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ARTIFICIAL INTELLIGENCE

A REAL-WORLD APPROACH

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ARTIFICIAL INTELLIGENCE

A REAL-WORLD APPROACH

Information on how financial institutions use artificial intelligence, the impact of generative AI, identifying projects, working with vendors, data privacy and management, and building a regulatory framework.

Bank Director. FinXTech. Microsoft

Dear Reader,

Generative AI may be the latest technology buzzword, but artificial intelligence doesn't have to be big, bold and buzzy. Sometimes AI can feel exceptionally simple — for the end user, at least.

Take the proliferation of chatbots, a technology that dates back to a 1966 program called Eliza. The program encouraged people to share their thoughts and feelings with an AI therapist —and showed that conversations between humans and AI were possible.

Decades later, corporations were using chatbots to help customers. In 2018, Bank of America Corp. launched Erica. Equipped to assist customers with their banking, lending and investing needs, the chatbot handled 170 million interactions in the third quarter 2023 alone. In collaboration with vendors, smaller institutions have deployed chatbots, too. In 2021, Michigan State University Federal Credit Union in East Lansing, Michigan, launched a chatbot that handled roughly 45,000 conversations a month.

But AI can do more than interact with customers. It can operate behind the scenes, flagging fraud or assisting human resources to find the right talent.

In this report, sponsored by Microsoft Corp., we dive into potential opportunities for AI in the financial services industry, and how organizations are building teams to identify their "next best action" — an AI term for making predictions and decisions.

To take advantage of the technology, financial institutions should start with small projects and identify partners that can help them execute, says Daragh Morrissey, director of AI at Microsoft Worldwide Financial Services. "Don't try and build everything yourself."

As regulated entities, financial firms must also look out for risks. For the first time, the Financial Stability Oversight Council in December 2023 noted AI's potential impact on the safety and soundness of the financial system. In response, FSOC recommended that "financial institutions, market participants, and regulatory and supervisory authorities deepen expertise and capacity to monitor AI innovation and usage and identify emerging risks."

With all eyes on AI, you can use this report to further your own knowledge of the technology. And for those excited to explore this new frontier, I hope you'll leverage those insights to develop your own real-world approach.

Sincerely,

Emily McCormick
Vice President of Editorial & Research
Bank Director

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THE START OF SOMETHING BIG

By: **Kiah Lau Haslett**

David Becker is experiencing deja vu.

He remembers what it was like in the late 1990s, when personal computers were buzzing, humming and literally dialing into the internet. The technology had migrated out of labs and universities into companies and, eventually, people's homes. At the same time, computers became smaller, more affordable and personal, increasing the technology's potential audience.

Back then, Becker, who has a technology background, had just set up a little bank called First Internet Bank. It was one of a handful of early U.S. institutions that divorced the act of banking from a physical location. He saw the cycle of hype and skepticism surrounding the internet, as people logged on and took their first tentative steps into this brave new world, and he planted his flag firmly on the side of the internet.

Today's interest in artificial intelligence reminds him of that heady time in the late 1990s. The internet had been around for decades, and some companies had been using it for years. But its commercialization and application was about to explode.

"AI, to me, is very similar to what the internet was 25 years ago," says the chairman and CEO of the now $5.2 billion First Internet Bancorp, in Fischers, Indiana. "It's a promising tool. It has tremendous capabilities and I think potentially some tremendous use cases. But right now, it's still kind of the Wild West frontier."

"AI, to me, is very similar to what the internet was 25 years ago. It's a promising tool. It has tremendous capabilities and I think potentially some tremendous use cases. But right now, it's still kind of the Wild West frontier."

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But AI is rapidly migrating out of the Wild West and into tamer corporate offices, software companies and yes, financial institutions. Like the internet, the personal computer and the smartphone, AI has also become more commercial and affordable over the years. Technology companies are adding AI capabilities to their existing software offerings or creating new licensed offerings that enterprises can purchase. That means AI is moving down-market, from the largest banks that have in-house developer resources to regional and small banks and credit unions that can add the capabilities via vendors.

AI Defined

In an October 2023 executive order, President Joe Biden's administration defined artificial intelligence as "a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. Artificial intelligence systems use machine- and human-based inputs to perceive real and virtual environments; abstract such perceptions into models through analysis in an automated manner; and use model inference to formulate options for information or action."

The Financial Stability Oversight Council opted for a simpler definition in its 2023 annual report, writing that AI "generally entails machines doing things previously thought to require human intelligence. ... Given this broad definition of AI, it is not surprising that there is significant variety in AI methodologies and uses and that there is not always a stark difference between AI and more traditional quantitative modeling."

The first half of the 2020s has been marked by a "step-change increase in ambition and investment" in AI use cases at the biggest global banks, according to an October 2023 report from Evident, a London-based research firm tracking those efforts. "Banks are generating more ideas for AI use cases than ever before, face more pressure from leadership demanding [return on investment], and need to keep up with the rapid pace of AI innovation," the report said. "Working out how to scale up use cases, deliver value, and orchestrate the AI activities across the company has, in many banks, become the mandate for newly established group AI leadership teams."

For example, JPMorgan Chase & Co., the largest bank in the country by assets, has more than 300 use cases in production, focused on "risk, prospecting, marketing, customer experience and fraud prevention" along with payment processing and money movement, according to Chairman and CEO Jamie Dimon's annual investor letter published in April 2023. The bank has 900 data scientists, 600 machine learning engineers and a 200-person AI research group.

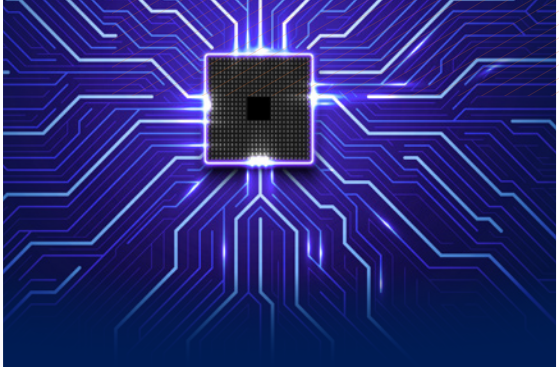
As of the third quarter of 2023, Bank of America Corp. had more than 760 artificial intelligence and machine learning patents in its portfolio. These patents make up 22% of the patents the bank was granted in the first half of 2023.

→ To read more about use cases, go to **page 8.**

AI technology has become more flexible and adaptive for business cases, which has allowed institutions like $60.9 billion Valley National Bank, the bank unit of New York-based Valley National Bancorp, to explore how to adopt it, says Chief Operations Officer Russell Barrett.

Previous generations of machine learning tools that banks used for business intelligence or modeling required "a lot of investment to get something digestible in return," Barrett says. Data inputs needed to be formatted, cleaned and structured; the models could be rigid and break.

This shift from rigid tools to flexible technologies has led to increased interest from banks of all sizes. More than half of the bank executives and board members responding to Bank Director's 2023 Technology Survey said their bank's leaders had discussed allocating some of their budget or other resources to artificial intelligence over the previous 18 months; respondents representing banks between $1 billion and $10 billion in assets indicated particular interest in the technology. Most said their institutions were exploring use cases that touched on customer service and fraud detection



AI Use Cases Explored by Banks

Source: Bank executives and board members responding to Bank Director's 2023 Technology Survey

56%

of executives and board members said their banks' leaders had discussed allocating budget or resources to AI.

Source: Bank Director's 2023 Technology Survey

$21.4B

investment in generative AI in 2023, through Sept. 30, 2023

Source: Pitchbook

and/or prevention; additionally, around 50% saw enhancing sales capabilities or credit underwriting as potential applications.

Less than a quarter of respondents to the survey said their institution was already using artificial intelligence or machine learning for fraud detection and/or prevention, with another 15% reporting they were integrating it into the technology stack. The previous year, 19% reported using those technologies to generate efficiencies within the institution; 32% said they used robotic process automation, which is generally used to automate repetitive tasks.

The Impact of Generative AI

Artificial intelligence is not a new concept, and technology powering today's applications has been in development for years, if not decades. Financial institutions may already be using AI technology via vendors that have added AI-powered capabilities in their offerings or in more limited applications within the organization. But one recent major development in AI — both as a technology and in capturing the attention and dollars of businesses and the public — has been generative AI.

"Generative AI has really changed the game around AI in terms of accessibility," says Daragh Morrissey, director of AI at Microsoft Worldwide Financial Services. "You don't need to be a [big] Wall Street bank anymore to get this capability into the hands of your company."

Broadly, generative AI is trained on large data sets and produces information that users understand via text, software, images, sounds, video and other media. The public's imagination was captured by the fall 2022 release of ChatGPT, which is a chatbot developed by OpenAI and powered by a large language model called GPT-4. A report from the Swiss bank UBS estimated that ChatGPT reached 100 million monthly active users by January 2023, two months after launch, according to Reuters.

Microsoft Corp., which sponsored this report, began investing in OpenAI in 2019; the company announced an additional multibillion-dollar, multiyear investment in January 2023. The firm said the partnership would extend Microsoft's "ongoing collaboration across AI supercomputing and research."

Generative AI is seen as an especially promising technology, but there are limits. Public chatbots can produce results that aren't accurate or real. In its 2023 annual report, the Financial

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>
> **Daragh Morrissey,** Microsoft Worldwide Financial Services

Stability Oversight Council flagged that generative AI could pose risks for banks in areas like data security and consumer protection. And there's a concern that AI-powered models could produce discriminatory or biased results.

→ To learn more about regulatory considerations, go to **page 14.**

But no one disputes that AI's capabilities — generative or not — are powerful enough that a bank or credit union could experience real productivity and efficiency gains from its use. AI can help banks detect and prevent fraud, assess credit risk, analyze investments, generate marketing materials, target potential customers and assist with compliance. Its accessibility and abilities are impressive enough to intrigue community bank and credit union boards and executives who may have been skeptical about AI's capabilities in the past or daunted by the work to integrate the technology. They may be moving off the sideline of observation toward implementation. At the same time, institutions are considering how to manage and oversee the associated risks.

As AI technology continues to develop, financial leaders are left to figure out how to start or move forward in their AI journey. But infusing AI capabilities across an institution will be no easy task. It will require support from management, coordination across the organization, quality data management, vendor due diligence, enhanced risk management and strengthened oversight. In short, it will require the institution to build a framework, structure and methodology to execute and oversee these initiatives, given the size of its potential risks and rewards.

"We call it an iPhone moment. I think generative AI and traditional AI are going to be game changers for the next few years to come, at least. You can really use that to your advantage to not only get more efficient but to create the big bank type of experience," says Ashvin Parmar, who heads the financial services generative AI center of excellence at the technology consultancy Capgemini. "You can engage and service clients in a more meaningful and comprehensive way. You can improve your risk management practices and then free up investment for other things, which will allow you to grow. So this is not something that you should ignore. This is a pivotal moment."

Many banks and credit unions in the United States are at the start of their AI initiatives, if they've started at all. What they don't have the option to do is nothing, Morrissey at Microsoft says. Big banks are years into their AI initiatives; financial institutions that don't start soon will fall further behind in their capabilities, productivity and efficiency.

Organizations big and small are assembling teams to lead their projects. They're drafting plans. Eventually, they'll begin constructing a framework of AI-powered models and systems, populated by their data. These initiatives will progress and iterate — there will be more projects, more applications, more data. The use cases will require strengthened and heightened risk governance, which should become more robust as AI is used in more places across the institution.

It's not clear what a bank or credit union shaped by AI looks like yet. But it's getting built today.

Kiah Lau Haslett is the banking & fintech editor for Bank Director.

NEXT BEST ACTION

By: **Kiah Lau Haslett**

There is a technique in artificial intelligence called "next best action." It's a predictive approach that uses available data to recommend the next thing a company or person could do, generating a series of personalized stepping stones. Financial institutions looking for ways to incorporate AI into their internal processes and procedures could take inspiration from the approach to think about what the next best action looks like for their organization.

To start, these initiatives should have support from leadership to achieve meaningful inclusion throughout the institution.

"I think that without [that support], it's very hard to actually implement AI. It's got to be a CEO or CTO that pushes it through because it does require retooling the organization. It requires putting aside resources in order to structure the data, buy AI tools and train people to identify where the benefits are and so on," says Alexandra Mousavizadeh, cofounder and CEO of Evident, a research firm focused on AI adoption within the banking sector. "If that decision [isn't] a strategic vision for the community bank, then it's very hard. So, make it your strategic priority."

AI adoption and use isn't so much a decision about technology but about strategy, says Ashvin Parmar of the consulting firm Capgemini. The objectives, goals and strategy of a business line or unit within a bank should inform how and where it will add AI — not the other way around — since those groups will own and operate the technology once it's implemented.

Mousavizadeh says many global banks that have laid the groundwork for AI use cases have started by setting up a cross-functional system or group to take the lead on AI. These groups help centralize decision-making and coordinate efforts across the institution by prioritizing use cases, conducting due diligence on vendors, and overseeing testing and implementation.

Valley National Bank uses a cross-functional working group populated with stakeholders from business units, support and control functions across the bank, which Chief Operations Officer Russell Barrett sponsors and the chief data officer chairs. Barrett says the group has two goals that work in concert: organizing and overseeing the bank's AI projects and figuring out how to manage them within the $60.9 billion bank's organizational capacity. Valley prioritizes AI investments that can enhance the customer experience or build greater trust. It's also prioritizing technologies that would increase the bank's effectiveness and efficiency.

"We put some guiding principles on what this cross-functional group should be doing. One thing we wanted it to be was with purpose — it wasn't just to get a bunch of people in a room and create bureaucracy or excessive governance on one side, or just to sit here and do nothing on the other side," Barrett says.

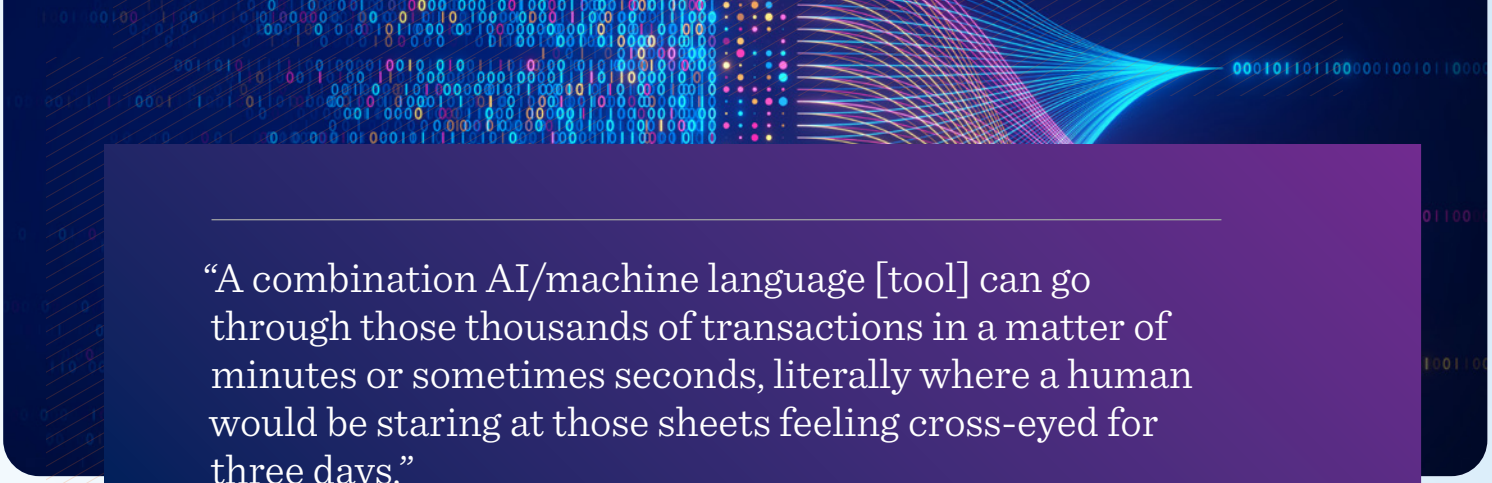
The group creates organizational alignment for Valley's approach to AI. They learn together, identify use cases and engage with vendors. They also consider how the bank will manage the risk of these technologies, and what policies and procedures they will need. Because the group represents so many different areas of the bank, no one division is tasked with owning AI technology or making decisions about use cases or oversight.

Starting Small

But with so many potential use cases, where should a bank's AI working group start?

Identifying and prioritizing projects is an important task for the bank. Too much caution and nothing gets done; too much excitement and the bank could engage in "random acts of digital" with little to show for it at the end, wrote Garth Andrus, the president of AI consultant Cognixia, for "The Financial Brand" in August 2023.

"Random acts of digital refers to the sporadic, impulsive, or unaligned planning or implementation of digital technologies.



> "A combination AI/machine language [tool] can go through those thousands of transactions in a matter of minutes or sometimes seconds, literally where a human would be staring at those sheets feeling cross-eyed for three days."
>
> **David Becker,** First Internet Bancorp

This includes generative AI strategies, solutions or technology without a clear plan and approach to align with the organization's broader goals, strategic vision, and operational, talent and adoption needs," he wrote, later adding: "[I]t will be even more important [for banks] to focus on not only the technology, but the business imperatives, and the resulting organization, talent, and change issues to ensure the transformation is successful."

Community banks and credit unions should start with use cases that are on the smaller side, and come with realistic and achievable goals that reflect the current and future state of the institution. Sourish Sarkar, senior director, solutions architecture at Moody's Analytics, says banks may look for automated solutions that will allow an institution with limited resources to achieve greater efficiencies.

"The path to adoption ... starts with low-hanging fruits, which are much more secure and [have] a high confidence score," Sarkar says.

Many organizations can approve the use of assistive AI technology updates if they're embedded in current tools; this use of AI can increase productivity by generating meeting summaries and action items or automating other simple, work-related tasks. One example of this is Microsoft Corp.'s Copilot, a chatbot that works with programs like Word, Excel or Teams.

"I think for a lot of banks, they're going to be able to use this capability out of the box. They would just need to focus on adopting or communicating these new features to users," says Microsoft's Daragh Morrissey. "They're not going to get a whole load of new apps."

With credit unions and banks ever-mindful of regulatory and compliance guidance and practices, current use cases for AI focus more on efficiency and less around decision-making, which remains firmly in human hands. But that doesn't mean that AI can't play a role. Sarkar sees institutions selecting "recommendation engine-type [tools], where you get a much deeper analysis, recommendations and curated data at your fingertips to make a more educated or faster decision."

Valley is searching for technology that does just that: assists and supports decision-making but gives an employee the final say, Barrett says. Valley is especially interested in solutions that can help the bank process data that would been laborious and time-intensive to assemble.

Both Valley and First Internet Bancorp see compliance-related transaction analysis as being ripe for AI and machine learning software. Financial institutions have millions, if not billions, of transaction data points that they need to sift through to identify unusual or criminal activity; AI can use parameters and patterns to highlight transactions that should be investigated further.

"A combination AI/machine language [tool] can go through those thousands of transactions in a matter of minutes or sometimes seconds, literally where a human would be staring at those sheets feeling cross-eyed for three days," says David Becker, chairman and CEO of $5.2 billion First Internet. "Tremendous tool, but not a lot of decisioning in it."

Institutions can use a rating system to identify, sort and

Smarter Alerts

Valley National Bank, the bank unit of New York-based Valley National Bancorp, has partnered with Refine Intelligence, a provider of AI-powered software that analyzes transactions to quickly rule out false alarms.

Financial institutions can get bogged down by anomalous, yet legitimate, customer transactions that trigger compliance alerts — such as large deposits following a wedding or a home sale. Those transactions could look suspicious in rules-based internal systems, requiring investigations to resolve them and posing potential disruptions for customers, like account closures. But Refine's technology builds customer profiles that give the $60.9 billion bank context to understand when a customer's transaction is out of the ordinary but legitimate, says Russell Barrett, Valley's chief operations officer.

Helping to comply with the Bank Secrecy Act and anti-money laundering rules is a popular use case of artificial intelligence for banks. Large, uniform data sets create transaction patterns and reveal triggers that could indicate concerning behavior or generate a suspicious activity report filing. In that regard, Barrett says the bank didn't have to do much in the way of formatting and managing its data ahead of adding Refine to its process. The software also gives clear explanations for its recommendations, which the bank incorporates into its decisioning.

"It's really being used in an assistive fashion. We don't have the AI taking the decision [away] from us when it comes to investigations that would typically take a lot of coordination between branch and compliance teams," Barrett says. Instead, Refine's software assists compliance investigators, which he says "makes their lives a lot easier."

That's yielded results. Since launching in 2023, investigation time decreased from two weeks to two minutes by diverting 60% of AML-related issues to digital channels, according to the bank.

AI IN THE REAL WORLD

By: **Kiah Lau Haslett**

Financial institutions have uncovered a variety of uses for artificial intelligence, from analyzing transactions to serving customers.

Cross-Organizational Uses

BNP Paribas has spent several years experimenting with artificial intelligence and robotics. That's resulted in a variety of uses that help teams across the organization improve customer experience, increase efficiency and reduce risk, according to information shared by the global French bank.

A natural language processing tool supports the bank's human resources recruiters. The tool extracts unstructured data from documents; its models were tailored to understand how information is presented on resumes. This helps recruiters search through candidates and job descriptions across the bank's 64-country geographic footprint, translate job postings into several languages and rank candidates by matching information in the resume to available jobs.

Another place the bank has added AI is documentation management, which impacts all areas of the company. AI can extract information from a variety of documents, including SWIFT messages, email, paper forms and PDFs. This application processed about 300,000 documents annually as of 2022, with a goal of expanding that to over 1.5 million documents by the end of 2024.

To streamline and automate tax reconciliation, the bank uses optical character recognition and data extraction technology to read and extract data from PDFs, and formats and reconciles it before generating a user-friendly presentation using visualization tools.

Serving Customers

In 2021, East Lansing, Michigan-based Michigan State University Federal Credit Union launched a virtual customer service agent named Fran in partnership with boost.ai. Fran allows the credit union to provide around-the-clock service, resolve common questions, and help human agents manage workflow and focus on more complicated inquiries. Within two weeks, the chatbot resolved 81.1% of customer inquiries successfully; that improved to 98% by October 2023 with assistance from the credit union's AI trainer team, according to the Norwegian software provider.

Fran is the first point of contact for members who use the credit union's live chat service; it handles the equivalent chat load of nearly 60 full-time employees across almost 45,000 conversations a month. Application programming interface (API) connections automate 10 common account processes so Fran can share personalized information on rates, account balances, payments and loan payoffs.

Financial institutions are increasingly using AI to assist customers. Bank of America Corp. was an early mover; its AI assistant, Erica, handled 170 million interactions in the third quarter of 2023.

And before it was acquired in 2022, Sterling National Bank, the bank unit of Pearl River, New York-based Sterling Bancorp, used an AI assistant in its call center to authenticate customers and manage simple inquiries, like sharing account balances and recent transactions, troubleshooting online banking issues and resetting passwords, handling debit card claims, managing declined card transactions, confirming fraudulent charges and providing nearby branch locations. Customers could still interact with a human. Over time, the software learned from interactions so it could better manage calls without human agents. That had Sterling's AI assistant managing about 100,000 calls a month.

Sandboxing AI

In 2023, Winter Haven, Florida-based SouthState Corp.'s internal innovation group, dubbed Spark, created and launched its own chatbot to compete with its internal intranet. Comprising 35 employees from across the bank, Spark brainstormed this use case for generative AI technology, outlined what it would be like for someone to use the technology and developed an action plan, according to an article authored by Chris Nichols, director of capital markets at the $44.9 billion bank.

The result — a generative AI chatbot called Tate — functions as an internal librarian for employee queries. Employees can ask Tate questions, which it answers using approved SouthState documents, rather than needing to search for the right documents and policies on the company's intranet and then searching those documents for the answers. Tate reduced the time it took for employees to locate information from seven minutes to about 32 seconds, according to Nichols. Correctly phrased prompts produced answers in less than 15 seconds.

"Tate essentially unlocks valuable information stored within our bank and makes it accessible to all," Nichols wrote. "Training time gets reduced, productivity increases, and employees provide more accurate and helpful answers." He also pointed out that seven minutes can feel like "an eternity" if a banker is with a client.

Tate's answers include the model's thought process, supporting content and citations for each answer, which allowed bank testers to rate the AI assistant's accuracy for 1,600 questions. That helped developers track the model's process and increase its relevancy.

SouthState built the chatbot in its Microsoft Azure environment, using only internal data. It cost the bank about $25,000 to build and about $50 a day for 100 employees to operate. At that rate, 100 users asking Tate two questions a day would cost the bank about $13,000 annually but save about 5,200 hours and up to $442,000 of employee productivity, Nichols calculated.

prioritize new potential use cases and applications, along with tracking existing initiatives that should be scaled up and expanded. A scoring method should incorporate the bank's risk tolerance, compliance considerations, revenue growth potential, operational efficiency and other areas, wrote Cognixia's Andrus in September 2023. In Evident's October 2023 report, the firm also recommended including any relevant ethical and regulatory considerations.

Small wins make AI feasible for smaller institutions, but they also create a manageable learning environment while fostering an AI ecosystem, in which employees become familiar with the technology and capabilities and generate future use cases. The stronger an ecosystem is, the more likely the organization will be to implement AI technology quickly without too much disruption, says Mousavizadeh. And the more AI penetrates an institution, the more impact it will have on the bottom line.

Working With Partners

Of course, most banks will not undertake these efforts alone. Perhaps unsurprisingly, AI technologies have rapidly evolved from bespoke and built in-house to increasingly available from vendors. Mousavizadeh at Evident says there are "so many tools available now, there's no need to build" an application at most banks.

"You can buy these capabilities," she says. "A growing number of vendors sell great solutions for banks now, which was not the case four or five years ago."

The bulk of the use cases that Valley's group has identified will have the bank working with vendors. Barrett says most of the engineering and data science work underpinning the technology would be a difficult endeavor for all but the biggest banks, so partnering with a vendor is extremely attractive.

Vendors that use AI in their solutions or offer AI-specific tools may have a sense that community banks and credit unions are cautious — but curious — about the technology. Research from the consulting firm CCG Catalyst found that vendors can offer on-demand pricing, more targeted solutions or additional training and assistance. "The bank, though, needs to be able to articulate what exactly it is trying to achieve," wrote Kate Drew, director of research, in a January 2022 report.

For instance, Bud Financial stresses its flexibility and efficiency as a partner for financial institutions that want to use its products to learn more about customers through their transactions. After inputting their transaction data into the software, a generative AI feature assists credit analysts by answering queries about the data; it can also analyze transactions to better understand the financial strength of customers. Since launching in 2018, CEO Ed Maslaveckas has seen how financial leaders' feelings toward AI and machine learning have shifted from skeptical and apprehensive to excited.

"I think the first challenge is … being able to automate a lot of workflows," he says. "That's the biggest cost save, the biggest opportunity for organizations right now."

Barrett says the "explainability" of an AI solution is a major focus of its vendor due diligence — so much so that Valley would not pursue a solution that produced results that executives couldn't explain. The bank's due diligence process includes its model risk validation, project governance, third-party governance and the AI policies created by Valley's cross-functional group. He says these policies, and the groups in charge of them, create layers of oversight but also clear pathways for internal use cases and implementation.

"I think it's really important to have a dedicated policy framework around [AI], notably because of the amount of evolution that's going to happen in the space," Barrett says. "Having something that recognizes the potentially disruptive nature of the technology, and what it could also mean for the customer — customer privacy and customer information — having a dedicated framework around reviewing that is really what we should all be doing as bankers."

One important step First Internet is taking as it explores use cases and conducts due diligence is "locking down" the bank's data using a data or security wrapper, Becker says. The bank hired a firm at the end of the third quarter of 2023 to install the wrapper, which is a mechanism designed to prevent leakages of confidential information using security protocols. His concern is that employees could input bank

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> **Russell Barrett,** Valley National Bancorp

data into an AI tool or model that could later be extracted and shared externally.

As regulators have made clear, financial institutions are responsible for the actions and outcomes of their third-party vendors as if they had taken the action themselves. In the absence of regulatory guidance specific to AI, they should revisit and potentially update and strengthen their model risk governance and validation as they conduct due diligence.

As far as technology goes, there are several data science techniques that organizations can use to explain the operations of machine learning-powered models and address concerns about these models' fairness and reliability, according to a July 2023 paper from the nonprofit FinRegLab that looked at machine learning in credit underwriting. Banks and credit unions may want to familiarize themselves with these techniques as they conduct due diligence on vendors and inquire about models.

"If I was a community bank, I would be very conservative in my approach. I would not want to be on the bleeding edge, and only look for things [that] have been tried and tested," Parmar says.

One benefit of partnering with existing providers is the familiarity the latter have with prudential regulators' expectations, Moody's Sarkar says. These vendors are likely familiar with model validation processes and oversight expectations, and can produce documentation the institution can share with regulators. For instance, as part of its responsible AI approach, Microsoft lets clients peer into its models to explain why they may generate certain outcomes and uses AI to identify data or model drifting, the gradual change in the data properties used to train a model that can degrade performance over time.

It's also essential that financial firms stay focused on their identified use case and desired outcomes during due diligence, says Bud Financial's Maslaveckas. They should make sure they're using the right technology on the right problem, and not be swayed by the compelling capabilities of AI if it's not appropriate for their application.

"Not everything needs a large language model or generative AI. Sometimes it just needs some really basic machine learning. Sometimes you just need a rules-based system doing math questions for affordability calculations," he says. "Don't get blinded by the shiny thing."

CHECKLIST: NEXT STEPS FOR AI

Strategic Planning

- Is AI an area of strategic investment and operational focus for the bank?
- Who should be in our cross-functional AI group? What groups or business lines aren't represented that need to be?
- What guiding principles, ethical use policies and governance practices does the institution need to create or strengthen to oversee AI?

Use Cases

- What is most important to the organization? How can AI assist in that objective?
- How will we assemble use case pitches, and what methodology should we use to prioritize them? How will we oversee the implementation of these projects, measure their outcomes, and share lessons and takeaways?
- What are applications of AI that could make employees more productive or accurate? What work is being done manually that could be automated?
- What AI capabilities do our existing vendors have that we could enable?
- Would this use case be complex to implement or operate? Do we have the appropriate staffing and expertise to manage it?
- What data do potential solutions require? Is data quality important to this particular application?
- What is the quality of the data that we would use to train a model, and can we access it?
- Can AI assist us with our data management strategy?

Due Diligence

- How was the vendor's model constructed and trained? What data was the model trained on, and what data will it use? Is the model explainable?
- What are our responsible AI practices, and what are our vendors'?
- How will we keep our data secure? What are our vendors' data privacy practices?
- What are our vendors' security protocols if the model is hosted on the cloud? What security certifications does the cloud provider maintain?
- Can our vendors share compliance documentation with us and our regulator?

THE DATA PROBLEM

By: **Kiah Lau Haslett**

Most artificial intelligence applications that financial institutions are interested in will use internal data — and that could be an unwelcome realization for institutions that don't have formal data management initiatives.

"I think even before [banks and credit unions] start to think about the AI use cases and what [are] the right models and technologies to use, the first thing they should get control of is the data itself, and [whether they] have all the right data in a usable format," says Ashvin Parmar of Capgemini.

AI runs on a company's data infrastructure: Computational power processes data via models and components that link to an individual application or use case through connections like application programming interfaces. If the data isn't organized or clean, or if the technology underlying these connections, or rails, is "choppy" due to older, legacy or disparate systems, then it's harder to run the technology and get good results, says Evident CEO Alexandra Mousavizadeh.

A data management strategy can help banks and credit unions understand what data they have and what they will need to acquire. An institution may realize that some of its identified use cases may not be able to move forward if it can't validate the quality of the data, or if it's not labeled and reviewed by subject matter experts.

Financial institutions will need to closely consider their data privacy practices and safeguards. AI models may need to train on or analyze an institution's data, and organizations are responsible for their intellectual property, including the quality of the data, what information is in the data set and making sure that data doesn't leave. Institutions will need to think about how they hide or remove personal identifying information and mask or anonymize the data.

They could consider using a data classification system sorted by sensitivity, public availability and market importance, says Daragh Morrissey of Microsoft. Failing to manage this could result in long-term reputational risk and loss of customer trust, along with regulatory and compliance penalties.

But to manage this risk successfully, Morrissey points out that the relevant business line at the bank needs to be involved. The IT team won't be able to look at loan data and ascertain what information is highly sensitive and what is public. Lenders and credit analysts will need to share their insights.

> "The better the data is, the more you can get out of it."
>
> **Alexandra Mousavizadeh,** Evident

AI may also be able to assist here. Both Mousavizadeh and Parmar point out that institutions can apply AI to their data to clean it, standardize it and otherwise make it usable. AI may be able to make sense of a fragmented data set or sift through and strip out customer information that shouldn't be inserted into a model. Parmar says an institution may even be able to juggle an AI project and a data management project in parallel. But good data management — and good data privacy and security protocols — are essential to truly leverage AI's capabilities.

"The infrastructure is such a huge part of it; it's impossible to delineate one from the other. But you could definitely do both at the same time. There are going to be some areas in community banks where you can start using AI on subsets of the data and build real capabilities," Mousavizadeh says. "It's just [that] the better the data is, the more you can get out of it."

NAVIGATING RULES & ETHICS

By: **Kiah Lau Haslett**

Federal regulators so far have adopted an observational stance toward AI. But its use — and risks — are on their radar.

The Financial Stability Oversight Council wrote in its 2023 annual report that AI can introduce risks to institutions, including to their models, cyber environments and overall safety and soundness. It can also have specific consumer compliance, consumer protection and fair lending risks, making it necessary for an institution to explain an outcome when AI is used in credit and underwriting decisions. A lack of explainability "can make it difficult to assess the system's conceptual soundness, increasing uncertainty about their suitability and reliability," and potentially generate biased or inaccurate results, the report read.

"It is the responsibility of financial institutions using AI to address the challenges related to explainability and monitor the quality and applicability of AI's output, and regulators can help to ensure that they do so," it added.

In the absence of more direct guidelines from regulators, financial institutions can apply existing regulatory requirements and guidance like risk management frameworks and fair lending rules to their AI applications and use cases.

The Office of the Comptroller of the Currency took that approach in its Fall 2023 Semiannual Risk Perspective, highlighting its existing supervisory expectations for banks, no matter the technology they use.

"It is important for banks to identify, measure, monitor, and control risks arising from AI use as they would for the use of any other technology," the OCC wrote, adding that these activities should be "commensurate with the materiality and complexity of the particular risk of the activity or business process(es) supported by AI usage."

FSOC recommended that financial institutions consider how they can update and strengthen their oversight structures to keep up with emerging AI risks. It also advised that institutions and their regulators further build their capacity to keep up with AI innovations, usage and risks. The OCC reminded banks specifically of their duty to conduct appropriate due diligence, follow their change management process and engage in risk management as they consider new or changing products, services and operating environments.

While not subject to European Union regulations, U.S. banks can also adopt a type of AI risk continuum that the EU articulated in its Artificial Intelligence Act, suggests Capgemini's Ashvin Parmar. The continuum sorts use cases by output risk, from limited to high risk to unacceptable, and the amount of oversight and controls that would be necessary for each one. Low-risk applications could be used widely; high-risk ones should be used carefully and sparingly.

"While there's nothing clear cut and readily available [in the U.S.], there's enough frameworks out there [that] clearly articulate your obligations in terms of what you should be ready for," Parmar says.

Regulatory Risk Emerging From AI

- Data security.
- Consumer protection.
- Regulatory compliance.
- Convincingly delivered output that is erroneous or flawed.
- A lack of consistency in responses over time.
- Unclear sourcing used to generate responses.

Source: Financial Stability Oversight Council

Responsible, Ethical AI

Organizations that want to leverage artificial intelligence capabilities may want to come up with ethical guidelines and responsible use policies. These guardrails can help guide how, where and to what end an institution should apply AI technology.

One example of this is Microsoft's responsible AI standards, a 27-page document it shares publicly and with companies it works with, says Daragh Morrissey, director of AI at Microsoft Worldwide Financial Services. A financial institution's responsible AI policies could include outlines for security and privacy protocols, fairness and inclusivity, reliability, transparency and appropriateness. Morrissey also recommends that financial institutions ask their vendors about their responsible AI approaches and compare how those policies line up with their own.

Financial institutions should consider their own ethical framework amid evolving regulatory scrutiny.

President Biden's Executive Order

In October 2023, President Joe Biden issued an executive order regarding the development and use of artificial intelligence. The order is intended to coordinate the government's approach to AI development, promote responsible innovation and competition, and keep America safe.

The order makes clear that AI technologies do not excuse organizations from complying with consumer protection laws, which are especially important in financial services. Further, the government will enact safeguards against harmful AI outcomes like "fraud, unintended bias, discrimination" and privacy infringement. The administration encouraged the Consumer Financial Protection Bureau to require its regulated entities to "use appropriate methodologies including AI tools" to comply with federal law, including evaluating their underwriting models for bias or disparate impact among protected groups, along with collateral and appraisal valuations that can minimize bias. The order also stipulated that the Department of the Treasury publish a report looking at best practices for managing AI-specific cybersecurity risks at financial institutions.

The Consumer Financial Protection Bureau

In line with its mission to protect American consumers, the CFPB stands out among financial regulators for its interest in how financial institutions are using AI.

"Unchecked 'AI' poses threats to fairness and to our civil rights in ways that are already being felt," said CFPB Director Rohit Chopra in an April 2023 speech. "When consumers and regulators do not know how decisions are made by artificial intelligence, consumers are unable to participate in a fair and competitive market free from bias."

The CFPB is concerned that AI and algorithmic-powered credit decisions could lead to "digital redlining," which he defined as "redlining caused through bias present in lending or home valuation algorithms and other technology marketed as artificial intelligence." Redlining is a discriminatory practice where borrowers are denied access to credit or services based on factors like race; its historical practice leveraged maps of areas that were deemed more or less desirable and were delineated by red lines.

In April 2023, the regulator signed onto an interagency statement regarding enforcement efforts against discrimination and bias in automated systems, along with the Federal Trade Commission, the Equal Employment Opportunity Commission and the Department of Justice's Civil Rights Division. The statement reminded enterprises that the use of automated systems and other "innovative new technologies" falls under these agencies' existing legal authorities to uphold consumer civil rights.

And in May 2023, the CFPB published a circular reminding financial institutions of their obligations to follow consumer financial laws and adverse action requirements, along with the clarification that a technology's complexity, novelty or opaqueness is not a defense for violating the law. It followed up that circular with September 2023 guidance about adverse action notices when AI has been used in a lending decision. Lenders provide those notices to a consumer if they've denied credit.

CONCLUSION

Big, global banks have been experimenting with artificial intelligence for years, dedicating time, resources and staff to solve an array of problems. Now, community banks and credit unions have the opportunity to consider how AI can help their own organizations — whether that's fighting fraud, serving customers or generating efficiencies. But successful AI initiatives require full support from management and should align with an institution's strategic goals. Care should be taken to protect customer data and ensure full compliance with regulations — and regulators appear to have more questions than answers about the technology's impact on financial services.

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Microsoft (Nasdaq "MSFT" @microsoft) enables digital transformation for the era of an intelligent cloud and an intelligent edge. Its mission is to empower every person and every organization on the planet to achieve more.

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Launched in 2014, FinXTech is a resource powered by Bank Director, which specializes in connecting a hugely influential audience of U.S. bank leaders with technology partners at the forefront of innovation. FinXTech makes it easier for banks and technology companies to work together – through its exclusive in-person events, editorial content and online FinXTech Connect platform. For more information, please visit **FinXTech.com.**

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