AI IN BANKING AND PAYMENTS

HOW ARTIFICIAL INTELLIGENCE IS CUTTING COSTS, BUILDING LOYALTY, AND ENHANCING SECURITY ACROSS FINANCIAL SERVICES

February 2018

Sarah Kocianski | Lead Research Analyst

Dan Van Dyke | Managing Research Analyst

BI INTELLIGENCE

KEY POINTS

- **Artificial intelligence (AI) is one of the most commonly referenced terms by financial institutions (FIs) and payments firms when describing their vision for the future of financial services.** AI techniques teach computers to parse data in a contextual manner to provide requested information, supply analysis, or trigger an event based on their findings.

- **Three of the most commonly implemented types of AI are machine learning (ML), natural language processing (NLP), and cognitive computing.** ML finds patterns in data and gets better at doing so over time, while NLP is technology that can understand human language. A cognitive system is made up of a complex combination of technologies that enable it to think like a human.

- **Banks are beginning to use AI on the front end to secure customer identities, mimic live employees, deepen digital interactions, and improve cross-channel engagement.** While most of those use cases are nascent, securing digital identity stands out as a mature use case of AI in banking, due to its high bank support and the cost savings it drives.

- **AI is also being implemented by banks within back-office functions in three key areas — aiding customer service employees, automating processes, and preempting problems.** It is most mature in its application of aiding customer service employees, and is making headway when it comes to automating existing processes, but there is still some way to go before AI can reliably be used to preempt problems.

- **Lastly, in payments, AI is being used in fraud prevention and detection, anti-money laundering (AML), and in growing conversational payments volume.** Of those use cases, preventing and detecting payments fraud is the most mature.

Download the charts and associated data in Excel »

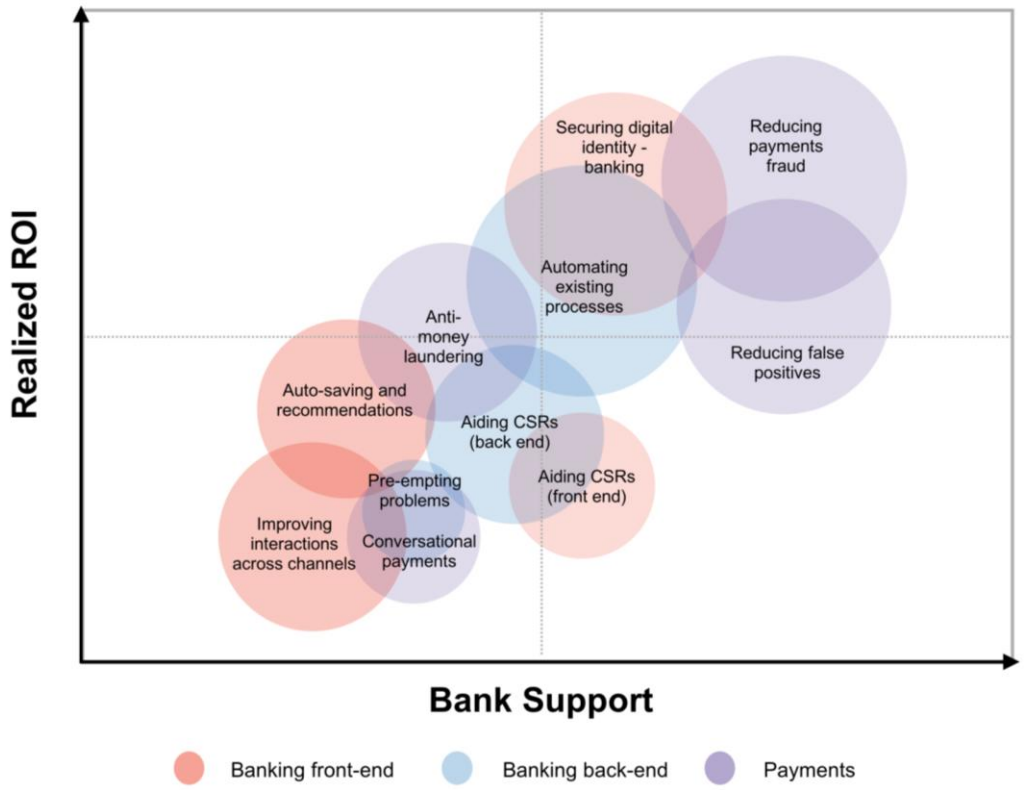
INTRODUCTION

Artificial intelligence (AI), often used as a catch-all to describe types of technology that can simulate human intelligence, is one of the most commonly referenced terms by financial institutions (FIs) and payments firms when describing their vision for the future of financial services. AI techniques teach computers to parse data in a contextual manner to provide requested information, supply analysis, or trigger an event based on their findings. It comes in many different forms, and is lauded by many CEOs, CTOs, and strategy teams as their saving grace in a rapidly changing financial ecosystem.

AI can be applied in almost every area of financial services. It can be used to detect constantly evolving forms of fraud, automate complicated back-end processes, ensure regulatory compliance, create new and increasingly personalized products, enhance the performance of (or even replace) employees, and much more. It is also a highly complex area of technology that many people, in financial services and beyond, struggle to understand. The combination of its potential and complexity has made AI a buzzword, and led to its inclusion in many descriptions of new software, solutions, and systems.

This report will cut through the hype to offer an overview of different types of AI, and where they have potential applications within banking and payments. Due to the complexity of banking, BI Intelligence will separately explore uses of AI in both customer-facing operations and back-end processes. We will also emphasize which of these applications are most mature, provide recommendations of how FIs should approach using the technology, and offer examples of where FIs and payments firms are already using AI. Additionally, we will provide descriptions of vendors of different AI-based solutions that FIs may want to consider using.

Maturity Of Uses Of Artificial Intelligence In Banking And Payments



Size of bubble = Five-year potential ROI
Source: Estimated qualitatively by BI Intelligence analysts

BI INTELLIGENCE

TYPES OF AI

Throughout this report, we will use "AI" to refer to any type of technology that simulates human intelligence. However, we will also use some more specific terminology when referring to certain types of AI, which we have defined in this section. Please note, the below are not finite definitions, but are instead designed to give readers an idea of the differences between the types of technology, all of which are commonly classed as AI currently being used by FIs.

Machine learning (ML). ML is by far the most commonly referenced technology by FIs when talking about their use of AI. There are various subsegments of ML, but supervised and unsupervised are the two most relevant for the purposes of this report:

- **Supervised ML.** This refers to when a system is fed data and told what patterns to look for, before determining potential outcomes. Once it can accurately predict the same outcomes human employees would also have reached, without being given specific instructions, it's considered "trained." The algorithm gets better at finding patterns the more it's used. A system that automatically detects spam email has been trained using real emails to recognize data that indicates an unwanted communication, for example. It gets better at detecting those emails as individual users label them as spam.

- **Unsupervised ML.** This kind of system can detect patterns from input data, without being told what information to look for first, in order to reach specific outcomes. For example, modern fraud systems can make connections between someone's financial history, social media activity, and location to create a narrative that indicates whether they've already committed, or are planning to commit, fraud.

Natural language processing (NLP). NLP is the ability of software to understand human language, increasingly including colloquialisms and emotions. A widely used example of NLP would be in voice assistants, including Amazon's Alexa and Apple's Siri.

Cognitive computing. Cognitive computing may use ML, but it's a system specifically designed to help people make better decisions, rather than decide for them. The ultimate goal of cognitive systems is that they'll think like humans by reacting, reasoning, and learning in order to find outcomes that, in some cases, hadn't been anticipated, predicted, or previously experienced.

AI IN FRONT-END BANKING

AI has the potential to fundamentally transform banking customer interactions. As voice interfaces catch fire in smart home devices like Amazon's Echo, FIs are exploring the ability of AI to provide deep real-time insights, to interface conversationally, and even to save funds on behalf of customers. In fact, enhancing the customer experience was ranked the single most important business driver of AI solutions to bank executives, according to a 2017 Digital Banking Report study. Yet, despite the technology's outsized potential, only some business cases merit action today due to low maturity, which is evident in its limited bank adoption and small impact in driving ROI thus far.

Here's how banks are using AI to transform the front-end customer experience, ranked from most to least mature:

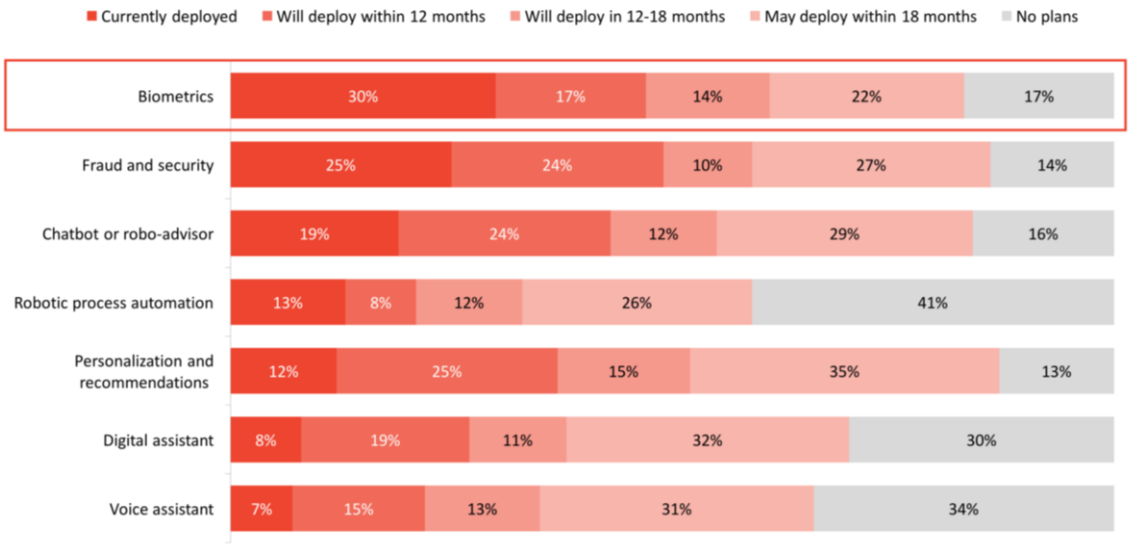
Securing Digital Identity

A significant and growing proportion of banks today are using AI solutions to secure customers as they conduct digital banking or open new bank accounts. This could have a significant impact on their bottom lines because new fraudulent customer accounts or existing compromised accounts are estimated to have cost US firms $6.7 billion in 2017, according to Aite. One in four bank executives surveyed by the Digital Banking Report in 2017 said their organization used AI for fraud and security, and 30% said they used it for biometrics.

Banks today are tackling security through a number of AI techniques, including ML, deep learning, and cognitive computing. Looking ahead, the use of AI in this area can be expected to grow more popular because, according to Aite Group, a few fraud types that AI is well suited to mitigate — account takeover fraud, application fraud, and card not present fraud — are set to surge, in terms of fraud losses, from $5.6 billion in 2016 to $9.7 billion in 2020. In order to get ahead of this fraud wave, banks will need build, buy, and partner extensively for authentication and fraud detection solutions that use AI to separate customers from sophisticated criminals.

AI Solutions Planned Or Deployed, US

Financial organizations with at least one AI implementation



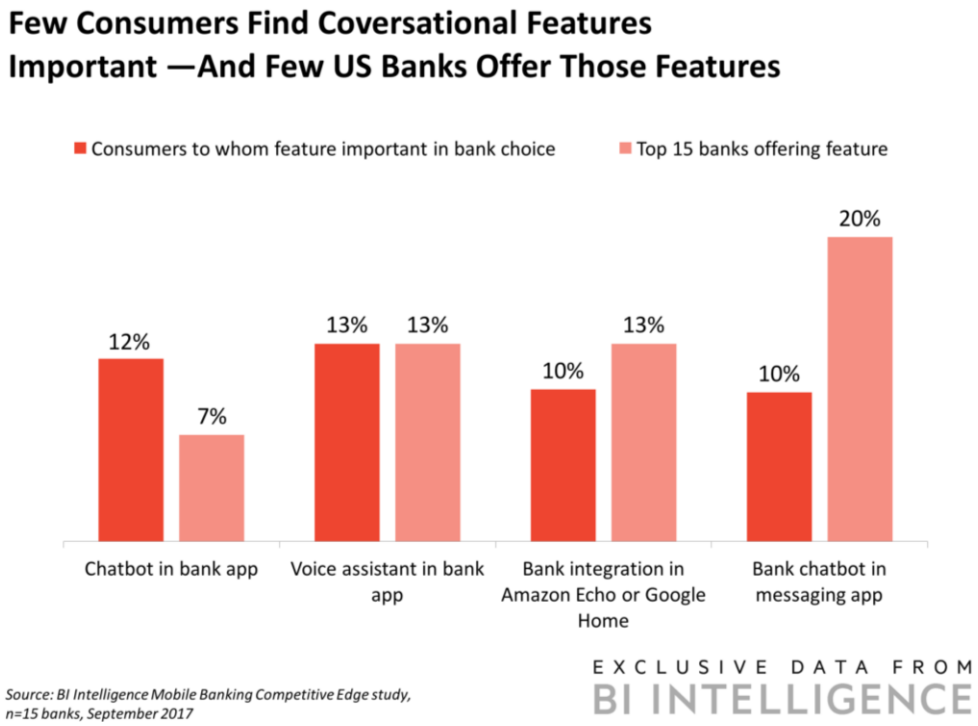
Source: Digital Banking Report, 2017

BI INTELLIGENCE

Supplanting Human Customer Service Agents

Advances in NLP and ML have made voice- or chat-based banking experiences possible, allowing banks to offload interactions from costly human employees to automated solutions. As of September 2017, four of the top 15 US banks — Capital One, Fifth Third, USAA, and Wells Fargo — offered voice- or chat-based interfaces in banking apps, third-party messaging apps, or in smart home speakers, according to BI Intelligence's Mobile Banking Competitive Edge study. However, while that bank support is healthy, the maturity of conversational interfaces is hamstrung by low consumer interest.

Only 13% of consumers said they viewed voice interfaces in mobile banking as important or extremely important in choosing a bank in 2017, and other conversational interfaces had even lower demand. To grow consumer interest and adoption, banks will need to add new abilities beyond simple balance inquiries and better their understanding of how customers speak. Overcoming these challenges won't happen overnight: Capital One needed to train its chatbot on 2,200 ways customers might ask for a balance inquiry, American Banker reported.



Deepening Digital Engagement

An emerging use case of AI in banking is generating personalized financial recommendations or automatically saving on behalf of customers. Today, very few banks or fintechs — such as Royal Bank of Canada, its vendor Personetics, and nonbank Clarity Money — offer such features. Down the line, the technology has the potential to become important because, if banks can develop AI-driven digital tools that better customers' financial well-being, that could pay off in the form of increased customer retention and acquisition.

However, banks will need to determine whether AI is the best tool for the job when it comes to digital money management. The app Albert, for example, forgoes AI in favor of algorithms that analyze consumers' income and spending, and saves a "safe" amount on their behalf daily. With such advanced features possible without ML, banks will need to ensure AI adds significant value, and make certain those benefits don't come at the expense of predictable automated savings transfers or recommendations.

Improving Interactions Across Channels

The least mature use case for AI in front-end banking is optimizing the customer experience across channels. For example, customers could receive personalized sales offers or servicing in branches, interactive voice responses (IVRs), or digital according to their specific needs at the time. Speaking to BI Intelligence, Hari Gopalkrishnan, client facing platforms technology CIO at Bank of America, gave an example of what this might look like: A customer who just received a SMS fraud alert could call the bank and be greeted by a customer service agent who proactively asks if the customer is calling about the fraud alert.

Personalized servicing and sales could pay off in the form of better customer loyalty and lifetime customer value through more effective cross-selling. However, banks may have a long way to go before such experiences become possible, due to silos of data for different channels at most banks. Speaking to CNBC, former Barclays CEO Antony Jenkins noted that most large FIs' data is fragmented in different areas, and that running ML across those stacks or unifying the data in central repositories is difficult and expensive. According to Jenkins, the challenge is worsened because banks have a tendency to prefer mainframe- over cloud-based solutions.

Below, we take look at several vendors and banks with AI solutions in front-end banking:

BioCatch

BioCatch's behavioral authentication and threat detection tools use AI to continuously authenticate bank customers as they interact on the web or in browsers. BioCatch works with banks to prevent new account fraud and account takeover fraud. The company was founded in 2011 and has accumulated total funding of $11.6 million, according to Crunchbase. Speaking to BI Intelligence, BioCatch's vice president of marketing, Frances Zelazny, noted that the company measures three biometrics:

- **Physical data, like the way a user holds a phone.**
- **Cognitive behaviors, such as how the user switches between screens.**
- **Response patterns to subtle tests that indicate whether a user is legitimate or not.**

Across those categories, each user generates a multitude of data points, which BioCatch makes actionable using rules and ML. This allows the company to more effectively pick out legitimate customers from fraudsters, without adding friction such as additional security questions.

Kasisto

Kasisto is the provider of KAI, a conversational AI platform that banks, merchants, and others use to power assistants and bots in apps, websites, messaging apps, and smart home speakers. The chatbot can answer questions such as, "What's my balance?" or handle more complex transactions like managing money, tracking expenses, or making payments. Kasisto was founded in 2013 as a SRI International spinoff, just as Siri was, and has accumulated total funding of $28.5 million, according to Crunchbase. Kasisto's clients include TD Bank, Wells Fargo, DBS Bank, Mastercard, Standard Chartered, and others. Kasisto CEO Zor Gorelov told BI Intelligence that clients use the company's conversational interfaces to accomplish three things:

- **Clients can offer new experiences to their consumers, with the intuitive interface of natural human language.**
- **They can decrease customer care costs by deflecting call center calls.**
- **By providing contextual and relevant offers for financial products and services, they can increase the lifetime value of customers.**

Capital One

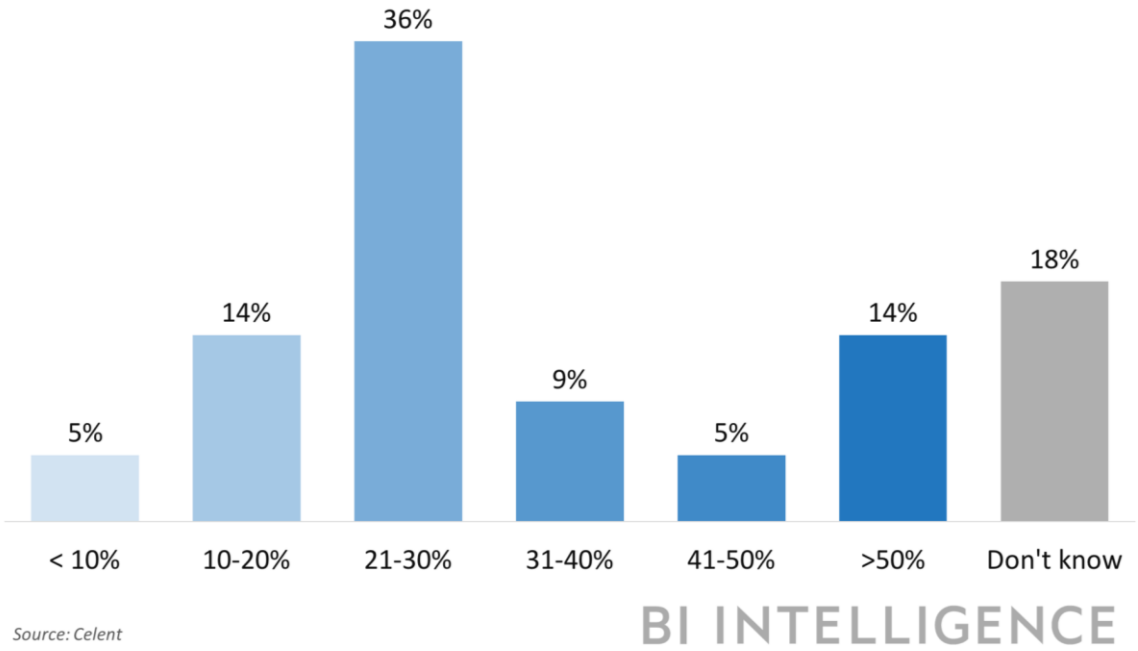
Capital One, the tenth largest bank in the US by assets, according to Bankrate, has several AI-powered conversational banking initiatives: an integration with Alexa, an integration with Cortana, and an SMS-based intelligent assistant, called Eno. Customers can use the latter to check bank accounts, pay credit card bills, and more. The bank took the chatbot out of limited pilot in October 2017, allowing millions of customers to access the feature. In an email interview with BI Intelligence, Ken Dodelin, vice president and head of conversational AI products at Capital One, said the bank determined conversational banking technology might hold appeal with customers, and decided to move quickly to learn and work out any kinks in its voice payments offering before others jumped on the trend.

AI IN BACK-END BANKING

Banks and payments firms are not only using AI to improve their bottom lines by creating new revenue streams, but are also implementing it to cut costs. FIs are applying AI to existing back-end processes in order to increase efficiency, keep up with an ever-changing regulatory environment, and preempt issues before they occur. As such, the use of AI in noncustomer facing areas is where many banks and payments firms see the most immediate applications for such technologies.

Percentage Of Back Office Tasks Banks Would Like To See Done Using AI

North America, 2017



Source: Celent

BI INTELLIGENCE

Here's how banks are using AI to transform back-end processes, ranked from most to least mature:

Aiding Human Customer Service Agents

While the utility of AI in replacing customer service agents is still being proven, firms are increasingly leveraging AI to aid customer service employees. In particular, technologies such as NLP, combined with ML, are being applied to customer service inquiries, both text and voice, to help employees provide the most appropriate responses. This approach is popular with FIs, as 14% have NLP in deployment or pilot, and a further 77% are planning or considering its use.

The advanced maturity of AI-powered technology in this area is likely because solutions are not customer-facing, and therefore give firms more room for trial and error, as well as boast a broader set of potential applications. In addition to helping employees answer customer inquiries, AI-powered solutions are being used to speed up training of customer service employees by highlighting when a trainee has diverged from official guidance or rules. AI is also being used to detect from language or tone when customers are unhappy and may be planning to leave a provider. However, for FIs to get the most out of these solutions, they'll need to be applied across all customer interaction channels and business departments, and employees will need to be well trained in their use.

Automating Existing Processes

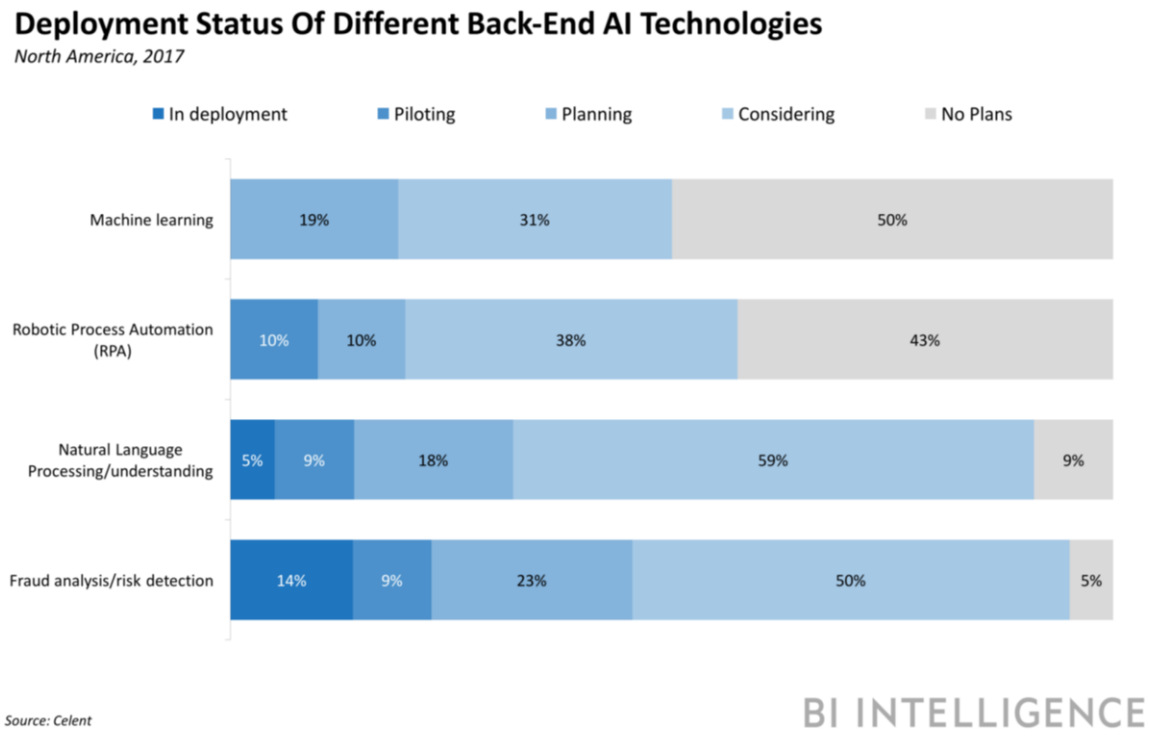
Robotics has historically been used to automate physical operations in areas like manufacturing. However, more sophisticated technologies now exist that combine robotic automation with AI in order to automate complex, intellectual processes, including those used in the financial services industry. The services these technologies provide are called Robotic Process Automation (RPA), or intelligent automation, and consist of the automation of high-volume processes previously done by humans. RPA is one of the more mature AI-based technologies implemented by banks in their back-end processes, and is widely tested.

RPA can free up employees to do more complex tasks, as well as reduce the possibility of human error, which is typically high in repetitive processes. A number of banks have moved beyond the testing phase: Singaporean bank OCBC has reduced the time taken to re-price home loans from 45 minutes to 1 minute by implementing RPA, for example. Meanwhile, Japanese FI Sumitomo Mitsui claims to have removed 400,000 hours of employee labor from processes through the use of RPA. It's also already used extensively in capital markets, particularly in reconciliation processes and high-speed trading. The efficiencies RPA introduces to back-end processes mean its adoption will only become more widespread, although FIs looking to implement it end-to-end should do so cautiously, perhaps with the aid of partners as DBS is doing with IBM.

Preempting Problems

ML has been able to detect real-time problems within processes, such as incorrect calculations or fraudulent transactions, for some time, but the newest technologies are enhancing these capabilities to the point where AI-based systems can now predict problems before they happen. These solutions are often referred to as "cognitive" and enable employees to make better decisions, as opposed to some older ML-based solutions that make rules-based decisions, such as stopping a transaction or correcting a calculation, on employees' behalves. While they hold great promise for FIs, truly cognitive solutions are among the least mature AI-based technologies around.

Many cognitive solutions aim to use unsupervised learning to sift through unstructured data, like social media posts, conversations, or data in multiple formats, to detect patterns and predict potential issues. That means they could be applied to a wide variety of areas within financial services including investment research, compliance, customer intelligence, and data management. However, there remains significant developmental work to be done on these solutions before they achieve their full potential, with some estimates saying we're 10 years away from that scenario.



A few FIs, such as Bank of America, have built their own AI solutions in-house; however, the majority are working with third-party providers in order to get solutions live quicker and often at lower cost.

Here are selected examples of vendors that are already working with FIs:

Emagia

US-based Emagia's solutions are offered by FIs to clients to help with corporate treasury functions, such as receivables and reconciliation, and use AI, in particular ML, to aid managing unstructured data. For example, one feature enables the automatic matching of open receivables and remittances. Emagia also has an AI-powered digital assistant, called Gia, that improves financial employees' efficiency by automating simple tasks, like downloading bank statements. Gia can also help with more complex tasks, such as collecting data from multiple unconnected systems and bank accounts, and pointing out patterns in the data to employees.

Expert System

A number of European banks, including BNP Paribas, Unicredit, and ING Direct, are using an AI-powered platform provided by Expert System, called Cogito. The platform, which the company calls cognitive, has a variety of applications and can be tailored to solve particular problems for individual banks:

- **Anti-money laundering (AML) departments are using Cogito to provide ongoing checks of customer data.** Additionally, they use it to flag where new data that needs further investigation by an analyst has been collected. That saves employees from having to spend vast amounts of time sifting through data, allowing them to focus only on information they know requires their attention.

- **Compliance and research teams are leveraging Cogito to connect apparently disparate systems and sets of data.** This includes multiple suspicious activity reports (SARs) to help with compliance reporting, and social media platforms, news sites, and web forums to aid investment research. Additionally, it can search through data contained in banks' own individual systems to make searching for all information on a particular client far less time-consuming.

- **Marketing and customer retention teams are using Cogito for sentiment analysis.** This involves analyzing customer interactions after they've occurred to detect where clients are expressing unhappiness. By flagging a customer's use of a particular phrase or tone, the system notifies employees that a customer is dissatisfied, and enables the relevant department to preemptively reach out.

HighRadius

Bank of America Merrill Lynch (BAML) is using US-based HighRadius' technology to increase efficiency in the area of accounts receivable. The AI-powered solution sifts through large companies' invoices and received payments, matching one to the other, and saving the firm's employees from having to manually sort though large volumes of data in order to achieve reconciliation. It currently uses supervised ML, but the firm plans to make a version of the platform that uses unsupervised learning techniques generally available in the near future.

IBM's Financial Crimes Due Diligence with Watson

Japanese bank Mizuho is using the tech giant's solution to achieve compliance with global AML and know your customer (KYC) rules. The cognitive solution uses multiple AI techniques, including RPA and ML, to retrieve data from various sources and extract relevant information — jobs that were previously completed manually by employees. As both volumes of data produced and regulatory requirements increase, the use of AI is becoming necessary for banks to keep up. Simultaneously, IBM's product enables the bank to boost its ability to prevent financial crime, like fraud and financing of terrorism, reducing associated costs, including customer repayments and fines.

James

Three Portuguese FIs — Cofidis, Evo, and Banco Postal — are already using James, which utilizes ML to help FIs with risk management. The banks are using James to build credit models that enable more accurate risk assessment, and therefore increased acceptance rates and reduced defaults. James also provides ongoing performance assessment of the risk models and can flag when a model needs adjusting due to external conditions.

Recordsure

UK bank NatWest is testing software from the British firm that is designed to ensure its financial advisors act within European laws regarding the difference between financial guidance and advice when speaking with clients. Interactions, both in person and over the phone, are recorded and segmented by ML algorithms into areas including financial advice, guidance, general chat, and disclosures. The software can also analyze written transcripts of conversations. The analysis is then made available to the employer, the advisor, and the client, should the latter want to see it, and any potential risks or breaches are flagged. The AI-powered software can also point out areas that should have been covered, but were missing from a particular conversation. The solution ensures more consistent approach to compliance, and can help firms identify sales and training priorities, thereby creating more efficiency overall.

AI IN PAYMENTS

In addition to banking, AI is also currently a hot topic in payments circles, despite the fact that companies have applied the technology in payments fraud prevention for years. The reason payments firms are paying more attention to AI today is because processing power improvements have made applications of AI in fraud, AML, and conversational payments interfaces increasingly powerful and cost-effective. Banks, processors, e-commerce providers, and others are now rushing to introduce such AI-driven solutions to market. And, while in some cases the hype is outpacing present-day performance, AI nonetheless has real potential to transform payments from initiation to settlement.

Here are examples of how AI is being used in payments, ranked from most mature — adopted by many banks and yielding high payoff today — to least mature:

Preventing And Detecting Payments Fraud

Many firms are currently using ML techniques to prevent and detect fraud, such as Visa with Advanced Analytics, Mastercard with Decision Intelligence, Stripe with Radar, and PayPal with its homebuilt solution, to name a handful. With 2017 global card fraud costs at $27.7 billion, and set to grow to $31.7 billion by 2020, according to Nilson, the payoff for using AI to better separate fraudulent purchases from legitimate ones is high and rising.

AI can aid fraud detection in two ways: It can reduce false negatives, which are fraudulent purchases viewed as authentic and accepted, and it can reduce false positives, which are authentic purchases suspected as fraud and declined. False negatives incur a cost for both the fraud and associated fees; the cost of lost business from false positives in the U.S. is actually 13 times the total amount lost to card fraud, according to Al Pascual, senior vice president and research director at Javelin Strategy & Research. With AI experts earning up to $500,000, according to The New York Times, most firms will likely pursue partnerships to bolster their abilities here.

Global Card Fraud Losses

Billions ($)

Source: The Nilson Report, October 2016

BI INTELLIGENCE

Anti-Money Laundering

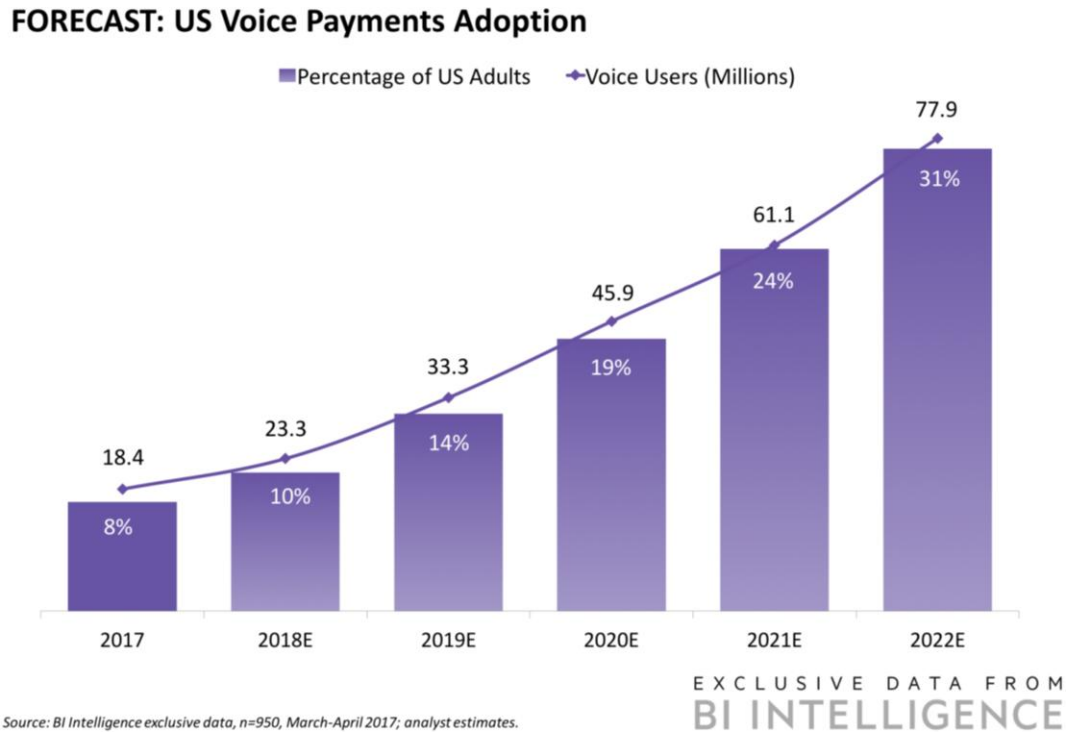
AML, or efforts to put a stop to concealing origins of illegal income, is the second-most mature use case for AI in payments. AI is not entirely mature in AML because bank support is currently low, but it has the potential to drive significant savings through increased efficiency in the long term. ML can be applied to AML use cases by sorting alerts into low-, medium-, or high-risk buckets, according to Accenture. Such uses of AI could allow banks to cut back on human analysts and reduce their growing AML costs, which were estimated to exceed $8 billion worldwide in 2017, according to WealthInsight.

Despite the large opportunity, Accenture notes that ML in AML remains limited for many reasons, including incomplete data, lack of data sharing on customers between banks, lack of experts in both ML and financial services, regulatory constraints, and lack of process standardization. Because many processes in AML demand human approval and review, such as transaction monitoring and screening, the near-future of AI in AML will involve augmenting human agents rather than replacing them. However, with large portions of the AML process being algorithmic in nature, banks are just beginning to realize the potential for AI to drive cost savings.

Growing Conversational Payments Volume

Using NLP and ML, payments providers are beginning to allow consumers to initiate payments through speech or text commands. Conversational payments have the potential to grow payments volume in new environments: Today, consumers can shop with Google Assistant through a smart speaker, pay peers through chat in Facebook Messenger, or pay a Capital One bill through SMS. However, conversational payments are still an immature use of AI in payments, due to low adoption; only 8% of US consumers made a conversational payment in 2017, according to a BI Intelligence study.

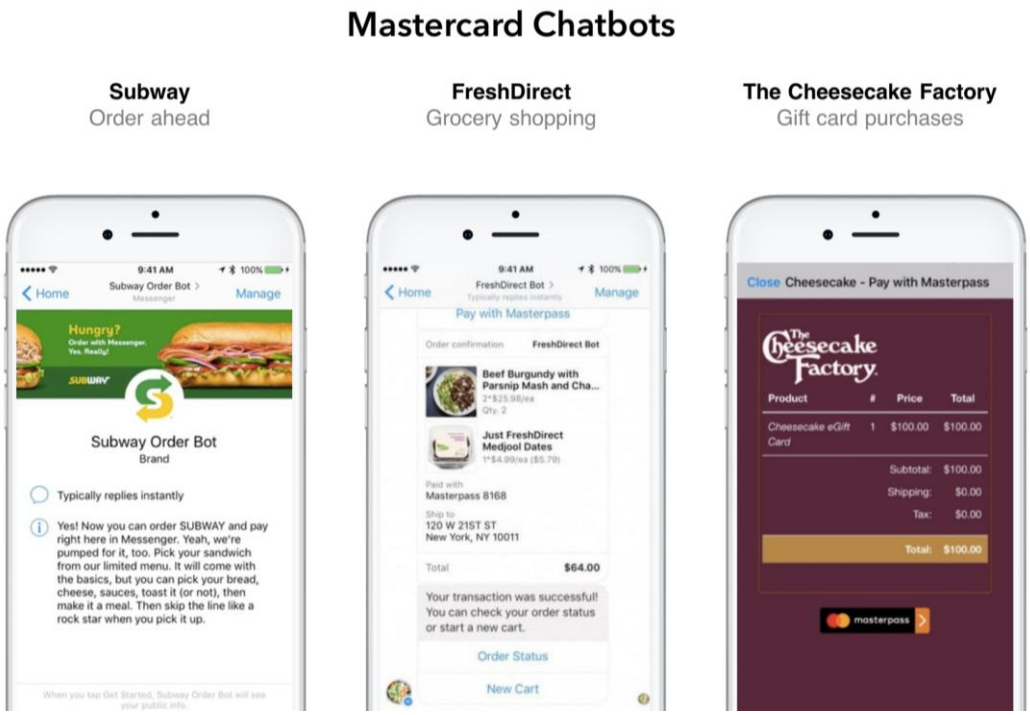
Over the next five years, conversational payments are poised to become more common. BI Intelligence projects voice-based payments, for instance, will more than triple to reach 31% adoption among US adults by 2022, driven by the speed and convenience of conversational interfaces. In order to stake a claim in the growing voice payments space, payments providers should focus on growing consumer confidence in security, which BI Intelligence found was the top barrier to voice payments adoption.



Below, we take look at several providers with AI solutions in payments:

Mastercard

Mastercard, an early mover in using AI across its network, has doubled down on security and conversational payments applications in recent years. In November 2017, Mastercard announced its acquisition of Brighterion, a software company focused on using AI in cybersecurity, homeland security, cross-channel fraud prevention, risk monitoring, data breach detection, and other sensitive areas. Mastercard also debuted a chatbot application programming interface (API) in October 2016, and in April 2017, it announced partnerships with three retailers — online grocer FreshDirect, Subway, and The Cheesecake Factory — to enable chatbot purchasing in Facebook Messenger.



Feedzai

Feedzai provides a risk management platform that helps issuing banks, acquiring banks, and merchants detect fraud in banking and commerce. Its solution detects and prevents fraud using a combination of ML and other tools such as enrichment data (device fingerprinting) and rules. For banks, Feedzai works with their systems to process transactions, score risk, and render decisions in real time. The company was founded in October 2009 and has secured $76 million in funding, according to Crunchbase. Speaking to BI Intelligence, Feedzai CEO Nuno Sebastio noted that Feedzai's approach is to first understand client needs and the market, before talking about what they want to build and what they want to do — and to use ML or other AI tools if it helps them reach their goals.

RECOMMENDATIONS

With so much optimism surrounding AI, banking and payments executives may be tempted to look for opportunities to use the technology, just to stay ahead — that is a mistake. Due to AI's novelty and the scarcity of qualified talent, AI projects carry a significant risk of being too expensive or not living up to outsized expectations.

To avoid getting burned, firms should start with real problems that need solving — like reducing fraud or growing compliance — and then stack up AI against other available approaches. For all but the largest firms, it only makes sense to pursue AI when it adds clear and measurable benefits over alternatives today, instead of betting on the technology's long-term potential.

Here are three recommendations for those that decide to use AI in banking and payments:

- **Don't go it alone.** The use of AI in financial services demands access to a very limited pool of experts with specialized knowledge. For most banks and payments firms, the best approach to get ahead will be through partnerships and acquisitions. Some vendors interviewed by BI Intelligence noted that banks commissioned them to help establish internal teams that would interface with the vendors.

- **Realize that AI is at the peak of the hype cycle.** It's critical to define realistic expectations of AI, and to take a hard look at whether other areas, like digital account opening, for example, are more deserving of funding. The risk of engaging in a show of being innovative by taking on frivolous AI projects is high.

- **Be creative in hiring.** In some cases, it may become necessary to hire in-house AI experts, but nearly every vendor we spoke to noted the massive challenge of doing so. One digital banking vendor BI Intelligence interviewed looked for majors with potential crossover into AI — like philosophy majors, which the company valued for their focus on syntax and logic.

THE BOTTOM LINE

- AI, or technologies that simulate human intelligence, is a trending topic in banking and payments circles.
- The three most common types of AI used in financial services are ML, NLP, and cognitive computing.
- Banks are using AI on the front end to secure customer identities, mimic bank employees, deepen digital interactions, and engage customers across channels.
- Banks are also using AI on the back end to aid employees, automate processes, and preempt problems.
- In payments, AI is being used in fraud prevention and detection, AML, and to grow conversational payments volume.

BI INTELLIGENCE

BI Intelligence, Business Insider's premium research service, provides in-depth insight, data, and analysis of everything digital. Our research is fast and nimble, reflecting the speed of change in today's business. We give you actionable insights that enable smarter and better-informed decision-making. We publish in-depth reports, news, and an exhaustive library of charts and data focusing on key areas of tech: mobile, e-commerce, digital media, payments, the Internet of Things, transportation and logistics and more.

If your organization would like to learn more about our research, including a license to republish our charts, please contact: intelligence@businessinsider.com