WHITE PAPER | BANKING & FINANCIAL SERVICES | DATA INTELLIGENCE & AUTOMATION

Get Personal: Banking on AI to Help Customers Reach Their Hopes and Dreams

NTT DATA global study finds more than 80% of financial industry executives believe artificial intelligence is central to their strategies to differentiate products for each customer

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Introduction

The financial services industry has always been a deeply personal business. Customers will turn over their financial future only to people and institutions they trust, and that bond has been forged through person-to-person relationships for generations.

Today, however, cataclysmic events in business, technology and society are suddenly conspiring to drive a wedge between financial institutions (FIs) and their customers. New competitors, changing consumer expectations, vast improvements in digital technologies and more complex regulations threaten every banker's standard operating model.

And that was before the arrival of COVID-19, which is motivating customers to fundamentally rethink how and with whom they want to do business. One danger signal is that they're doing more banking online. Banks have traditionally relied on branch visits to reinforce their relationships with existing customers, attract new ones, and introduce new products and services.

If left unchecked, FIs will lose the deep well of trust they've established with customers, those one-to-one relationships that have served them and their customers so well. But here's the great news: New technologies and the enthusiasm of next-generation customers make it possible for financial services providers to pivot to build personalized proactive services that are tailored to each customer, delivered when needed, and based on a data-driven understanding of their individual life goals and aspirations.

This revolution in banking is catching no one by surprise. A new NTT DATA global survey of senior financial services executives shows unheard of agreement on what will be the key competitive driver of success over the next few years: implementation of artificial intelligence (AI) technology. More than 80% of the 476 responding executives in banking, brokerage, capital markets, wealth management, and cards and payments say they're already baking AI into their strategies to create personalized proactive services, attract and retain new customers, expand into new markets and run more profitably.

This unanimity of action isn't limited to specific geographies. The survey polled executives in Brazil, Germany, Italy, Japan, Mexico, Spain, the United Kingdom and the United States.

There's also something of a common vision of what the AI-driven bank of the future will look like. Winning FIs will use AI and related technologies such as machine learning to automate routine tasks, reduce expenses and improve accuracy. And thanks to the rich customer data they possess, as well as improving analytics to dissect it, FIs will constantly experiment with new business models, participate in or even run business platforms, and create engaging, personalized customer experiences that help customers make smart financial decisions throughout their lives.

Most important, institutions' enthusiasm to embrace AI is supported by their customers. In polling 4,807 banking customers, we learned that one segment, those who are extremely comfortable using technology and tend to be younger — around 35–44 years old in the Gen X and millennial age groups — are eager to engage and share personal data with FIs if it can be used to tailor services to their individual financial needs on a one-to-one basis.

These "Futurists" are where FIs should place their bets. Our findings suggest the winners of tomorrow will be institutions that move beyond broadly tailored marketing efforts that target groups to those that offer personalized, proactive financial guidance enabled by AI technologies to the segment of one.

So, the table is set for another personal finance revolution, one that follows digital services, cloud-based operations, and the rise of fintechs and other technology providers tromping on the financial services battleground. The only question — and it's a huge one — is this: Are traditional FIs up to the challenge of reorganizing around AI, creating cultures that both value experimentation and fast change and can win the trust of users?

Our survey starts to answer these questions, as well as offers early-stage guidance on overcoming challenges, the capabilities required and the best practices needed to build competitive advantage over the next three to seven years.

Key study findings

There is a growing customer segment — the "futurists" — that is more willing to share data and pay for individualized recommendations.

Customers provide striking testimony that they want FIs to act as a conscientious advisor (voice of reason) on their major spending decisions.

Using AI and data to provide customized advice to individual customers is FIs' #1 challenge for attracting and retaining customers.

81% of FIs agree that AI is a critical part of their strategy to attract and retain customers.

93% of FIs see personalized proactive services as an opportunity to attract and retain the "futurist" customer segment, yet only 16% are leveraging AI and data to provide specific recommendations to each customer.

Forward-looking FIs believe 1:1 personalized proactive services will be the differentiator in 3-7 years.

There is a major wave of activity among banks building personalized proactive services. Between 14% and 18% have active partnerships with service providers such as travel experts, music and game providers.

What does the AI-enabled bank of the future look like?

Is the industry correct in focusing on AI as the pivotal technology in which to invest its future? We believe the answer is a resounding "yes." While some argue that the concept of AI has been around since the Tin Man found his heart in the "Wizard of Oz," in truth the science started to evolve rapidly after Alan Turing wrote a foundational paper in 1950 that asked the question, "Can machines think?"[1] Many of us paid closer attention to the evolving science as AI robots defeated chess champion Gary Kasporov in 1997, two "Jeopardy!" champions in 2011 and Go champion Ke Jie in 2017. The game was afoot.

Those wins required intuition, imagination and strategic thinking — abilities previously considered distinctly human but are essential for delivering personalized proactive services. And now they're here, allowing Netflix and other companies to offer recommendation engines based on customer preferences and actual behavior.

We predict that by 2025, banks will be able to rise far above existing service levels to capture nothing less than the hopes and dreams of their client base, and then seamlessly and proactively act on that data.

They'll be able to offer experiences that are intelligent, anticipate customer needs, and deliver recommendations when needed via any channel while automating key decisions and tasks. For example:

- AI-driven FIs will provide hyper-individualized, one-to-one relevant and timely financial guidance based on customer data acquired from past conversations, interactions and customer preferences.
- FIs will engage more deeply with customers by offering them adjacent financial and administrative services, as well as services outside the financial industry, delivered through either their own online platforms or ecosystems. By contracting with third-party providers, the expanded services could include those for insurance, tax, legal, small businesses, travel, restaurants and shopping.
- We also predict banks will provide access to concierge-style services such as customer 911, travel planning, preferred access to special events, and even music and games. (Doubt that music and gaming will be part of a bank's portfolio? It's already happening. See "Case study: The bank as platform.") These services will drive customer loyalty and increase wallet share.

Case study: The bank as platform

Institution: CaixaBank, Spain

How far afield from traditional banking services should FIs be willing to venture using AI? Digital banking pioneer CaixaBank offers a mobile platform and app called imagin that provides 2.6 million Gen Z users with not only financial services but also video games, music and concierge services, such as access to events, from third parties.[2] The ecosystem partners operate under a revenue-sharing model. CaixaBank's strategy is to start a relationship with millennials before they need formal banking services by actively recruiting them to participate in the imagin community. AI and advanced analytics power customer interactions and inform new product development. The interweaving of AI, innovative product design and, most recently, hybrid cloud utilization puts CaixaBank at the forefront of what AI-enabled banking can become.

What will these unprecedented levels of personalized proactive services look like in the real world? Let's explore two scenarios involving customers of the future: Ava, a consultant, wife, mother and future Ferrari owner (Figure 1), and Carlo, a single veterinary technician with wanderlust (Figure 2).

Ava's bank has a 360-degree view of not only her financial needs but also her life goals and ambitions. This allows AI-driven technology to "follow" Ava — with her blessing, of course — and advise her proactively when her goals may be undermined by her spending. Better yet, the bank presents Ava with alternatives that will keep her ambitions on track. Seemingly intrusive in today's financial world, customers value such tracking and interaction by an FI — although to what level of detail will be worked out over time.

Ava | 55 years old | Consultant | Resides in Alabama, USA

- Married
  2 kids in college (Chris, age 20, and Matt, age 18)
- Dreams of retiring at 65, moving to Vermont, opening a B&B and owning a Ferrari

The bank can provide Ava with broad tailoring (proactively push Ava an auto loan with a 4.2% interest rate) or individualized recommendations (don't buy the Ferrari now, you have tuition payments due.)

Human bank advisor talks with Ava to understand her hopes, dreams, likes, dislikes and captures them in a CRM system	Bank app uses geolocation and detects Ava at a Ferrari dealership	Knowing Ava, the bank connects the dots between her dreams, income, expenses (upcoming tuition payments) and savings	Bank intervenes and advises Ava that now is not the right time to purchase a Ferrari if she wants to stay on budget and reach her goals	Bank offers Ava individualized savings guidance on how and when to achieve the Ferrari dream	In the interim, the bank recommends Ava rent a Ferrari for a weekend at this dealership near her; the dealership is part of the bank's ecosystem and provides Ava with 20% discount

Figure 1: How AI improves a customer's financial wellness and lifestyle

In Carlo's scenario, his bank creates tailored budget plans that embrace his larger ambitions for travel. Another plus for Carlo: His bank has ecosystem relationships with vendors such as airlines and hotels that offer him discounted pricing. Even when he's on his trip, the bank acts in his best interest by monitoring his journey. This use of client-friendly technology forms deeper emotional connections with Carlo, ensuring his trust and loyalty. For both Ava and Carlo, the bank of the future has moved way beyond processing transactions, writing loans and providing cookie-cutter financial advice. By incorporating client data and rich analytics, FIs become a partner to customers in helping them meet lifetime goals.

Carlo | 25 years old | Veterinary Technician | Resides in Milan, Italy

- Single
- 0 kids
- Dreams of traveling to Sri Lanka

For banks to succeed in the future, they need to provide hyper-personalized, positive experiences that form an emotional connection.

Human bank advisor talks with Carlo to understand his hopes, dreams, likes, dislikes and captures them in a CRM system

Bank app proactively offers Carlo individualized savings solutions for his Sri Lanka trip, recommending an auto transfer of 2% of salary into his savings account

Bank app monitors Carlo's account and alerts him of unusual spending activity, advising him on amount of money he's spending in specific categories and how he can save money

Carlo receives airline and hotel discounts through bank's ecosystem partners, providing cost savings

When Carlo is in Sri Lanka, there's a natural disaster and he's unable to leave the country so the bank proactively contacts Carlo to check on his wellbeing (makes sure he has a hotel, connects him with embassy, provides cash, helps secure the earliest flight home) — promoting a feeling of goodwill toward his bank

Figure 2: How AI enriches the customer experience with emotional connections

Financial services and AI already have a productive history together

As it turns out, financial services and AI are no strangers to each other. Financial firms were early adopters in using robotic process automation (RPA) to streamline back-office operations. Since then, FIs have used AI to analyze loan applications, spot fraudulent transactions and employ chatbots to answer common questions for customers.

So, it shouldn't come as a huge surprise that FI executives in our survey appear to be all-in when it comes to employing AI to drive competitive advantage. Among the respondents, 83% say AI creates new ways to differentiate offerings and win customers, while (and perhaps even more significantly) 82% say AI is already a critical part of their own strategies to attract and retain customers.

Yet, many banks struggle to use AI to differentiate and capture customers

Widespread acceptance and implementation of AI comes at just the right time for financial services. Given the ever-increasing arrival of new players, from tech giants to big-box retailers, many FIs struggle to differentiate themselves and capture customers, and they often see uncomfortably high rates of defections.

Another top challenge noted by banking leaders is building trust. Here's why. When we asked customers their top five reasons for leaving their banks, they said:

- Fear of data breaches
- Poor customer service
- Bad experiences
- High fees
- Unattractive savings and loan interest rates

That's a difficult list of grievances for any industry to overcome.

According to our study, FI respondents say their number one challenge for attracting and retaining customers is using AI and data to provide customized advice to individual customers. Why? Because implementing AI is hard work; it's not a plug-and-play solution. Financial services providers have been most likely to turn to AI to fix a problem — error-prone transaction processing done by humans, for example — rather than for today's imperative to create a holistic strategy where AI touches everything from customer service to audit quality to regulatory compliance.

We believe that the majority of banks view technology implementation as their primary obstacle because many, if not most, FIs lack a clear AI strategy. Customer data — the oil that lubricates AI solutions — is fragmented and stuck in organizational silos. Furthermore, the core technology solutions banks built before the arrival of cloud services are inflexible when it comes to gathering, processing and analyzing data, let alone making fast decisions based on it. Just as their technology is dated, so too are their hierarchical, slow-moving operating models that interfere with collaboration between business and technology teams.

83% AI is creating new ways to differentiate offerings and win customers, driven by access to unique data sets

82% AI is a critical part of our strategy to attract and retain customers

81% AI is a driving shift in how FIs should attract and retain customers

Figure 3: Time for AI

What's more, COVID-19 has left its mark. By necessity, many customers have made the jump to online banking, which hurts the ability of traditional banks to win their business at the branch level. It doesn't help that these customers are open to the possibility of dumping their current financial services providers if tech companies and fintechs can offer what they want. Finally, even FIs acknowledge they're slow to launch new products.

1. Using AI and data to provide customized advice to individual customers
2. Building trust with customers
3. Competition from fintechs and technology companies
4. Limited in-person customer interactions
5. Slow to launch new products

Figure 4: Top challenges for attracting and retaining customers

AI creates new ways to win the hearts and minds of customers

Though a multitude of challenges confront the modern financial services provider, AI-based solutions exist to help overcome them by creating differentiated offerings that engage customers and build loyalty. We saw strong support for that sentiment from the leaders we surveyed.

Case study: The one-to-one experience

Institution: Scotiabank, Canada
In November 2020, Scotiabank launched what it calls a global AI platform to provide both consumer and business customers with more intelligent and personalized financial advice. The platform uses machine learning to anticipate and understand each customer's needs. "These AI models have been a central piece of the bank's core retail banking programs focused on customer engagement, including deepening relationships through targeted and relevant offers," according to the bank's announcement.[3] "With a focus on providing quality advice for customers, the platform's compute power enables the fast delivery of insights, ultimately providing better data to support customers in their financial goals."

Financial services providers start with a strong hand. Banks have a truly unique advantage that big tech companies can't match — an abundance of customer financial data built up over years and even decades of relationships. While non-FIs must depend on public records or private sources such as credit bureaus to piece together customer profiles, FIs already know their bank balances down to the penny. They know their purchase preferences and with whom they like to do business. Customers provide FIs with detailed financial and employment information when opening accounts and securing loans. They use the institution's credit and debit cards and their bill pay services.

Another advantage over non-traditional competitors is that banks have a good reputation in financial dealings. Unlike Google, Amazon or Apple, banks have existed for more than 500 years, are closely regulated and are bound by a code of ethics when using personal data. This is a fertile seedbed for growing trust. And although users are concerned about security, in our survey 65% of respondents say they have complete trust in how their primary banks manage their personal data.

Thanks to AI, big data analytics and cheaper processing power, this treasure trove of personal information is already generating insights that support industry efforts in the broad tailoring of offers to customer segments like recent college graduates. The next step is even more powerful: using AI and other digital technologies to engage in the lives of each individual customer — their dreams, hopes and desires, as well as their everyday needs and challenges. In other words, a true one-to-one relationship.

For financial services providers, what they know about their customers could be a difficult-to-overcome competitive advantage.

Personalized proactive services

FIs can provide two levels of customization to their customers by leveraging digital technologies — primarily AI — using internal and external data:

1. **Broad tailoring** — marketing to target customer segments in a one-to-many strategy
2. **Individualized (one-to-one) recommendations** — providing specific financial guidance to each individual customer on how to achieve life goals and ambitions in a one-to-one strategy

We call these two levels of customization: personalized proactive services.

AI is ready to power a new set of competitive opportunities that firms can take advantage of:

Hyper-personalization. AI enables FIs to advance beyond broad tailoring and create one-to-one recommendations, better advising customers like Ava and Carlo based on their specific needs at particular times and even at particular locations thanks to geolocation capabilities in most mobile phones.

Engagement. FIs can use AI to interact with customers to provide superior service and digital experiences — including acting as a voice of reason, advising for or against major spending decisions, as well as anticipating products and services that customers either need or might be interested in.

Collaboration. With access to personal data, AI can connect the dots between customers' ambitions, income, expenses and savings to provide guidance on creating personalized proactive services that can help them reach their financial goals.

Ecosystems. Leveraging AI and digital capabilities, FIs can work with partners both inside and outside the financial industry to provide individualized services for customers — everything from auto insurance on demand to exclusive tickets to sporting events.

What attracts customers, and what makes them stay?

In addition to surveying FI leaders, we polled almost 5,000 banking customers across all demographics. The results provide striking testimony about what these customers would like their FIs to provide. Figure 5 highlights what they told us.

Of course, customers are unlikely to act on these new offerings if they don't trust the provider to secure their assets and protect their privacy.

53%	Proactively send me reminders on upcoming major payments (tuition, mortgage, auto loans, etc.)
49%	Anticipate products and services that I might need and be interested in
47%	Connect the dots between my income, expenses, and savings, providing proactive guidance to help me reach my financial goals
46%	Act as a conscientious advisor (voice of reason) on major overall spending decisions
39%	Intervene and prevent purchases to help me stay on budget and reach my financial goals

Figure 5: Customers are interested in a variety of personalized proactive offerings

According to our survey:

- 59% of bank customers say they want their bank to **deliver on its promises**. They're saying, "Show that I can trust you by keeping your promises. If you promise to deliver a payment in two days, make sure I can access the funds in two days. If you promise to protect my data, don't fail."
- 66% say be **honest with me**. "If you make a mistake, come clean about it and correct it quickly."
- 42% say **know me**. "Understand enough about me to offer services I can use based on my past interactions, preferences and life situation."

Two distinct customer segments inform bank strategies for personalized financial guidance

We categorize these customers into two groups, “Futurists” and “Traditionalists,” based on their willingness to pay more to receive personalized recommendations on products and services to improve their financial well-being.

Futurists
(35% of study)

Futurists are the most important customer segment for banks to understand for growth, but they also pose both opportunity and risk.

Futurists are particularly desirable because of their willingness to share their personal information and pay more for personalized recommendations on products and services that will improve their financial wellness. Among the respondents, 66% of Futurists agree personalized proactive services are an important feature for their primary bank to offer.

However, they’re less loyal and would consider leaving their primary bank to get personalized service elsewhere, whether it’s from another bank or a big tech competitor.

Younger
Includes a higher percentage of Gen X and millennials (24% in the 35-44 age group, 22% in the 25-34 age group) - a growing, desirable customer segment who prefer digital products and services

Higher income segments
A higher percentage of respondents who have household incomes above $100k

Technology savvy
Extremely comfortable using technology, and habitually conducts online banking using websites, mobile apps and social media

Dynamic banking relationships
Have 3 or more relationships and continue to add relationships over time

Complex product needs
More likely to have products such as mortgages, auto loans and personal loans

More willing to share personal data
More willing to share data from sources such as online retail data if it improves their financial well-being

Traditionalists
(65% of study)

Traditionalists aren’t willing to pay more to receive personalized recommendations on products and services. They want basic banking services and are less willing to shift to new banks. Receiving outside financial guidance and support isn’t a priority for this group.

Although they’re not likely to be susceptible to an expanded profile of personalized proactive services, Traditionalists are worth retaining for their loyalty and easy-to-meet requirements.

Just as important, many Traditionalists are later in their careers (or retired) and have more assets to manage than Futurists.

Older
A larger percentage of Baby Boomers (23% in the 55-64 age category) and Gen X and millennials (22% in the 35-44 age group)

Lower income segments
A larger percentage have incomes below $100k

Technology laggards
Many have moderate to lower comfort levels with technology

Stagnant banking relationships
Less likely to switch primary banks

Limited banking needs
More likely to use basic banking services such as checking, savings and credit cards

Less willing to share data
Less willing to provide personal data even if it can improve their online customer experiences

Figure 6: Important distinctions between Futurists and Traditionalists

Futurists are ready for personalized proactive services...

66% Agree proactive services is an important feature for their primary bank to offer

57% Would leave their FI to get proactive services offered at another FI

33% Say it sounds great and to sign them up!

...but are looking for benefits

- Save money
- Lower costs for banking services
- Personalized online guidance to manage money
- Have FI act as a conscientious advisor on major spending decisions
- Personalized online support for broader issues (e.g., insurance, taxes, legal)
- Improve CX and financial well-being

Futurists and Traditionalists are found across all demographic segments, but there are important distinctions.

Traditionalists tend to be older and less comfortable with technology. Depending on their stage in life, they may have a lower income or less valuable assets. They're also skittish about sharing personal data. However, because they have fewer demands for additional services, they're easier to please.

Futurists tend to be younger, are extremely comfortable using technology, and prefer using digital products and services.

In a sense, Futurists and Traditionalists are something of a virtuous circle and each deserves attention.

Traditionalists provide the stable cash bankers can use to fund technology initiatives to target new customers — the Futurists. Over time, technology becomes more accessible, which motivates even Traditionalists to morph into Futurists. (As grandma follows the grandkids on Facebook and places orders with Amazon, she learns those same great experiences can be delivered by online financial services.)

In less than a decade, Futurists will replace Traditionalists. The early adopter segment eventually becomes the status quo customer, so planning for this smaller segment now will yield FIs much more benefits in the long term. Advances in AI, machine learning and natural language processing will give banks and their intelligent virtual assistants vast capabilities to deliver personalized proactive services to all segments.

Futurists would trust their primary bank to provide personalized proactive:

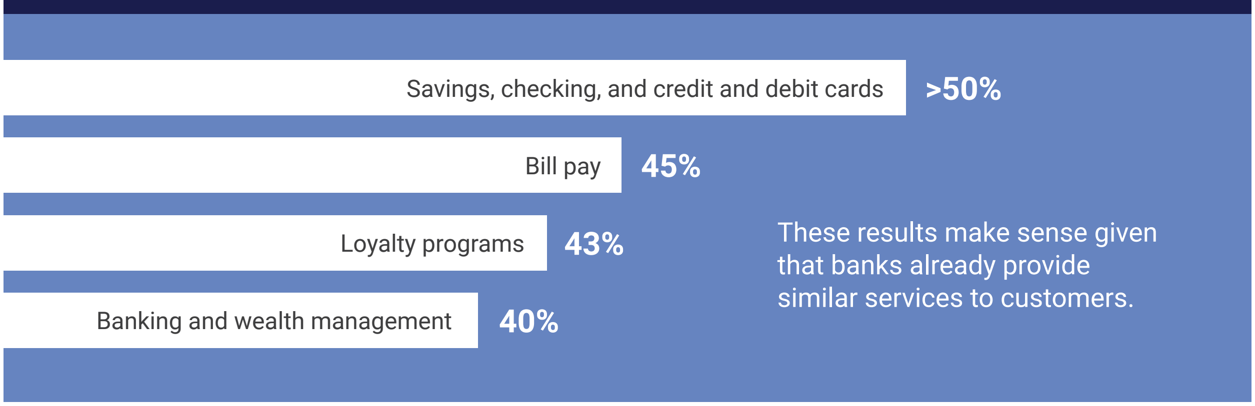


Figure 7: Futurists' expectations for personalized proactive services

The opportunity for personalized proactive services

Futurists are looking for help on financial matters, much more so than Traditionalists. They want FIs to use their personal data to proactively provide specific advice to help them meet financial goals. Among the respondents, 66% agree that personalized proactive services are an important feature for their primary bank to offer, and 57% would leave their FI to get those services elsewhere.

For example, as we saw earlier, these customers desire customized services, such as lifestyle planning and budgeting, that anticipate their needs at particular life stages and conscientiously advise on major spending decisions.

Even better news for FIs looking to create additional business lines is this information from our consumer survey: Futurists will trust their primary FI to provide personalized proactive services across many products — if they develop a reputation as a solid service provider.

Among Futurists, there is a stronger willingness to share data if they derive benefit by doing so. Our study found that receiving help with managing their spending budget motivates 72% of this customer segment to ease their reservations around privacy and security.

Delivering value to the business

Personalized proactive services deliver value to not only customers but the businesses providing them. According to our executive survey, customer acquisition and retention are the top two business drivers of personalized proactive services when offered across financial wellness, tailored advisory services, ecosystems and concierge services. FIs also benefit from new revenue channels, including expanding revenue in traditional channels, profit margins and customer wallet share, as well as enhancing emotional connections with users.

Twenty-eight percent report investments in personalized proactive services will have a major impact on differentiating their banks — and if executed correctly could reposition their firms for future success. This percentage increases to 35% of financial services executives in Germany and 40% in Japan, but it decreases to only 10% in Mexico.

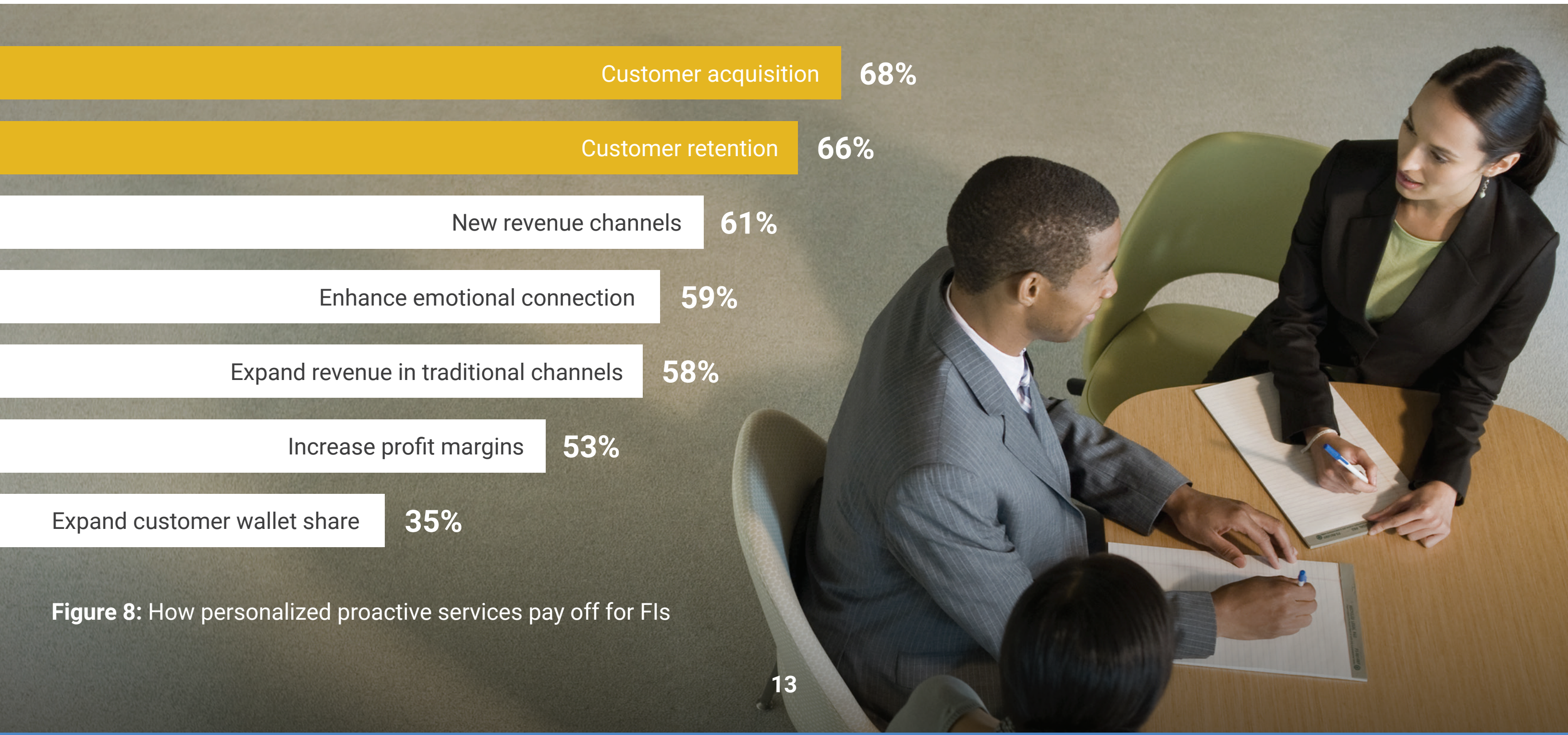


Figure 8: How personalized proactive services pay off for FIs

A wave of activity is underway to build in personalization

With the benefits of personalized proactive services seemingly well understood, it shouldn't be surprising that 93% of surveyed FIs see them as an important opportunity for growth. So far, however, only 16% leverage the data required to provide individualized recommendations to each customer — the ultimate goal of personalized proactive services.

Most institutions are moving toward building more personalized proactive services based on customer data. On the more conservative approach side, 32% of firms are investing in leveraging data to provide broad tailoring to customer segments. These initiatives — special offers, rewards and other incentives — target groups rather than individuals. Another 35% of banks are in the process of planning for personalized offerings. And 16% report they have no plans in the works, although 12% of that group acknowledge the importance of personalized proactive services.

It's interesting to note that when looking at personalized proactive services development by country, European

Overall status	Financial wellness
No plans	4
Important but no initiatives	12
Leverage data to provide "individualized" recommendations to each customer	16
Broad tailoring leverage data to conduct internal "gap" analyses to "tailor" recommendations to customer segments	32
In the process of planning	35

Figure 9: Overall status with personalized proactive services (%)

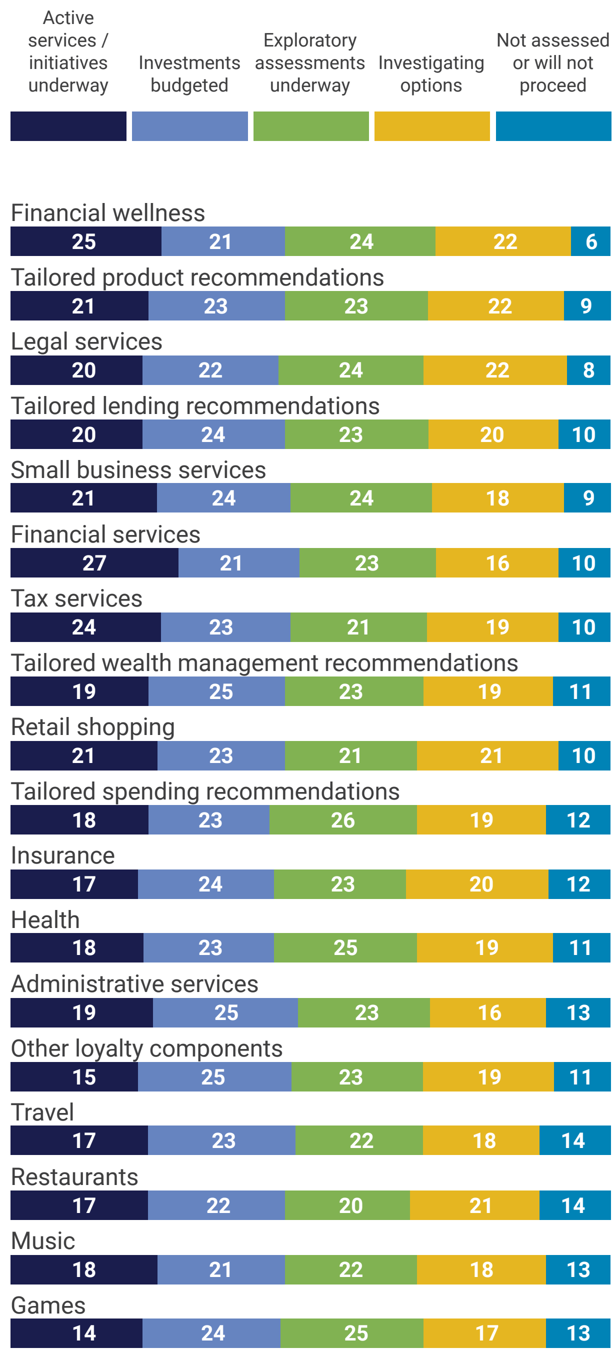


Figure 10: Status of proactive services (%)

firms lead the charge due to the PSD2 regulation for electronic payment services. In the U.K., open banking has been law since August 2016. Regulators required the nine biggest banks — HSBC, Barclays, Royal Bank of Scotland, Santander, Bank of Ireland, Allied Irish Bank, Danske Bank, Lloyds and Nationwide — to grant licensed startups direct access to their customer data, including account transactions. Europe followed in January 2018, with PSD2 rules requiring European banks to share customer transaction data with third parties that request it, as long as customers give their consent.

As a result, Italy (40%) and Germany (26%) ranked as having the largest percentage of FIs with initiatives underway for personalized proactive services, followed by Spain (26%), Brazil (20%), the U.S. (19%), Japan (18%) and Mexico (15%). The U.K. (10%) has the lowest percentage.

Drilling down one layer, we can see specifically the types of personalized proactive services being funded (see Figure 10).

Leading applications underway are in financial wellness, financial services and tax services. This makes sense for two reasons. First, Futurists are willing to pay for more personalized recommendations on products and services to improve their financial wellness. And second, many firms expand initially by focusing on developing services that are either adjacent to or logical extensions of those already offered.

The bigger surprise is that FIs are increasingly prepared to lean into the future to attract millennials, or at least explore the waters. Between 14% and 18% of the survey respondents already have active partnerships with service providers such as travel experts, restaurants, and even music and game suppliers to deliver proactive services. Another 17% to 25% are exploring or assessing those options across many areas of financial services, ecosystems and concierge services.

For most banks, some form of personalized proactive services is either under way or under consideration.

Current state of AI investment in personalized proactive services

As the industry invests more in personalized proactive services, are FIs also investing in AI to bring that strategy alive? The survey shows that most financial services providers are in the early stages of their AI deployments, but financial bets are being placed. Figure 11 looks at how those investments are being used.

For less mature banks, the easy AI play is to develop inform processes and smarter customer segmentation. RPA improves the speed and accuracy of back-office operations and increases return on investment (ROI) through cost reduction. These institutions are also employing AI to help segment customers to a higher degree than was available with older technologies.

Case study: Beyond the chatbot
Institution: UBS Group AG, Switzerland
It's one thing for a bank customer to ask a chatbot if a payment has posted but quite another if the query is, as envisioned by the Wall Street Journal, "How would a Fed rate increase impact the U.S. economy?"[4] The financial services industry is thinking about future-generation chatbots. In the example above, UBS Group

	Platform	
	Individualized 1:1	All other respondents
Communication (chatbot, intelligent agent)	34	13
Data structuring (data capture, natural language processing)	25	22
Inform processes (synthetic fraud detection, alternative credit models, advanced risk models)	13	28
Segmentation and customer experience (hyper-personalization, life-event prediction)	17	27
Strategic / product insight ("deal finder," advanced forecast models, customer behavior forecast, smarter decision-making)	12	11

Figure 11: Key AI investments in platforms for personalized proactive services (%)

AG partnered with Amazon to embed Alexa smarts into its Ask UBS service. By integrating historical data with predictive analytics, the bank of the future could offer services such as expenditure tracking and analysis, personalized financial advice and predictive spends.

Banks further along the maturity curve use AI to improve customer service with chatbots and virtual assistants, so-called conversational AI. This is another must-have application for established institutions with large customer bases. But because FIs may lack the people and resources to troubleshoot day-to-day problems for all their customers, the industry leaders have embraced smart technology to respond to and engage with them. Chatbots can easily and quickly handle problem-solving tasks such as answering frequently asked questions, providing simple account services and processing payment requests.

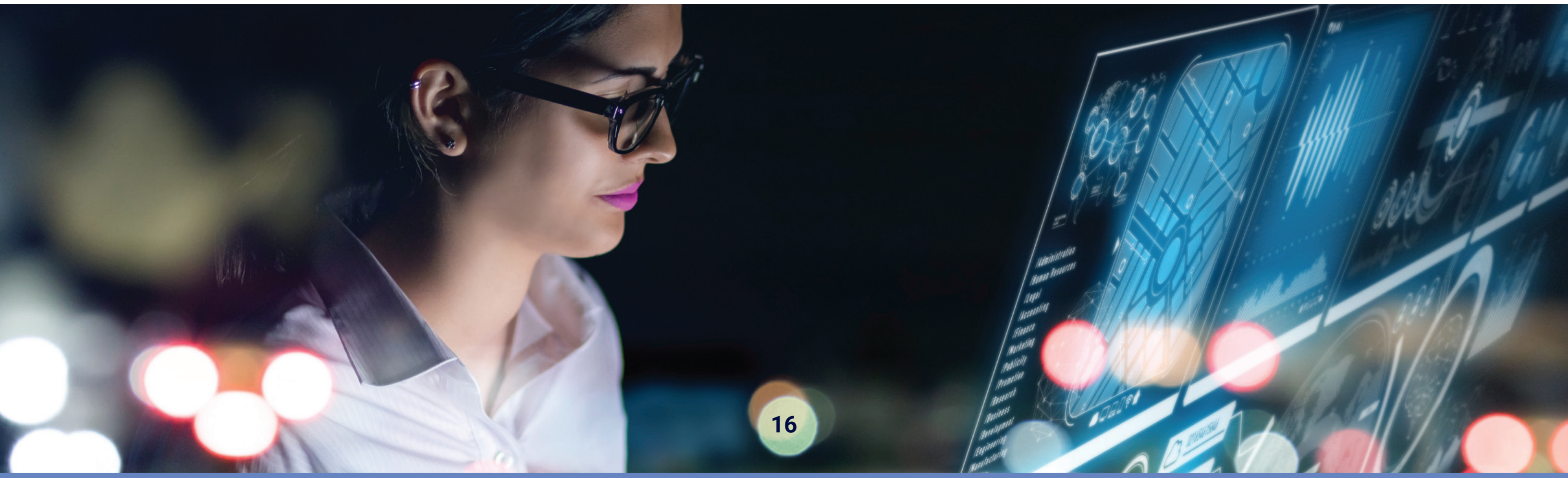
Institutions furthest along in their digital journeys use AI to hunt for fraudulent activity, model customer behavior, assess risk, and, ultimately, deliver innovative new products and hyper-personalized services at scale. For example, on the cybersecurity front, banks use cognitive fraud analytics — a machine learning model that can be trained for real-time behavioral profiling — to flag suspicious behavior. Since these models look at actual consumer behavior patterns rather than react to specific rules, AI-based systems are more likely to detect fraud than manual monitoring.

Case study: Guarding the digital bank
Institution: CTBC Bank, Taiwan
AI is being used to not only generate more transactions but also protect them, at a customer-by-customer level.[5] Launched in April 2020, CTBC Bank's Fraud Risk Intelligent Management (FRIM) solution uses internal data, external data and advanced analysis to form a 360-degree view of customer transaction patterns. This enables CTBC to create tailor-made fraud risk strategies for each customer. FRIM calculates the risk level for each payment and determines the appropriate strategy to process it with the least amount of friction. The bank partners with Cherri Tech to track each customer's "device fingerprint," which can be used to authenticate the customer's identity.

Personalized channels of conversations (data structuring)
Improving operational efficiency, cutting costs, improving cybersecurity and increasing customer interactions are all noble — and necessary — goals for AI-based technologies. But the area with the greatest payoff for banks is in the one-to-one personalization of products and services.

At this early stage, personalization in financial services has the feeling of those many technology promises that so far have generated more publicity than profit (we're thinking of you, internet of things and blockchain). Sure, major retail, travel and hospitality players have had success tailoring their services to individuals — just ask any Las Vegas casino owner what knowing and then catering to high rollers means for the bottom line. But for banks, it works a little differently. Short of an army of branch reps, technology-enabled personalization is seen as the best tool for engaging customers in direct and open conversations, which in turn builds trust and loyalty. Accomplishing those two objectives alone should increase revenue.

Like in Las Vegas, a customer's historical data is the foundation for any personalization strategy. And happily, FIs are swimming in it: demographic details, offline and online transaction data, credit card spends, website analytics and merchant data are all available relatively easily, as least compared to the work that non-FIs have to put in to obtain or estimate the same results. Banks have enough data to not only predict consumer behavior but personalize experiences for every customer.



Partnering is the key to executing personalization initiatives

For banks to carry out massive personalization initiatives they need to develop the capabilities required to be an innovative partner. Partnership skills are also key to any strategy that involves creating or participating in business platforms. A single institution can't possibly offer all the services its customers will desire, and it certainly doesn't possess all the technical expertise in-house necessary to do so.

On the technology side, for example, FIs will need to team up with fintechs and software companies to acquire needed capabilities. Companies such as Optimizely, Braze and Crayon Data offer the financial sector the means to personalize at least part of the customer experience.[6] Crayon, for example, offers a proprietary AI-led recommendation engine called maya.ai that empowers banks to reactivate long-dormant accounts by using data analytics to personalize offer recommendations. This process alone can boost revenue by 3% to 7%, according to Crayon.

Partnerships		
	Individualized 1:1	**All other respondents**
Inform processes (synthetic fraud detection, alternative credit models, advanced risk models)	26	26
Communication (chatbot, intelligent agent)	19	9
Data structuring (data capture, natural language processing)	18	17
Segmentation and customer experience (hyper-personalization, life-event prediction)	17	27
Strategic / product insight ("deal finder," advanced forecast models, customer behavior forecast, smarter decision-making)	19	20

Figure 12: Key AI investment in partnerships for personalized proactive services (%)

Overcoming obstacles depends on AI maturity levels

Asked to list the top challenges to pursuing a strategy driven by AI, there was little surprise in the number one obstacle executives listed: mastering the technology. But respondents also recognized that AI requires extensive changes on the business side of the house, too.

Clearing these obstacles to build personalized proactive services requires expertise, money and a top-down mentality.

In addition to these challenges for implementing personalized proactive services, we want to add another. As recent headlines have shown, AI-driven technologies pose the risk of propagating bias, inequality and social disconnection.[7] Any organization considering leveraging AI in its business should be aware of the ethical concerns, evaluate downstream unexpected impacts and actively counteract any negative effects.

Challenges	Individualized 1:1	Broad tailoring	All other respondents
Technology	55	54	40
Creating new business startup culture in an established business	51	44	38
Organizational / skill changes	43	40	44
Understanding the business questions to be answered	35	38	36
Management support	35	29	42
Building partnerships and alliances	30	33	36
Justifying the ROI	22	33	32
Data	30	29	30

Figure 13: Top AI challenges implementing personalized proactive services (%)

Attracting and retaining customers with personalized proactive services: Our recommendations

Our surveys of financial executives and their customers provide a clear roadmap for creating engaging personalized proactive services based on AI. We recommend FIs:

1. Establish data as the foundation for AI success
Good data is essential for this one-to-one strategy to succeed. A wise first step is for the organization to perform a data survey so it understands what kind of data it has in-house, where it resides (data assets are often fragmented across department servers) and how it needs to be prepared for use.

Other important steps for creating a data-centric organization:

- **Develop a data-friendly infrastructure.** To feed an organization, data must be readily accessible to those who need it. This may require re-architecting the network so data sources are on broadly accessible (although secure) platforms, supported by technology and policies that promote easy data analysis and transfer.

  The hard part will be cleaning and migrating data so it can feed customer-management solutions, modeling and forecasting programs, marketing channels, customer experience improvements and many more areas across the organization. And this data, like cash in the vault, will require failsafe security protection wherever it lives, as well as guidelines for its use that provide privacy protections for customer information.

- **Increase business ownership of the data.** In many organizations, data is created, sourced, cleaned, secured and maintained by IT. That sole-ownership model begins to break down in modern organizations where decision-making, supported by the freshest data and analysis, must speed up. The challenge now is to make sure business units begin to "own" their data. While technologists can assess objective metrics like data quality, business analysts need to ensure the data is ready to meet business goals.

- **Leverage external sensing and listening.** Many factors that influence the business and the lives of the customers it serves reside outside of leadership's control. Pandemics, hurricanes and electoral results all impact lives, but in this data-rich environment they need not be total surprises. The world is now full of sensors spewing out data: cell phones, media companies, internet of things devices, radar imaging, GPS systems and disease infection rates. All this information can be used to fuel predictive modeling forecasts — just as the Public Health Agency of Canada used existing data sources to forecast the march of COVID-19. To fully serve customers with personalized proactive services, FIs need to master AI-assisted predictive modeling and risk assessment capabilities in-house or contract to secure them.

While technologists can assess objective metrics like data quality, business analysts need to ensure the data is ready to meet business goals.

A data-first ethos is thwarted by inflexible core systems and outdated operating models that hinder collaboration between business and technology teams. Data engineering experts who can manage and curate data assets should be at the top of the organization's recruitment priorities.

2. Develop an AI strategy
As part of this strategy FIs should:

- **Define overall goals and objectives** that answer why AI is of strategic importance to the future of the organization. What is the impact of AI relative to other potential focus areas, such as efficiency, better customer service, and new markets or channels? Defining the AI objectives of the entire organization is critical, because it ingrains in the minds of stakeholders the full breadth and complexity of what's intended when the organization says "AI."

- **Identify executive sponsors and stakeholders.** C-suite executives and team leaders are accountable for the success of the transition enterprise-wide and must agree on the business metrics and key performance indicators that matter, track those metrics across time to reinforce positive results and illustrate how AI affects them.

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  Metrics are used at an enterprise level to assess management's ability to move the AI strategic vision forward, communicate with executives and individual contributors across disciplines, and give individual contributors the tools and processes they need to do their jobs well. When AI becomes everyone's responsibility, silos break down and the entire organization aligns around achieving shared business outcomes. Board buy-in is essential, too.

- **Create business use cases.** Target use cases will drive the transition to AI and deliver on the defined goals and objectives of the organization's AI strategy.

- **Clearly depict the FI's AI-enabled future state.** To design a roadmap with the activities necessary to move the organization in the direction of the desired future state, it's important to conduct a current state/gap analysis. Given how rapidly the AI landscape is evolving, it's more important to follow the 80/20 rule when documenting the roadmap than it is to get it exactly right from the start.

- **Ascertain the capabilities that need to be acquired** either through training or partnering to complete an enterprise-wide transition to AI. This requires a hard look at the organization's current target state capabilities and what's required to advance them to the next stage.

- **Establish technology investment roadmaps.** Are the resources on-premises, in the cloud or in a hybrid environment? What's the plan for developing, deploying and maintaining application programming interfaces — the critical gatekeepers that allow programs to work with each other?

- **Recognize the value of communication.** How will the goal of the AI program — proactive and personalized financial services — be inculcated throughout the organization? How will trust be developed with the customer? How will AI-based interfaces with customers be designed and marketed or, if needed, explained?

3. Connect people and skills
FIs focused on individualized, one-to-one financial advice rather than broad tailoring efforts place more weight on creating a startup culture, because they're essentially re-inventing how banking has been done for hundreds of years. These FIs are replacing slow decision-making with quick innovation bolstered by experimentation; swapping out traditionally trained executives with new leaders who have digital in their DNA; and developing strategies that enable their institutions to talk directly to each customer on a one-to-one instead of one-to-many basis.

Banks that run on AI require new skillsets and organizational design. FIs that insist on maintaining silos between operations, marketing, human resources, IT and other departments will not be agile enough to benefit from AI as much as competitors that can tie those departments together with a digital throughway.

It's just as important to survey where data currently resides within the organization as it is to conduct a similar audit of its people, discovering the technical and business skills they own and plotting the skills required for the future. Staff members must be quick learners, innovators and willing to lead from whatever layer of the organization they inhabit. Based on the organization's current state and vision, who is going to do what? What's the partnership strategy? How much should the organization try to accomplish internally versus working with partners?

Meeting the new needs of customers requires a collaborative, multi-disciplinary team of banking specialists, data scientists, data engineers, AI architects, user experience experts and digital marketing mavens working together to apply AI to the daily lives of customers.

In addition, incorporating AI into all segments of the business means all support functions (such as human resources, marketing and risk management) need to understand the technology and buy into the vision of the future — every part of the organization needs to be part of the AI journey. Technologists must understand how the business operates to create the software. Everyone must understand the foundation underlying the journey to apply it to their disciplines.

Digital businesses are democratizing in that they enable decision-making in every corner of the organization, and specifically empower employees who are closest to the customer to meet their needs. That means people serving in the organization must put the customer first, be comfortable making decisions, be flexible in taking on new assignments and enthusiastically learn new skills.

Here's one example of connecting people and skills. As FIs begin to operate or participate more in business platforms or ecosystems that deliver personalized proactive services, employees will need sharp skills in negotiation, team-building and asynchronous work habits (partners are unlikely to be in the same time zone). They'll also need strong communication and storytelling skills to ensure they can connect at the human level. If these skills aren't available in-house, organizations should go out and partner for them.

Another example is the call center agents, tellers, relationship managers and other key employees who directly service customers. Even as these employees are enabled with AI-driven, real-time virtual assistants, they'll still require advanced multitasking and communication skills. These employees will need insight into broader product areas, as well as to understand the institution's view of the entire customer lifecycle. Such skills are often seen in high performers but never really required or evaluated in more traditional operational areas.

4. Build out internal and external ecosystems

If it's not apparent already, driving an organization toward a future based on AI technology and hyper-personalized engagement with customers is an incredibly complex journey. Help from external partners — an external ecosystem — is a must, as is a new cadre of highly trained employees united on a mission — an internal ecosystem.

> The future of banking will depend in large part on the ability of institutions to determine which third parties add the most value to the customer experience, and then develop relationships with those partners.

This transformation should include the following steps:

- **Define and build out an external ecosystem.** Create an external ecosystem strategy that will help decide what types of products to offer customers, how those products will serve Futurists versus Traditionalists, who (in-house or third party) will provide them and the details of revenue-sharing agreements. Banks can build their own ecosystem or participate in platforms built by others. FIs must think about which partners they want to join them on this journey to develop personalized proactive services in customer-facing ecosystems or business platforms.

The future of banking will depend in large part on the ability of institutions to determine which third parties add the most value to the customer experience, and then develop relationships with those partners. Determining which partnerships best map with an FI's business and technical architecture is essential, too.

- **Define and build out an internal ecosystem.** It's useful for FIs to think of the organization as an internal ecosystem because the parts — marketing, operations, product development, finance and technology — must work together seamlessly to develop the best customer experience. This requires top-to-bottom culture change. Where information has been sequestered on far-flung servers, now it must be shareable and accessible by all business units at any time. Where individuals were once siloed in their departments, now they must accept responsibility for executing the overall mission of the firm, which is to put the customer at the center of everything.

- **Plan a technology roadmap.** This step will require help from outside vendors and consultants. FIs will need advice on technology choices in areas such as AI, machine learning, high-volume data analytics, endpoint security and chatbot deployment, just to name a few.

Conclusion: Building a new, trusted relationship with customers

Banks and financial services providers of all stripes are relationship and trust builders. They have to be. Few financial customers are going to turn over their money, their investments or their plans for the future to someone they don't trust.

Now, that relationship is moving to a new level. As the pandemic forces bank customers to do more financial business online, their requirements are changing quickly. They're looking around at service providers in other industries and appreciating the near frictionless experience of online shopping and quick delivery. They're looking at Netflix and how it provides timely viewing suggestions based on their past choices, as well as at Venmo and how it empowers them to electronically transfer money to friends without a bank affiliation.

The writing is on the wall. FIs need to meet the increasing expectations of their customers by creating digital solutions that provide the ultimate financial experience: personalized proactive services. This is particularly important for the next wave of customers, the Futurists, who expect FIs to use their personal data to customize products and services just for them, just in time, to achieve their life ambitions.

Advances in AI, machine learning and data analytics give banks vast capabilities to deliver on these expectations. To be successful, however, accurate real-time data must be at the core of every customer interaction. Better data and the ability to act on its insights empower FIs to anticipate customer needs, provide customized financial counsel, improve data protection, trigger proactive alerts and automate manual transactions.

Financial services executives who participated in our survey agree with this vision. Many are already investing in the technology and organizational change initiatives to make it real. These leaders are more digitally mature, willing to embrace AI and learning their early lessons using broad tailoring approaches on how to provide personalized services at scale. Critically, many technology and service providers are ready to join forces with them.

The race is ready to be run. Winners in the financial industry will be those players that move beyond broad tailoring to offer highly personalized, proactive, one-to-one financial guidance. Customers want it, and FIs — thanks to AI and other digital technologies — can provide it. Are you ready to meet your customers in the future?

Let's get started

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Research methodology and demographics

Global survey snapshot

Countries:

- Brazil, Germany, Italy, Japan, Mexico, Spain, U.K. and U.S.

Consumers:

- 4,807 online survey responses
- Required to be 18+

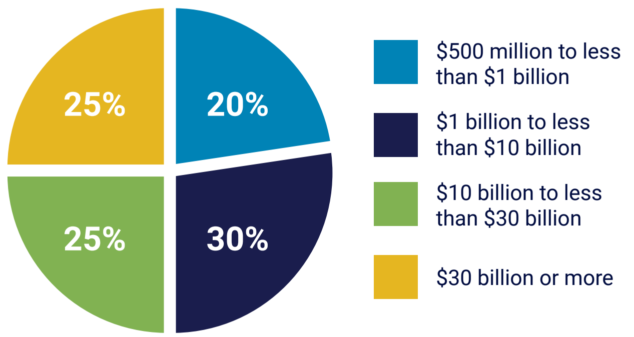
Financial institutions:

- 476 online survey responses
- Banking, brokerage, capital markets, wealth management
- Director-level and above executives involved in decision-making, budgeting, managing or strategic planning for AI and data initiatives

Countries	Financial institutions	Consumers
United States	101	601
Germany	100	600
United Kingdom	100	600
Japan	50	600
Brazil	35	602
Italy	35	602
Spain	35	601
Mexico	20	601
Total	**476**	**4,807**

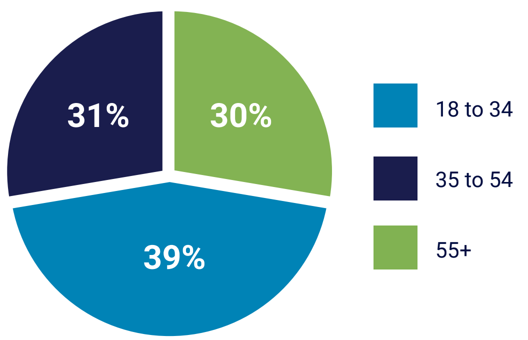
Company size

50% of FIs in the survey have more than $10 billion in revenue



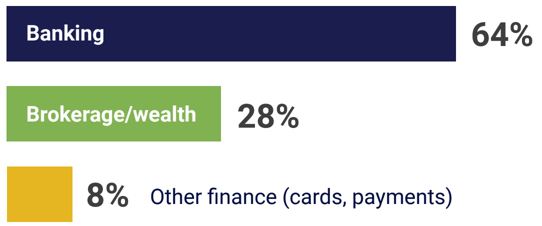
Consumer age

The majority of respondents are millennials and Gen X



Industry segment

The majority of respondents represented retail banking, wealth management and payment/cards firms



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