
– **Nicole Sturgill**, Principal Executive Advisor at CEB

"FinTech has quickly become one of the biggest sectors in technology. 2017 is looking like the year when blockchain races into production at the largest firms, PSD2 and other regulatory changes worldwide takes center stage, increased cybersecurity threats are omnipresent, and artificial intelligence transitions from sci-fi high concept to an everyday reality."
– **Oliver Bussmann**, Founder and Managing Partner at Bussmann Advisory

"2017 will be the year of 'convergence' in financial services. There will be more cooperation between financial services and startups, blurring lines between traditional products (retail, payments & insurance in particular), and the acceleration of the convergence of technologies including mobile, distributed ledgers, IoT and cognitive computing."
– **Sebastien Meunier**, Senior Manager at Chappuis Halder & Co.

"In 2017, we will see the scaling of fintech and the beginning of the post app world."

– **Alex Sion**, Executive Director, Mobile Platforms at JPMorgan Chase

"Share price rebound and interest rate increases, driven by the American election, will create more budget flexibility and space for innovation. For many organizations, it could allow firms to double down on old business models and infrastructure. This could mean that new fintech competitors have a lazy incumbent base to attack."
– **Simon Taylor**, Co-Founder of 11:FS

"Because of rising interest rates and inflation, new opportunities for profitability in deposit, lending and wealth accounts will emerge. Agile organizations that can rapidly drive customer acquisition, and quickly launch new products to attract new customer segments, will be in best position to generate higher revenue and profit from this new environment."
– **Don Bergal**, CMO at Avoka

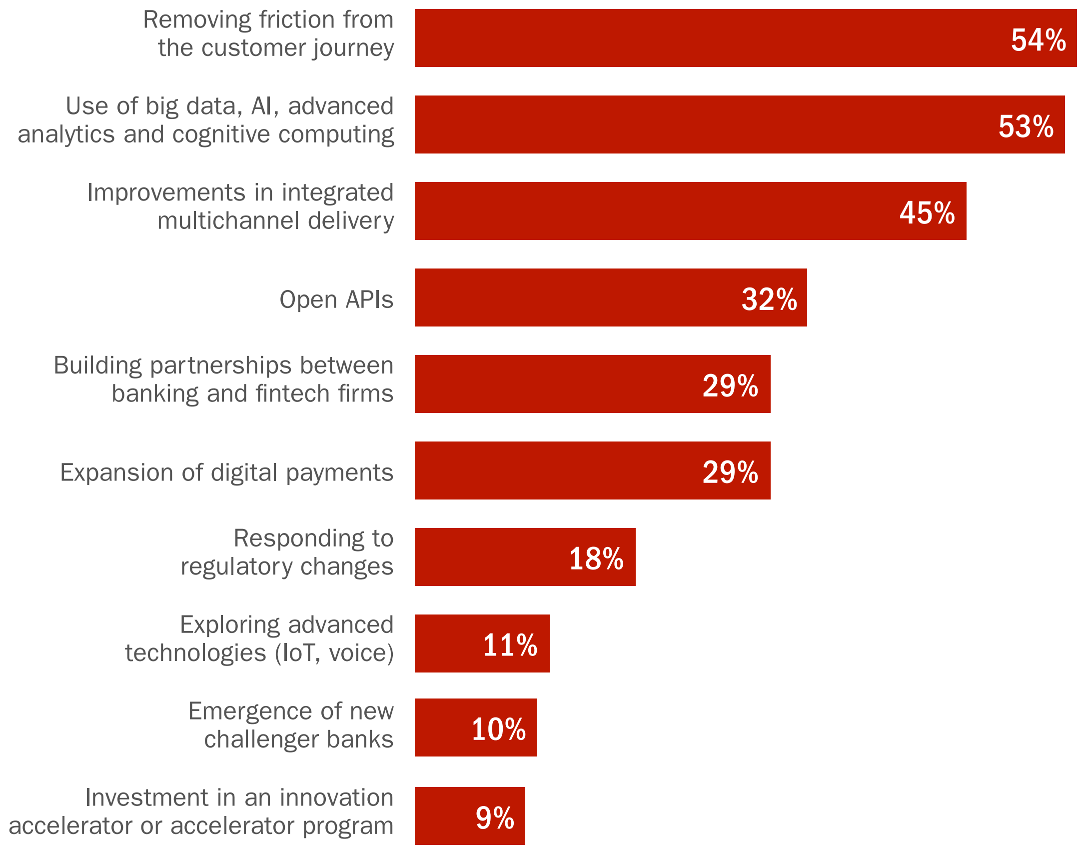
Rather than simply providing a list of trends and predictions, as we have provided in the past, we were able to develop a ranking based on the results of our global research. This allows for a determination of the importance/likelihood of each trend from the perspective of banks, credit unions, and other financial organizations.

When financial institutions were asked for their top three trends or predictions for 2017, there were three distinct categorizations or trends based on likelihood to occur. The top three trends (improving the customer experience, use of big data and improvements in channel delivery) were all mentioned by close to half of the institutions who responded.

While open APIs, fintech partnerships and expansion of digital payments were ranked 4-6, there was a modest drop in the number of firms that mentioned these trends. Finally, while mentioned by several of our crowdsource panel, the last 4 trends were given much less support by the industry as a whole.

CHART 4: TOP 10 TRENDS AND PREDICTIONS FOR 2017-FINANCIAL INSTITUTIONS

Q: What do you think will be the (3) three most important trends for the retail banking industry in the upcoming year (2017)? (n=455)



Source: DBR Research © December 2016 Digital Banking Report

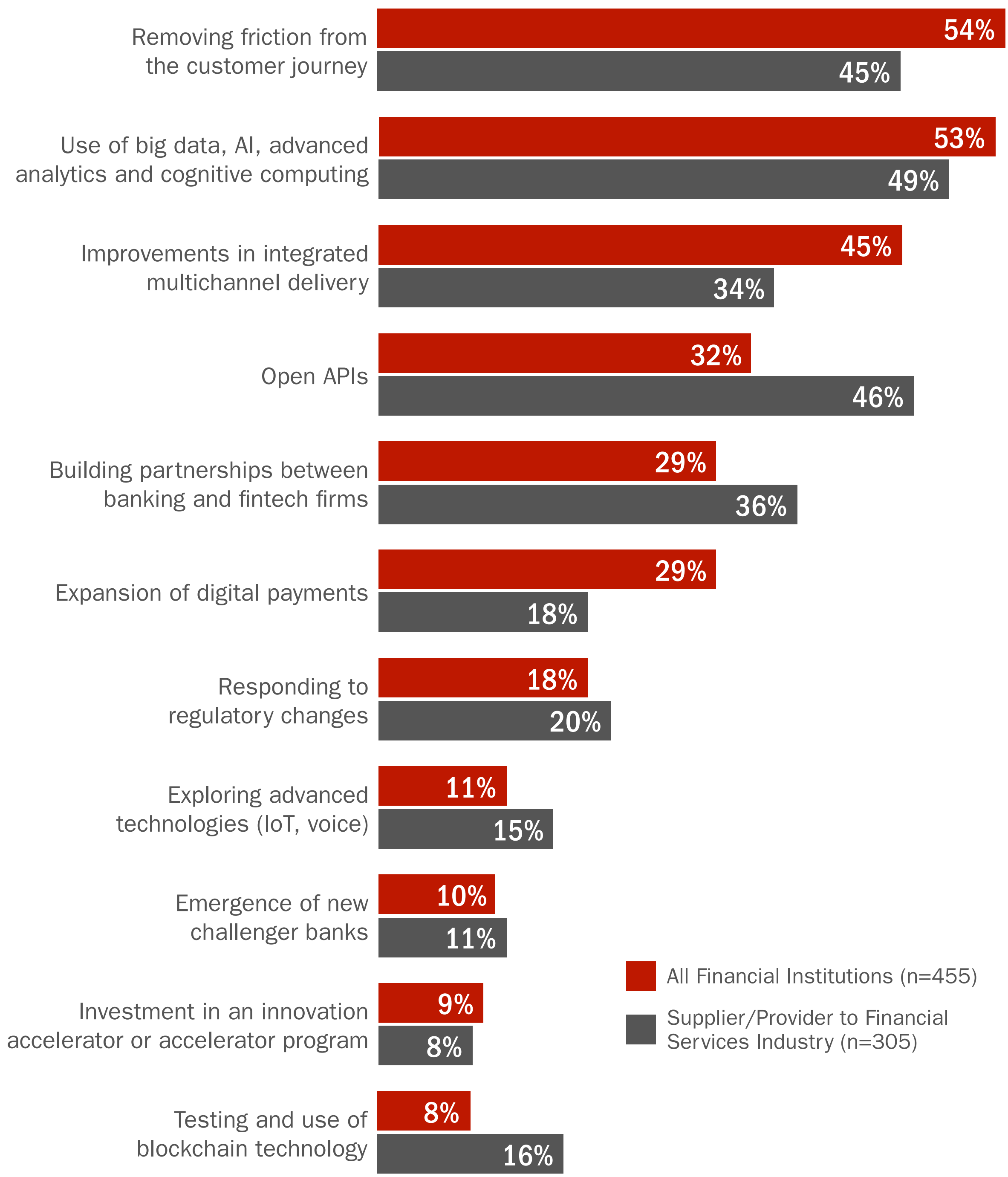
When we asked the same question of the solution providers/suppliers, there was some divergence of option as to the importance or likelihood of each trend.

As shown on the next page (Chart 5), the financial services industry was much more bullish on the top three trends than were their suppliers. Alternatively, solution providers were more bullish on the next two trends (open APIs and the building of fintech partnerships). This may be caused by the amount of industry 'buzz' that is occurring with both trends.

Interestingly, the two other trends where there was significant divergence of opinion was with digital payments (the industry is much more bullish) and the use of blockchain technology (the suppliers were more bullish). Despite all of these variances, the order of the trends and predictions for 2017 were not extremely different between the industry and the solution providers.

CHART 5: TOP TEN TRENDS AND PREDICTIONS FOR 2017 (FIs VS. SUPPLIERS/VENDORS)

Q: What do you think will be the (3) three most important trends for the retail banking industry in the upcoming year (2017)?



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SUMMARY OF TOP 10 TRENDS & PREDICTIONS

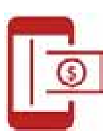
1. **Removing Friction from the Customer Journey.** An optimal customer journey makes every step and touchpoint in the buying cycle streamlined, efficient, consistent and personalized from the consumer perspective. Financial institutions need to reimagine their core journeys from front to back by addressing key customer pain points, identifying new opportunities to delight customers in differentiated ways.

2. **Use of Big Data, AI and Advanced Analytics.** Despite the vast amount of data available and the industry's formidable resources, most banks and credit unions are still far from realizing big data's full potential. This gap in capabilities is caused by competing priorities, the complexity of knowing what data to use and how to collect the insight as well as the lack of a coordinated vision. Going forward, the use of machine learning will provide opportunities for greater personalization and channel optimization.

3. **Improving Integrated Multichannel Delivery.** As introduced in last year's trends report, the use of advanced analytics provides an opportunity for an optichannel™ experience, where the optimal channel is based on the customer's need and preferred channel. So, rather than offering all channels for a specific solution, big data will enable an organization to point the consumer to the channel that will provide the most personalized experience.

4. **Use of Open APIs.** APIs were not even listed as a 2016 trend, but was #4 in 2017. The use of open APIs provides the opportunity for combinations of products and services beyond traditional banking. As mentioned by Ron Shevlin in last year's trends report, traditional financial services firms can leverage their existing customer relationships to create the foundation of platformification™ with traditional organizations at the center of the relationship.

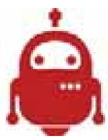
5. **Partnerships Between Banking and Fintech.** Continuing a trend that emerged in 2016, legacy organizations will leverage the advantages of scale, stability, trust, experience in navigating regulations and the access to significant capital. Conversely, fintech firms will offer the agility, innovation culture and technological expertise that legacy organizations seek, with the resultant partnerships benefiting the end consumer.



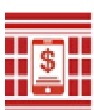
6. **Expansion of Digital Payments.** Despite an increase in awareness of mobile payments, usage continues to remain flat, illustrating the challenges in changing consumer behavior when merchants and issuers can't deliver a strong value proposition. To stimulate mobile payment use, financial institutions will need to test discounts and rewards while improving the consumer experience.

SUMMARY OF TOP 10 TRENDS & PREDICTIONS

7. **Responding to Regulatory Challenges.** The financial services regulatory environment continues to be stringent, very complex, highly uncertain and often with conflicting regulations. In addition to causing a huge increase in the costs of compliance, they have also impacted many organizations' business models. In 2017, it is expected that non-bank competition will begin to be both authorized and regulated, creating both risks and opportunities.



8. **Exploring Advanced Technologies.** While opportunities around blockchain technology did not make the top 10 list of trends this year overall, it was ranked significantly higher by larger organizations. Of more general appeal were technologies around artificial intelligence (AI), the Internet of Things (IoT) and robo-advising. While not ranked as high as other trends, this is an area which is changing daily.



9. **Emergence of New Challenger Banks**. The term "challenger bank" is widely used to describe a banking organization, started from the ground up and built without relying on another banking firm for back office support. While very common in the UK, this breed of bank will begin to emerge in the U.S. in 2016 as new regulations are beginning to reflect this form of financial organization.

10. **Investments in Innovation**. Investing in innovation dropped in prioritization in 2017, possibly reflecting the significant increases in investment over the past several years. In other words, the importance may be the same, but most firms are geared up adequately (in their view). One trend we are seeing is a shift in emphasis from "innovation labs" to real-time testing both in consumer venues and in partnership with fintech start-ups.

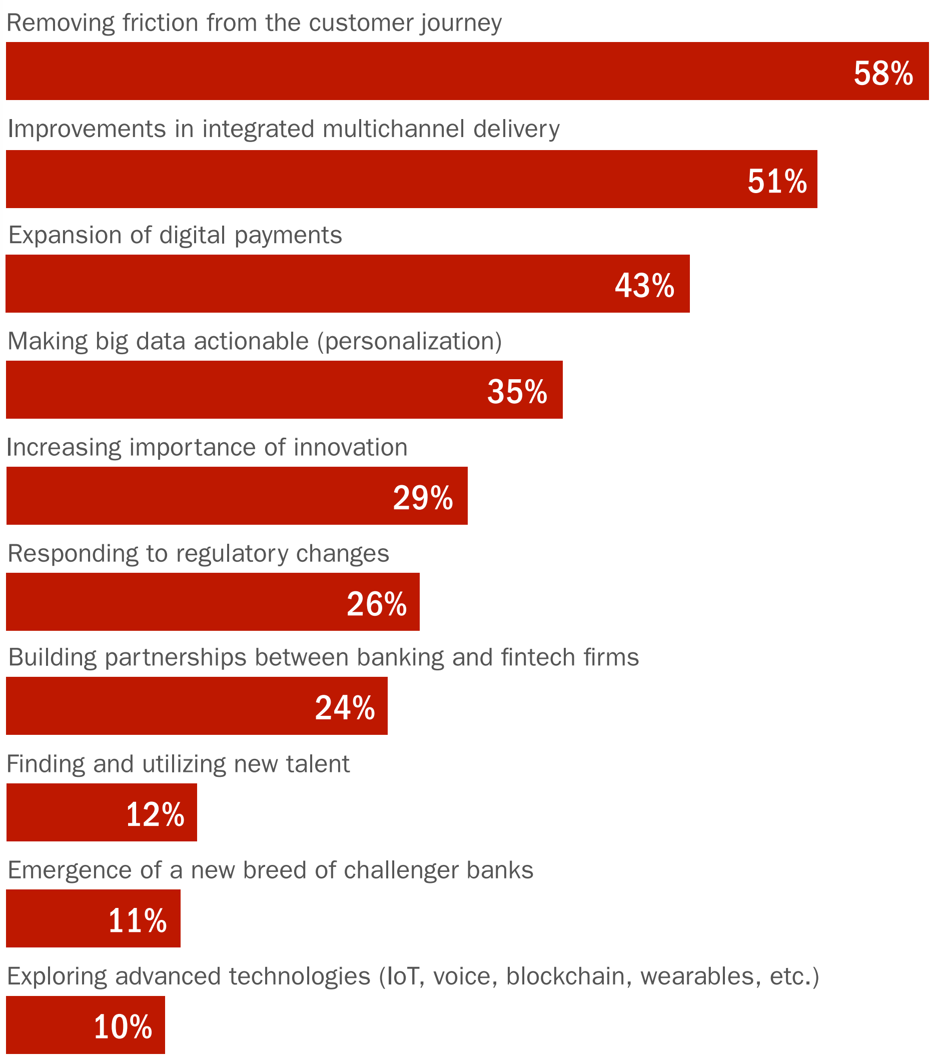
A LOOK BACK TO 2016

As with the projections in 2017, many of the *2016 Retail Banking Trends and Predictions* included trends mentioned in 2015. While last year's trends were not rank ordered, we asked the global respondents to this year's survey to rank the trends mentioned last year, reflecting what actually occurred during the year.

As we did for 2017 trends, we asked respondents to provide the top 3 trends they saw occur in 2016.

CHART 6:
TOP TEN TRENDS AND PREDICTIONS FOR 2016 - FINANCIAL INSTITUTIONS

Q: What do you think were the three (3) most important retail banking trends in the past year (2016)? (n=455)



Source: DBR Research © December 2016 Digital Banking Report

Removing Friction from the Customer Journey

The relatively poor performance by a majority of traditional financial services organizations in delivering a customer-focused digital account opening, onboarding and cross-selling process is an opportunity for those institutions that want to embrace the potential of becoming a “Digital Bank”.

The 75-page Digital Banking Report, *‘State of the Digital Customer Journey,’* provided evidence that banks and credit unions of all sizes are not prepared to combat the increasing encroachment by fintech start-ups that focus on making every stage of the customer journey easy, seamless and contextual. In fact, there are some segments of the industry that are falling significantly behind consumer expectations.

The key takeaways from the report include:

- Most financial institutions can’t open a new account entirely online or on a mobile device.
- Only 16% of financial organizations provide a tablet assist account opening option in a branch.
- Branch based ID verification and/or signatures/supporting documentation are required at the majority of organizations.
- Multichannel digital account opening (save and resume) is not supported at most financial institutions.
- New account opening abandonment rates are high for institutions that offer online or mobile account opening.
- Only 55% of banks and credit unions have a “structured” onboarding process.
- Only 22% of financial institutions on-board new customers with the “optimal” amount of communication.
- Only 30% of banks and credit unions market products within the mobile banking app.
- Community banks are falling behind both larger banks and credit unions in digitizing the customer journey.

The Importance of a Seamless Digital Customer Journey

A vast majority of financial institutions surveyed do not offer a consistent digitalization of any given process, with many engagements that begin on a digital channel requiring either a manual or in-person interaction to complete. To improve the consumer experience and realize the revenue, cost, and operational benefits of complete digitization, banks and credit unions must adopt consumer-centric design practices, leverage advanced analytics and automation, and transcend silos.

The consumer wants a simple and seamless digital experience. If this can be achieved, it will be reflected in improved satisfaction, loyalty and referral scores. If the digital consumer does not experience a positive end-to-end digital process, new account opening abandonment or existing relationship attrition is likely to occur.

An increasingly important component of a digital customer journey is to apply ‘intelligent engagement’ through advanced analytics. This is not only table stakes in the ability to acquire and serve customers, it is the differentiation that many fintech firms tout in the marketplace.

It is no longer a matter of whether digitalization of the customer journey in banking is needed. Digital consumers are already demanding this level of engagement and are moving relationships based on an organization’s ability to meet their expectations easily and in real-time. The value to banks and credit unions goes beyond customer satisfaction, to include opportunities for cost reductions, revenue enhancements and risk management.

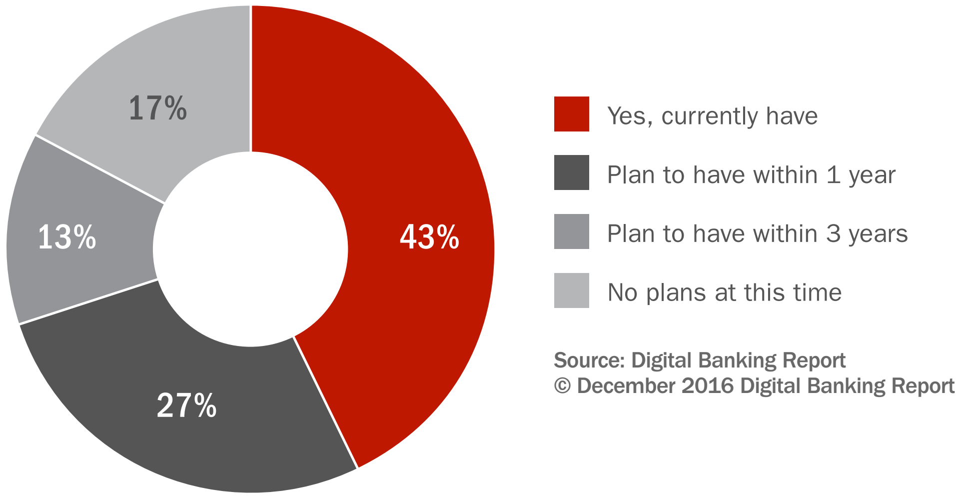
Account Opening

The research indicated that the digital account opening process offered by the majority of financial institutions doesn’t align with most consumers’ expectations. Not only do the majority of banks and credit unions not provide an online or mobile new account opening option, but even those that do provide this option require non-digital engagement to complete the process.

While roughly half of the banks and credit unions surveyed indicated that they allowed new customers to open their account online, many still required a branch visit. The question then becomes, “If you allow consumers to initiate the process online, but still require signatures, documentation, ID verification or funding in a branch office, has the process been built for the benefit of the customer or just the financial institution?”

CHART 7: OPENING CHECKING ACCOUNTS ONLINE WITH A WEBSITE APP

Q: If your FI provides a website app to open checking accounts, can the entire process be done online? (n=312)



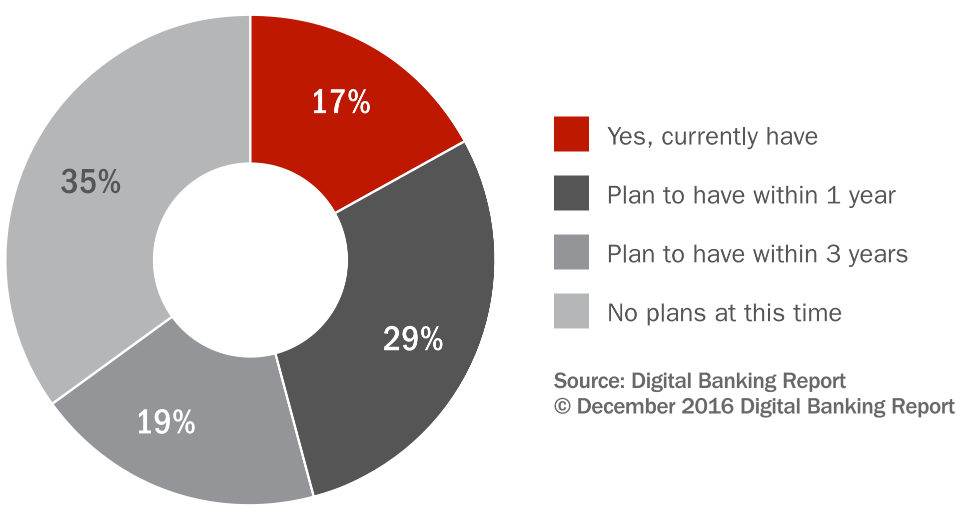
Source: Digital Banking Report

While many financial institutions have tried to move some portion of their account opening process to mobile devices, the reality is that most processes are confusing, tedious, and a lot of work for customers to complete. As with any mobile process, every keystroke and every time a consumer must exert extra effort that takes them away from the smartphone, contributes to abandonment.

As with the online account opening process, research from the Digital Banking Report found that account openings that begin on a mobile channel usually must be completed on another channel.

CHART 8: OPENING CHECKING ACCOUNTS ONLINE WITH A MOBILE-SPECIFIC APP

Q: If your FI provides a mobile-specific app to open checking accounts, can the entire process be completed on this channel? (n=262)



Source: Digital Banking Report

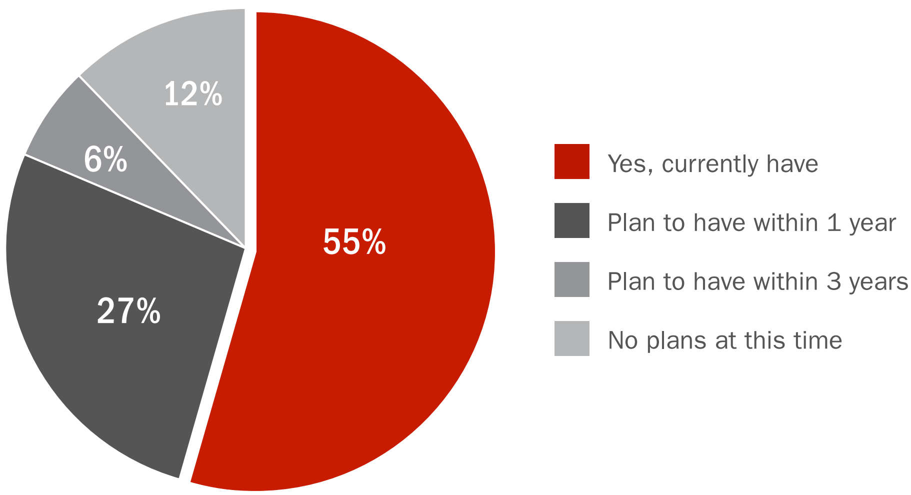
Account Onboarding

Banks have seen a steep decline in face-to-face interactions with customers and even prospective customers. If an organization doesn't offer some form of digital onboarding, they at least need to be building future strategies for the digital consumer.

Unfortunately, when survey respondents were asked to indicate if they had a "structured" post new account opening process, only 55% respondents indicated that they had such a program at their organization. Without an onboarding program, customers are left to fend for themselves, dealing with friction and a lack of cohesive communication.

CHART 9: POST NEW CHECKING ACCOUNT ONBOARDING PROCESS

Q: Does your FI have a post new checking account opening onboarding process using non-branch channels? (n=312)



Source: Digital Banking Report © December 2016 Digital Banking Report

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Cross-Selling

Similar to new account opening and onboarding processes, financial services firms need to change their cross-selling strategies to align with the new digital reality. Leveraging expanded data insights and a customer-first positioning will enable a more compelling customer experience resulting in greater sales, loyalty and share of wallet.

The cost of technology and advanced analytic tools should not be a hurdle for most financial organizations and the digital marketing tools are also available to virtually any organization.

The margin between opportunity and risk is narrowing, as more alternative financial services become available and the digital consumer becomes more demanding. Now is the time for banks and credit unions to "up their game" and begin to deliver the seamless and contextual digital customer experience that is possible.

"The upshot of the Wells Fargo scandal will be that banks will seek to prove that they have their customers' best interests in mind when marketing and cross-selling to them. The result will be a focus on "we're here to help you improve your financial health," and a positioning of PFM-related tools and apps as ways to measure and improve financial health."
– **Ron Shevlin**, Director of Research at Cornerstone Advisers

"In 2017, limited resources and cultures of 'legacy thinking' will cause the gap to widen between customer expectations and digital customer experience at many smaller institutions (under $1B in assets). Thankfully, the year ahead will also see new resources emerge – as well as new examples of organizational agility and operational structuring – that will finally prompt some small institutions to reshape cultures and become digitally proficient and customer-centric."
– **Jim Perry**, Consultant and Strategist at Market Insights

"A customer-centric approach will be a 'must have' instead of a 'nice to have' for financial institutions, with the need to increase engagement or risk getting relegated to being a dumb pipe. Expect more personalized offerings and business models that adapt to lifestyle and the impact of an aging population (most notably enormous healthcare and caregiving costs)."
– **Theodora Lau**, Director of Market Innovation, AARP

"More than ever, the mobile apps that become the 'Uber of banking' are becoming the minimum ante to compete in a connected economy. Technology aside, I believe that 2017 is a year that calls for transparency in banking, operations and customer engagement. The prophecy is coming true; we do in fact live in interesting times. Customers and employees are evolving – and how they think about banking, money and success is deviating from the old normal. It's time for leaders to disrupt themselves before the gift of disruption is given to them by someone else."

– **Brian Solis**, Principal Analyst for the **Altimeter Group** and author of the best-selling book: *X:The Experience When Business Meets Design*

"Everyone's talking about customer experience and design, but to produce better ROI it's time to turn to the data. Design is as much science as it is art, and the moment the Dow starts to pause, expect to see more focus on results-driven design (rather than the faddish approach often dominating the headlines today)."
– **Jim Van Dyke**, Founder and CEO of Futurion.Digital

"We are going to see more emphasis and execution of empathy-led marketing. Social conversion strategy is going to become more prominent, with content marketing strategy being focused on unique high quality and interactive content. Smart businesses will take a much more strategic, thoughtful approach to engaging in meaningful ways with their customers and prospects."
– **Danielle Guzman**, Global Solutions Marketing Leader at Mercer

"Mobile banking will transform in 2017, with a focus on making mobile banking apps different by executing on great designs emulating best-in-class consumer vendors such as Facebook and Amazon. There will be an expanded feature set with photo bill pay and debit card controls as well as stand-alone mobile banking apps for debit card controls and alerts."
– **Tom Shen**, CEO of Malauzai Software

"2017 will be the year of the digital-direct effort by banks. In typical form, 7-8 years after Simple and Moven were founded, banks have finally figured out that customers aren't visiting branches to open accounts anymore and digital acquisition is a thing."

– **Brett King**, best-selling author and CEO/Founder of Moven

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"The most important trend will be incumbent retail banks implementing on last year's promise of a smoother customer experience, beginning with onboarding. Challenger banks and technology firms have put a spotlight on the onboarding process, making this almost frictionless with biometric layers and digitized KYC/AML checks. Challenger banks also set the standard for personalized and contextual experiences. It's time for all of the fintech/bank partnerships, innovation lab experiments and design studios of incumbent banks to deliver."
– **Daryl Wilkinson**, Managing Director of DWC Strategy and Innovation

"The banking relationship continues to move from the branch to digital to mobile as technology matures. Despite the advances, the basics of banking still apply: Banks win because of strong relationships driven by consistently reliable and rewarding customer experiences. To build these kinds of interactions, banks will need to evolve from the traditional user experience design process to a design thinking approach supported by a service design methodology."
– **Craig McLaughlin**, President of Extractable

"Personalized service will further evolve beyond communications and interactions, toward the personalization of products (like mortgage, savings deposits and checking accounts with rates and terms that better match client profiles and needs)."
– **Nick Bilodeau**, Head of Insurance (Canada) for American Express

"The focus for 2017 will be on enhancing the customer experience through proactive customer experience design. Removing the friction from the banking relationship and making banking more intuitive and useful. There will also be a strengthening of brands to enhance appeal and trust in a fragmented and crowded marketplace. This is becoming even more important as fintechs, telcos and start-ups eat our market shares away."
– **Vikram Krishna**, EVP and Head of Group Marketing at Emirates NBD

"The banking industry needs to remember that the consumer's mobile phone is part of their life. Well, at least it is for people who don't live in woodsy Wisconsin, where reception at home doesn't work…"
– **Tom Groenfeldt**, writer for Forbes

"There is a tremendous digital knowledge and talent gap holding traditional banks and credit unions back from responding to the needs of the digital consumer. There are four options; Train, fire, hire, or outsource. Outsourcing is only a short-term solution. And hiring still has challenges due to the nuances of financial services. Therefore, ramping up and investing in delivering the best possible experience will be an important trend for financial institutions as they seek to guide consumers through the digital buying journey."

– **James Robert Lay,** CEO of CU Grow

"In 2017, banks need to test their assumptions about what 'banking' is – it's not about opening a checking account or completing transactions. It's about creating products that assist with all of the steps customers must complete in order to achieve their financial goals."
– **John Fishback**, Principal Executive Advisor at CEB

"With the globalization of finance, a dwindling profitable middle class and an ever-growing regulatory overhead, it's all about creating an engaging and personalized experience, and more importantly, being helpful to customers and users. Soon, customers will demand hyper-personalized conversations with their banks, via an IoT device and with artificial intelligence … will banks be ready?"
– **Mike King**, Founder and President of Bankwide

"In the coming year, financial institutions will put a high priority on upgrading digital channels as a key to future successes. As more consumers prioritize their experience on digital channels, FIs will conclude that offering an innovative and modern set of digital offerings is key to survival and customer retention."
– **Jeff Weikert**, President of Payveris

"Banks will be willing to partner with Fintech startups that offer delightful digital experiences that has resulted in a loyal fan base."
– **Deva Annamalai**, Director of Innovation and Insights at Fiserv

"Beyond the retail consumer, there will be momentum around building a better experience for SME banking (especially micro businesses). This is important since most banks and credit unions do not offer this valuable segment any value-added services despite a proven record of being willing to pay for value."
– **Mike Carter**, CMO of D3 Banking

10 STRATEGIC PRIORITIES FOR 2017

As part of this year's market research study conducted around 2017 Retail Banking Trends and Predictions, we asked financial institutions worldwide to name their top three strategic priorities for 2017. Aligned with the number one trend/ prediction for the upcoming year, over 70% of the responding financial institutions mentioned 'improving the customer experience' as one of their top three strategic priorities in 2017.

Despite the wide variance in both asset size and geographic location of the more than 500 responding financial institutions, the ranking of the top priorities named by the majority of organizations were surprisingly consistent. There wasn't total alignment between predictions made and priorities. Investments in talent, security and even core systems were higher ranked than in the trends and predictions part of the survey.

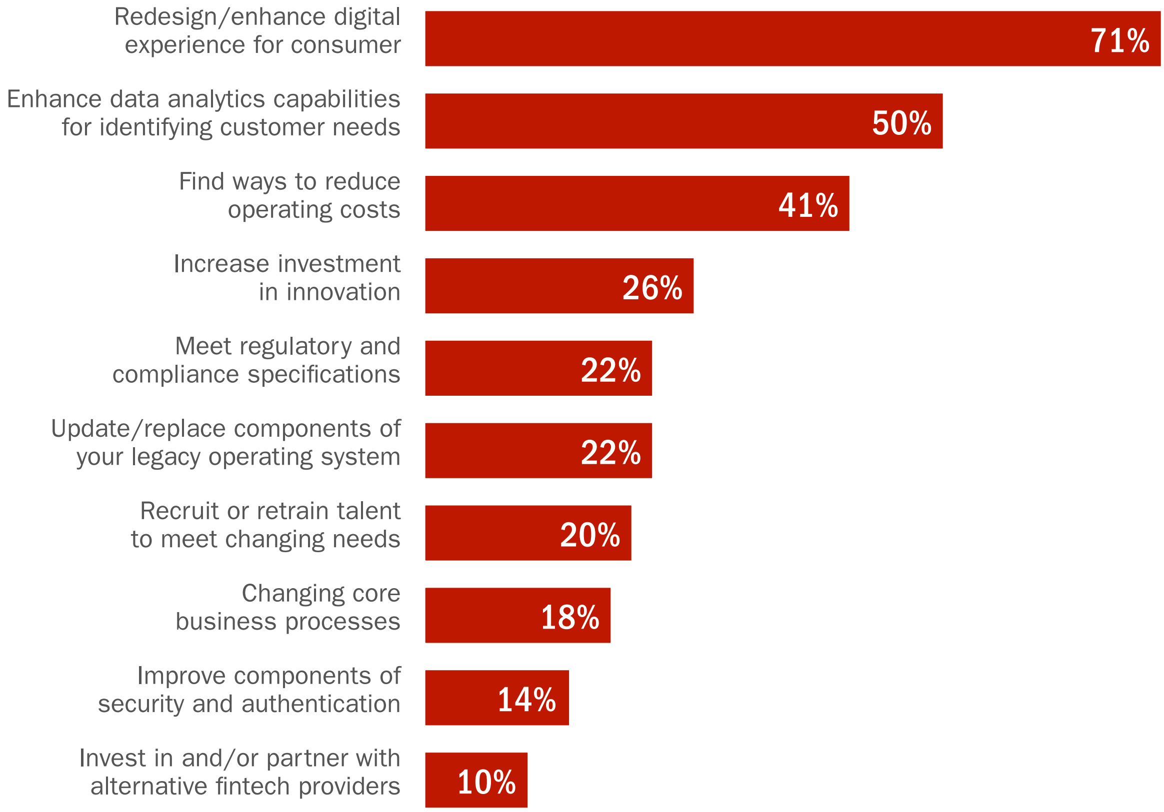
Overall, the top three priorities mentioned were improving the digital experience (mentioned by 71% of the respondents), enhancing data analytic capabilities (50%), and finding ways to reduce costs (41%). The rest of the priorities mentioned were at least 15% less likely to be mentioned. Interestingly, despite a great deal of coverage in industry publications, the desire to partner or invest in fintech relationships is a low priority for all but the largest organizations.

— Top 10 Strategic Priorities for 2017—

1. Improve the Digital Customer Experience
2. Enhance Data Analytics Capabilities
3. Reduce Operating Costs
4. Increase Investment in Innovation
5. Meet Regulatory and Compliance Requirements
6. Update of Replace Components of the Core Operating System
7. Recruit and Retrain Talent
8. Improve Business Processes
9. Enhance Security and Authentication
10. Partner with Fintech Providers

CHART 10: TOP STRATEGIC PRIORITIES FOR FINANCIAL INSTITUTIONS IN 2017

Q: What are your top 3 strategic priorities for 2017 as an organization? (n=510)



Source: DBR Research © December 2016 Digital Banking Report

Top 10 Strategic Priorities for 2017

1. Improve the Digital Customer Experience

As was mentioned in The Financial Brand article, *Are Banks Really Committed to the Customer Experience?*, "As consumers increasingly make decisions based on the ease with which they can interact with their financial institution, competition around the customer experience is giving rise to new roles and titles within the banking industry."

The challenge has been that, while a majority of financial services firms are in the process of expanding their CX projects – especially as it relates to both digital and mobile engagement – there is still difficulty in gaining resources to pursue new projects.

In addition to applying resources towards improving the customer experience, institutions will need to determine how success should be measured. To date, there is a wide variance in methods used, including measurements around satisfaction, retention, loyalty, engagement and/or some form of revenue metric.

More than any other priority, improving the customer experience was the most consistent in level of mentions across asset categories, type of organization and location.

2. Enhance Data Analytics Capabilities

Customer insight and data analytics is at the foundation of virtually every retail banking trend in the coming year. From removing friction from the customer journey, to improving multichannel delivery and exploring the use of open APIs, data is the fuel that will power these initiatives.

Despite the vast amount of data available to financial institutions, most organizations are having a difficult time determining what data will have an impact and how to harness the full potential of insight collected. According to research from the Boston Consulting Group, some of the reasons for falling short of potential include:

- **Competing priorities.** As noted above, there are a lot of priorities … some of which may change over the course of a short period of time.
- **IT complexity.** Because of multilayered systems and siloed data, FIs rarely use the full breadth and depth of data at their disposal (or know what data to use).
- **Lack of coordinated vision.** This can result in a sub-optimal allocation of human and technical resources and limited interaction and exchange of ideas.

As noted in The Financial Brand article, *Data Analytics Critical to Success in Banking,* "The risk of falling behind in leveraging consumer insights has never been greater since consumer expectations are rising. The majority of these expectations are being set by non-financial competitors.

In the survey, credit unions were the most likely to mention data analytics as a strategic priority. Community banks were the least likely to mention this as a priority.

Top 10 Strategic Priorities for 2017

3. Reduce Operating Costs

Due to razor-thin interest rate and operating margins, a lot of time and effort has been spent by financial organizations to cut costs wherever possible. Sometimes these efforts have been done without understanding the impact on the customer experience or without fixing underlying process flaws,

According to Bill Heitman, founder of **The Lab**, "Installing new digital banking technology (in the interest of cost savings) doesn't help much unless the routine processes that are being automated are first closely examined and streamlined – applying the principles of "industrialization" and efficiency management to processes and operations." Without a review and revamping of underlying processes, any digital banking initiative will fall short of full optimization and, at worst, simply automate already dysfunctional processes.

While all types of organization found the reduction of costs to be the third most important priority, large national banks and community banks ranked this higher than other types of organizations.

4. Increase Investment in Innovation

While investing in innovation was the fourth most mentioned priority by financial institutions internationally, the frequency of mention was 15% below the mission of reducing operating costs and 45% less than the emphasis on improving the customer experience. This is reflected in the *8th Annual Innovation in Retail Banking Report* from Efma and Infosys Finacle, where the proportion of banks with an innovation strategy increased only marginally in 2016. This is also aligned with the predictions for next year, where innovation was lower ranked than in previous years.

The areas where most banks are increasing innovation investment are customer service/experience (84%) and channels (82%), followed by processes (67%), products (63%) and sales and marketing (56%), according to the Efma study.

In research fielded by the Digital Banking Report, the percentage of mentions was almost uniform at 25% among the different organization types and asset sizes.

5. Meet regulatory and Compliance Requirements

In the past, many organizations have operated in reactive mode regarding regulations and compliance … only changing in response to regulatory orders, examination comments, or other types of intense regulatory pressure. However, many organizations have begun a shift towards a more proactive approach to regulatory strategy – establishing a stronger link to business strategy.

According to Deloitte, "By identifying connection points between your regulatory and business strategies – instead of managing regulatory strategy as a side activity – an organization can discover ways to achieve common objectives more efficiently and align compliance activities with your organization's broader goals." This strategy creates a win-win, answering compliance issues while improving business performance.

Top 10 Strategic Priorities for 2017

While only 13% of credit unions mentioned regulations and compliance as a priority, 30% of large regional banks and 27% of community banks mentioned regulations as a priority.

6. Update or Replace Components of the Core Operating System

Now more than ever, there is a need to organize each financial institution around customer data, and then to leverage that data through the cloud to mobile devices and apps. The only way to achieve this is to completely rip out the old systems and replace them with a new core banking system that can support the bank, and the customers.

To quote a good friend and financial industry scholar Chris Skinner, "Changing core systems is like changing the engines on an aircraft at 15,000 meters … you just don't do it. But, more and more banks are doing just that."

"You cannot restructure a bank around customer data if you have that data locked into heritage systems that are product siloed and channel hand-cuffed," continued Chris. Bottom line, it is not a question of if banking organizations will be changing core operating systems, but when.

The largest organizations were the most likely to mention updating core operating systems as a priority, with 25% national banks and 28% of regional banks indicating an emphasis. Only 18% of community banks or credit unions found this as a priority for 2017.

7. Recruit and Retrain Talent

The banking industry is changing quickly, with a requirement to meet the needs of a digital consumer. Unfortunately, most legacy bankers, who have long established careers, are not familiar with many of the nuances of the digital banking consumer. There is a need for a new wave of digitally aware and technology adept employee.

Banking's ability to recruit the 'best and the brightest' has never been tougher. Candidates want to work with innovative companies, with the desire for training and development being placed ahead of money. To succeed in the future, banking must win the talent wars.

According to Stuart Hall from **Tyzack Partners**, "Building a focused and flexible workforce will enable banks to seize the opportunities that will come from developing an organization that is not only customer-centric and digitally capable, but also flexible enough to regularly re-tune its brand both internally and externally.

The largest organizations appear to be 'winning the talent wars', with less than 10% mentioning talent as a top 3 priority in 2017. Alternatively, 36% of community banks and 23% of credit unions believed this to be a top priority.

Top 10 Strategic Priorities for 2017

8. Improve Business Processes

As mentioned earlier, installing digital banking technology to improve front and back office operations will not lead to optimal results unless the routine underlying processes that are being automated are first closely examined and streamlined. Although many organizations have been successful in automating applications, fewer have achieved high levels of automation in middle- and back-office processes.

Many organizations have embraced lean process redesign. More needs to be done to achieve completely paperless processes, improved workflow tools, and automated task management. Going beyond just converting paper to digital, organizations need to rethink all steps to maximize and optimize process improvement.

All organization types and sizes ranked "Improving Business Process" roughly the same.

9. Enhance Security and Authentication

For financial institutions, the key component of improving the digital customer experience is to improve the simplicity of banking. One of the challenges around simplification has been the password authentication process needed to access mobile banking. Combining the need to improve the security of accessing accounts with a desire for greater ease of use is a difficult balancing act.

According to Deloitte, "Organizations can begin their journey by starting to invest in non-password-based authentication solutions now as part of their digital transformation efforts, such as the rapid adoption of software-as-a-service platforms and omnichannel customer engagement initiatives. These new solution areas can serve as the foundation for broader enterprise authentication initiatives, which may take time."

It is safe to say that the banking industry is only one data breach away from making this a much higher priority.

Large regional banks, community banks and credit unions ranked security and authentication as a top 3 priority roughly 18% of the time, while large national banks indicated this as a top 3 priority 10% less often (8%).

Top 10 Strategic Priorities for 2017

10. Partner with Fintech Providers

While a lot has been written, and will continue to be written, about the opportunity of fintech partnerships, indicating how the benefits of banking can help start-ups and visa-versa. The reality was best brought forward one year ago when Ron Shevlin stated that it is not partnerships that are needed, but platforms, where banking organizations provide a range of traditional and non-traditional services to their customers.

The key will still be how to innovate and move the digital banking needle to respond to the needs of the consumer. This may be done through investment, partnership or simply becoming the center of a consumer's financial relationship, brokering solutions for the benefit of the consumer.

National and regional banks were significantly more likely to indicate partnering with fintech firms as a strategic priority (10% and 18% respectively) with both community banks and credit unions only listing this as a top 3 priority 5% of the time.

Use of Data, AI and Advanced Analytics

Data is the fuel of the digital economy and the foundation for all the trends and predictions in 2017. Unfortunately, while the consumer has indicated a willingness to share information about themselves with banks and credit unions, the ability for financial institutions to leverage this insight has been far short of optimal.

The Digital Banking Report, *Power of Personalization in Banking,* found that many customers will share their data with bank brands if they get something valuable in return. The desired reward? Offers customized to their individual wants and needs.

Unfortunately, the clear majority of organizations are collecting customer data and not doing anything with it that benefits the customer. Beyond neglect, this practice could also be killing an organization's future and ensuring greater share of wallet go to your competitors.

Meanwhile, customers are only growing more used to co-creating value with brands and retailers with every passing year. The digital Millennial segment especially expects reciprocal relationships with companies and their brands.

Getting to know your customer should go beyond simply knowing their name, address, account number and balance. Social, locational or other data should be used to understand what will "surprise and delight" your customers. As today's banking customers grow more and more used to co-creating value with other organizations such as Apple, Amazon, Google and Facebook, customers are more eager to show you how to earn their loyalty.

Ultimately, the goal is to ensure that the total experience you offer is one your customer cannot get elsewhere. This goes beyond an investment in hardware or a commitment to a better app. It's about delivering a singularly gratifying experience created with real, often zealous input from your own customers.

Becoming a Cognitive Bank

The banking industry continues to be challenged by a low interest rate environment, intense competition from new market entrants, and heightened consumer experience expectations set by highly digital non-bank organizations. Despite these pressures, the response by most institutions has been initiatives focused on cost reductions.

In the **IBM** report, *The Cognitive Bank: Decoding Data to Bolster Growth and Transform the Enterprise*, it is emphasized that tapping into huge quantities of dormant, bank-owned data is essential to offering the individualized engagement that customers demand. It is also proposed that cognitive systems can continually build knowledge and learning, providing the insight needed to increase efficiency and effectiveness throughout the organization. In other words, the one to one future on steroids.

Unfortunately, while almost all agreed on the challenges being faced, only 28% of the executives surveyed were familiar with cognitive computing, and only 11% of the respondents said they have adopted cognitive technology. Not surprisingly, the "outperformers" were more likely to understand and be using the tools of cognitive computing.

Creating Competitive Differentiation

When asked about the expected benefits of cognitive computing, the benefits were very aligned with the industry's strategic priorities. Improving operational efficiency was named by 58% of surveyed executives as their most important strategic priority, with 49% seeing this as being a benefit of cognitive computing. Similarly, improving customer engagement and growing revenues were also both important strategic objectives and benefits of cognitive computing.

CHART 11: EXPECTED BENEFITS FROM COGNITIVE COMPUTING ALIGN WITH BANKING'S STRATEGIC PRIORITIES

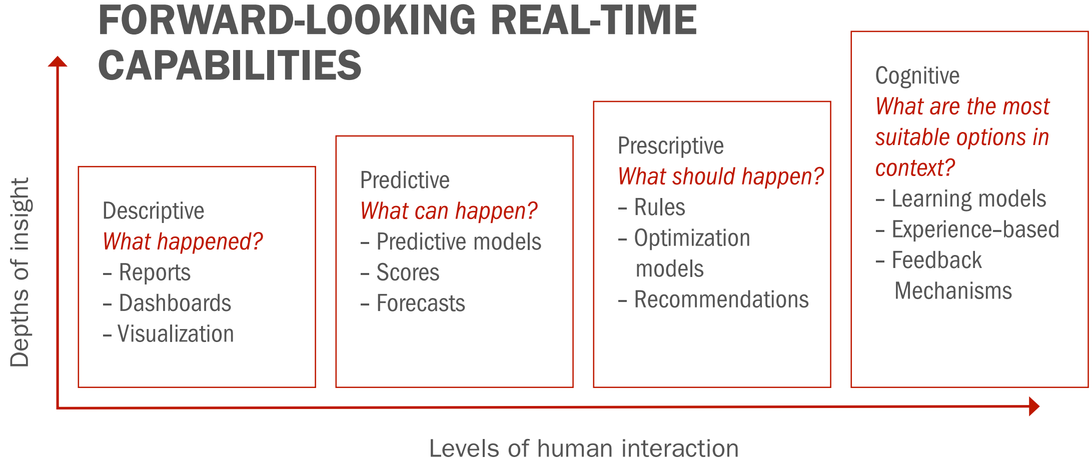
Source: IBM © December 2016 Digital Banking Report

According to IBM, "Cognitive computing solutions offer valuable capabilities by enabling systems to process and act on data in a human-like manner. They can transform how organizations think, act and operate". The four principles that form the foundation of cognitive computing include; 1) learn and improve, 2) build speed and scale, 3) collate human intelligence, and 4) interact in a natural manner.

Ultimately, cognitive computing enables banks to exploit the benefits of available data by:

1. Providing deeper and more personalized customer insight
2. Supporting more-informed decisions across the whole bank
3. Accelerating operational and organizational efficiency

CHART 12: COGNITIVE TECHNOLOGIES PROVIDE FORWARD-LOOKING REAL-TIME CAPABILITIES



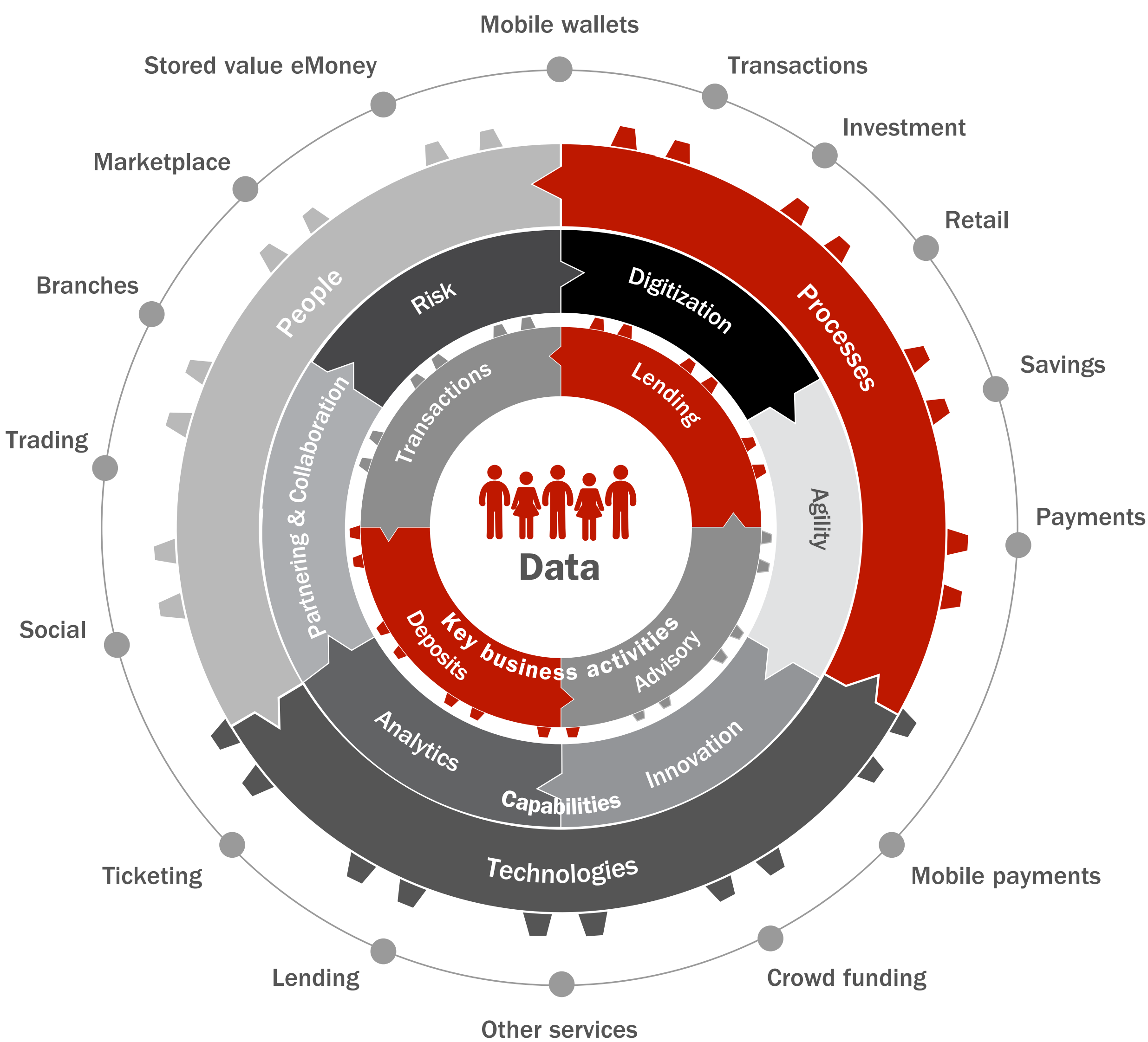
Source: IBM © December 2016 Digital Banking Report

The Cognitive Bank Ecosystem

By combining internal and external data (both structured and unstructured), banks and credit unions can position their organizations at the center of rapidly evolving banking ecosystems. Because legacy banking organizations have such a wealth of knowledge, cognitive banking organizations can provide 'doorways' for existing fintech firms to build relationships with households they could not reach or serve before.

Leveraging the trust and immense data already in place, traditional banking institutions could transform from being 'utilities' to becoming central to a consumer's daily life. Most importantly, like what was referenced almost a quarter century ago, a cognitive bank becomes a 'learning organization' improving decision making and value to the consumer with each transaction and interaction.

CHART 13:



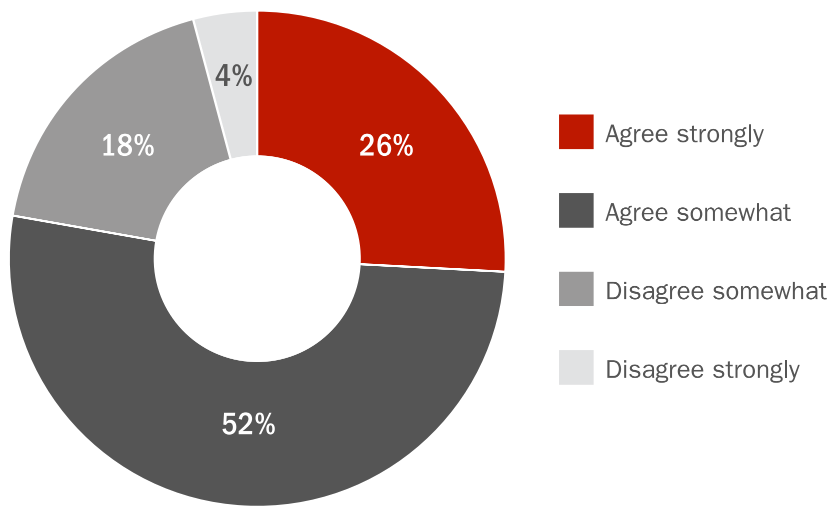
Source: IBM © December 2016 Digital Banking Report

The Power of Artificial Intelligence (AI)

Although most bank marketers today aren't yet leveraging artificial intelligence (AI), there is hope that this technology will be transformative for the industry. In a November 2016 survey from **Demandbase**, 78% of all marketing executives believe that AI will revolutionize marketing over the next 5 years. Unfortunately, only 26% are very confident they understand how AI is used in marketing and only 10% of marketers are currently using AI today.

CHART 14: MARKETERS EXPECT AI TO REVOLUTIONIZE INDUSTRY BY 2021

Q: How strongly do you agree or disagree with the following statement — AI technology will revolutionize the marketing industry over the next 5 years.



Source: Demandbase © December 2016 Digital Banking Report

Executives are acting on these expectations with plans to integrate AI into their marketing. Forty percent of respondents to the Demandbase study indicated they would implement AI in marketing within the next two years. An additional 40% stated they would do so in three to five years, with just 6% saying they had no plans to integrate AI into their marketing.

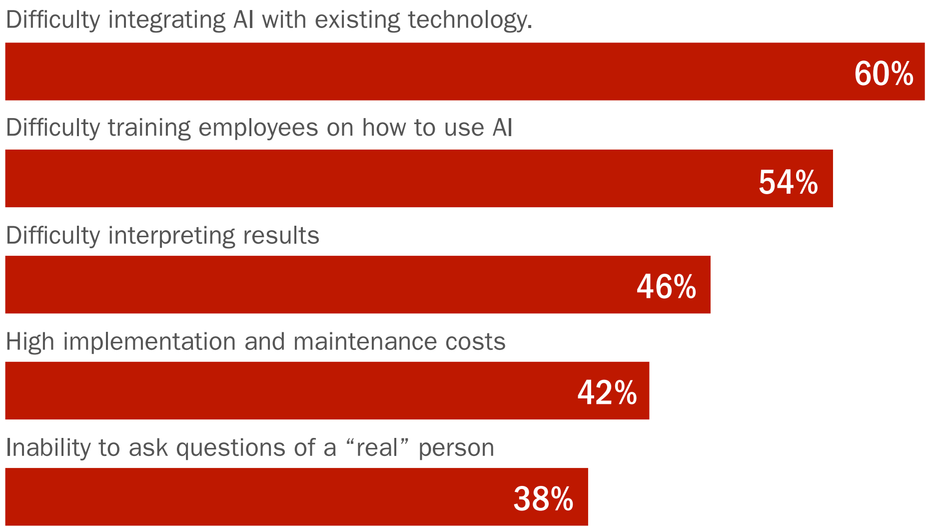
Challenges with AI

There are significant hurdles, however, associated with taking advantage of this capability. The top challenges marketers are worried about when it comes to using AI technology are the following:

- Integrating AI into their existing technology (60%)
- Training employees (54%)
- Difficulty interpreting the results (46%)

Surprisingly, concern with the cost of implementing AI is lower on the list at 42%. Overall, there is a lack of general understanding around AI technologies available, and how to begin using them, says the study. Further education and hands-on experience will be required to ensure the use of AI technology to support marketing is successful.

CHART 15: BIGGEST CHALLENGES PERCEIVED BY MARKETERS IN LEVERAGING AI



Source: Demandbase © December 2016 Digital Banking Report

"As someone who has been studying AI for many years, I've recognized the promise of AI for marketing for some time, which makes it really rewarding to see this vision is now shared by marketing executives," said Aman Naimat, SVP of Technology at Demandbase. "This data reveals that in order to be successful, marketing leaders need to lead the charge and present opportunities for AI instruction and experience to their teams."

Delivering a Personalized Experience

Consumers are demanding a more personalized, tailored experience with all the organizations that impact their lifestyle … including their bank and credit union. The results of this survey revealed that AI has the potential to help marketers personalize the customer experience at an entirely new level, which allows for one-on-one conversations.

As noted in the *Power of Personalization in Banking* Digital Banking Report, it is immensely valuable to know the financial goals, pain points and lifestyle of both prospects and current customers. AI helps to leverage these insights with the top benefits from AI including:

- Better insights into accounts (60%)
- More detailed analysis of campaigns (56%)
- Identifying prospective customers (53%)
- Expediting daily tasks (53%)

As with any marketing initiative, AI must impact an organization's top line and drive revenue for it to be determined successful. To be worth pursuing, marketers stated that AI must:

- Generate a better sales close rate (59%)
- Increase revenues (58%)
- Improve website traffic and engagement (54%)
- Convert more leads (52%)

Sophisticated AI and machine learning now make it possible to read and analyze hundreds of terabytes of unstructured text every month along with billions of web interactions from consumers every month. This provides financial marketers with a single comprehensive view of their prospects and customers, including what they are looking for, when they are doing important transactions and may will be influencing their decision.

According to **Venturebeat**, Microsoft, Google, IBM, and Facebook are creating neural networks that enable AI systems to better understand and target consumers. AI also will be a key driver for chatbots and voice assistants, where the ability to contextualize conversations with consumers is key.

False Promises and Data Gentrification™

The promises and hype around big data, advanced analytics and AI have yet to be realized for many financial institutions, states Ron Shevlin. "It's not because of a lack of statistical and analytical tools and techniques. It's not necessarily because of the lack of access to the data available. And it's not necessarily because of data "cleanliness" issues. It has a lot to do with the fact that the data that is available isn't predictive or descriptive. It's the wrong data."

While financial institutions make a big deal about having payment data available, Shevlin asks the simple question, "What does payment data do? It certainly helps retailers and merchants (and Apple) pitch offers. But, that's not what customers want from their banks."

The term gentrification typically refers to the renovation and improvement of rundown properties. Shevlin argues that banks' data warehouses are similar to … rundown properties in need of gentrification.

"The use of data really is now becoming a mandatory tool to assist the customer, employee and the CEO. Going forward, data will be embedded and detected on a real-time basis, driving decisions on efficiency, experience improvement, and margin gains. Banks and credit unions will look to large technology companies as the standard in data-responsive design and development, and will seek to automate not just measurement, but also improvement and process."

– **Rob Findlay**, Founder of Next Money

"Machine Learning and Artificial Intelligence will begin to be applied beyond robo-advisors and activity to leverage these technologies will begin to take hold. 2017 is likely to be a transitional year where pilots inform longer term product development."
– **Dominic Venturo,** EVP and Chief Innovation Officer at U.S. Bank

"2017 is the year to marry Tech + Touch. Find a balance between accelerated digital adoption and the human touch. It's time that banks start using data to digitally personalize customer interactions."
– **Vikram Krishna**, EVP and Head of Group Marketing at Emirates NBD

"Machine learning and artificial intelligence are transforming other industries. Banking is just getting started building out greater efficiencies using these tools and leveraging the data we've neglected for decades. There will be more consumer applications delivering personalized financial advice by leveraging aggregated financial data across a consumer's providers in the future. Forget robo-advisors for investments only ... our entire financial life will start to have a robo-component. And we will be better off for it."

– **Bradley Leimer**, Head of Fintech Strategy at Santander, US

"Retail banking should have been transformed by data analytics late last century but it was not. The rise of FinTech and the 2008 financial crisis have ushered in a new focus on data (cognitive computing, AI, predictive analytics, etc.) throughout the entire organization, with operational excellence and digital transformation being key. 2017 will be the year when financial service providers who have embraced these tenants will begin to separate from those who have not."
– **David Gerbino**, Fintech and Marketing Adviser at DMG Consulting

"Over the next few years, banks will embark on Data Gentrification™ efforts – not just cleaning up the data they have, but collecting and using BETTER data. Data that better predicts and explains consumers' financial health, directions and trends in their financial health, and actions needed to better improve financial lives."

– **Ron Shevlin**, Director of Research at Cornerstone Advisers

"2017 will be the year that predictive analytics will hit the big time in retail bank marketing. Banks will boost their top line with 'next best product', social media, and customer retention analyses."
– **Steven Ramirez**, CEO of Beyond the Arc

"Banks and credit unions will be challenged to deliver digital experiences that mimic the human assistance that consumers get in other channels – such as the branch and call center. Through artificial intelligence, banks and credit unions can breathe life into consumer interactions. With artificial intelligence as the face of the digital interaction, other technologies such as natural language processing, predictive analytics, biometrics, among many other technologies, become the guts that stitch together an experience that drive interactions through every stage of the consumer lifecycle."
– **Tiffani Montez**, Senior Analyst at Aite Group

"2017 will herald in the 5th age of banking – the analytics age. Financial Institutions will face an unprecedented opportunity to be true advocates for consumers by utilizing data to the same level as other disrupted industries (think Amazon or Netflix). Consumers enjoy unprecedented choice and virtually no friction to change. FI's who do not embrace data will find themselves beautifully equipped for a world that no longer exists."

– **Don MacDonald**, CMO at MX

"Predictive analytics move from theory and early beginnings to broader and more prevalent application. Recurring transactions become easier to undertake and product recommendations become more pro-active and relevant."
– **Nick Bilodeau**, Head of Insurance (Canada) for American Express

"Smart use of data can enable us to reestablish personalized services and bring back customized one-to-one relationships between the bank and the customer. The upcoming PSD2 (and US equivalent) will alter how the data is stored and used, with bots, machine learning, and adaptive technologies all playing a role. Nailing this (data) step is essential to progress towards the banking-as-a-platform model, which is the future of finance.
– **Alex Nechoroskovas**, Founder of Fintech Summary

"All of the business models we have seen created and funded in fintech over the past 8 years will be revisited with an AI component – be it machine learning, deep learning or other. This is bound to happen as AI is sweeping the business world. If mobile is eating the world, AI is the chef that is orchestrating the menu."

– **Pascal Bouvier**, Venture Partner at Santander Innoventures

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Supporting Integrated Multichannel Delivery

Most consumers continue to use multiple channels to conduct their banking based on transaction type and individual behavior patterns. To migrate more transactions to digital channels, financial institutions must move their sole focus away from cost reduction, and instead focus on improving the integrated multichannel experience.

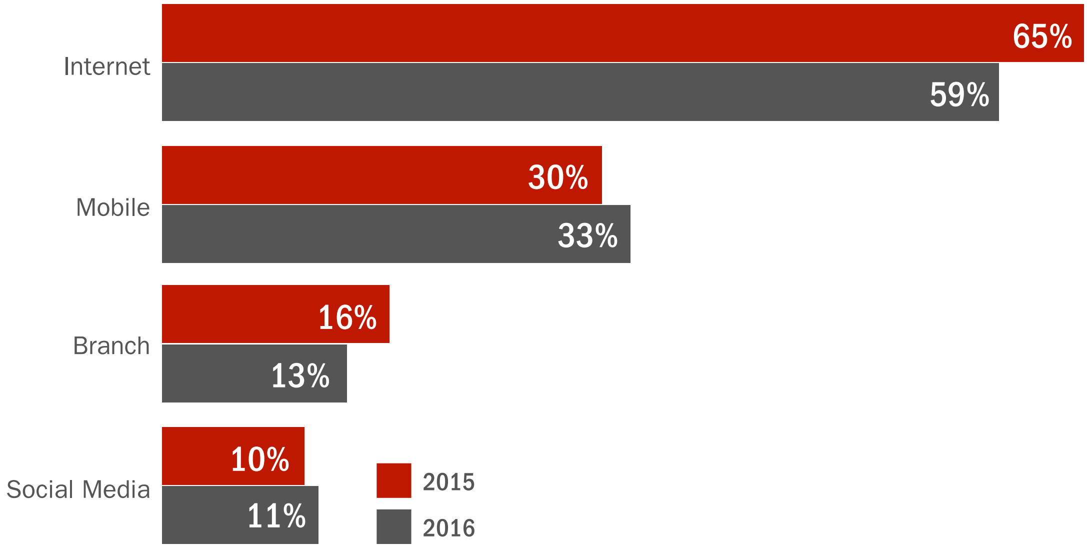
The the **Nielsen** report, *Channel Effectiveness for Financial Services*, it is shown that consumers still do not use any single channel when interacting with their financial institution. In fact, most customers use a multitude of physical and digital channels based on the activity they want to perform. And, while banks and credit unions may prefer their customers and members to use the least expensive channel, this may not be optimal for the customer due to lack of physical or digital convenience.

Shifts in Channel Usage

Bank customer transactions continue to move away from branch and desktops and toward mobile devices, per the Capgemini *World Retail Banking Report 2016.*

- In 2015, 65.1% of consumers used internet desktop banking at least weekly. That number went down to 59.4% this year.
- The number of customers using mobile banking weekly increased from 30.5% to 33.3%.
- Branch-based banking is becoming less frequent. 16.2% of customers visited a branch weekly in 2015, a number that decreased to 13% this year.
- And social media, one of the newest banking channels, had 11% of customers using it weekly this year, compared to just 9.8% in 2015.

CHART 16: PERCENTAGE OF GLOBAL BANKING CUSTOMERS USING SELECT CHANNELS AT LEAST WEEKLY

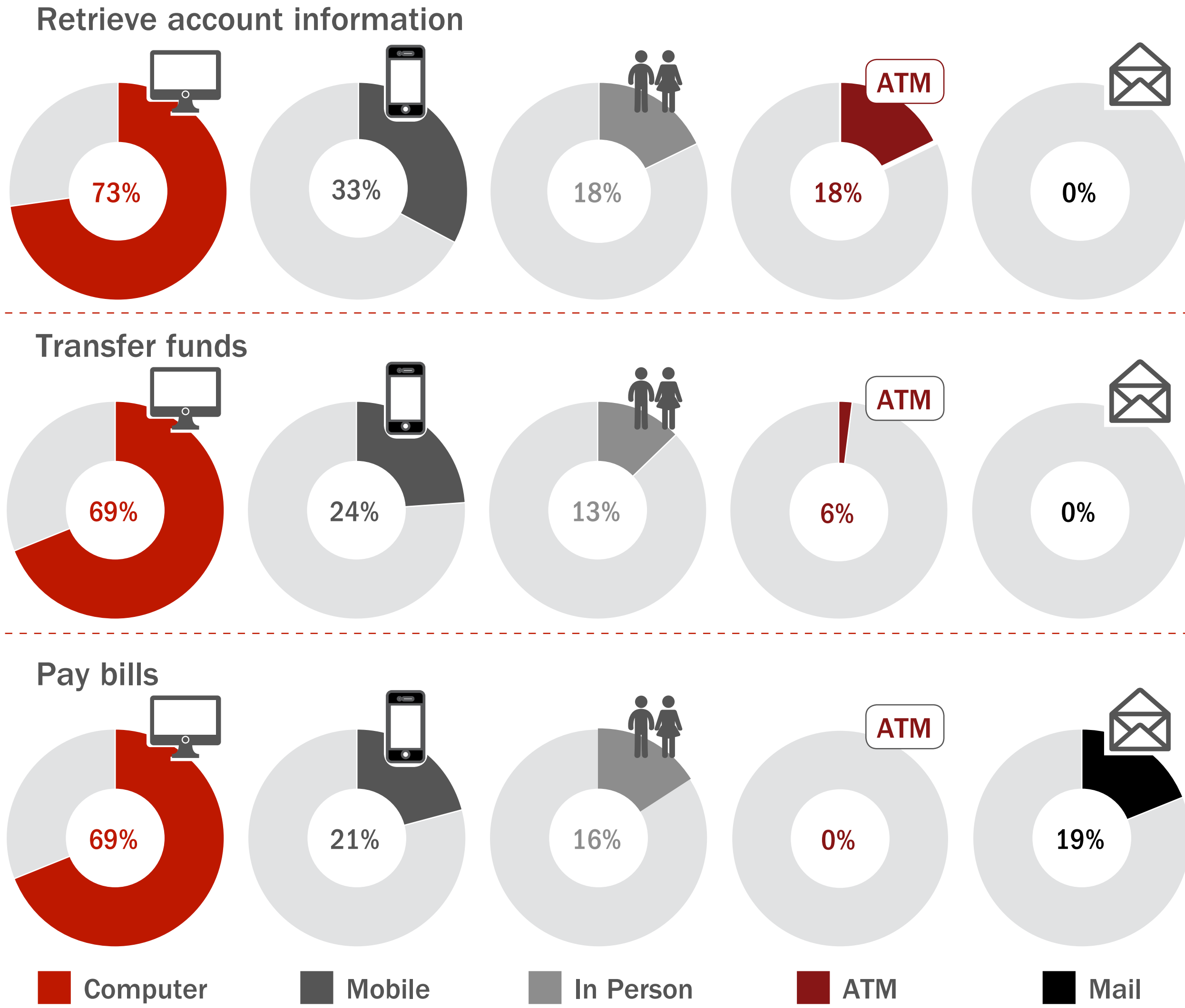


Source: Capgemini © December 2016 Digital Banking Report

While the movement to digital engagement has been the most successful with activities such as checking balances, transferring funds and paying bills, activities that involve the physical handling of funds or exchange of private information have been slower to gain digital acceptance.

For instance, Nielsen found that 73% of consumers are comfortable using their personal computer to retrieve basic account information, transfer funds (69%) or pay bills (69%). Similarly, 33% of consumers use their phone to check balances, transfer funds (24%) or pay bills (21%). These numbers are significantly higher than the interactions at the branch level, ATM or by mail.

CHART 17: PERCENT OF INDIVIDUALS USING CHANNEL BY TRANSACTION TYPE



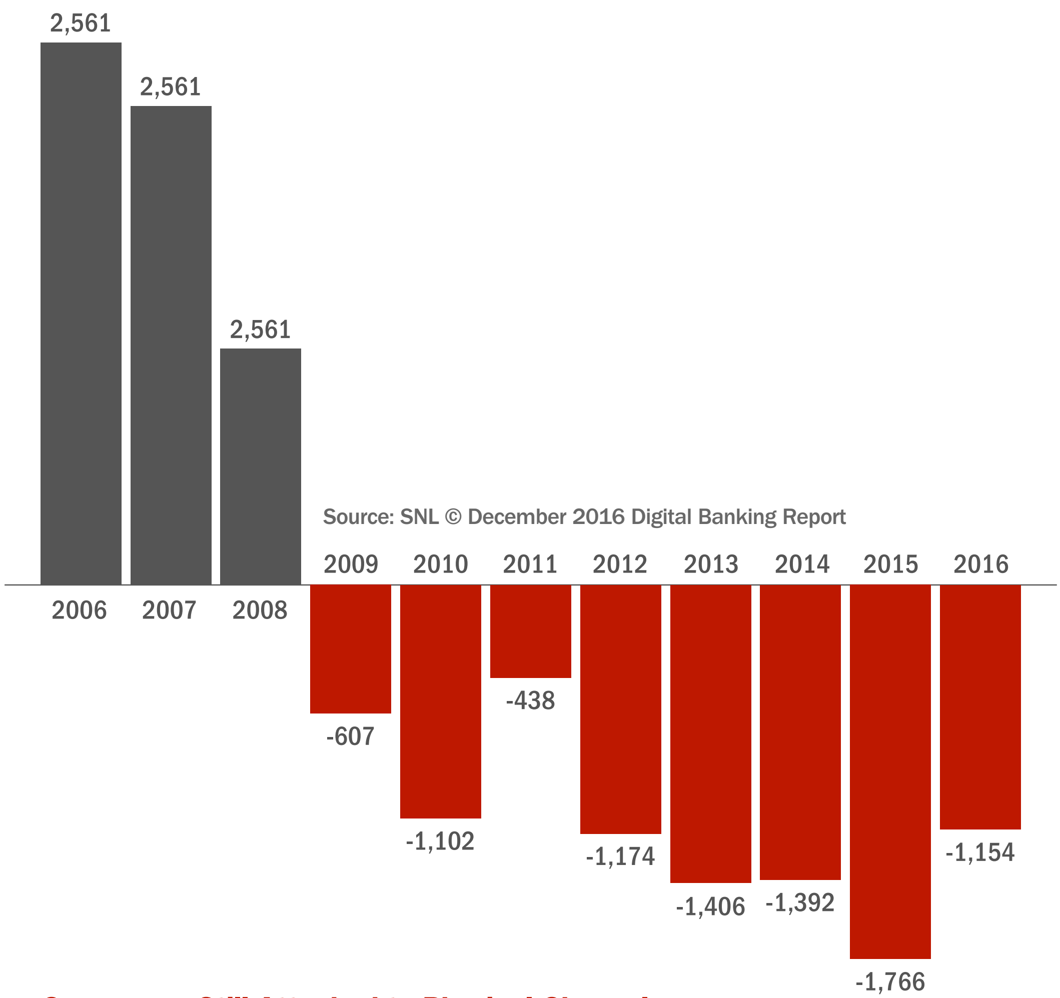
Source: Nielsen © December 2016 Digital Banking Report

The impact of this channel shift is most evident in the net change in physical branches. Banks continue to close branches and shrink the size of their networks, but institutions with over $10 billion in assets are responsible for a significant majority of these closings.

"The smallest U.S. banks are still pruning their branch networks, but larger banks are taking out the chainsaw," says a pair of experts from **SNL Financial**, who have tracked the size of bank branch networks for at least the past decade.

Over the last 10 years, SNL says the U.S. banking industry as a whole has cut 3,012 branches, but those institutions with less than $1 billion in assets have actually *opened* 3,275 net new branches.

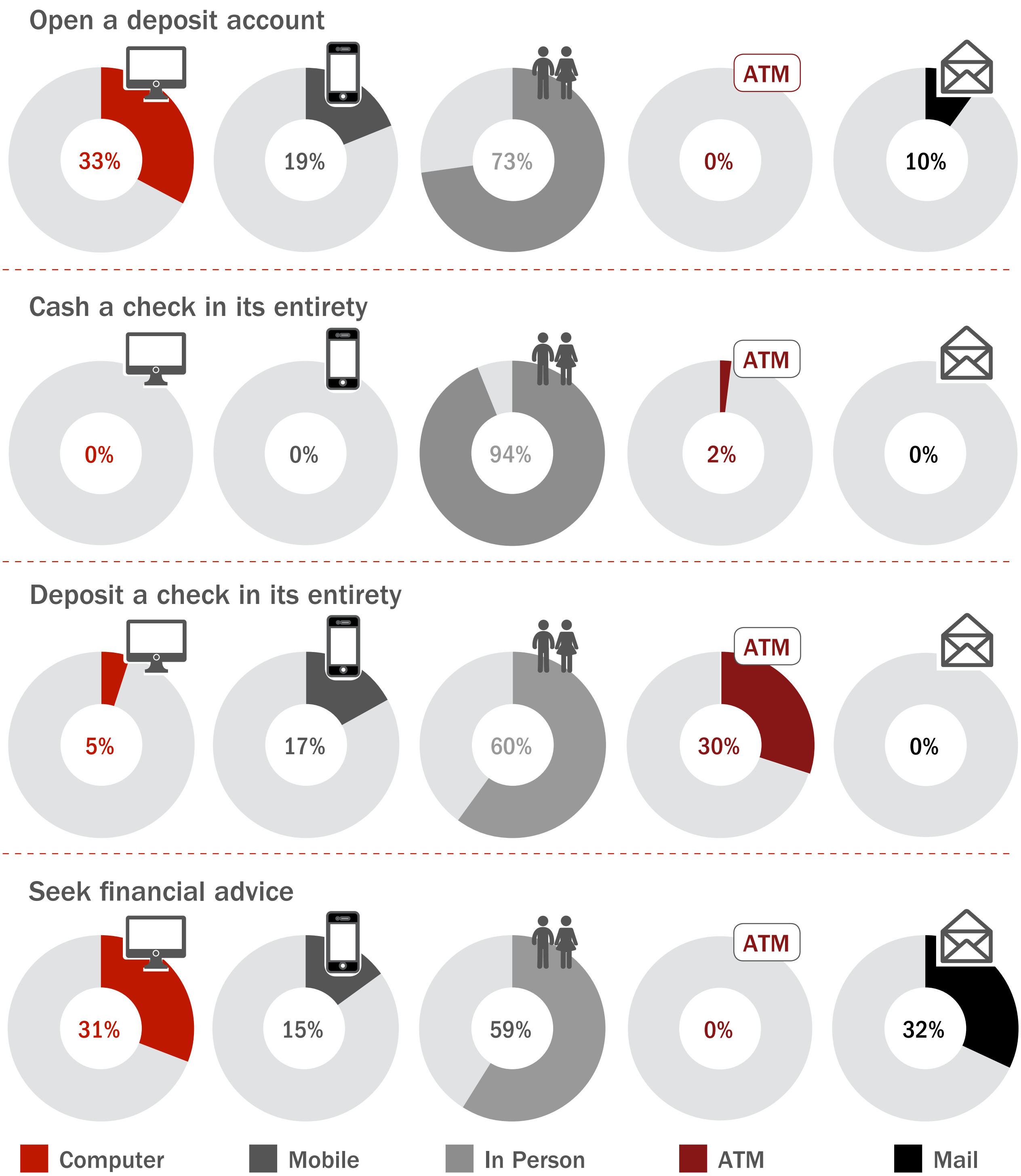
CHART 18:
NET NUMBER OF BRANCHES OPENED/CLOSED BY BANKS IN THE U.S..



Consumers Still Attached to Physical Channels

Part of the reason physical branches remain open is because of the preference of consumers to continue to use branches for activities such as opening an account, cashing or depositing checks and seeking financial advice. As has been noted in previous reports, the reliance on branches should be taken with a grain of salt since many institutions have made the process of opening accounts digitally exceedingly difficult, and/or have not done an adequate job of educating consumers on services such as mobile deposit capture.

CHART 19: PERCENT OF INDIVIDUALS USING CHANNEL BY INTERACTION TYPE



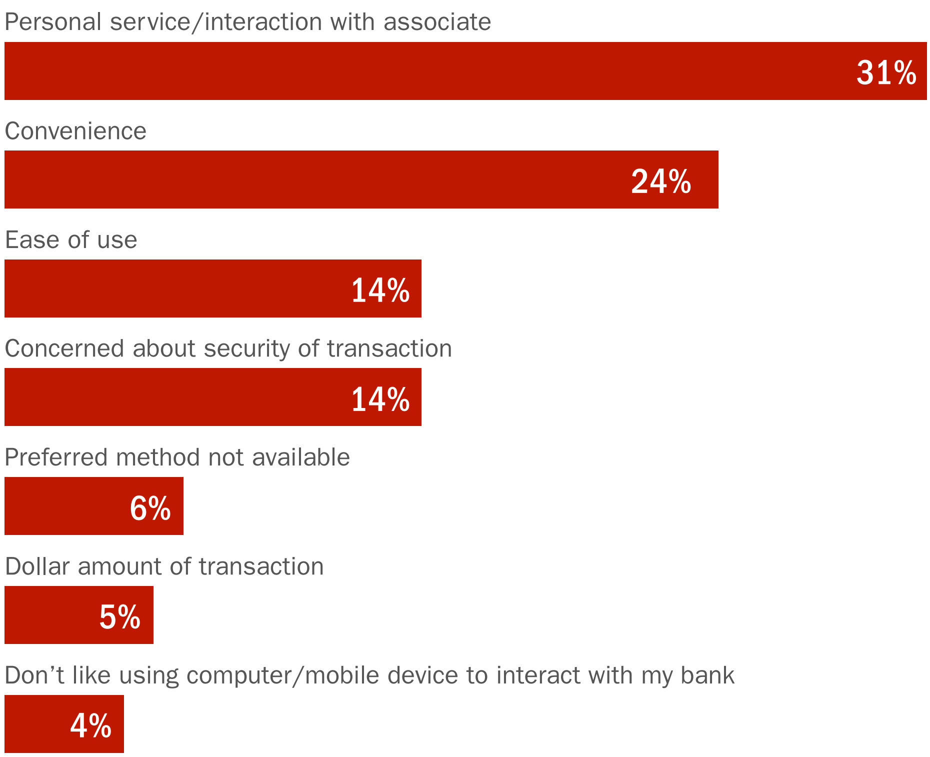
Source: Nielsen © December 2016 Digital Banking Report

Driving Migration Requires Better Experiences

Understanding the drivers of the channel behavior is the first step to creating a migration plan to lead customers to use the desired channel. While some of the desired shift can be impacted by better communication, some of the lack of shift may be the result of digital technology shortfalls at some institutions. There is also the possibility that continued use of physical facilities may be more deeply rooted in the concern for security and privacy.

For example, 73% of consumers opening a new deposit account still did so in-person at a physical location according to Nielsen. When asked for the reasons why a physical branch was used, the leading reasons were the desire for personal service (31%) and convenience (24%), followed by ease of use (14%) and concern about security (14%).

CHART 20: REASONS CONSUMERS STILL WANT PHYSICAL BRANCHES



Source: Nielsen © December 2016 Digital Banking Report

As mentioned earlier, these numbers can be a bit misleading, however. In the 75-page Digital Banking Report, *State of the Digital Customer Journey,* there is strong evidence that banks and credit unions of all sizes are not making every stage of the customer journey easy, seamless and contextual. This includes the entire account opening process, early new account onboarding and even subsequent engagement around the building of a stronger digital relationship once an account is opened (cross-selling).

The Risk of Doing Nothing

As mentioned in The Financial Brand article, *The Digital Divide: Can Small Banks Keep Pace?*, the biggest banks have significantly improved in overall customer satisfaction, while midsize banks have declined and regional banks have plateaued. This appears to be driven by a focus on improved digital offerings, with satisfaction with big banks rising for the sixth consecutive year, per the *J.D. Power 2016 U.S. Retail Banking Satisfaction Study.*

There is a growing need to serve the increasingly digital consumer that is no longer defined by demographic variables like age and income, but by the way an entire segment of the population hopes to engage. The strategic impact and resultant actions may differ by institution, but the ability to decrease costs and improve customer satisfaction rides in the balance.

For any organization, the priorities should be to improve the digital deliverables that include making basic transactions (balance inquiry, funds transfer and bill payments) more simple and intuitive, while also making the next stages of engagement (account opening and check deposit) more easy to complete with an online and mobile device.

"We'll find a lot of banks revisiting their branch portfolio and there will definitely be some consolidations and closures. This is all part designing branches around a broader distribution channel strategy. The trend will be towards greater self-service cash transaction and digital integration in physical units. Research data and market analytics will also enable data-driven decision making, with branch design based on the type of distribution model appropriate for each market area."
– **Mark Charette**, CEO of Solidus, Inc.

"Leading banks will start converging mobile and online banking into new digital banking applications composed of widgets built on an agile microservices architecture. The new digital banking applications will offer many cross-channel services, such as text with contact center, video with relationship banker, cardless withdrawal at ATMs, appointment making, and transaction pre-staging prior to a branch visit."

– **Danny Tang**, Worldwide Channel Transformation Leader at IBM

"The banking business is going liquid, expanding the relationship towards the digital places where customers fulfill their everyday needs. Purchasing any kind of financial product will be built within a highly-contextualized proposition … remember when insurance was sold at kiosks in the US airports in the 50's? Now imagine a world where open APIs bring banking everywhere."
– **Ambrogio Terrizzano**,
Interactive Financial Services Lead for Europe at Accenture

"Some institutions will get serious about experiential design and build internal teams staffed with senior designers from out of category (e.g. Retail) to build elegant and integrated omnichannel experiences. They will be the winners in the future."
– **Tom Wennerberg**, EVP Marketing Director at Key Bank

"There will be continued digitization of banking and the redefinition of 'place'. This should, hopefully, prompt more financial institutions to invest more aggressively in digital channels, rethink their strategic planning processes, and consider 'place' as a customer mindset more than a geographic location."
– **Joe Sullivan**, CEO of Market Insights

"The Chinese are 'Always on'! It's much more than just O2O (online-to-offline and offline-to-online). Today, the Chinese people are 'always online', creating a need for banks to understand how to communicate and when to interrupt and influence. In China, social and ecommerce platforms are driving connections with retail brands, purchases and relationships with money."
– **Matt Dooley**, Director of Next Money Hong Kong

"In 2017, AI will help retail banks profile the collective financial lives of their customers. This will aid in multichannel distribution, by identifying the real-time what, where and when and how opportunities to deliver complimentary products and services."

– **April Rudin**, Founder and CEO of The Rudin Group

Though social media banking is still the least used channel, it's growing in popularity among consumers and banks because it has the potential to digitize "human" functions, like appointment booking, customer service, financial management and advising. The potential social channels provide could be push banks to explore the medium further, with the impact felt in 2017. **Bank of America** and **American Express** have already announced the launch of a Facebook Messenger chatbots, with many other banks indicating a plan to offer Messenger as a customer service channel in the future.

Testing Open Banking APIs

Banks are beginning to expose their data for use by third parties, such as fintech companies, through open APIs. Banks can not only make their own product data available, but also allow their customers to share their bank data with third-party providers, thus paving the way for "open banking."

API banking allows financial institutions to decouple its internal environment from the customer-facing apps. The bank is much more able to flexibly distribute its products through third-party channels provided by fintech partners, facilitating innovation and reducing time to market.

According to **Ron van Wezel**, Senior Analyst, Retail Banking and Payments at Aite Group, "Technology is a strong driving force in the trend to open banking. APIs enable banks to redesign their IT architecture and work with fintech start-ups to develop innovative solutions for their clients." Competition from peers and new entrants urges incumbent banks to develop a digital strategy. In Europe, regulations have accelerated the trend to open banking and enforces an end date for banks to provide open APIs.

Many US banks have limited or even shut off access to financial data rather than exploring ways to make sure that such access, once granted, is safe and secure. The largest banks, in particular, appear to want to control what outside organizations can use their data for the benefit of the consumer.

This has not gone over well with the US Consumer Financial Protection Bureau (CFPB). The CFPB recently issued a veiled warning to banks suggesting they may soon be forced to give up their troves of customer data if they don't do it voluntarily. The CFPB believes consumers should have control over their own data and the ability to instruct banks to share it with third parties if they wish.

There are many open banking models as shown by the chart from Aite below.

CHART 21: OPEN BANKING MODELS

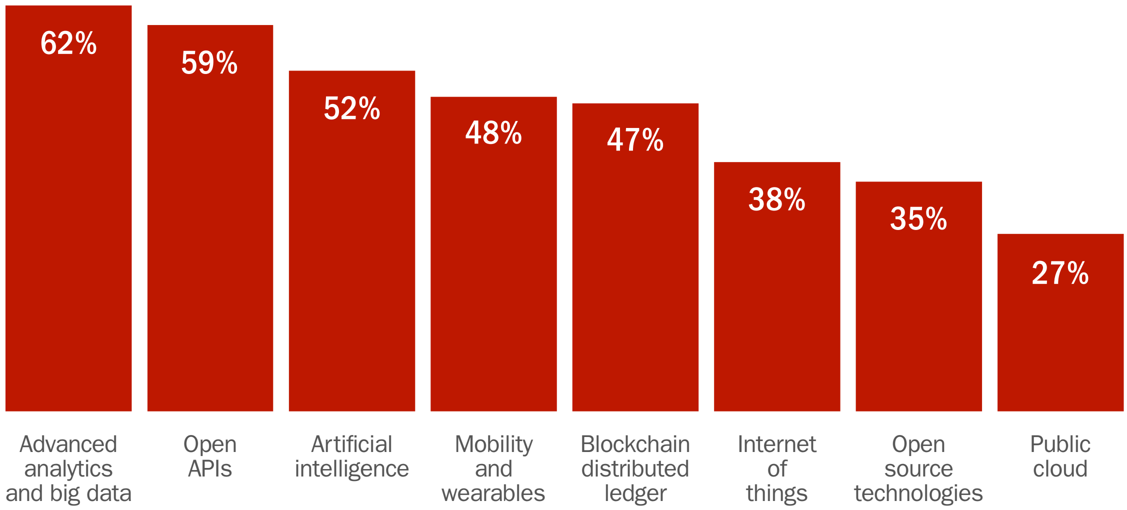
	Bank Channel	App Market	Distributor	Aggregator	Banking as a Platform
Description	Use APIs as a channel for own bank products.	Expose bank services through open APIs to third party developers.	Integrate/bundle external financial services with own offerings.	Aggregate multiple APIs from financial service providers into a single API.	Offer open banking platform including APIs to other financial institutions.
Value	Faster development, better UX	Create ecosystem around bank services.	Deliver best-in-class products with partners.	Multibank offering; standard solution for third-party providers	Enable banks to accelerate their digital strategy.
Business Model	Traditional	Charge API calls; or revenue share if third party brings clients.	Revenue share from service providers; new customers.	Service and transaction fees	License maintenance fees, revenue share
Examples	Many banks as part of digital strategy	BBVA api_market, Credit Agricole API CA Store, Capital One Devexchange	N26	Figo; many (non-bank) personal financial management (PFM) providers (Yodlee, Strands, Treefin)	Fidor, CBW/Yantra, Open Banking Platform

Source: Aite Group © December 2016 Digital Banking Report

In a global banking report from **Efma**, open application programming interfaces (APIs) were identified as one of the technologies due to have the biggest impact on their business models. APIs provide simple connections between systems, while open APIs establish connections between two parties.

- 59% of banks said they expect open APIs to have a high impact on their business.
- 67% of banks said they were already having an impact, or expect the impact to happen within the next two years.
- 39% of banks said they have a high level of investment in this technology.

CHART 22: IMPACT OF TECHNOLOGY ON BANKING BUSINESS MODELS



Source: Efma-Infosys © December 2016 Digital Banking Report

When asked about the timing of each impact, advanced analytics and big data were expected to impact the industry much sooner (79% believed the impact will be within the next two years), with mobility/wearables (75%) and open APIs (67%) also expected to impact banking in the next two years.

Alternatively, artificial intelligence and blockchain/distributed ledger technologies were thought to have a much less likely impact over the next two years (37% and 21% respectively). To some extent, these results correlate with where banks are investing.

Opportunities and Threats of Open APIs

Banks that jump in early and build open APIs before they are forced to by legislation will obtain several advantages. One is that they could use open APIs to incorporate third-party offerings into their own product suites, offering a broader range of services, which would likely boost customer loyalty. Another is that by building and proving that their APIs work, they may be able to set the standard for APIs in banking, giving them an edge over competitors.

There are also clear weaknesses. Banks must manage complex legacy infrastructures, and a transformation to open banking will require huge investments and a multiyear program to fully realize the potential. But traditional bank culture, not legacy systems, is perhaps the most important hurdle to digital innovation. According to Aite, long release planning cycles, traditional development methodologies, and a lack of senior management affinity with API strategy and open banking are factors opposing change.

Aite believes that the strengths and weaknesses of nonbank players look like the mirror image of that of banks … and therefore they can – and should – work together for a stronger customer experience.

CHART 23: OPEN BANK API SWOT ANALYSIS

Banks

Strengths
- Fully KYC-ed customer base
- Trusted provider
- Risk management, compliance, and security expertise
- Owner of banking "rails"

Weaknesses
- Culture
- Legacy infrastructure, not ready for open API banking

Opportunities
- Partner with fintech and develop financial ecosystem
- Widen product offering with third-party services
- Provide TPP services (PSD2)

Threats
- Disintermediation by fintech, neobanks, TPPs
- Loss of payment revenue (PSD2)
- Default ownership of liability (PSD2)

Source: Aite Group © December 2016 Digital Banking Report

Bottom line, open banking APIs enable incumbent banks to build and launch products more quickly, and probably more easily, than they historically could. Banks will also likely find it attractive that open APIs require minimal connection effort on their part and offer access to multiple third parties. Fintechs, on the other hand, will benefit by gaining access to incumbent institutions' large customer bases.

"The enablement of customers to share their data stored in bank systems with any 3rd party accredited organization will foster the emergence of data-driven business models and new commercial exploitation, providing new services and experiences for customers."
– **Claire Calmejane**, Director of Innovation at Lloyds Banking Group

"2015 was all about blockchain. 2016 saw an explosion of interest in machine learning and artificial intelligence. 2017 will be the year of open marketplaces and platforms. Platforms support the rapid cycle deployment of microservices into a financial marketplace. Those microservices are apps, APIs and analytics that transform the back, middle and front office respectively. As the financial world is rapidly moving to open, loosely coupled marketplaces, any bank with old legacy technology will start to look like a dinosaur."

– **Chris Skinner**, Author and CEO of The Finanser Ltd

"As banks become more comfortable with APIs, partnering with fintech start-ups, and coming to the realization that not all products need to be created internally, we will see more Banking-as-a-Service (BaaS) or Banking-as-a-Platform infrastructures being created."
– **Bryan Yurcan**, Senior Writer for the American Banker

"Frequency and depth of bank integration into the digital platforms most entrenched in our customers' lives (e.g., Google Now, Facebook, Alexa) will increase – reinforcing the long-term value of an open API architecture. On the flip side, banks will work to take advantage of the open API model to seamlessly integrate "best of breed" partners into their experience – beginning the 'platformification' of banking."
– **Niti Badarinath**, Head of NA Channels for BMO Financial Group

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"The most significant change in financial services next year will be open banking APIs, as banks will start focusing on how to expand their reach and shift from the brand to the back end. Bank APIs allows businesses to build and scale more quickly, opening opportunities to bring services to market faster. For this to be successful at scale in the US, the core banking vendors and the government need to get involved."

– **Scarlett Sieber**, SVP for New Digital Businesses at BBVA

"We will begin to see a variety of API business models emerge, but 2017 will be too soon to tell which will succeed and which will falter in this new API economy."
– **Paul Loberman**, Global Head of Retail Business Banking Digital at HSBC

"APIs are arguably one of the biggest topics in the industry. In Europe, they're now a regulation discussion that's becoming real. The business model for profiting as a platform is key here, and many are still struggling with it."
– **Simon Taylor**, Co-Founder of 11:FS

"In 2017, the hype around banking APIs will increase, even overtaking cryptocurrencies. Major banks will launch public API platforms. In Europe, a fight will break out between proponents of OAuth and ISO 20022 as the technical standard for PSD2 APIs."
– **Shamir Karkal**, Head of Open APIs at BBVA

"Platforms and ecosystems will continue to take shape as various banks further build their API strategies, their marketplace strategies, or even their Bank-as-a-Service strategies. I expect the beginning of standardization in a similar vein to the movement we have seen in the DLT/blockchain space."
– **Pascal Bouvier**, Venture Partner at Santander Innoventures

"2017 could be a year where we see several countries follow the UK lead regarding API regulations. Fintech capabilities and partnerships at challenger banks will grow as big, legacy banks put their integration skills on display."

– **Aden Davies**, Director of Portfolio Management at 11:FS

"Players have to prepare for the implementation of PSD2 in the UK and similar regulation potential in the US. With the creation of open banking platforms, there will be opportunities for fintech firms to partner with banks, creating more exciting customer experiences."

– **Oliver Bussmann**, Founder and Managing Partner at Bussmann Advisory

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"The maturation of APIs will accelerate the open banking movement. Banks and other ecosystem participants will get used to working with APIs and more will become available, propagating a virtuous cycle."
– **Dan Latimore**, SVP of Banking at Celent

Fintech Partnerships

The rise of interest in the fintech sector has been caused by increasing unmet consumer demands for digital banking solutions fueled by digital advances in many other industries. These consumer demands, combined with reduced barriers to entry in some markets, have improved the availability of funding for the sector and have increased the interest in potential partnerships.

The future of collaboration and competition between legacy financial organizations and new fintech providers remains somewhat uncertain. Banks and credit unions must continue to explore strategic options, however, as technology changes and regulations evolve.

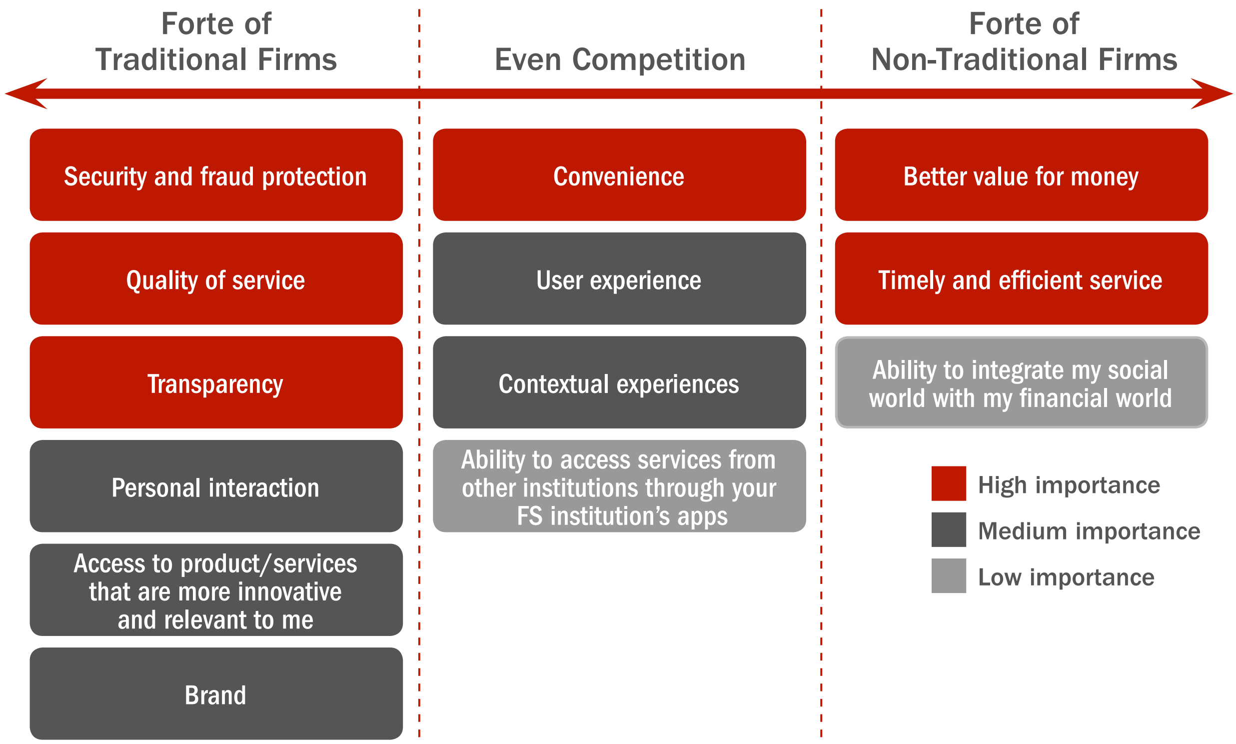
According to the *World Fintech Report 2017*, by **Capgemini** and **LinkedIn**, in collaboration with **Efma**, 50.2% of banking customers across the globe are using the products or services of at least one fintech provider. In addition, it was found that tech-savvy consumers are supplementing traditional banking services with fintech solutions at twice the pace as less tech-savvy consumers (67.3% vs. 33.6%).

While fintech firms usually have the "first mover' advantage, delivering customer-centric solutions at a low cost, without the burden of legacy infrastructure, they still lack scale in most cases. This is because traditional financial organizations continue to be viewed positively by consumers in the some of the most important foundational areas such as trust.

Only 23.6% of consumers say they trust their fintech provider compared to 36.6% for traditional firms. Consumers also noted that legacy financial institutions hold an advantage over fintech providers when it comes to fraud protection, quality of service, and transparency.

It should be noted that both traditional and non-traditional financial service providers are struggling to keep up with the demands of the increasingly digital consumer. It is thought that using advanced analytics to better understand the consumer and deliver personalized solutions will ultimately determine the winners and the losers.

CHART 24:
CONSUMER VALUE PERCEPTION OF TRADITIONAL AND NON-TRADITIONAL FINANCIAL PROVIDERS



Question: "How important are the following factors when working with your financial services provider and which type of firm provides a better experience on these factors?"

Note: Elements have been classified under 'Even' if the difference in positive experience for Traditional and Non-Traditional firms is less than 10%. Classification under 'Forte of Traditional' and 'Forte of Non-traditional' is done based on the customer's value perception on the experience that is provided to them by either of these firms.

Source: Capgemini Financial Services Analysis, 2016; Capgemini and LinkedIn WFTR Voice of the Customer Survey, 2016 © November 2016 The Financial Brand

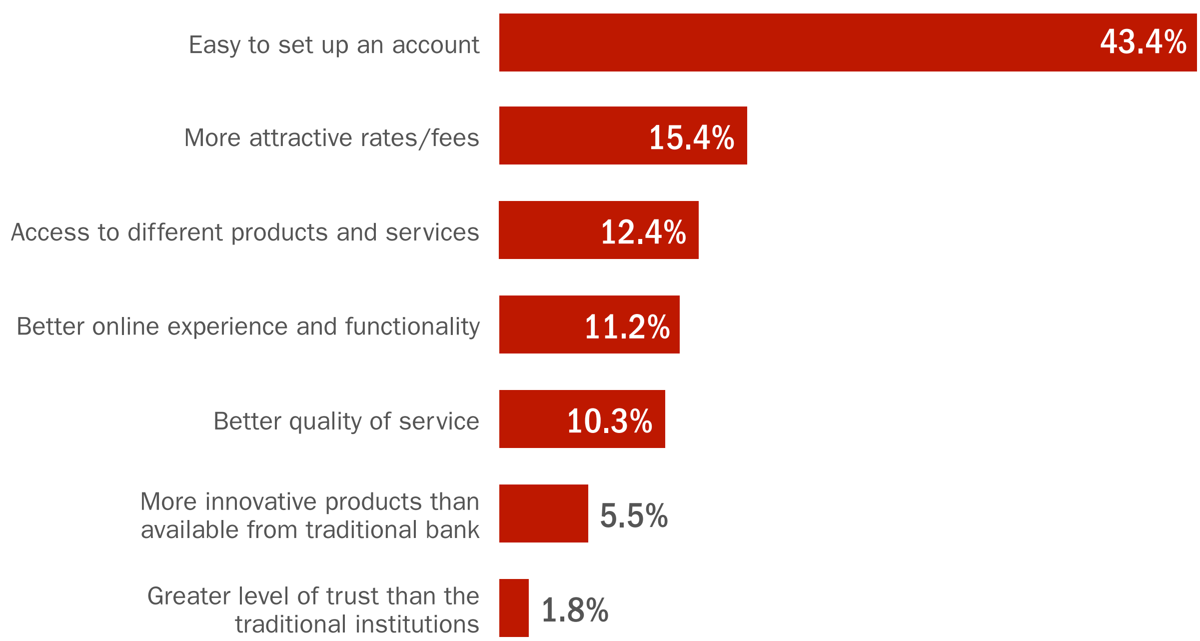
Simplicity is Fintech's Calling Card

There is nothing simple about opening a checking or current account, adding a savings plan, taking out a loan or establishing an investment or insurance relationship at a traditional bank. At most institutions, the paperwork is intimidating and the consumer is usually relegated to visiting a branch office.

That may be why the simplicity of setting up an account was the overwhelming reason for using a fintech provider according to EY's first *Fintech Adoption Index*. More attractive rates, access to different products and services and a better online experience were also popular responses, but these were dwarfed by the impact of making the process simpler for the consumer to engage.

Unfortunately, while there has been some progress made in digitizing some account opening and transaction processes by traditional banking organizations, the speed of change is not keeping up with the expectations of the digital consumer who are conditioned by the likes of Amazon, Apple, Uber, etc. For instance, less than 30% of the largest banks in the US provide an end-to-end mobile account opening process. Fintech firms also have built platforms where engagement with products is as easy as one click.

CHART 25: TOP REASONS CONSUMERS ADOPT FINTECH SOLUTIONS



Source: Ernst & Young © December 2016 Digital Banking Report

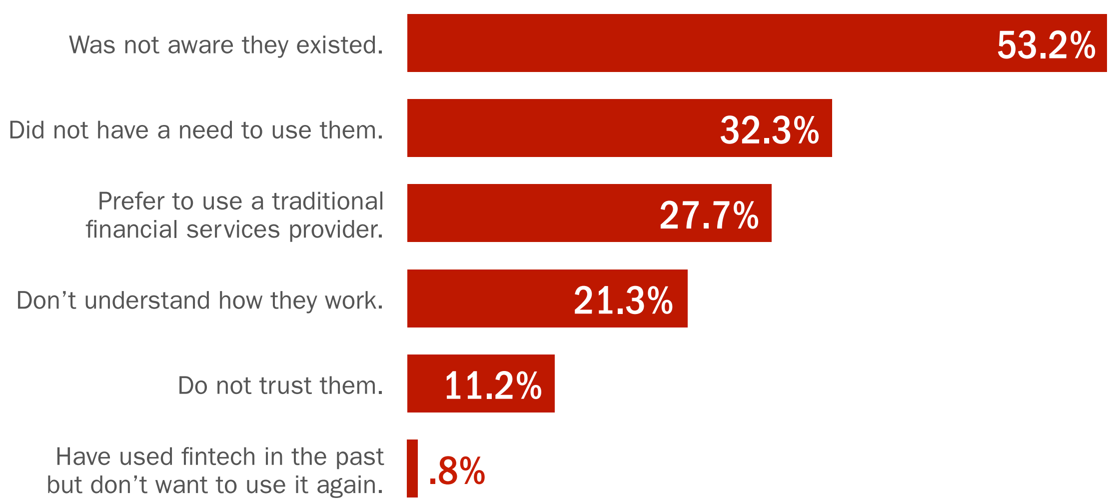
Awareness is Still an Obstacle for Fintech Firms

While ease is a calling card for fintech firms, the lack of awareness is the primary impediment to a broader adoption in the marketplace. Bottom line, the majority of non-fintech users are unaware that most fintech products exist, which provides a potential springboard for growth.

According to the EY research, for digitally active respondents who had not used two or more fintech products in the past six months, 53.2% said they were unaware the products existed, followed by 32.3% who say that they did not have a need to use the products. In addition, 27.7% preferred to use their traditional financial services provider, while 21.3% said they do not understand how the products worked.

Interestingly, trust was not a major impediment for fintech use, with only 11.2% of respondents saying they do not trust fintech providers.

CHART 26: MAIN BARRIERS PREVENTING CONSUMER ADOPTION OF FINTECH SOLUTIONS



Source: Ernst & Young © December 2016 The Financial Brand

The Opportunity for Collaboration Between Fintech and Legacy Banks

Not acting on the trend toward digitalization is dangerous since the industry's older customer base is shrinking. Per EY, the "Facebook Generation" will reach peak earning potential within the next ten years. This new breed of customers will demand anytime, anyplace, contextual tailored experiences facilitated by smart devices and ubiquitous internet access. Most banks currently struggle to meet the demands of this digital-first consumer.

Fidor and **Atom** are both recently licensed digital banks operating in Europe. **Simple**, **Moven**, **BankMobile** are growing in the US, with many other challenger banks close behind ready to introduce new banking services. It is only a matter of time before these mobile-first banks become the new normal.

The response to the fintech movement will differ for each organization, with the options of building internally, buying, partnering or playing "wait and see" all being options. But with the penetration of smartphones and wearables increasing and the expectations being set outside the financial services industry, there is the need for a logical approach for transformation and differentiation.

"In 2017, there will be a widening of the gulf between banks that are building meaningful partnerships with fintech firms and those that think that they are because they have a couple of tech vendors and a procurement department. There will also be an explosion of fintech offerings for small to medium enterprises (SMEs)."

– JP Nicols, Managing Director of Fintech Forge and Chairman of Next Money US

"2017 will be the year of Fintech rethinking its role. FinTech will not disrupt banking, but will deeply renovate it. Rethinking the expected speed of change, which is slower than start-ups want but faster than what bankers hoped. And, rethinking the fintech business model, looking for more revenues and less dreams."
– **Roberto Ferrari**, General Manager of Chebanca!

"I see collaboration between fintech and traditional financial services firms still being the big story for 2017. Many startups need additional investment and will require a longer runway to achieve scale and profitability. The environment will become even tougher as rates rise. We might also see the first mega-mergers and acquisitions between fintech unicorns and banks as the market begins its inevitable shake up."
– **Bradley Leimer**, Head of Fintech Strategy at Santander, US

"The lines between banking and fintech companies will blur, driven by open APIs, actionable data, and consumer demand. Traditional banking — fixated on paper, tellers, and mass marketing — will be crippled by competition from savvy tech partnerships and forward-thinking institutions."
– **Jon Ogden**, Director of Content at MX

"The Fintech debate shifts from Tech to Trust. Incumbent financial brands have formidable brand bulwarks, but they must resist being unbundled at key journey moments. At the same time, fintech challengers need to focus beyond cold lead gen to richer nurture and consideration campaigns."

– **Jennifer Grazel**, Director of Global Vertical Marketing at LinkedIn

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"The FinTech hype is at its peak. At the same time, many early fintech firms are out of money, and either need to shut down operations or merge with traditional banks. 2017 will become the year of symbiosis of fintech and banking."
– **Frank Schwab**, Member of Technology Advisory Board at Sberbank

"With rates rising and venture funding tapering off, the fintech sector will need to show how they can grow the bottom line more than ever and the only way to do that is with a large client base for distribution. Only the banks have that today."
– **James Anthos**, Director of Strategic Planning at BB&T

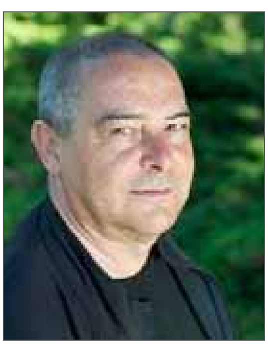
"We are witnessing the beginning of an important restructuring of the retail financial services, moving from a vertical, integrated, fully owned model to horizontals of functionalities where new type of agents will compete against each other but together, in various configurations they will be able to deliver diversified services at much lower costs."

– **Andra Sonea**, Fellow at Athemis

"Fintech startups will come together in 2017 to create solutions that solve fundamental business problems, old or new. There will be more regional hub and ecosystem bridges, and collaboration to emerge, ensuring there is a global view of all innovation coming up, regardless of where it originates from. Globalized efficiency will be the outlook for fintech in 2017."
– **Devie Mohan**, Co-Founder and CEO of Burnmark

"Banks' struggle to deliver innovation will lead to more Beta Banks launching and a maturing of how banks partner with early stage fintech firms. It will move from innovation theatre/stuff to excite the exec. to serious programs supported by a full launch to customers, capital injection etc."
– **James Haycock**, Managing Director of Adaptive Lab

"Banking has finally realized that they are falling short when it comes to innovation and are beginning to acquire and invest in small fintech startups Not surprising that 25% of global banks would buy a fintech company or that 60% would partner with one."
– **Sophie Guibaud**, Vice President of European Expansion at Fidor



"Fintech will manifest itself as a techno fantasy, drawing attention away from the real problems to be tackled: cybersecurity, trust and identity, which only can be solved through laser-focused industry and government efforts."

– **Peter Vander Auwera**, Founder of Petervan Productions

"With the uncertainty of an election year in our rear view mirror, 2017 will finally be the year that banks and lending fintech firms have to compete against each other in a rising rate environment … and the fintech firms that have forged relationships with banks will likely live to see 2020."
– **Chris Fleischer**, Research Guru at D+H

"Just as repartitioning of the world is happening through political forces, the repartitioning of the global digital banking space is going to happen by the most powerful digital ecosystems. The digital noise will fade away."
– **Barbara Biro**, Manager of Digital Transformation at Citi

2017 GLOBAL FI SURVEY RESULTS ON FINTECH

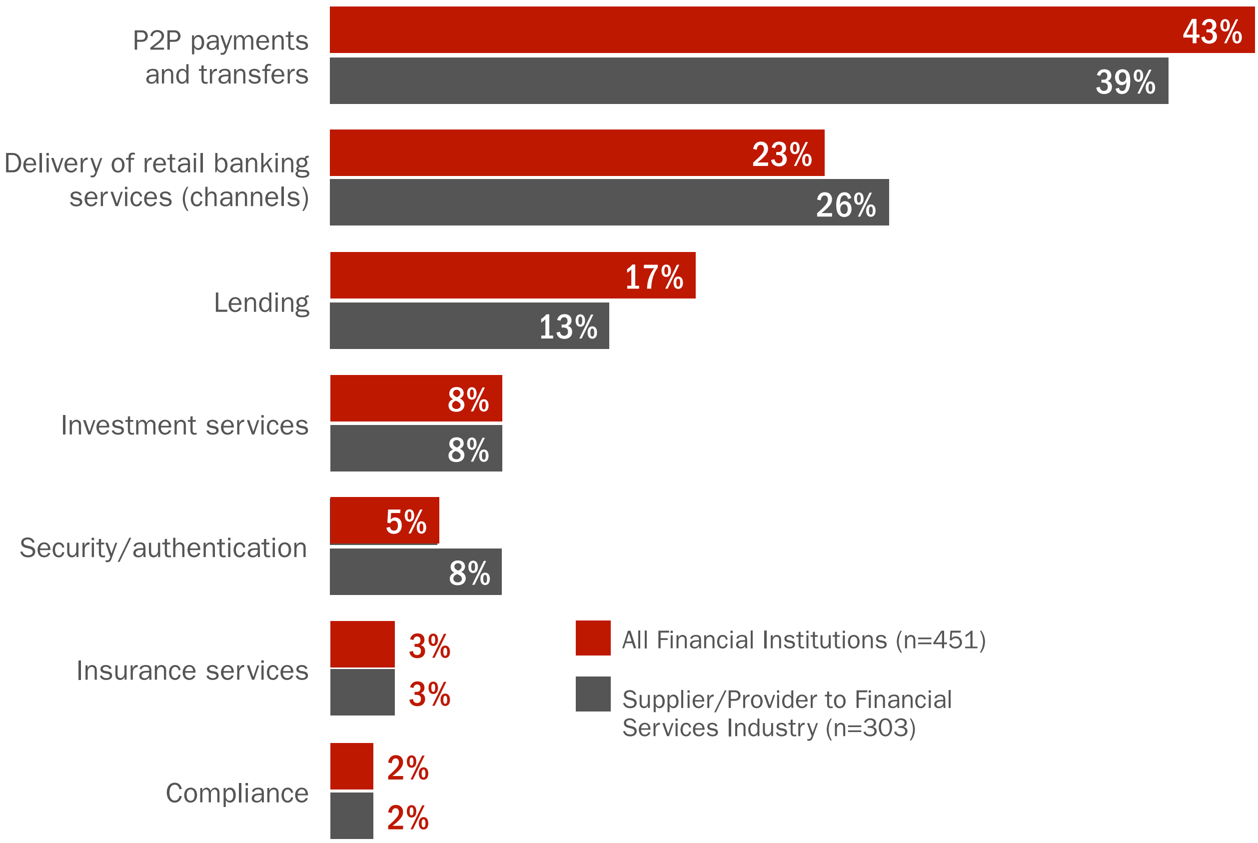
As part of our global research into the trends and predictions for 2017, we asked financial institutions about the impact and sentiment around fintech firms. The responses provide a foundation for understanding how the future may transpire in 2017.

CHART 27: AREAS OF LEGACY BANKING MOST LIKELY TO BE IMPACTED BY FINTECH IN 2017 (FINANCIAL INSTITUTIONS) (n=451)

When asked about the areas of legacy banking most likely to be impacted by fintech firms in 2017, responding organizations believed payments would be the key area impacted, almost by a 2:1 margin compared to the next highest response (delivery of services/channels). Lending was the third most likely area mentioned.

Source: DBR Research

CHART 28: AREAS OF LEGACY BANKING MOST LIKELY TO BE IMPACTED BY FINTECH IN 2017 (FIS VS SUPPLIERS)



Source: DBR Research © December 2016 Digital Banking Report

We asked the financial institutions worldwide whether they had partnered with a fintech firm in 2016 and whether they we expecting to partner with a fintech start-up in 2017. While the structure of the survey question could have impacted the findings (what is the definition of a fintech firm?), it is clear there is a greater likelihood of partnership anticipated in 2017.

CHART 29:
HAS YOUR ORGANIZATION PARTNERED WITH A FINTECH FIRM?

(n=509)

We established a partnership with a fintech firm in 2016

33%

We plan to partner with a fintech firm in 2017

40%

Finally, we asked the financial institutions involved in the research to list the top three organizations they believed would have the greatest impact in 2017. A word cloud provides the best way to view the results. From the illustration, there is a very strong indication that financial firms globally believe the most impact will come from the large technology firms (Google, Apple, IBM and Amazon) and the payment providers (PayPal, Square, Venmo).

CHART 30: WHAT THREE NON-BANK FINANCIAL TECHNOLOGY (FINTECH) FIRMS WILL HAVE THE MOST IMPACT IN 2017?

Expansion of Digital Payments

Despite an increase in awareness of mobile payments, usage continues to remain flat, illustrating the challenges in changing consumer behavior when merchants and issuers can't deliver a strong value proposition. Will 2017 be the 'tipping point' for digital payments?

Consumers make their payment choices based on personal preferences, available options, and often, out of sheer habit. Over the years, as new payment options are made available, consumers learn about new options, try new options and determine if a new way of making payments is more convenient and provides more value.

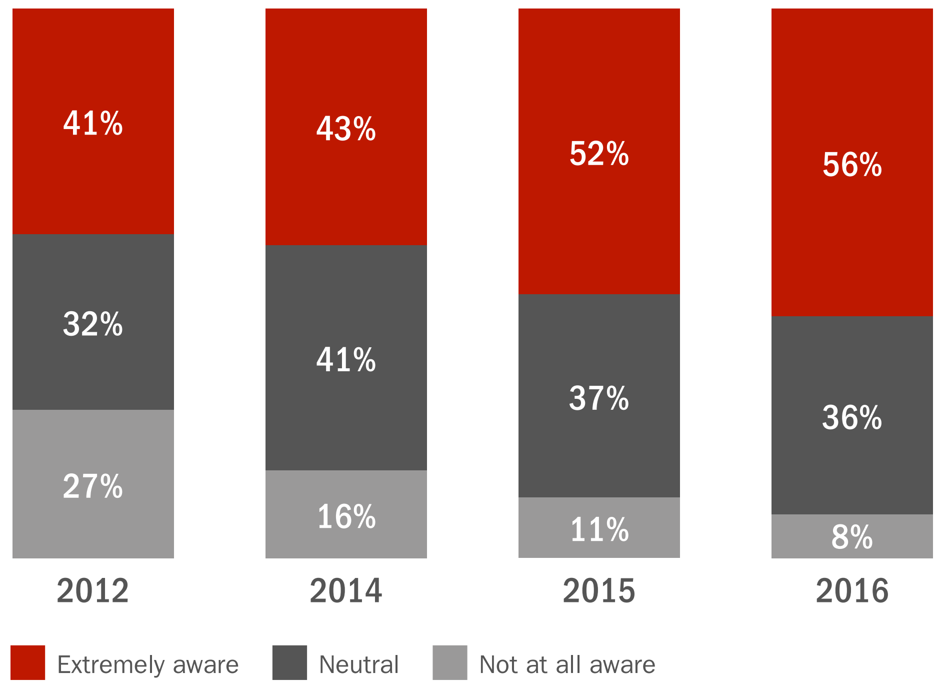
Over the past few years, the awareness of digital payments has escalated, especially online, where consumers have become comfortable using PayPal with their card 'attached' to their account. While awareness has also increased around the ability to make payments with a mobile device instead of plastic, the usage has not escalated to the same degree.

Awareness is usually a predictor of future usage, but will this be the case with mobile payments, where many of the foundational elements of increased usage are still not in place?

According to **Accenture**, 56% of North American consumers are now aware of mobile payment services — a 4% increase from 2015. However, the regular use of mobile payments remains flat at 19%, with 60% of consumers using cash at least weekly to make purchases at a merchant location (a drop of 7% from last year).

CHART 31: COMPARISON OF CONSUMER DIGITAL PAYMENT AWARENESS 2012 TO 2016 (NORTH AMERICA)

Q: Are you aware that there is technology available to use your phone as a payment device to buy goods or services at a retailer's counter?
Base: all respondents

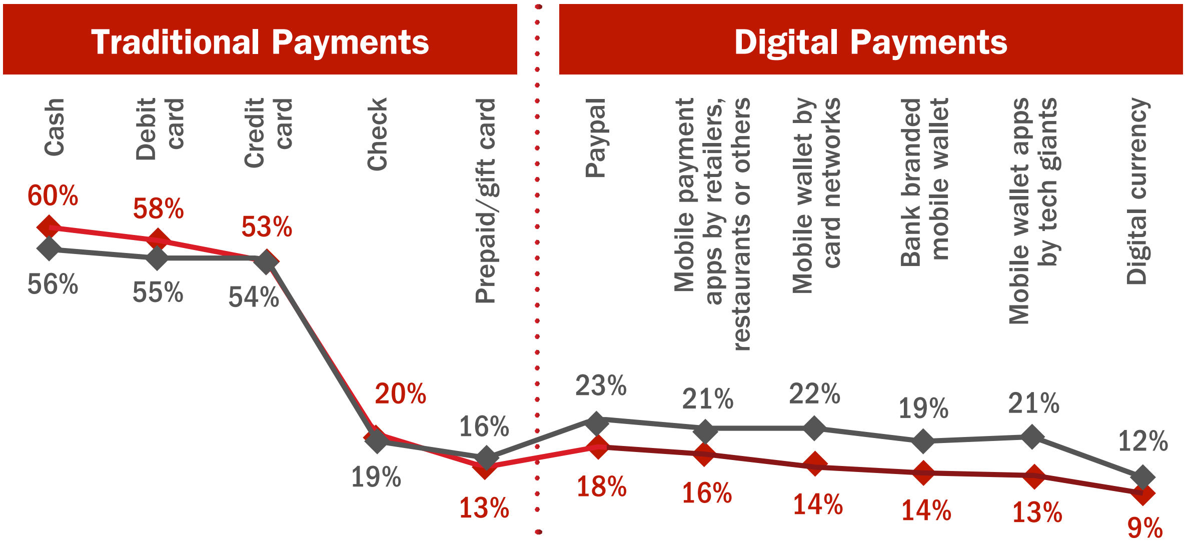


Source: Accenture © December 2016 Digital Banking Report

The *2016 North America Consumer Digital Payments Survey*, based on a survey of more than 4,000 smartphone users in the US and Canada, shows that consumers are expressing optimism about mobile wallet adoption in the future. anticipating a nearly 60% increase in the use of mobile wallets from card networks (from 14% in 2016 to 22% in 2020) and from technology companies (from 13% in 2016 to 21% in 2020). The usage of bank-branded mobile wallets is also expected to increase from 14% to 19%.

While digital payments options are expected to increase, traditional payment alternatives are in the decline. However, even with the expected decline in cash and debit card use, cash and plastic will continue to dominate the payments landscape for years to come. In fact, credit card usage was up three percentage points from 2015 and expected to increase another 1% by 2020.

CHART 32: COMPARISON OF CONSUMER USE OF PAYMENT OPTIONS 2016 TO 2020



TODAY how often do you use the different payment types to complete a transaction to purchase goods and services online or in store (AT LEAST DAILY + AT LEAST WEEKLY)

IN THE FUTURE how frequently do you anticipate you will use the following payment types to complete a transaction in 2020 to purchase goods and services both online and in store? (AT LEAST DAILY + AT LEAST WEEKLY) Base: all respondents

Source: Accenture © December 2016 Digital Banking Report

Barriers to Mobile Payment Adoption

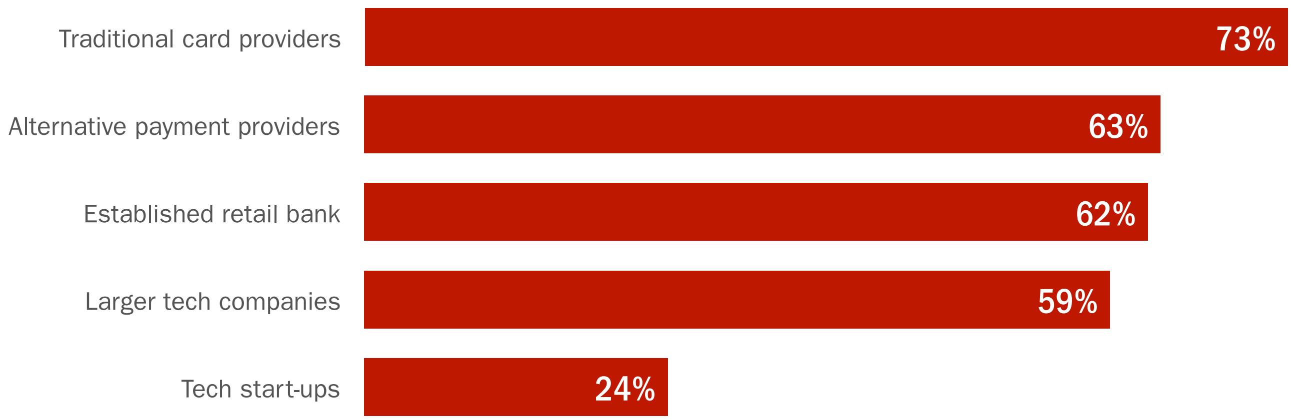
For financial institutions to achieve a first-mover advantage, barriers to consumer adoption of mobile payments must be addressed. Of the nearly two-thirds (64%) of consumers who have never used their mobile phone for in-store payments at a merchant location:

- 37 % said they have not done so because they believe cash and plastic are fine for their payments needs
- 21% prefer not to register payments credentials into their mobile phone
- 9% are concerned that unauthorized transactions may occur

Alternatively, of those consumers who have used mobile payment apps in-store, consumers most frequently used their bank's mobile app (26%), with 76% expressing satisfaction with the experience. In addition, 73% of the respondents said they trust traditional card providers the most as their mobile payments provider, followed by alternative payment providers like PayPal (63%), traditional retail banks (62%), and large technology companies (59%).

CHART 33: CONSUMER TRUST OF POTENTIAL DIGITAL PAYMENT PROVIDERS (NORTH AMERICA)

Q: Which of the following companies would you be more likely to trust as your mobile payment provider? (Definitely use + May use)
Base: all respondents



Source: Accenture © December 2016 Digital Banking Report

As with any commerce decision, consumers are looking for value. This includes what is being purchased as well as the way it is being bought. To this end, the Accenture survey found that consumers value tangibles like deals, discounts and rewards and intangibles like convenience and relevance. In fact, 45% of retail bank consumers say the top reason that they would stay loyal is if their bank offers discounts on purchases of interest.

There is a need to move from mobile payment transactions to digital commerce, where activity, behaviors, devices, location and offers all come together for an enhanced consumer experience. Open banking is one way for payments providers to improve their value proposition. Application programming interfaces (APIs) provide the technical backbone for organizations to partner with third parties to enable contextual engagement.

To be a market maker in the payments marketplace, providers will need to commit to increasing the level of personalization, leveraging insight not commonly used today. This includes not only payment data, but locational, behavioral and even social insights.

"Faster payments will start to become the standard in the US. Faster payments will start with simpler payment types, but will evolve during 2017. Acceleration of payment speed can help financial institutions regain control of their customer's payment relationship and help drive towards their goal of increasing digital engagement."

– **Matthew Wilcox**, Senior Vice President of Marketing Strategy and Innovation at Fiserv

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"Large commerce and payments platforms (such as Facebook, Amazon and PayPal) will get more aggressive with their financial services offerings, leading with more customer-centric innovation. We will also see massive disruption by outsiders in China with Ant Financial, Tencent, etc."
– **Gaurav Sharma**, Executive Director of Atlantis Capital

"Product innovation in prepaid will continue to boost financial inclusion around the world. Safer than cash, prepaid will continue to help consumers budget better and lay the groundwork for financial stability."

– **Bob Legters**, Senior Vice President at FIS

"2017 will see the rise of the super commerce platforms, with many of these originating in China. Names like Ant Financial, Tencent, Uber-beater Didi Chuxing, Weibo and Taobao, will join more commonly known platforms like Facebook, Apple and WeChat as social merges with payments globally."
– **Matt Dooley**, Director of Next Money Hong Kong

"2017 will be the year when bank-based real time P2P will gain mainstream adoption with Zelle. The fact that banks are not planning on charging for this service will be a key driver to adoption. This may finally be a nail in the coffin for checks."– **Deva Annamalai**, Director of Innovation and Insights at Fiserv"

A few banks will seize on real-time payments to cut out credit card companies, rebuild direct payment relationships with customers, and use technology to offer quick, cheaper, short-term personal loans as an alternative to cards."
– **Tom Groenfeldt**, writer for Forbes

"Retail banks will continue to lag the likes of Venmo, PayPal and more seamless digital mechanisms that continue to increase usage."
– **Bailey Reutzel**, self-employed reporter for Moneytripping

Responding to Regulatory Opportunities

As competition increases along with digital technologies and the way consumers do their banking, regulations are being challenged from both legacy players and start-up fintech firms. Fintech firms have not been very successful in forcing changes in regulations to date, mainly because most of the regulations are not in place to stymie competition, but to protect consumers.

There is no arguing that regulation increases the cost of entry, and provides some protection to incumbents. But most of the regulations that protected legacy banking organizations in the US were swept away as a part of deregulation in the late 1980s and 1990s.

Most of what remains exists primarily to serve other purposes such as consumer protection (truth in lending and equal credit opportunity) and anti-money laundering (related to KYC due diligence). Thus, even if consumers would prefer regulations to change, most are in force to protect them.

Since many of these rules are written so they cover not only banks and other traditional financial firms but would also cover fintech firms, regulators believe they can often act long before a fintech firm achieves the scale needed to gain a devoted customer base.

The Future of Fintech & Regulation

Regulators have a variety of reasons to want to facilitate fintech growth that are not inconsistent with their overall regulatory goals. One reason for optimism is that most regulations are not principally about limiting competition.

"The approach taken by many start-ups of asking for forgiveness rather than permission has not proven to be very effective for fintech firms."

There is continued discussion to allow for fintech entry while still achieving the goals of regulations. It is believed, in some cases, fintech could help existing financial services firms provide better services at lower cost. The hope is that lower-cost services will not only benefit existing financial services consumers but also help in reaching consumers who are currently unbanked or underbanked.

Another reason for optimism around the allowing of fintech related activities is that the technologies that fintech firms use may also help supervisors meet their regulatory responsibilities at lower cost. For example, distributed ledger technology could assist regulators in accessing consumer records. Finally, there is the recognition by governments globally that it is close to impossible to block financial innovation, especially given the large investments being made. If a regulator blocks adoption in one jurisdiction, the technology will most likely be developed in another market and imported into the blocked market.

It is for these reasons that regulators have expressed an interest in working with fintech firms to allow innovation to proceed within some regulatory bounds. The United Kingdom's Financial Conduct Authority (FCA) and the Hong Kong Monetary Authority have each created a "regulatory sandbox" for firms to try out innovative products, and a number of other countries are working on similar measures. US regulations are moving in the same direction.

It should be noted that, while the regulatory agencies want to find ways to accommodate fintech firms, these accommodations will not be done at the expense of meeting the regulators' underlying objectives of consumer protection and anti-money laundering. Instead, most proposals tend to focus on ways to allow fintech firms to test their products without bearing the full costs of regulatory compliance (within a limited "sandbox"). Also, as startups grow, they will eventually be expected to comply fully with rules related to the product(s) being sold.

The approach taken by many start-ups of asking for forgiveness rather than permission has not proven to be very effective for fintech firms. It needs to be remembered that the purpose of most regulations is not incumbent protection.

Financial regulators globally are becoming more and more open to innovation in financial services, and many see innovation as something to be supported rather than fought. The challenge is more often related to the ability of the fintech firms to gain the desired scale and profitability. It helps all parties when attempting to find efficient ways to meet their own goals without imposing unnecessary burdens on new innovations.

It is still unclear how regulators will balance the need for limiting risks with the desire to encourage innovation. It is clear, however, that the role of government regulations will increase in the foreseeable future, impacting partnerships, investments and innovation in the banking industry regionally and worldwide.

The very concept of what comprises fintech will shift. This new fintech era is being shaped by changes in market conditions, new regulations, and shifts in consumer demands and behaviors. Thus, the industry is becoming more cautious, even as it becomes more diverse across technologies and products.

2017 will be the year of 'Regtech'. Regulators are beginning to create environments where innovators and incumbents can find common ground before scaling their product or solution. Cross-pollination, and a more coordinated approach among regulators across geographies, will help fintech startups while facilitating a better collaboration with legacy financial institutions."

– **Matteo Rizzi**, Advisor for the Omidyar Network & Co-Founder of the FinTechStage

"The new decision from the OCC in the US to grant Fintech firms limited bank charters should make things interesting as more firms will be able to connect and offer payments without going through banks."
– **John Owens,**
Global Senior Advisor for Digital Financial Services for Development

"Partially due to the US elections, expect changes to current regulatory constraints, with decision-makers willing to take more calculated risks to increase profitability, decrease human costs and invest in tech transformation."
– **Lisa Kuhn Phillips**, VP of the Allied Payment Network

"We will see a war on cash as governments around the world appear to be suspiciously enthusiastic about moving their citizens to cashless. The loss of anonymous transactions will have a huge impact of civil liberties, with governments possibly not having our best interests at heart."

– **Chris Gledhill**, CEO and Co-Founder of Secco

"With the announcement by the OCC that fintech companies can apply for national bank charters, I expect to see many try to go that route in 2017 – in particular online lenders."
– **Mary Beth Sullivan**, Managing Partner of Capital Performance Group

"With a new administration governing in the US, all regulations will be on the table for review. And with the US having multiple regulatory bodies, plus a patchwork of state agencies covering financial services, we could see a complete rethinking of the overall US financial services regulatory approach."
– **Jim Van Dyke**, CEO and Founder of Futurian.Digital

"Ideas of 'partnerships' between fintech start-ups and financial institutions could fly out the window as a new 'lighter' charter landscape is created. While new charters may allow fintech companies to buy money as cheaply as banks, increased regulatory scrutiny on non-bank fintech companies may also slow growth for those unable to adapt."

– **John Waupsh**, Chief Innovation Officer at Kasasa and Author of *Bankruption*

"The potential of fewer regulatory and compliance requirements will save banks both staff time and money, that can be better spent improving digital channels for individuals and small businesses."
– **Lori Philo-Cook**, Marketing and Communications Consultant at InnovoMarketing

"Under a Trump administration, it's likely that regulations introduced since 2009 will be significantly rolled back, with Dodd-Frank repealed in part, which could boost investment and lending."
– **Don Peppers**, Futurist and Co-Founder of CXSpeakers

"US regulators will encourage innovation in the financial service industry, as they ease off new regulation. Sandbox schemes, controlled tests, and encouragement of standards will be the specific activities that we will see in 2017."
– **Alex Jimenez**, Digital Banking and Payments Specialist

"PSD2 will put massive pressure on the UK incumbents … global regulators will embrace fintech competition and regulatory concessions … Africa will embrace APIs … financial inclusion will become a mainstream and actionable topic … and the US will embrace change in the regulatory and political system."

– **David Brear**, CEO and Founder of 11:FS

Exploring Advanced Technologies

Banking is becoming less a place you go, and more something that is hidden from view behind digital banking and commerce apps. Technologies like Apple's Siri, Amazon's Alexa or Samsung's Viv will enable an even greater shift in banking. Instead of being hidden within apps, banking will become completely invisible to consumers.

Fueled by improvements in advanced data analytics, AI, voice-controlled devices, APIs, cloud technology and the Internet of Things (IoT), banking will be able to be integrated seamlessly within a consumer's everyday life. Ultimately being available 'beyond the device,' these technologies will allow banking, commerce, daily intelligence and decision making to be available to consumers 24/7/365 as a virtual, e-personal digital concierge.

In a vision presented by **KPMG** in their report, *"Meet Eva – Your Enlightened Virtual Assistant and the Future Face of the Invisible Bank"*,

Banking will become a disaggregated industry – with 3 distinct components.

- The first layer is the **platform**, leveraging a Siri-like device that combines the many services provided by smart tech with banking
- The second layer is the **product**, which becomes more flexible and customer-centric
- The third layer is the **process** layer that brings a new wave of utilities to operate the transactional infrastructure of banking

According to the vision presented by KPMG, large parts of the traditional banking organization could disappear. Functions and operations like customer service call centers, branches and sales teams could be a thing of the past. The winners will be those that are best positioned to utilize their data, drive down costs, build effective partnerships with a broad range of third parties, and drive this new engagement with a robust cybersecurity infrastructure.

Consumers will interact with a personal digital assistant (like Siri or Alexa) that proactively performs daily personal and financial tasks, informed by insights gathered from structured and unstructured data. The role of banking may be as a centralized provider of financial services from a variety of providers, as presented by Ron Shevlin (*The Platformification of Banking*). In a worst-case scenario, banking could become relegated to the position of a white labeled product provider.

It is believed that the platform layer will probably be provided by global technology players like Amazon, Google, Apple and/or Facebook. This is because technology hardware is hardly the core business of banks today who are focused on maintaining costly and outdated legacy infrastructure.

Progressive banks will want to own the product layer, however. This includes today's traditional products, the consumer's account behavior, custody of assets, and security function in addition to being the provider of outside products and services provided by fintech and non-financial technology providers.

The biggest banks will also want to retain the transactional (process layer) infrastructure, but again will look to be the centralized utility for fintech and technology providers. Competition will remain intense, especially for payments, settlements, core platforms, client onboarding, know your customer (KYC) etc.

CHART 34: THE STRUCTURAL CHANGE IN RETAIL BANKING

Platform Layer	• Customer interface • Brand, marketing • Quality, assurance & product selection	• Dominated by global technology players
Product Layer	• Manufacture product • 'Own' balance sheets • Security/custody of assets	• Low cost scaled banks • Niche providers, such as Fintech
Process Layer	• Facilitate payments • Manage administration and certain regulatory processes, eg. AML/KYC	• Centralized utilities • Major outsources • Fintech

Source: KPMG © December 2016 Digital Banking Report

The technology required to build the Invisible Bank already exists today. Components such as APIs, cloud-based services, artificial intelligence and mass personalization are already becoming the foundation for the future at many financial institutions. But, in most cases, these technologies are being used in the peripheral systems rather than the core.

According to Brett King, founder and CEO of **Moven** and author of the book *Augmented: Life in the Smart Lane*, "Banking is becoming embedded in our life through a set of distinct experiences, whether that be access to credit in a store, a voice agent that can act as a money coach and tell us if we can afford to go out for dinner and then can reserve and pay for a restaurant booking, or an algorithm that will manage our portfolio. As banking becomes a set of embedded technology-based experiences, the artifacts associated with the bank disappear."

A real shift in banking would require building out core platforms from scratch – and few banking CEOs have the risk appetite for that. The winners will be those that can utilize their data, drive down costs, build effective partnerships with a broad range of third parties, and provide robust cyber security.

CHART 35:
EXPECTED TIMING OF KEY TECHNOLOGICAL 'TIPPING POINTS'

2018	2021	2022	2023	2024	2025	2026	2027
Storage for All	Robot & Services	The Internet of and for Things Wearable Internet 3D Printing & Manufacturing	Implantable Technologies Big Data for Decisions Vision as the New Interface Our Digital Presence Governments and the Block-chain A Supercomputer in Your Pocket	Ubiquitous Computing 3D Printing and Human Health The Connected Home	3D Printing and Consumer Products AI and White Collar Jobs The Sharing Economy	Driverless Cars AI and Decision Making Smart Cities	Bitcoin and Block-chain

* Expectations of when key technological shifts will hit mainstream society as collected from 812 executives and experts from the information and communications technology sectors.

Source: World Economic Forum © December 2016 Digital Banking Report

"Chatbots (supported by robust AI and NLP) will start to go 'mainstream' – drawing into question the long-term future of apps in a 'post-app' world."
– **Niti Badarinath**, Head of NA Channels at BMO

"The most significant change in 2017 will be voice-mediated AI. This innovation will drive a deeper relationship that is more like a private banking relationship. AI and machine learning, with a Voice interface, will become a powerful way for banks to become more relevant with their customers, proactively recommending new products, on-demand finance and credit."

– **Brian Roemmele**, Founder of Payfinders.com

"In 2017, hype will move away from fintech, with the new hype on robotics, AI, deep machine learning and its potential impact eliminating the relationship manager."
– **Alain Enault**, General Manager and Program Director at Efma

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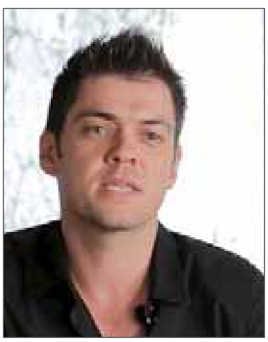


"Supported by the opening of regulation, there will be new products, service offerings and an abundance of non-bank players with new approaches to old problems. Technologies like Blockchain, AI, Natural Language Interfaces (Alexa, Siri, Google Assistant), and Cloud will underpin almost every advancement."

– **Scott Bales**, Managing Director at Innovation Labs Asia

"In the next year, machine learning and AI will be used to anticipate banking customer needs and proactively provide advice so they can make better financial decisions on a moment to moment basis. This will expand to biometrics, robotics, sensors, and the Internet of everything."
– **Luvleen Sidhu**, Co-Founder and Chief Strategy Officer at BankMobile

"Interactions with banks will be nothing different than a small talk with a friend. Conversational interfaces, in the form of AI-powered bots and Alexa-like devices, are going to remove any kind of friction, thus boosting digital adoption more than ever."
– **Ambrogio Terrizzano**, Financial Services Lead for Accenture

"Banks will join Capital One in working with Amazon's Alexa, while others will work with Apple's Siri. Still others will build their own virtual assistants, as USAA and Standard Chartered are doing. Banks and nonbanks alike will be forced to provide intuitive, conversational interactions for customers banking over digital devices."
– **Penny Crosman**, Editor at SourceMedia

"There will be increasing demand for providing intelligent virtual assistants to engage with customers through voice and text commands. Both help banks and credit unions offer highly personalized services to their consumers, improve customer satisfaction, and much more."

– **Steve Luong**, Senior Director of Marketing at Kony, Inc.

"Retail customers will start to feel the effects of API banking as their data is transformed into true capital. They'll also realize that the more data is exposed/exchanged, the less capital value it has on the market. This may result in a lesson in capital assets, not necessarily in smoother transactions."

– **Ghela Boskovich**, Director of Global Business Development at Zafin

"Evidence-based identity management will be the one technology to ensure systematic competitive advantage in the future."

– **Andreas Staub**, Managing Partner at FehrAdvice

"Customers will want and expect to access their bank via a chatbot on Facebook Messenger, or via a voice interface, such as Apple's Siri and Amazon's Alexa. This will start with basic information, customer servicing, and 'simple' transactions, and will get more sophisticated over time."

– **Zilvinas Bareisis**, Senior Analyst at Celent

"In 2017, more and more banks will embrace Robotic Process Automation (RPA) to help improve productivity and quality, while also offloading manual processing from employees. The result will include improved customer experience, as well as reduced cost of operations."

– **Jenni Palocsik**, Director of Solutions Marketing at Verint

"A hot trend for 2017 will be 'Botification™', as banks look to 'botify' their mobile banking-related service, marketing, and advice offerings with chatbots and AI technology."

– **Ron Shevlin**, Director of Research at Cornerstone Advisers

"Cloud hosted applications will make greater inroads in the financial services industry, with next year being an inflexion point as banks fast track this transformational initiative."

– **Arjun Ray Chaudhuri**, Senior Project Manager at Oracle

Emergence of Challenger Banks

If Challenger Banks are going to drive significant numbers of customers to change financial relationships, they must not only offer powerfully attractive alternatives and improvements, they must also convince consumers they can be trusted — to deliver on their promises and for security and privacy.

These challenger brands may be offering far better interest rates and lower bank charges, or easy to use digital services, or better design, or improved service, but the reality is that very few consumers switch providers despite widespread and often deep dissatisfaction and distrust with the financial industry's established players.

Even though these new innovative providers have been "challenging the status quo" for a few years now, the net number of those switching accounts has barely changed. In the UK, for instance, one million people switched their primary financial institution last year — 11% less than the previous year, even though several banks have been offering generous cash incentives to encourage switching.

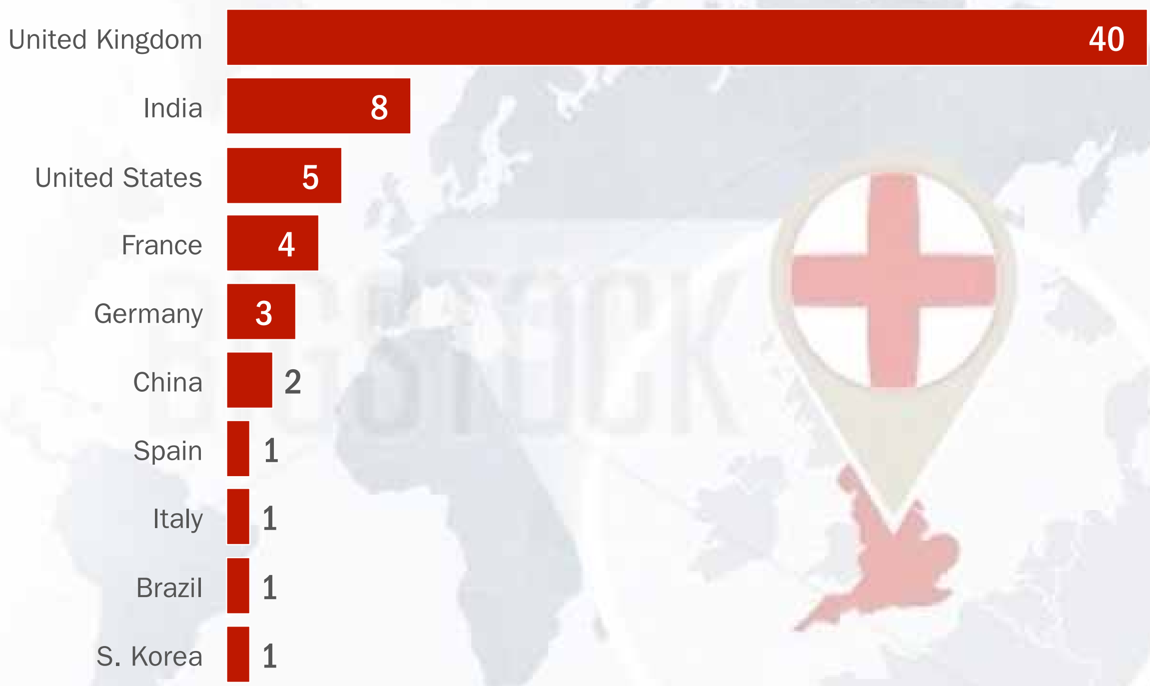
The same is true in the US, where new challenger organizations have many of the 'bells and whistles', but not the scale that one would expect from a better offering. The challenge is a combination of consumer lethargy, difficulty in switching accounts (more so in the US) and a lack of trust in many of the lesser known start-ups.

In study after study, consumers say they are willing to use digital-only banks and switch to innovators that hail from outside the industry. But when it comes time to pull the trigger, many revert to age-old criteria for selecting a banking provider (e.g., branch proximity).

Research from **Fiserv** shows that 80% of consumers would trust a new bank if it had “good technology,” and 56% said that a new bank would have an advantage over competitors if its IT was “very reliable.” Such numbers may sound encouraging to challenger banks, but the tech component only addresses the user experience and does little to engender trust.

Despite these challenges, these organizations are proliferating in the UK in numbers unseen elsewhere around the globe, according to data from **Burnmark**.

CHART 36: NUMBER OF CHALLENGER BANKS BY COUNTRY



Source: Burnmark © December 2016 Digital Banking Report

There are a number of reasons why the UK has so many challenger banks:

- **Regulations.** The Financial Conduct Authority (FCA) has been active encouraging the creation of new banks in the interest of greater competition. To make it easier for banks to launch, FCA created a unit in partnership with the payments regulator (PRA) that offers startups advice on regulation. The UK also operates a scaled licensing approach — new banks can be awarded an interim license once they have satisfied the regulators that their business model is stable. This sandbox environment allows the challenger bank to test systems and their business model with a limited customer base.

- **Capital.** The UK’s fintech scene has attracted significant investment over the last few years, and a sizable sum has gone to challenger banks. Digital-only bank **Atom** raised over $100 million before it even launched.

- **Frustration with Legacy Banks.** Consumer confidence in the legacy banking industry in the UK is at 33%, according to the Burnmark research. Weak ties between incumbents and their customers provides an opportunity for challenger banks to emphasize the customer-centric approach and transparency they offer — for example.

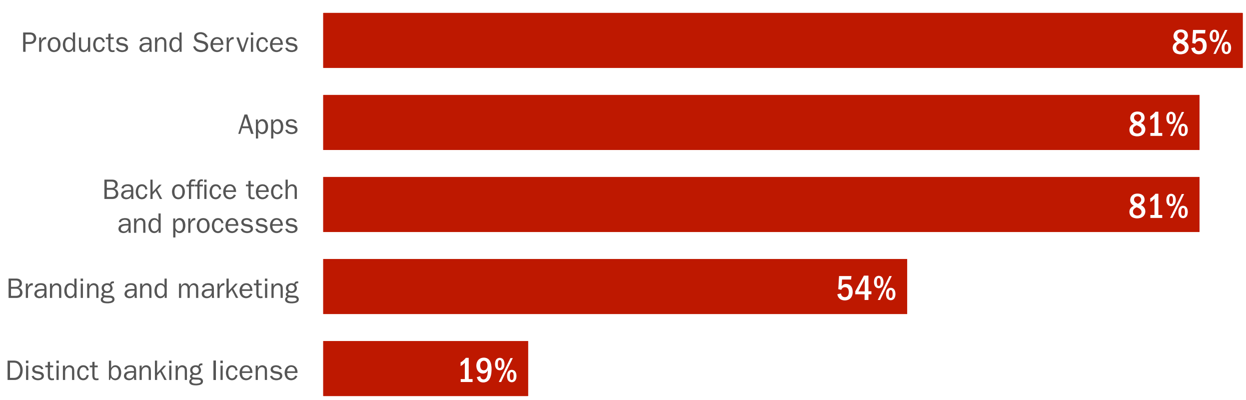
Despite the advantages offered by the UK market, it still seems likely that some challenger banks will fail. That's because the market is becoming increasingly crowded, making customer acquisition an uphill challenge.

One strategy used by legacy retail banks to compete with the growing number of digitally focused challenger banks is to open their own digital-only subsidiaries. These subsidiaries differ from their parent bank's core offerings in a number of ways, according to **Efma**.

- **The biggest difference is in product and service offerings.** Eighty-five percent of banks say their digital-only subsidiaries offer different products and services than their core bank. This perhaps explains why so many subsidiaries also have different apps, to reflect alternative products, and back-office tech and processes, to support separate offerings.

- **Very few subsidiaries have their own banking license.** Just 19% of digital-only offerings from legacy banks are separately authorized. That's likely because there is no need for a subsidiary of a regulated bank to obtain its own license in most countries.

CHART 37:
HOW GLOBAL DIGITAL-ONLY SUBSIDIARIES DIFFER FROM THEIR CORE BANK



Source: Efma/Finacle © December 2016 Digital Banking Report

Launching digital-only banks can be a faster way to bring new products to market. Banks increasingly need to launch products and create user experiences that compete with digitally focused challengers' offerings.

Setting up a digital subsidiary enables the parent bank to leverage advantages used by digitally focused new entrants, like new back-office technology, to get competitive products to market faster than by going through a risky and expensive transformation of the bank's core business.

Legacy banks are likely also using subsidiaries as learning tools. A digital-only offshoot allows the incumbent to test new products, customer experiences, and technology and processes, and transfer lessons from those that work into the core business.

"2017 is the year challenger banks will need to prove they can actually win customers, and traditional banks need to prove they can truly make digital the center of their strategy."

– **Jelmer de Jong**, VP of Product Management at Backbase

"There are many new digital challengers in the UK gearing up for their full launch and the lifting of their banking restrictions. When this happens, it will herald a huge shift for the fintech sector, with real competition finally being possible. Customers will have real choice."
– **Anne Boden**, CEO of Starling Bank

"Online lenders will make a comeback by more deeply partnering with banks, or by becoming banks."

– **Teppo Paavola**, Chief Development Officer at BBVA

"In 2017, we will begin to see the era of insurtech (insurance technology). The integration of advanced analytics, digital delivery and devices will herald in new challengers that will be watched closely by start-up banks and legacy organizations."

– **Spiros Margaris**, Founder of Margaris Advisory

"Being truly digital will come of age, as organizations like N26 and Monzo (who now have banking licenses) look to expand. Both have a digital core … It will be interesting to see how they differentiate, grow and what sort of ROE they can deliver."
– **Simon Taylor**, Co-Founder of 11:FS

"It's going to be the year where 30 new banks come to the market in Europe and we start to see whether or not they will make dents in the retail, commercial and wealth spaces."
– **David Brear**, Founder and CEO of 11:FS

"Unlike single-product fintech solutions, challenger banks are rethinking comprehensive banking services from the perspective of the ideal customer experience. They are 'new hope' for the financial services industry. Their models and experience could turn into a key factor for the whole industry transformation over the next 10 years."

– **Alex Kreger,** Founder and CEO of UX Design Agency

Investment in Innovation

The innovation agenda has become intertwined with the digitalization agenda, with both requiring changes in culture and back office operating systems. While increases in innovation investment have slowed, the focus is still on reducing costs, improving engagement and making banking easier.

Financial institutions are under immense pressure to evolve and usher in new technologies to make banking a more user-friendly and efficient experience. But the strategies that spur innovation cannot be introduced overnight. Rather, banks must commit time and financial resources to upgrade technology, hire talented workers, build a degree of flexibility into management and diversify.

To better position themselves for the future, banks need to address three hurdles standing in the way of bank innovation:

- The rigidity of hierarchial organization
- An increasingly out-of-touch culture
- The ever-widening technology gap.

One of the biggest barriers to innovation in banking lies at the foundation of how traditional firms are built. Banks have a relatively rigid organizational structure of associates, analysts, various managers, directors, vice presidents and so on. Ideas easily get lost or forgotten in this complex chain of command. Simply put, a hierarchical management structure hinders creativity, agility and flexibility – all drivers of innovation.

Innovation requires a change in attitude from what the banks want to offer to what customers need. This seems obvious, but it is especially difficult to create in large revenue-oriented organizations. One additional reason American banking organizations are out of touch with their customers is that the demographics of banking executives has stayed relatively stagnant while customer profiles have changed significantly in recent decades.

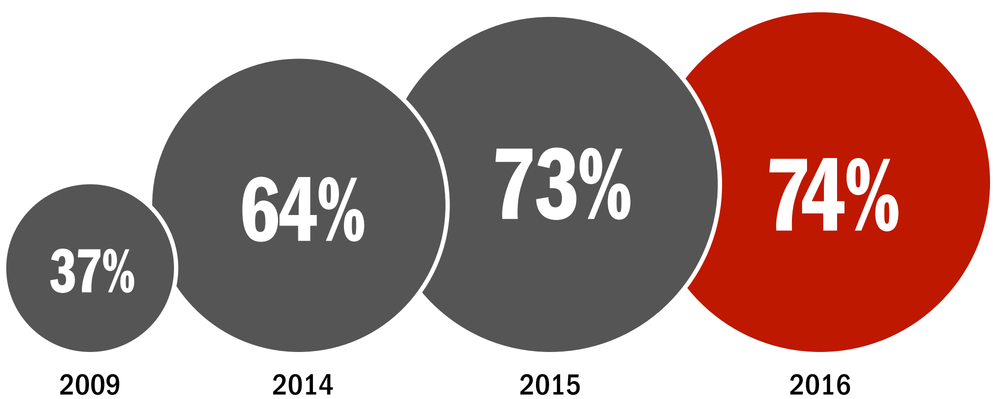
Technology has evolved tremendously in the past 10 years, and big banking organizations have struggled to incorporate new features at scale with the required agility needed in a fast-paced environment. Banking technology systems are currently full of complex applications with redundant functionalities and limited connectivity. This makes it very difficult for banks to incorporate the product demands and tastes of millennial users in the necessary time to market.

Given these challenges, banks should consider strategic acquisitions and partnerships with promising and successful fintech startups. By integrating innovative entities that are being created to meet the demands of the marketplace, banking institutions can more quickly meet the changing needs of their customers in new regions and in more ways.

Investment in Innovation

According to the Efma/Infosys Finacle *Innovation in Retail Banking* study, the proportion of banks with an innovation strategy has increased marginally in 2016 to 74%. This is only a one percentage point rise from last year, yet significantly more than the level in 2009. The slowdown in innovation spending is also reflected in the proportion of banking organizations that have increased spending YOY, where we see a drop from 84% increasing their innovation investment in 2015 to 78% in 2016.

CHART 38: PROPORTION OF BANKS WITH INNOVATION STRATEGY



Source: Efma-Infosys © December 2016 Digital Banking Report

The areas where most banks are increasing innovation investment are customer service/experience (84%) and channels (82%), followed by processes (67%), products (63%) and sales and marketing (56%). Interestingly, 50% of banks regard their innovation performance in channels as high (scoring 6 or 7 on a scale of 1 to 7). In all other areas (customer experience, processes, products and marketing/sales), less than one third of banks feel that their innovation performance is high.

"One challenge for banks, in a financial environment which continues to be difficult, is how much to invest in innovation, and where. There are many options and lots of different strategies, including acquisitions, investments and partnerships."

To help jump-start innovation efforts, many banking organizations are working with start-ups. For instance, the research found:

- 41% of banks are working with start-ups as suppliers
- 32% of banks are making investments in start-ups (vs. 21% in 2015)
- 27% of banks are running accelerators or incubators, internally or externally (vs. 25% in 2015)

The majority of banks (69%) believe they are becoming more innovative. This is a very similar result to last year's survey from Efma, indicating that the investments being made in innovation are to some extent having an impact.

One challenge for banks, in a financial environment which continues to be difficult, is how much to invest in innovation, and where. There are many options and lots of different strategies, including acquisitions, investments and partnerships.

Having an innovation lab of some description now seems to be a basic requirement, but many seem to be more for show than for implementable innovations. Many banks are moving innovation back to the front line for testing and roll-out.

Small and medium sized banks might be at a disadvantage to larger banks when it comes to innovation investment. However, there are steps they can take to ensure they are keeping up:

- **Monitor Trends and Other Organizations.** Make sure your bank is aware of all the critical innovations taking place around the world and understand how these are impacting the business model of banking.

- **Build an Innovation Culture.** Smaller banks will have an advantage over larger banks when it comes to developing an innovation culture so this is an area on which to focus attention.

- **Prioritize.** With limited resources, smaller banks need to be very selective and disciplined in choosing where to invest.

- **Leverage Vendor Relationships.** Make use of relationships to access innovation at lower cost, done by vendors, other organizations or even trade groups.

"I think that over the next twelve months we will see the comeback of the innovation edge from those few traditional banks that have thoroughly embraced digital. Insight + digital infrastructure + customer experience design will produce a new, powerful competitor to fintech start-ups."

– **Marco Brandirali**, Executive Director at EY

"The biggest news will be material or mission-critical financial services technologies moving to cloud-first architectures, opening the door for innovation at the core of a bank."
– **Scott Bales**, Managing Director at Innovation Labs Asia

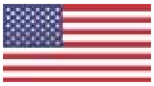
"Due to economic and bottom-line pressures, banks will witness massive lay-offs and disinvestments in innovation labs and initiatives. These initiatives will be re-branded as research efforts, focused solely on incremental improvements in the core business lines."
– **Peter Vander Auwera**, Founder of Petervan Productions

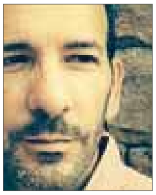
"2017 will be the year of accessible integration...finally! Look for trade groups, cores and community bankers to unite in the effort to make community bank tech relevant and open to innovation."
– **Jill Castilla**, President and CEO of Citizens Bank of Edmond

Closing Thoughts

"Long time stable financial institutions will no longer be the safe bet for many. Waves of hidden entrepreneurial minds are about to leave their comfort zone to look for 'new income models' or to create/strengthen start-up ventures. It's time to refresh talent in banks, as many 'legacy' employees become obsolete."

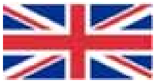
– **Maria Jose Jorda Garcia,** Head of Customer Experience Transformation at BBVA

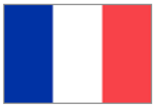




"There will be a continued power shift to the East. The emergence of Asia, led by China, as the leader in fintech investment and innovation of financial services products will occur due partially to the uncertainty in Europe thanks to Brexit and the new administration in the US."

– **Sam Maule**, Director and Senior Practice Lead at NTT Data



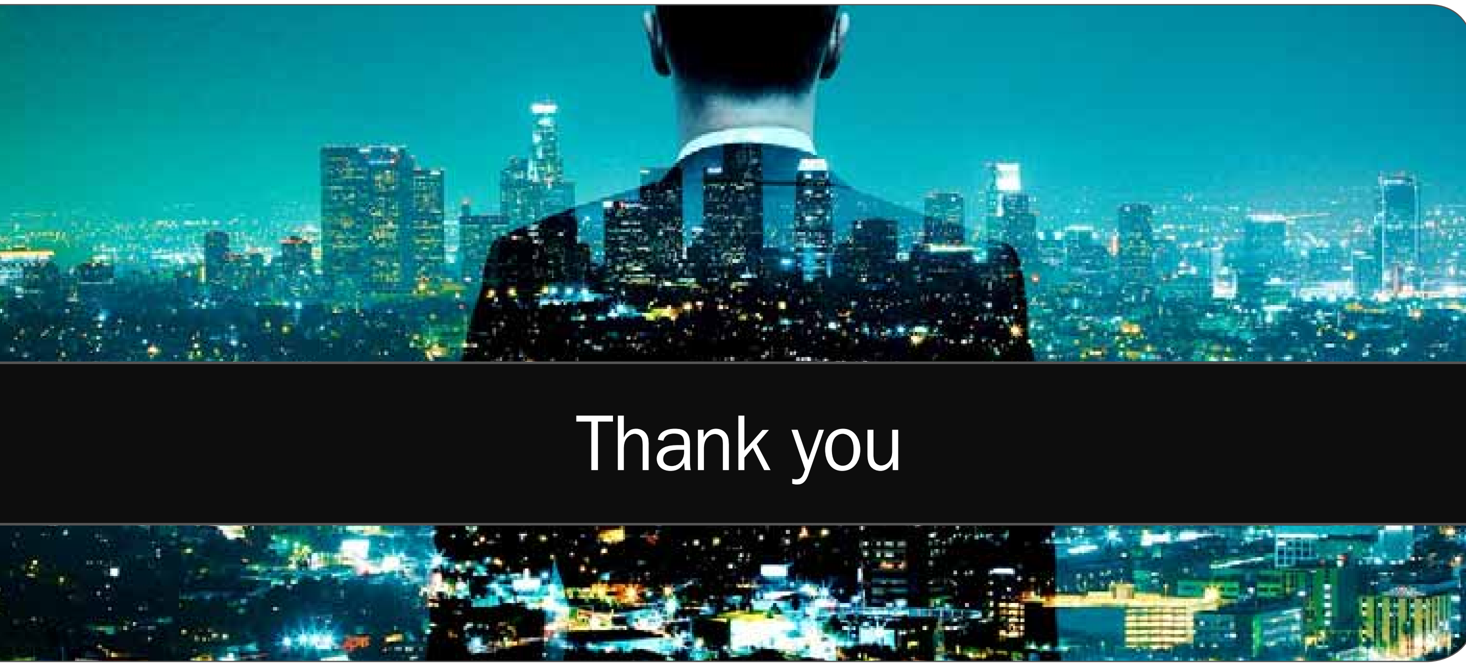


"2017 will see an increase in competition for talent with the rise of the Asian hub. This has been set by the success of several very large fintech events that have produced fintech unicorns with key figures like Jack Ma, CEO of AliPay, with the intention of turning Fintech into TechFins."

– **Claire Calmejane,** Director of Innovation at Lloyds Banking Group

"Social media has given rise to a new class of online influencers in financial services, comprised of experts and analysts, competitors and collaborators, journalists and bloggers. Whether you're a disruptive start-up or an incumbent brand, you need to identify relevant influencers and start building relationships with them. You can buy followers, but you can't buy influence."

– **Jay Palter**, President and Founder of **Jay Palter Social Advisory**



Thank you

I would like to thank the more than 100 members of this year's crowdsourced panel (who are shown on the following 4 pages) who accepted my invitation to be interviewed for this expansive annual report. The insight shared was extraordinary, and the continued support of this effort is greatly appreciated.

I would also like to thank the more than 900 banks, credit unions, suppliers and vendors who took the time to help us prioritize the trends from both 2016 and 2017. I know you're busy, so some special thanks.

I would also like to thank Carol Ryan, Jim Booth, Jeffry Pilcher, Ron Shevlin, Brett King and the rest of the Fintech Mafia for the daily support, inspiration, insights and laughs.

My wife Linda and my son Cameron also get a huge thanks for putting up with me daily. (It's not easy.)

Finally, and most importantly, I would like to thank the sponsor of this year's research, Kony, Inc. Without your support, this research would not be possible.

I don't think there is any annual research available that provides as in-depth a review of annual trends from such a diverse audience. But I'm always open to suggestions.

Jim Marous,
Owner and Publisher
Digital Banking Report

2017 Crowdsource Panel

Deva Annamalai
Director, Innovation and Insights
Fiserv

James Anthos
SVP, Director of Strategic Planning
BB&T

Peter Vander Auwera
Founder
Petervan Productions

Niti Badarinath
Head, NA Channels
BMO

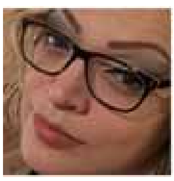
Scott Bales
Enterprise Business Development - APAC
Amazon Web Services

Zilvinas Bareisis
Senior Analyst
Celent

Don Bergal
CMO
Avoka

Nick Bilodeau
Head of Insurance, Canada
American Express

Barbara Biro
Manager of Digital Transformation
Citi



Duena Blomstrom
Fintech and Digital Experience Specialist
DB Consulting

Anne Boden
CEO
Starling Bank

Ghela Boskovich
Director, Global Business Development
Zafin

Pascal Bouvier, CFA
Venture Partner
Santander InnoVentures

Marco Brandirali
Executive Director - EMEIA FS
Advisory Services
EY

David Brear
CEO and Founder
11:FS

Oliver Bussmann
Founder & Managing Partner
Bussmann Advisory

Claire Calmejane
Director of Innovation
Lloyds Banking Group

Mike Carter
CMO
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Jill Castilla
President and CEO
Citizens Bank of Edmond

Mark Charette
CEO
Solidus, Inc.

Arjun Ray Chaudhuri
Senior Product Manager
Oracle

Bryan Clagett
CMO
Geezeo

Penny Crosman
Editor
SourceMedia

Aden Davies
Director of Portfolio Management
11:FS

Jelmer de Jong
VP, Product Management
Backbase

Matt Dooley
Executive Director
Connected Thinking Asia

Alain Enault
General Manager & Program Director
Efma

2017 Crowdsource Panel

Rob Findlay
Founder & Managing Partner
Next Bank

John Fishback
Principal Executive Advisor
CEB

Chris Fleischer
Market Research Director
D+H

Maria Jose Jorda Garcia
Head of Customer Experience Transformation
BBVA

David Gerbino
Founder
DMG Consulting

Chris Gledhill
CEO and Co-Founder
Secco

Jennifer Grazel
Global Director, Vertical Marketing
LinkedIn

Tom Groenfeldt
Writer
Forbes

Sophie Guibaud
VP, European Expansion
Fidor

Danielle Guzman
Global Solutions Marketing Leader
Mercer

James Haycock
Managing Director
Adaptive Lab

Jacob Jegher
SVP, Banking and Head of Strategy
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Alex Jimenez
Digital Banking and Payments Specialist
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Shamir Karkal
Head, Open APIs
BBVA

Brett King
Best selling author and CEO/Founder
Moven

Mike King
Founder and President
Bankwide

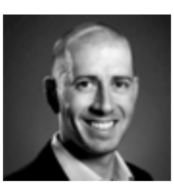
Alex Kreger
CEO
UX Design Agency

Vikram Krishna
Head of Group Marketing & Customer Experience
Emirates NBD

Christophe Langlois
Executive Consultant
IBM

Dan Latimore
SVP, Banking
Celent

Theodora Lau
Director, Market Innovation
AARP



James Robert Lay
CEO
CU Grow

Bob Legters
Senior Vice President
Fidelity National Information Services

Bradley Leimer
Head of Fintech Strategy
Santander, US

Paul Loberman
Global Head of Retail Digital Banking
HSBC

Steve Luong
Director, Product Marketing
Kony, Inc

Don MacDonald
CMO
MX

2017 Crowdsource Panel

Sam Maule
Director and Senior Practice Lead
NTT Data

Craig McLaughlin
President
Extractable

Sebastien Meunier
Senior Manager
Chappuis Halder & Co.

Devie Mohan
Co-founder and CEO
Burnmark

Tiffani Montez
Senior Analyst
Aite Group

Alex Nechoroskovas
Founder
FinTech Summary

JP Nicols
Managing Director of Fintech Forge
Chairman of Next Money US

Jon Ogden
Director, Content Marketing
MX

John Owens
Senior Financial Services Advisor
Digital Financial Advisory Services

Teppo Paavola
Chief Development Officer
BBVA

Jenni Palocsik
Director, Solutions Marketing
Verint

Jay Palter
Chief Engagement Officer
Jay Palter Social Advisory

Don Peppers
Futurist and Co-Founder
CXSpeakers

Jim Perry
Consultant and Strategist
Market Insights

Lisa Kuhn Phillips
VP
Allied Payment Network

Lori Philo-Cook
Owner
Innovo Marketing

Steven Ramirez
President
Beyond the Arc

Bailey Reutzel
Reporter
Moneytripping.com

Matteo Rizzi
Co-Founder
FinTechStage Limited

Brian Roemmele
Founder
PayFinders.com

April Rudin
Founder and CEO
The Rudin Group

Frank Schwab
Member, Technology Advisory Board
Sberbank

Gaurav Sharma
Executive Director
Atlantis Capital Pte Ltd

Tom Shen
CEO
Malauzai Software, Inc.

Ron Shevlin
Director of Research
Cornerstone Advisors, Inc.

Luveen Sidhu
Chief Strategy and Marketing Officer
Bankmobile

Scarlett Sieber
SVP, Global Business Development
BBVA

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Alex Sion
Head of Mobile Platforms
JPMorgan Chase & Co.

Chris Skinner
President
Financial Services Club

Brian Solis
Author, Digital Analyst and Anthropologist
Future Works

Andra Sonea
Lead Solutions Architect
Lloyds Banking Group

Andreas Staub
Managing Partner
FehrAdvice & Partners AG

Nicole Sturgill
Principal Executive Advisor
CEB

Joe Sullivan
CEO
Market Insights, Inc.

Mary Beth Sullivan
Managing Partner
Capital Performance Group

William Sullivan
Head of Global Financial Services Market Intelligence
Capgemini

Danny Tang
Channel Transformation Leade
Global Banking & Financial Markets
IBM

Simon Taylor
VP, Entrepreneurial Partnerships
Barclays

Ambrogio Terrizzano
Financial Services Lead, Europ
Accenture

Jennifer Tescher
President and CEO
The Center for Financial Services Innovation

Huy Nguyen Trieu
Author
Disruptive Finance

Jim Van Dyke
CEO, Founder
Futurion

Ron van Wezel
Senior analyst
Aite Group

Dominic Venturo
Chief Innovation Officer
U.S. Bank

John Waupsh
Chief Innovation Officer
Kasasa by BancVue

Jeff Weikert
President
Payveris

Tom Wennerberg
EVP / Marketing Director
KeyBank

Matthew Wilcox
EVP, Digital Banking Group
Fiserv

Daryl Wilkinson
previously Head of Group Innovation
Nationwide Building Society

Bryan Yurcan
Senior Writer
American Banker