

ARTIFICIAL INTELLIGENCE & BANKING

Applications, challenges, risks, best practices

April 18, 2024



MARQUETTE
UNIVERSITY

BE THE DIFFERENCE.

Sponsors

Gold Level



Silver Level



Bronze Level

Town Bank

Contributors

Bankers Bank, Condor Consulting – John Byrne,
the NBS Group

Participants

Host

- Dr. Kent Belasco, Director Commercial Banking Program & Associate Professor of Finance

Moderator

- Mr. Tom Grottke, the NBS Group

Keynote

- Mr. Nathan Lasnoski, CTO and Co-Founder, Concurrency

Speakers

Mr. Tom Eck

VP of Digital Transformation, Fiserv

Mr. Steve Nickolson

**Partner & Director of Technology Services,
the NBS Group**

Ms. Sarah Grooms

SVP, Special Initiatives, Wintrust

Mr. Ryan Miller

**VP & Sr. Counsel Innovation Policy,
American Bankers Association**

Mr. John Rose

**Bank Examiner Artificial Intelligence &
Machine Learning, Reserve Bank, Chicago**

Agenda

8:30 am	Welcome and Introduction	Dr. Kent Belasco, Marquette
8:45	Keynote Address	Mr. Nathan Lasnoski, Concurrency
9:30		Mr. Tom Eck, Fiserv
10:00	Q&A Moderator	Mr. Tom Grottke, the NBS Group
10:15	Break	
10:30	AI Applications & uses	Mr. Steve Nickolson, the NBS Group
		Ms. Sarah Grooms, Wintrust
11:15	AI Compliance, governance, & policy	Mr. Ryan Miller, ABA
11:40	AI Exam development & regulation	Mr. John Rose, Federal Reserve
12:00	Q&A	
12:30	Adjournment	

FOUNDERS



College of Business Administration
Commercial Banking

Platinum Level

WINTRUST



**TODD & CAMILLE
NICKLAUS**

Silver Level



Bank of America



**JOHN K.
BARRETT**

**JOHN J.
BYRNE, CAMS,
ESQ.**

Bronze Level



Ixonia Bank



Mr. Nathan Lasnoski

Keynote Speaker

Chief Technology Officer and Co-Founder,
Concurrency



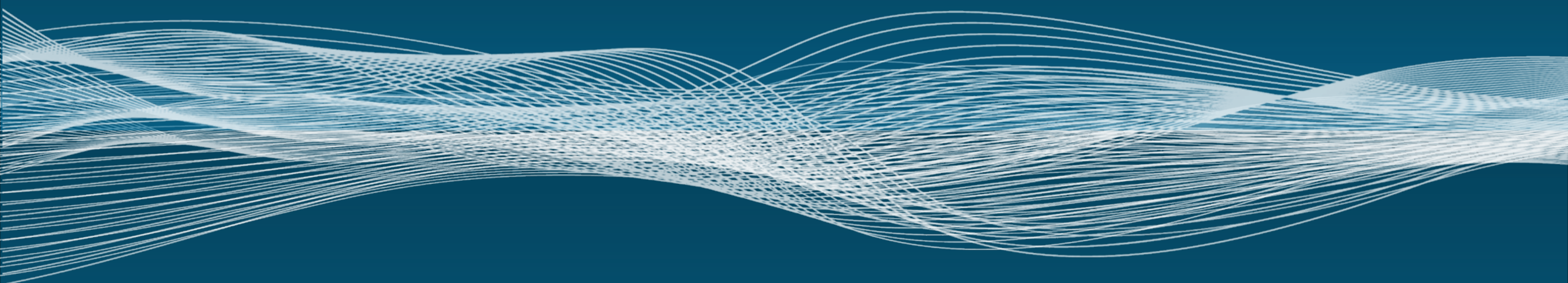
MARQUETTE
UNIVERSITY

BE THE DIFFERENCE.



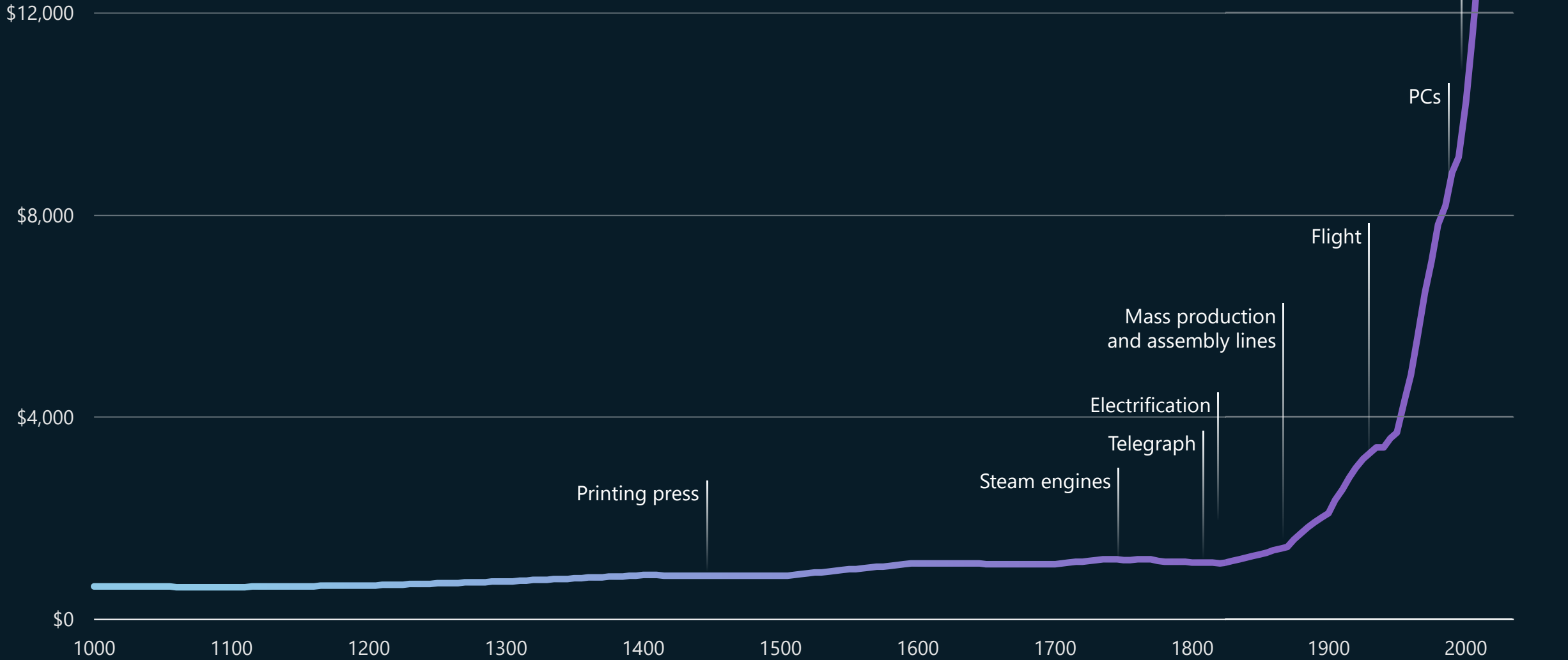
AI in Financial Services

Optimizing Customer Value



Technology Drives Productivity Growth

(Worldwide GDP per capita, adjusted for inflation in 2011 dollars)



Sources:

Max Roser (2013) - "Economic Growth". Published online at OurWorldInData.org. Retrieved from: '<https://ourworldindata.org/economic-growth>'. Accessed May 2023.

Max Roser, Hannah Ritchie, Esteban Ortiz-Ospina and Lucas Rod s-Guirao (2013) - "World Population Growth". Published online at OurWorldInData.org.

Retrieved from: '<https://ourworldindata.org/world-population-growth>'. Accessed May 2023.

12x

Capabilities of AI



What we can do now

Future state

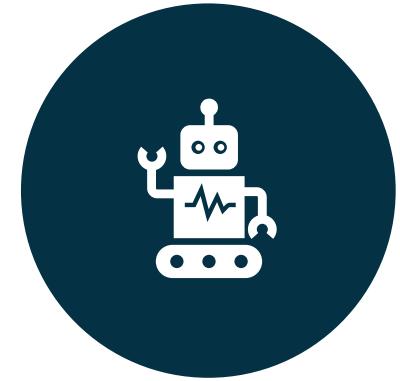
Framing the AI Journey

Domains of Impact to Consider



COMMODITY

(CREATING GENERAL IMPACT FROM AI ENABLED PRODUCTS, SUCH AS M365 COPILOT)



MISSION-DRIVEN

(CREATING DIRECT ROI FROM DATA-ENABLED JOURNEYS WITH DIRECT PAYOFF)

Common AI Concerns and Approaches



Data Privacy Concern

- Deploy a private instance
- Limit data access
- Control data source



Data Not Ready

- Work through use cases first
- Validate data readiness per use case
- Incremental data readiness



Human Displacement

- AI is a force multiplier
- Disruption is an old topic
- Train and engage people



Quality or Hallucination

- The basis of AI is test-ability
- Use confidence to control output
- AI + Human



Bias

- Manage data for use case
- Interpret possible biases
- Build controls for intelligent management

Commodity Examples

Examples of commodity AI for every person



**Finding info
and answers**



**Summarizing meetings
and action items**



**Creative
work**



Analytical work

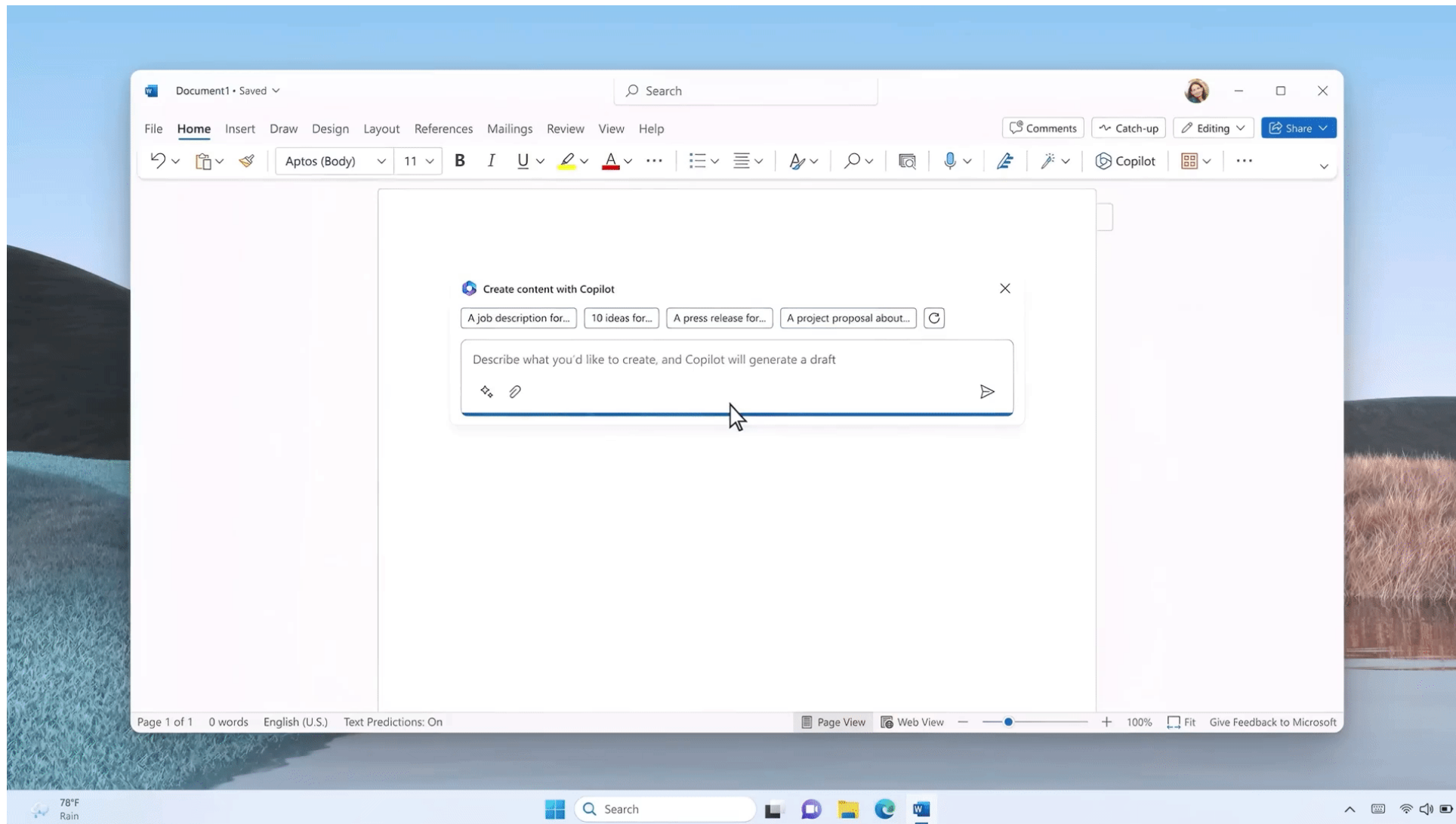


Planning their day



Admin tasks

Never Create a Draft Again



Presentation Prep

File Home Insert Draw Page Layout Formulas Data Review View Help FactSet

Clipboard: Paste, Cut, Copy, Format Painter

Font: Arial, 10, Bold, Italic, Underline, Text Color, Background Color, Font Color, Paragraph Spacing, Bullets, Numbered List, Indentation, Merge & Center

Alignment: Left, Center, Right, Justify, Top, Middle, Bottom, Wrap Text

Number: General, Text, Percentage, Fraction, Decimals, Scientific, Currency, Accounting, Date, Time, Custom

Conditional Formatting: Cell Styles (Normal 2, Normal, Bad, Good, Neutral, Calculation, Check Cell, Explanatory...)

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

Ideas: Ideas, Sensitivity

Share, Comments

D6 X ✓ fx =@FDS(B1,"FF_BUS_DESC_EXT()")

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	S	T	U	V	W	X	
1		ticker: FDS																				
2		Currency: USD																				
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
19																						
20																						
21																						
22																						
23																						
24																						
25																						
26																						
27																						
28																						
29																						
30																						
31																						
32																						
33																						
34																						
35																						
36																						
37																						
38																						
39																						
40																						

Navigation: About Us | 5Y Price Chart | Company Financials

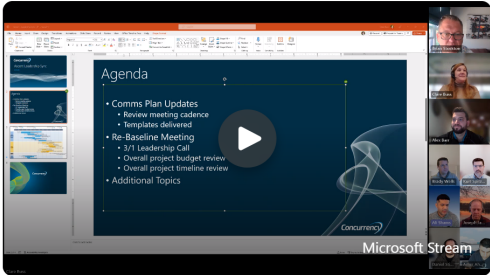
Footer: 110%

Get Smart Meeting Summaries

Leadership Sync - External - Asc... Chat Files Recap Speaker Coach Q&A +

Join 13

Friday, February 23, 2024 11:30 AM - 12:00 PM Open in Stream Copilot



Agenda

- Comms Plan Updates
 - Review meeting cadence
 - Templates delivered
- Re-Baseline Meeting
 - 3/1 Leadership Call
 - Overall project budget review
 - Overall project timeline review
- Additional Topics

Speakers # Topics Chapters

- Clare Buss
- Amer [redacted]
- Joseph [redacted]
- Brian [redacted]
- Ali [redacted]
- Daniel Stinchcomb
- Kurt Spitzner
- Alex Barr
- Brady Wells

Show less ^ Is this info useful? 👍 🗨

Content

No files were shared.

Notes AI notes Mentions Transcript

Generated by AI. Be sure to check for accuracy. Copy all

Meeting notes

- > **Clare** talked about weekend plans with Brian and Alex before the meeting started. Clare then started the meeting and discussed a list of TBD servers with Brian. Clare will provide a list of what is listed as TBD and what they are doing with it next.
- > **Clare** and **Amer** discussed T5, T2, and T1 comms for beta users. Bill will review the T-10 template and make necessary modifications.
- > **Clare, Ali, Amer, Daniel** and **Joseph** discussed the timeline and budget for the project, and the importance of tracking smaller details. They also discussed setting up a tracking mechanism for server migration channels and working with Ellie to review the queue. Ali introduced himself as a technology operating partner and observer for HG team. No major decisions were made.

Are these notes useful? 👍 🗨

Follow-up tasks

- **Clare Buss** will follow up with Bill about the changes made to the T10 template.
- **Clare Buss** will reach out to the PM today to see if they can loop the masergy team into the weekly voice sync on Wednesday the 28th.
- **Clare Buss** will send out the list of servers that are listed as TBD by

Copilot

that they join occasionally to observe the progress of the project. They also mentioned that they know Brian and Amer and that concurrency is supporting another portfolio company of HG. 1

AI-generated content may be incorrect 👍 🗨

What was the tone between Liberty and Concurrency?

Copilot 7:06 AM

The tone between Liberty and Concurrency was professional and collaborative. They discussed various topics related to the project, such as comms, timeline, budget, server migration, and user feedback. They also addressed some issues and concerns, such as the TBD servers, the T5 comms, and the masergy coordination. They agreed on some action items and next steps, such as scheduling meetings, sending out comms, and tracking tasks. They did not have any conflicts or disagreements, and they thanked each other for their work and support.

AI-generated content may be incorrect 👍 🗨

Recap the meeting

List action items

Ask me anything about this meeting

More prompts ▶

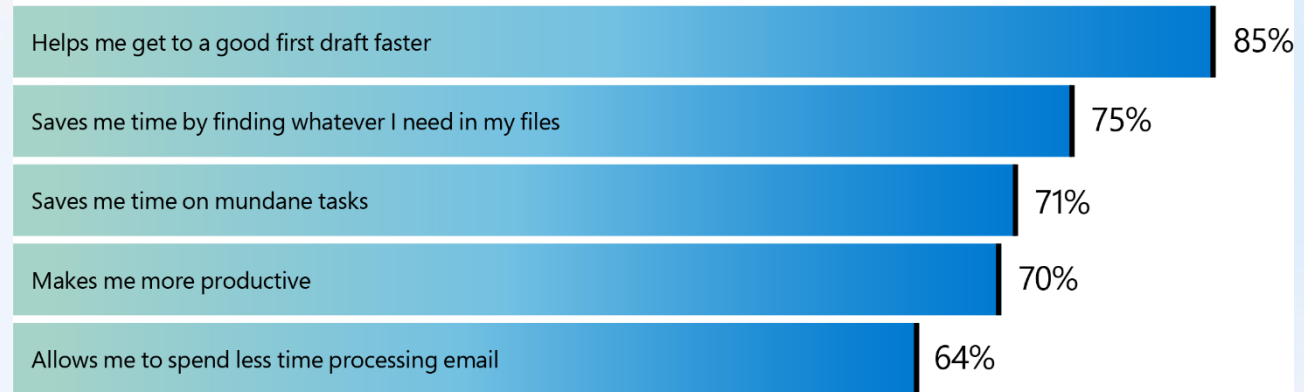
What the earliest Copilot users have taught us

Microsoft surveyed early users in our Copilot for Microsoft 365 Early Access Program to learn how they are using Copilot:

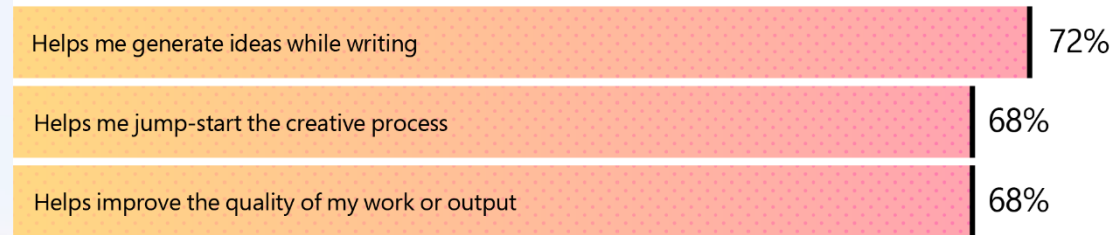
We also wanted to understand how valuable Copilot is to employees.

Early users told us once they've worked with Copilot, they don't want to go back to working without it.

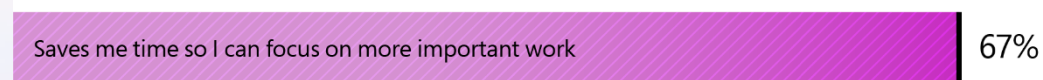
Productivity and speed



Quality and creativity



Focus time



Mission-Driven Examples

Banking and Capital Markets



Loan Origination
Automation



Customer Support
Automation



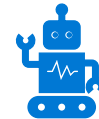
Knowledge Base



Wealth Management
Teams



Next Best Action



Multi-Generational
Relationships



Pitchbook
Generation



Insights



Risk Management

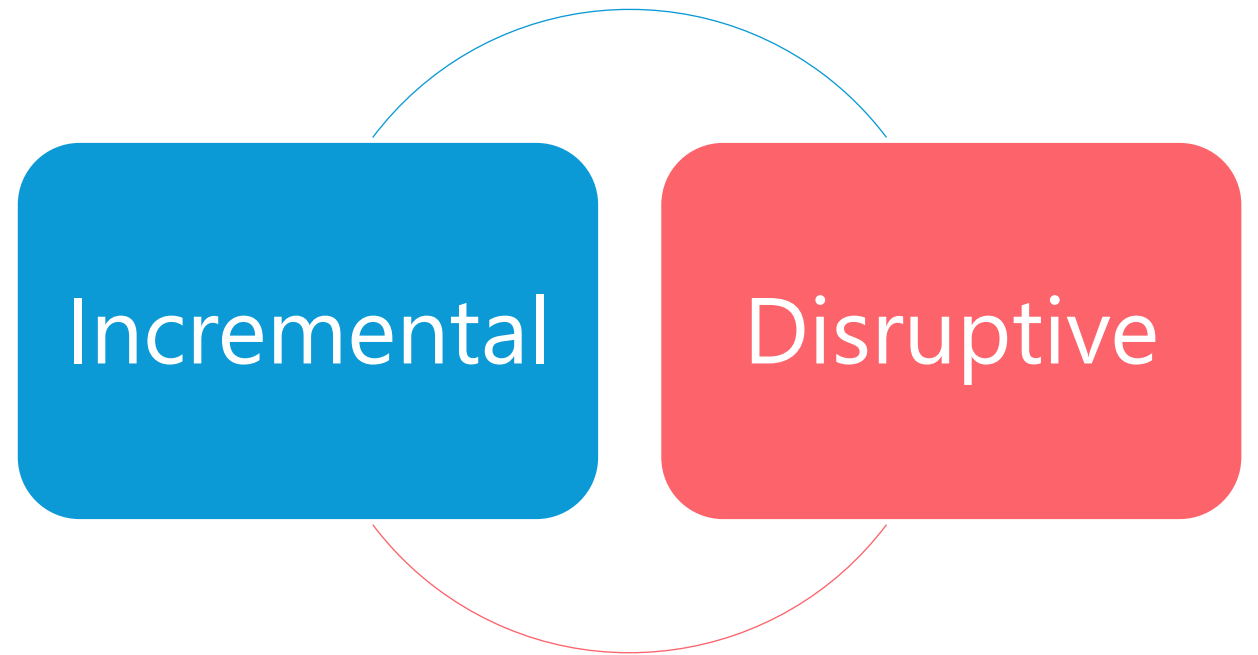


Claim Automation



Fraud Detection

Two Types of Innovation



Internal Use Cases

3/24 9:56 PM

If I'm a [redacted] employee, what numbers should I know about for our health plan?

[redacted] Demo 3/24 9:56 PM

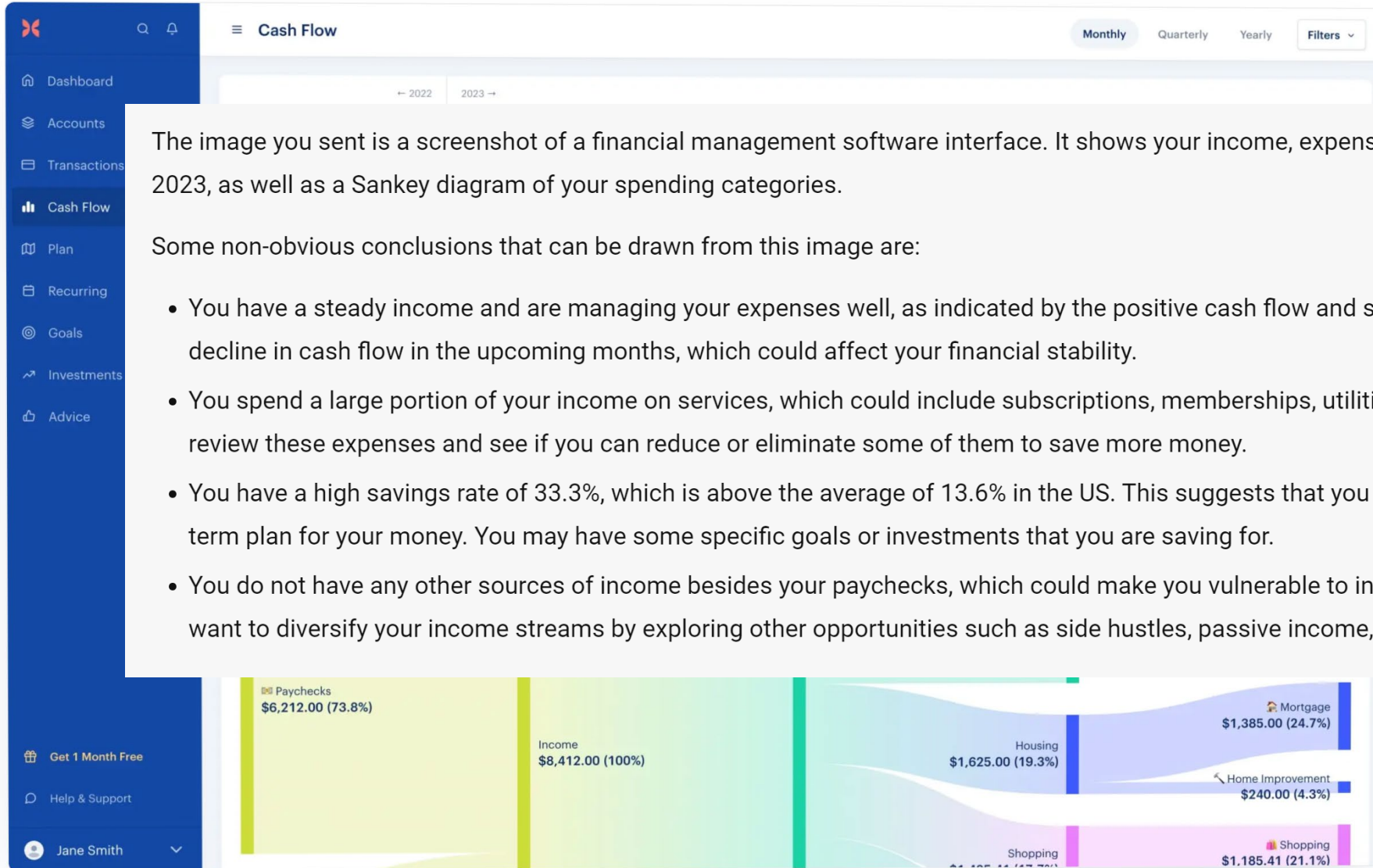


As a [redacted] employee, there are several important numbers to know about for your health plan. These numbers can help you understand your coverage and make informed decisions about your healthcare. Here are some key numbers to keep in mind:

1. **Deductibles:** Deductibles are the amount of money you must pay out of pocket before your health insurance starts covering your expenses. The deductible amount may vary depending on whether you are in-network or out-of-network. For example, in-network deductibles for employees are \$500 [1](#).
2. **In-Network Providers:** In-network providers are healthcare professionals, hospitals, and facilities that have an agreement with your health insurance plan to provide services at a discounted rate. It's important to know which providers are in-network to maximize your coverage and minimize your out-of-pocket expenses. Overlake is an in-network institution [23](#).
3. **Co-pays:** Co-pays are fixed amounts that you pay for certain healthcare services, such as doctor visits or prescription medications. These amounts are typically lower than the full cost of the service and can vary depending on the specific service and your health plan. Be sure to check your plan documents for the co-pay amounts for different services.
4. **Out-of-Pocket Maximum:** The out-of-pocket maximum is the maximum amount you will have to pay for covered healthcare services in a given year. Once you reach this limit, your health insurance will cover 100% of the remaining costs. It's important to know your out-of-pocket maximum to budget for healthcare expenses and understand when your insurance will start covering all costs.

Remember to refer to your specific health plan documents for the most accurate and up-to-date information about your coverage and benefits. [123](#).

What are non-obvious conclusions from this image?

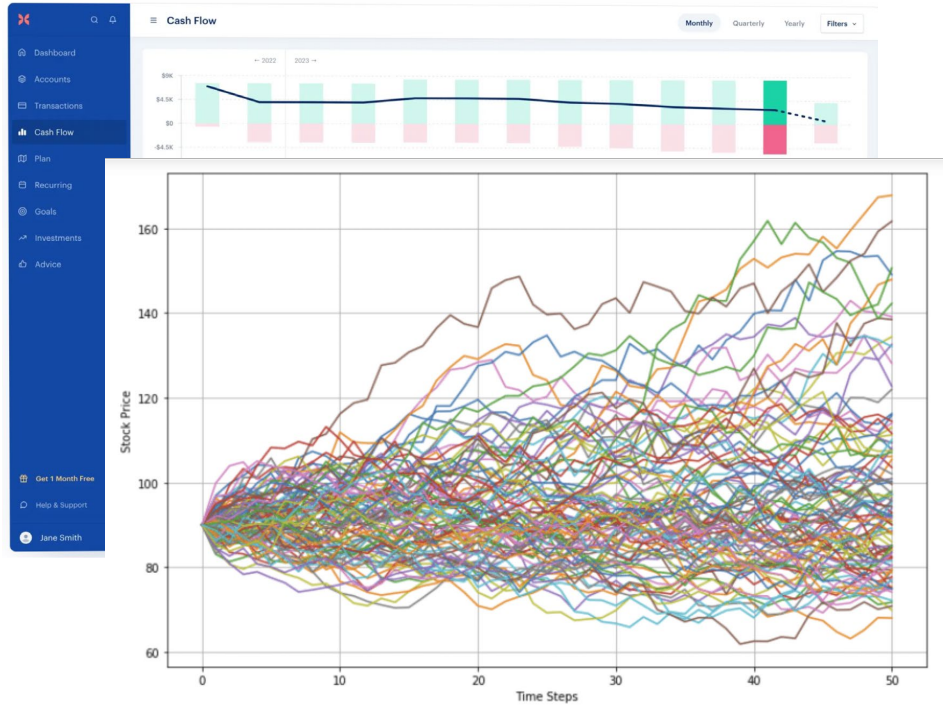


The image you sent is a screenshot of a financial management software interface. It shows your income, expenses, savings, and cash flow for October 2023, as well as a Sankey diagram of your spending categories.

Some non-obvious conclusions that can be drawn from this image are:

- You have a steady income and are managing your expenses well, as indicated by the positive cash flow and savings. However, there is a projected decline in cash flow in the upcoming months, which could affect your financial stability.
- You spend a large portion of your income on services, which could include subscriptions, memberships, utilities, insurance, etc. You may want to review these expenses and see if you can reduce or eliminate some of them to save more money.
- You have a high savings rate of 33.3%, which is above the average of 13.6% in the US. This suggests that you are financially savvy and have a long-term plan for your money. You may have some specific goals or investments that you are saving for.
- You do not have any other sources of income besides your paychecks, which could make you vulnerable to income shocks or emergencies. You may want to diversify your income streams by exploring other opportunities such as side hustles, passive income, or investing.

What is are non-obvious conclusions from this image?



✓ Analyzing the image: Privacy blur hides faces from Copilot

The table from the Monte Carlo Summary indicates that the couple's savings strategy is not successful in any of the simulated market conditions. Here's a breakdown of what the table reveals:

- **Upside Case (Outperform):** At the 97.5 percentile, the couple's total portfolio assets are negative at (\$4,819,349).
- **Median Case (Moderate):** At the 50 percentile, the total portfolio assets are negative at (\$7,103,239).
- **Downside Case (Underperform):** At the 2.5 percentile, the total portfolio assets are negative at (\$8,762,318).

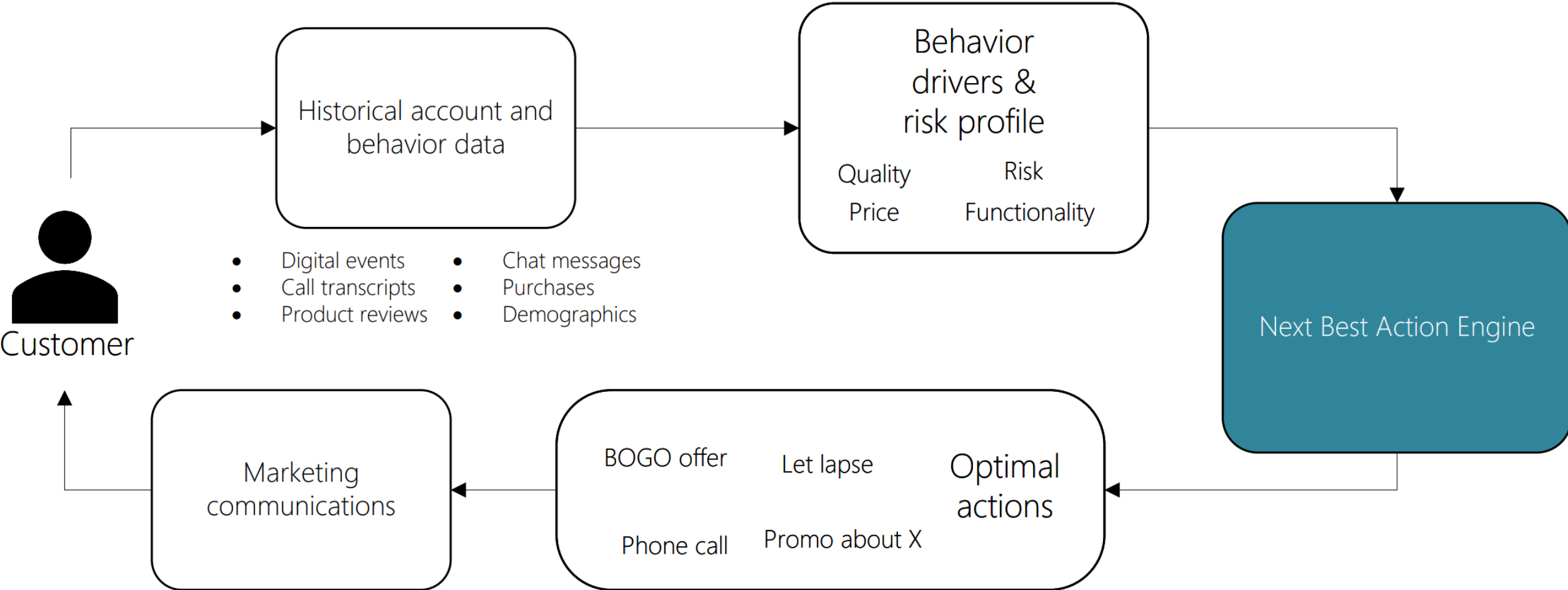
The fact that the Monte Carlo simulation is successful in 0% of the trials suggests that the couple's current savings and investment strategy is highly unlikely to meet their financial goals given the potential future market conditions. This implies that they may need to reassess their financial plan, possibly by increasing their savings rate, adjusting their investment strategy, or revising their retirement spending goals to improve the likelihood of success.

What percentage of portfolios have a greater than 25% chance of missing savings goals after considering the Monte Carlo summary?

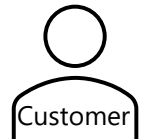
Wealth Management Teams

- Wealth management lead working with focused areas
- AI functions as another “team member”
 - Research
 - Meeting Prep
 - Portfolio Analysis
- “Research this possibility for my customer”
- “Return this data about my customer’s portfolio”
- “Tell me about the most recent accidents for my customer”
- “What changes should I make to my customer’s portfolio”
- “Inform my team members about the schedule for the week”

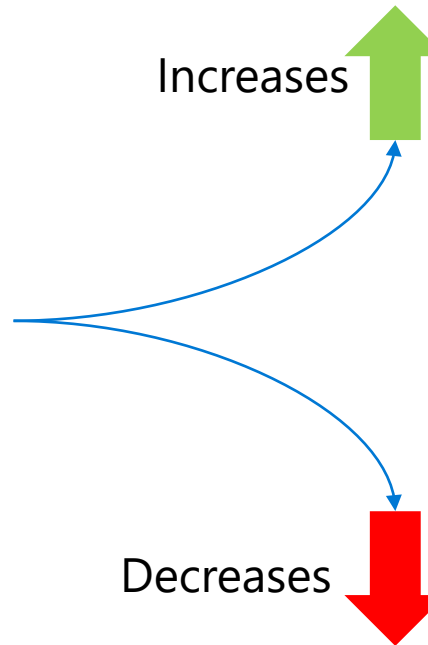
Personalizing Customer Experiences with **Next Best**



Personalizing Customer Experiences with **Next Best Action**



Take the action that



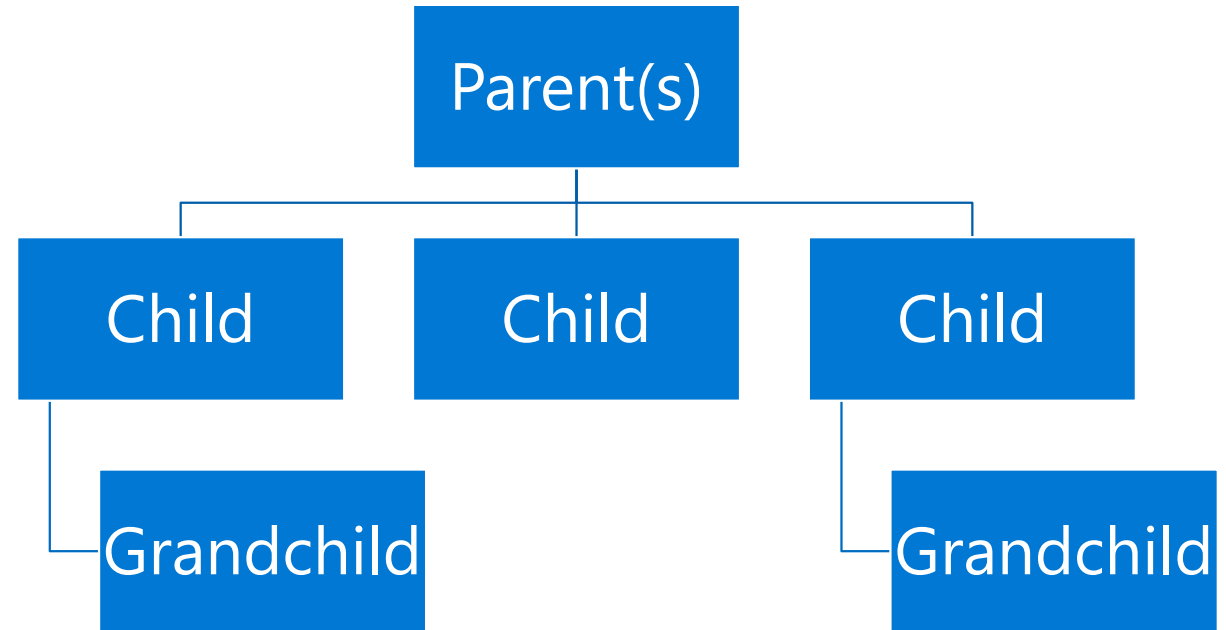
Business Benefits

- Lifetime value
- Engagement
- NPS
- Conversion

- Complaints
- Unsubscriptions
- Costs

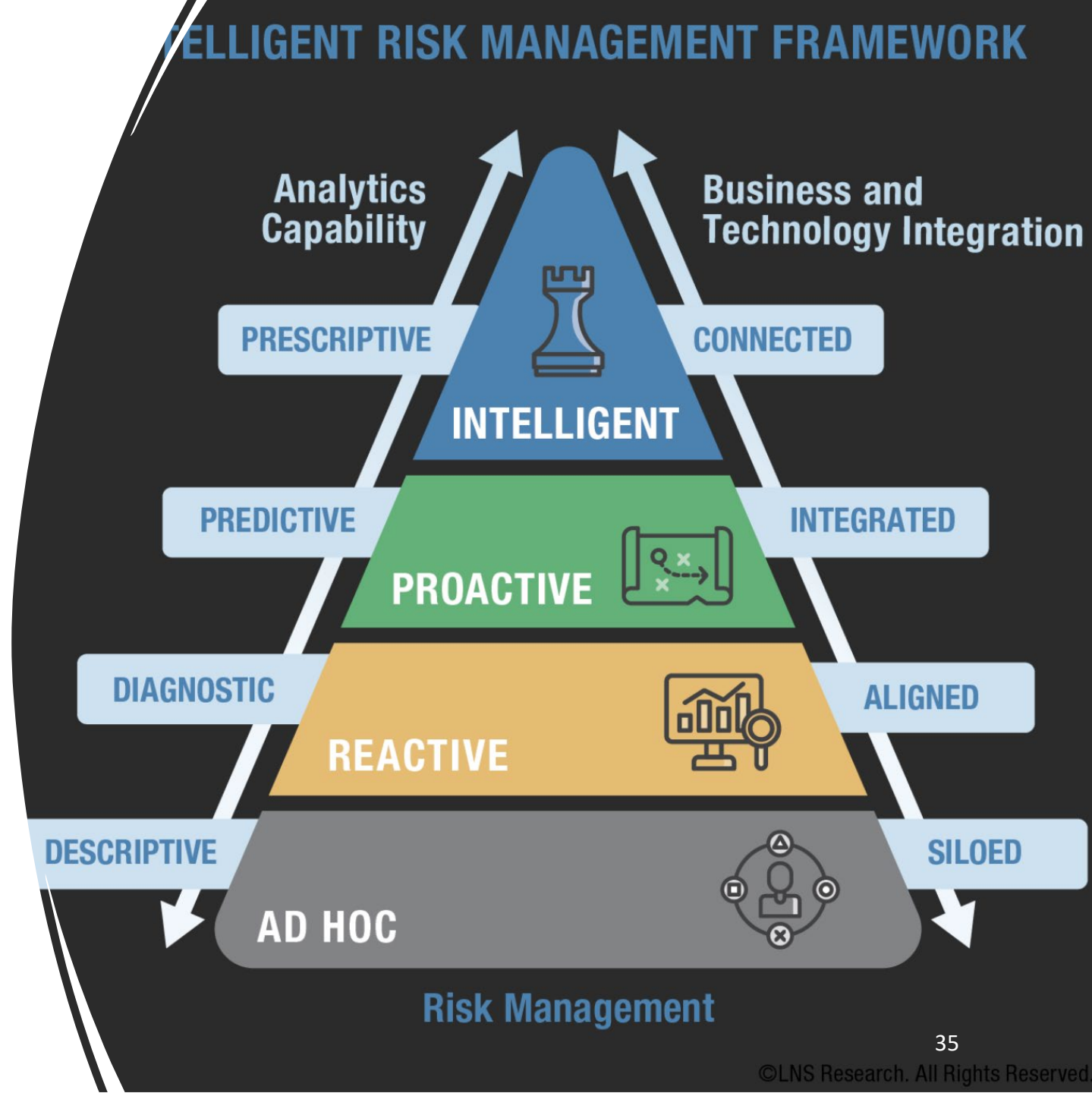
Multi-Generational Relationships

- Optimized marketing campaigns
- Understanding of whole-family
- AI-Powered Drip Campaigns
- Plan proactive transitions
- Auto-generation of documents
- Combine with **Next Best Action**



Risk Management and Advising

- Determining potential risks in portfolio
- Understanding priorities for improvement
- Provide prescriptive guidance to clients
- Prioritize based on stage of life



Forbes

Streamlining the Application Process

The mortgage application process has long been a daunting journey for many prospective homeowners. However, AI has emerged as a game-changer, streamlining this journey with the power of automation and natural language processing. [Chatbots](#) and [virtual assistants](#), equipped with the ability to understand and process human language, now guide applicants through the maze of mortgage applications, answering questions, and providing personalized advice 24/7.

Average Savings of \$2,000/Application



Federal

Your info

Income

Deductions

Credits

Taxes

Wrap Up

It's great to meet you, Mateo!

We've transferred info from your 2022 tax return — no need to type everything out. Take a look and let us know if everything looks good.

First name

Mateo

Middle initial

W

Last name

Chavez

Suffix

W

Date of birth

08/12/1989

Marital status

Married

This return is for a taxpayer who passed away.

I'm legally blind or disabled.

< Back

Next >

Side gigs

Should I report my side gig?

Yes, the IRS requires you to report income earned from the gig economy, even if the income is:

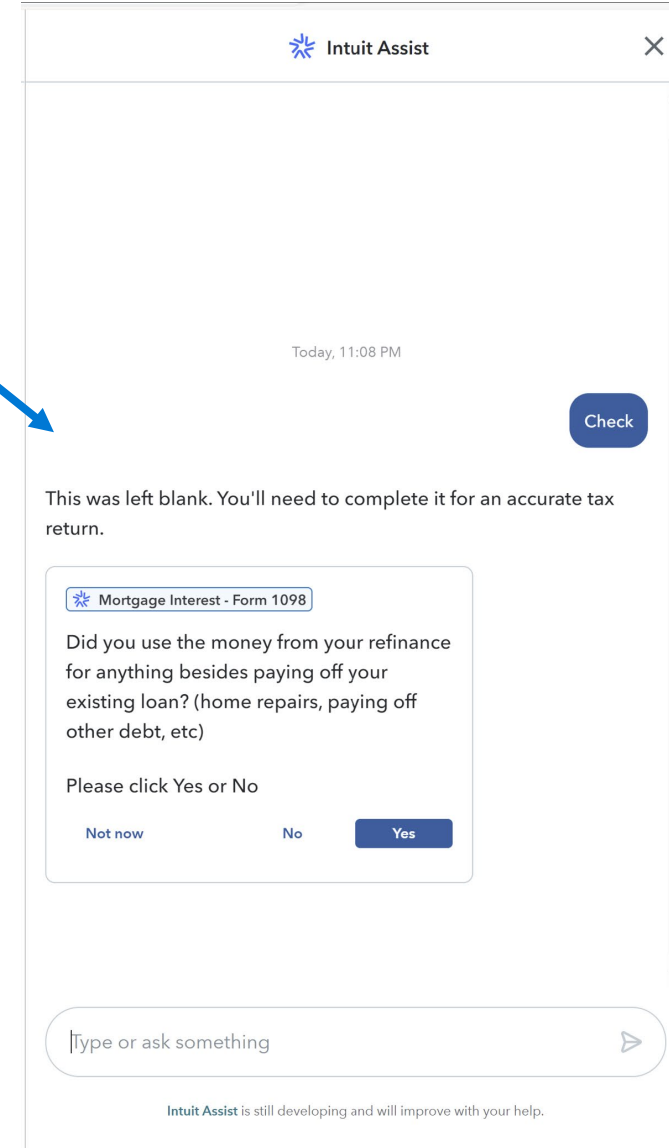
- From part-time, temporary, or side work
- Not reported on an information return form — like a [Form 1099-K](#), [1099-MISC](#), [1099-NEC](#), [W-2](#) or other income statement
- Paid in any form, including cash, property, goods, or virtual currency



Ask a follow-up question

Customer Support

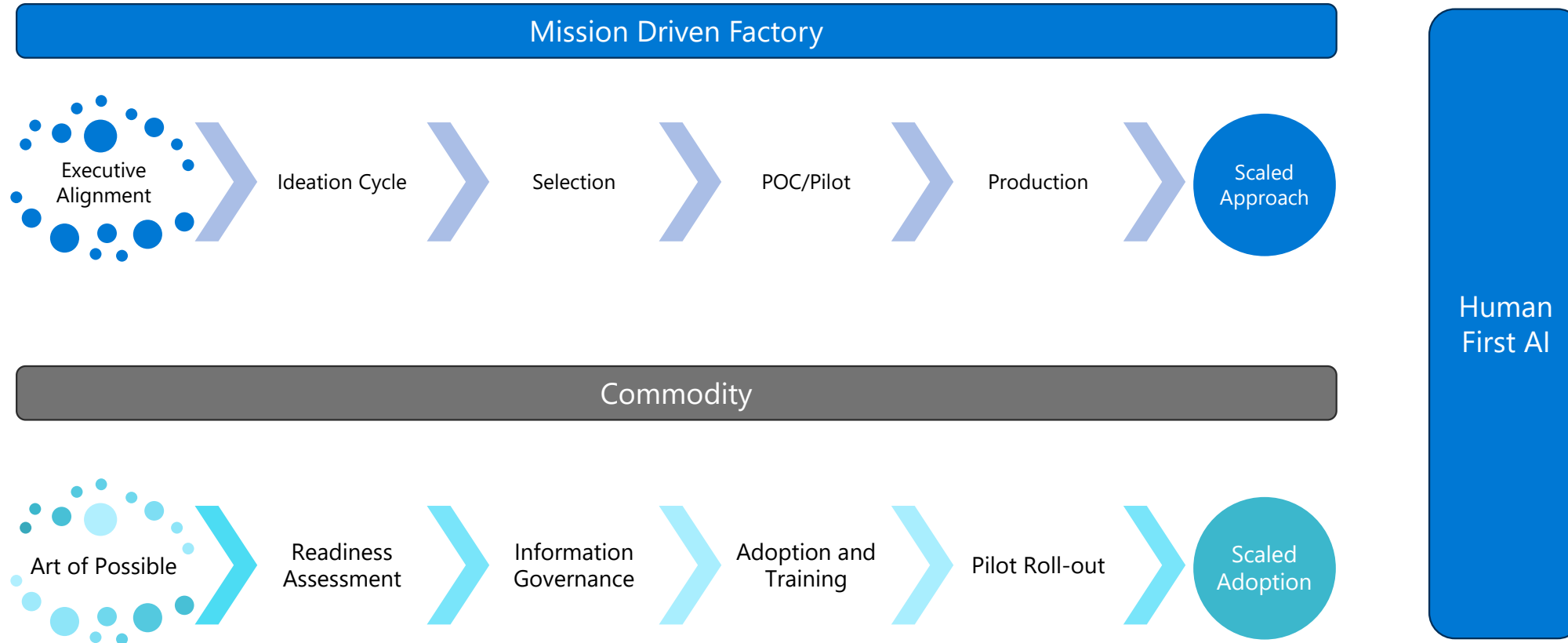
- Proactive prompting of missed items
- Interactive help
- Direct to self-help
- Escalate to person-directed



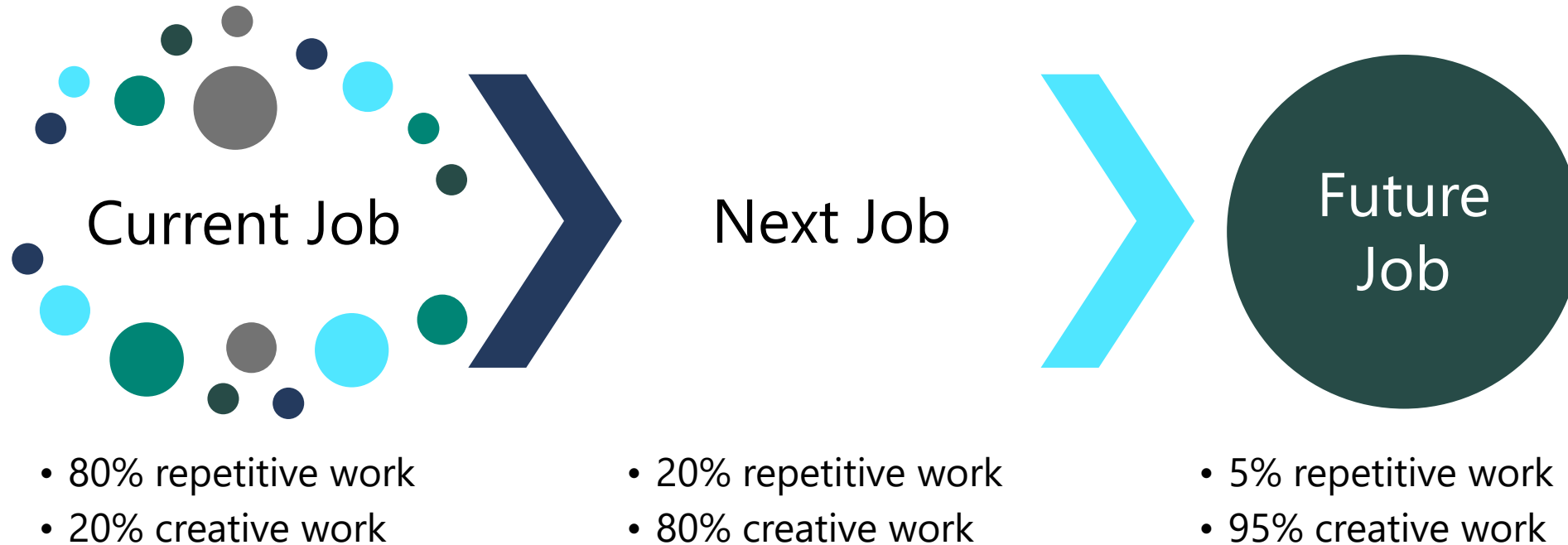
The screenshot shows a chat window titled "Intuit Assist" with a close button (X) in the top right corner. The chat history shows a timestamp "Today, 11:08 PM" and a blue "Check" button. The main message reads: "This was left blank. You'll need to complete it for an accurate tax return." Below this is a card titled "Mortgage Interest - Form 1098" with the question: "Did you use the money from your refinance for anything besides paying off your existing loan? (home repairs, paying off other debt, etc)". It asks the user to "Please click Yes or No" and provides three buttons: "Not now", "No", and "Yes". At the bottom of the chat window is a text input field with the placeholder "Type or ask something" and a send button (arrow). A footer note states: "Intuit Assist is still developing and will improve with your help."

Human First AI Strategies

Two AI Program Lanes



Role Transition with Artificial Intelligence



How to “get started in AI?”

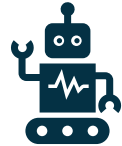
Learn our **Data Science Curriculum!?!?**

Will impact less than .1% of your staff

AI Upskilling is NOT About Data Science



Everyone **deserves**
an AI assistant



Adoption of AI is
about skills, not roles



Not limited to
technical skills



Re-awaken creativity



Requires growth
mindset

Types of Roles Using Artificial Intelligence



Data Engineer

Works with a data scientist or analytics team to **prepare data** for future AI and analytics use cases



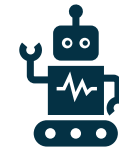
Data Scientist

Creates **trusted AI models** that must have accuracy and precision



AI Engineer

Uses **foundational models** to create value by applying and enabling within applications with customization



AI Practitioner

Applies and cooperates with AI to **create value in everyday work** processes as the “expert on the business”

Where to go from here?

Getting Started

- Persona-based Jobs to Be Done (what decisions do my teams need to perform)
- Predictions of information to inform decisions
- Prescriptions on action that normalize actions
- Analyze single portfolio to accelerate one workload
- Analyze greater portfolio to accelerate multiple workloads

Mr. Tom Eck

Senior Vice President, Digital Transformation

Fiserv



MARQUETTE
UNIVERSITY

BE THE DIFFERENCE.

AI in Action

Practical Applications for Safe and Responsible AI

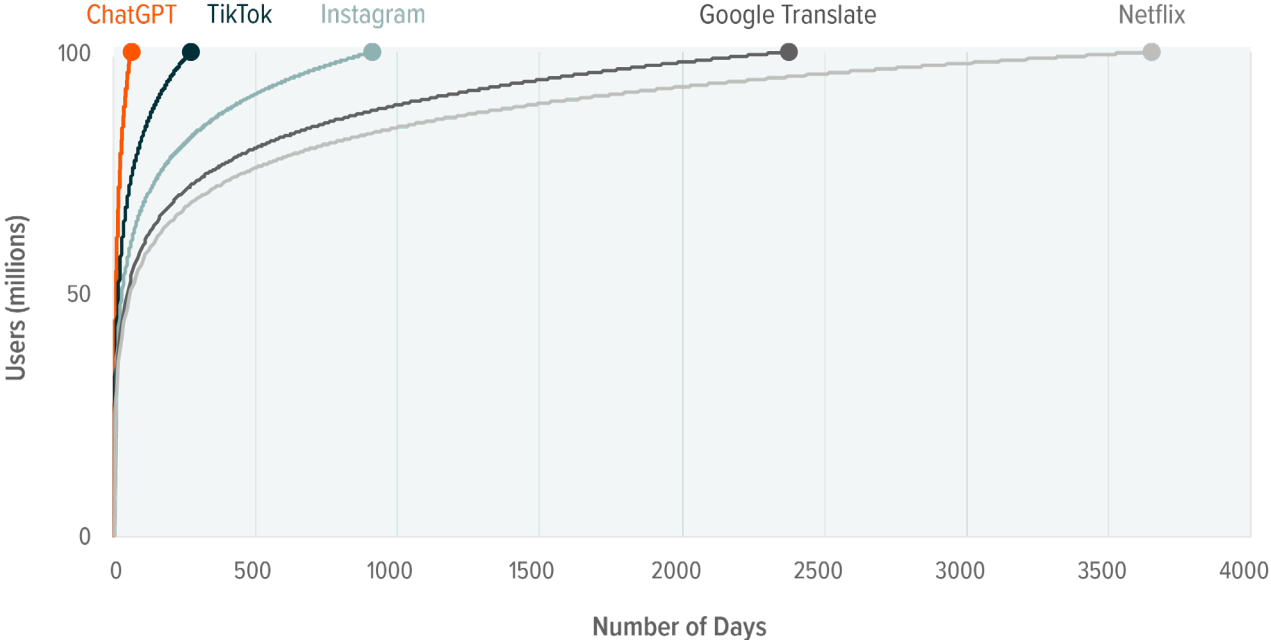
18 APRIL 2024

Tom Eck – AI @ Fiserv

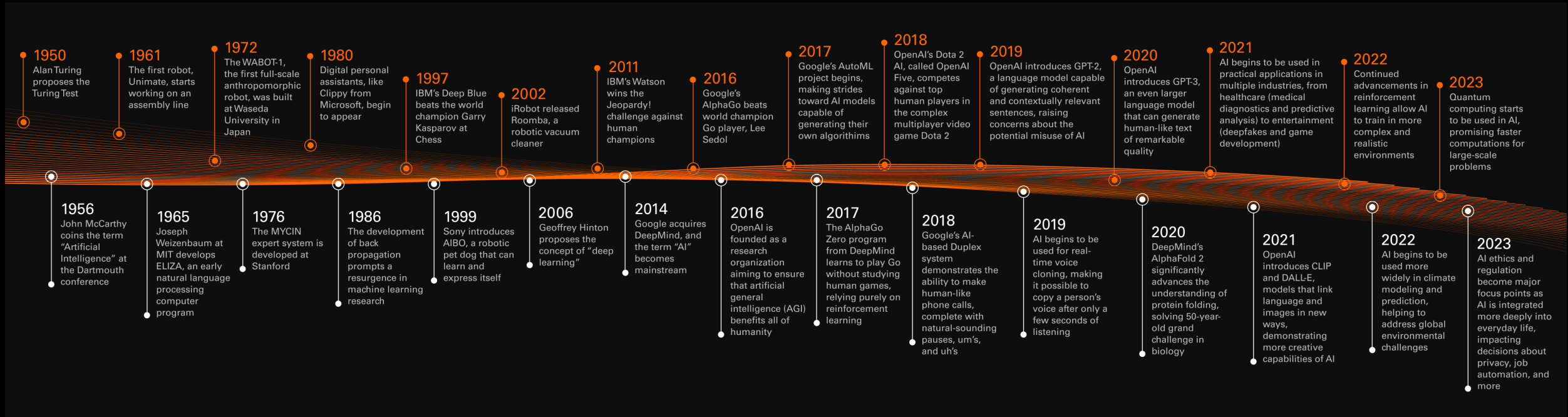
ChatGPT – An Overnight Success!

TIME IT TOOK COMPANIES TO REACH 100 MILLION USERS

Sources: Global X ETFs with information derived from: BBC News. (2018, January 23). Netflix's history: From DVD rentals to streaming success; Cerullo, M. (2023, February 1). ChatGPT user base is growing faster than TikTok. CBS News.

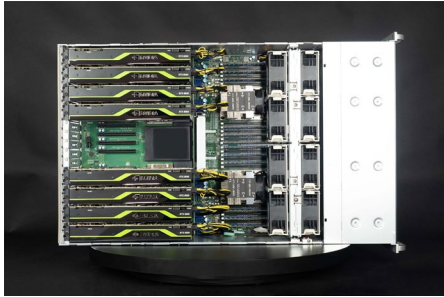


History of AI – Not an Overnight Success

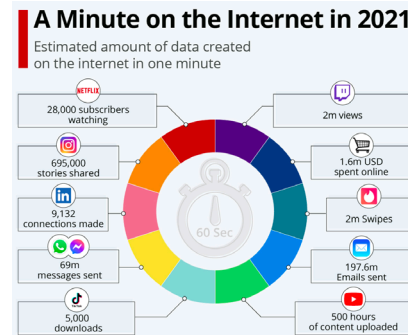


The Advent of Deep Learning and Foundation Models | How we got here

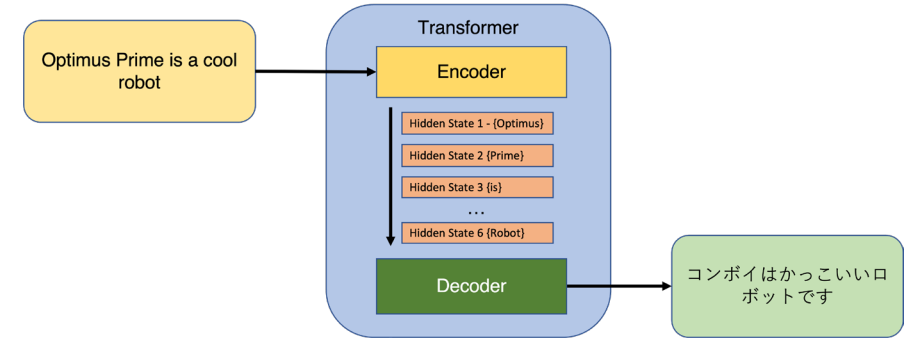
Hardware: GPU's, TPU's, Cloud



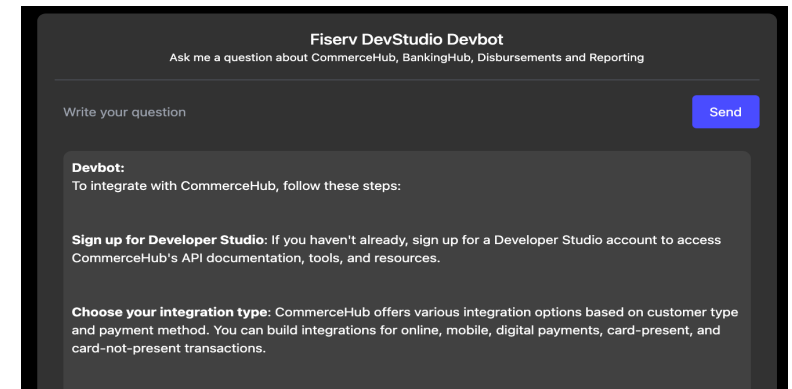
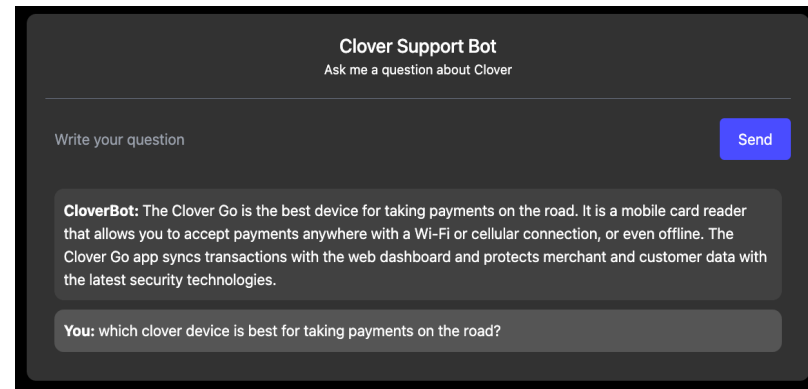
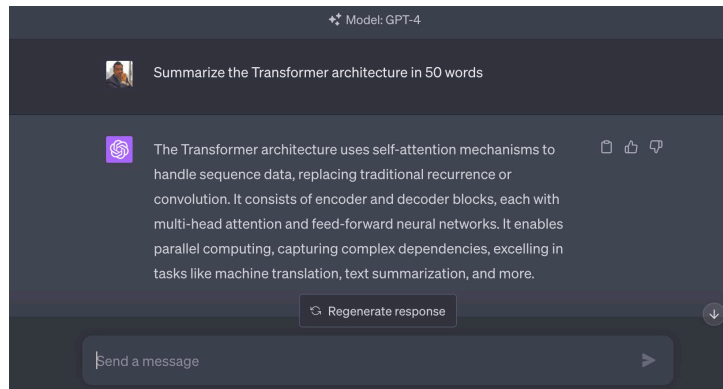
Data: easily, "freely" accessible, massive quantity



Architecture: highly scalable Transformer models



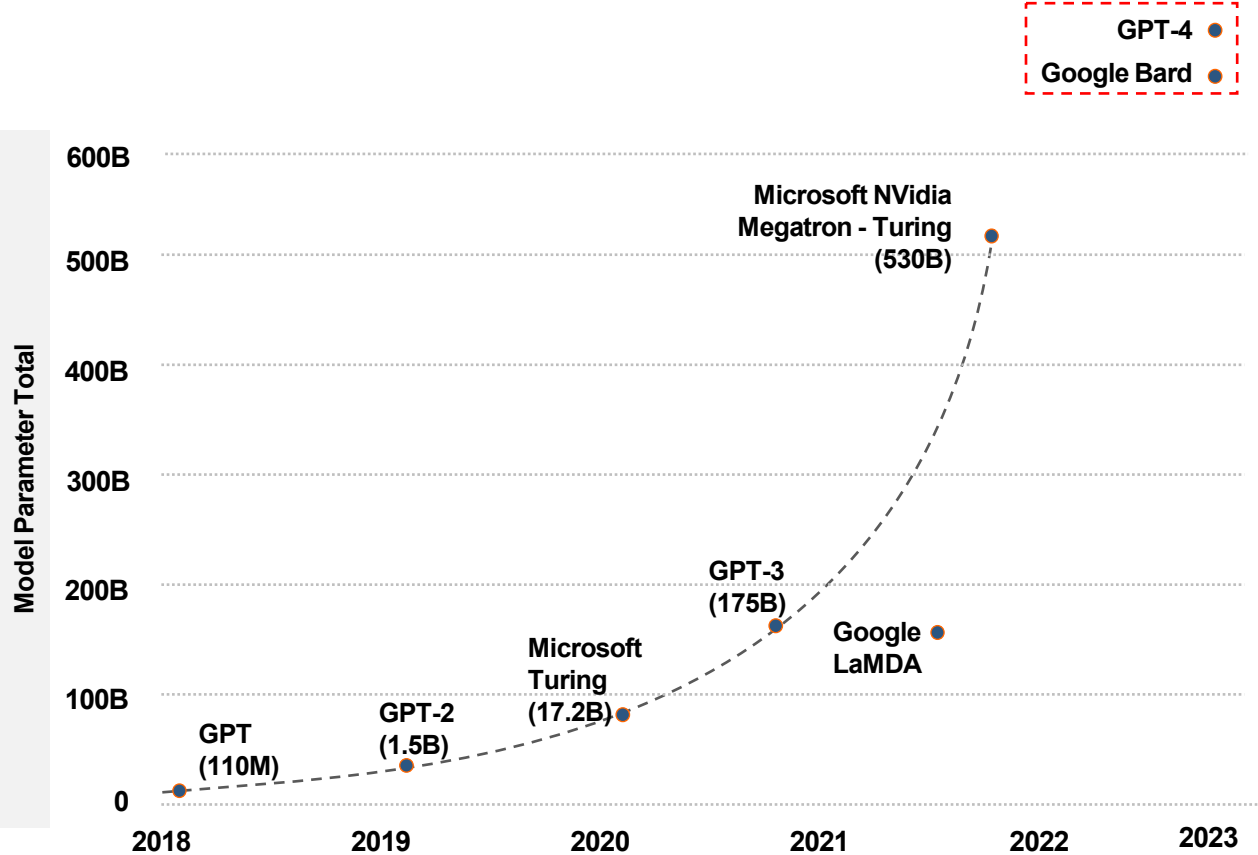
API Layer



Applications

Exponential Scale Transforms How We Think About AI

Exponential Growth in AI Model Parameters

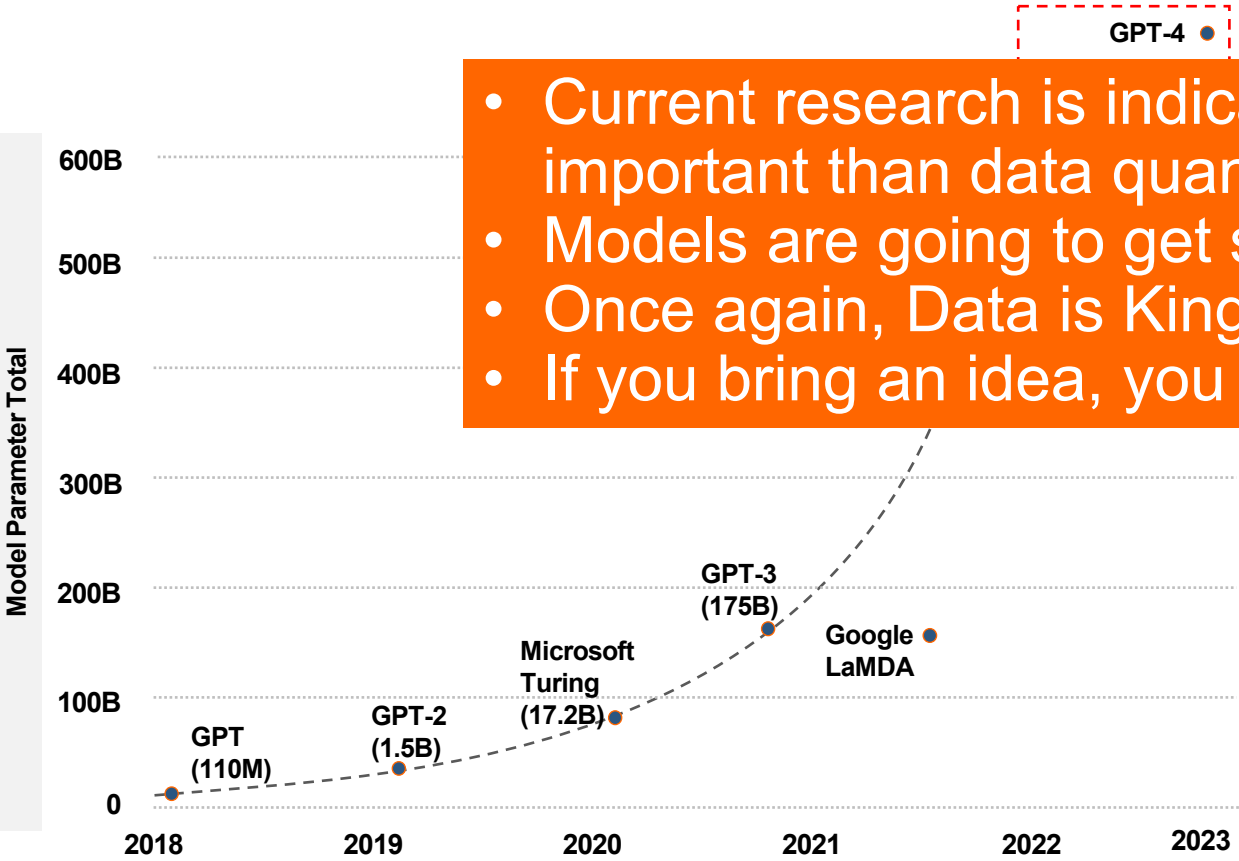


Source: Microsoft's vision for AI, May 2023

Exponential Scale Transforms How We Think About AI

Exponential Growth in AI Model Parameters

- Current research is indicating training data quality is more important than data quantity and model size
- Models are going to get smaller and more efficient
- Once again, Data is King
- If you bring an idea, you gotta' bring your data



Source: Microsoft's vision for AI, May 2023



AI at Fiserv – Present State

Current Industry Use Cases

Financial Services Use Cases



Contact center insights



Lead Generation



Fraud Detection



Market Surveillance & Analysis



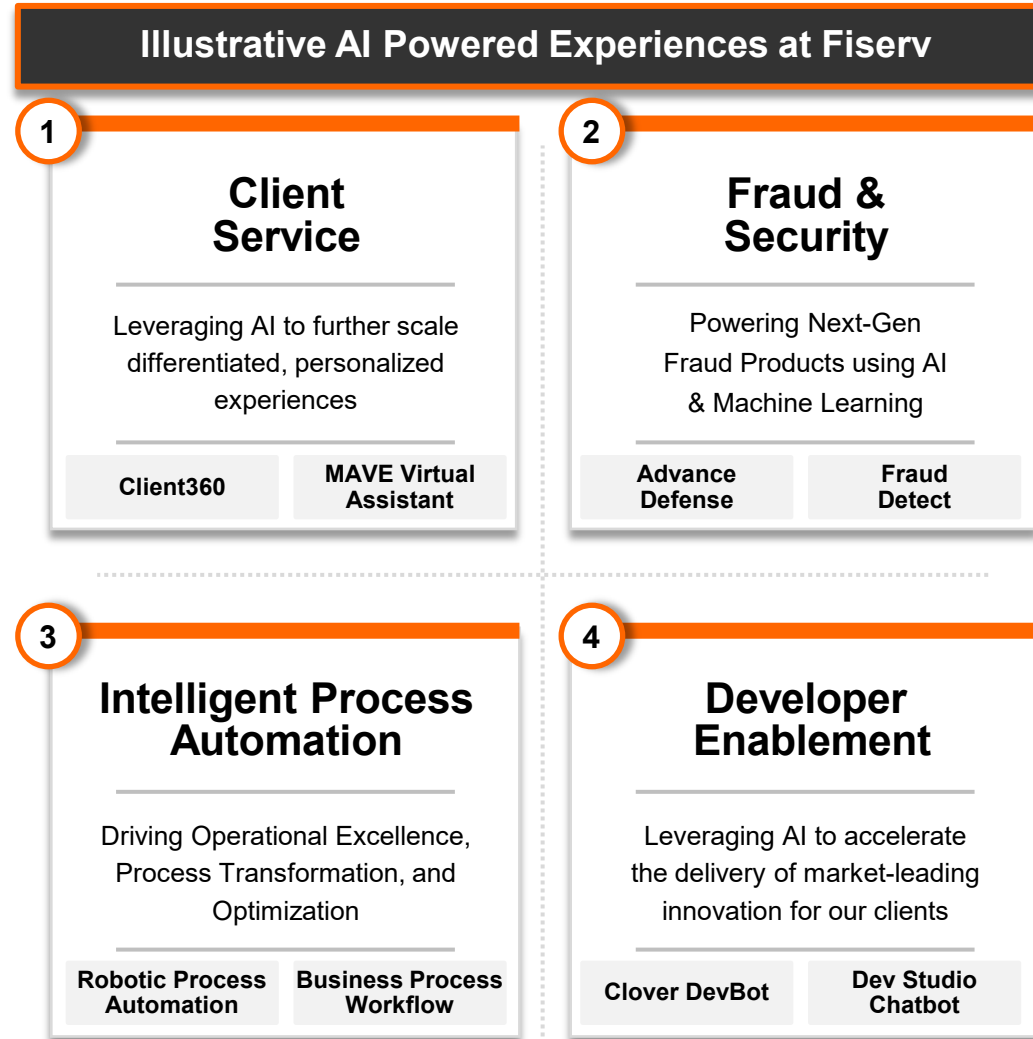
Document Analysis



Document Translation and Preparation

Source: Microsoft's vision for AI, May 2023

AI @ Fiserv Current State





Accelerating Safe & Responsible AI at Fiserv

AI Acceleration and Governance Enablement

Technology Innovation Enabling Operational Excellence @ Fiserv

Strategic Focus Areas

1

Quality

Continuous improvement of our software, solutions, and execution for clients

▶ Accelerating Fiserv's Cloud Transformation

▶ Strategic Infrastructure Modernization

▶ Operational Stability & Resiliency

▶ Enhanced Cyber Security Program

2

Service

Focus on delivering commitments and being responsive to client needs and requests

▶ Client Service Innovation and Transformation

▶ Accelerating the use of AI and automation across Fiserv

▶ Client Commitment Tracker

▶ Client360 Client Engagement Platform

3

Innovation

Transforming and modernizing our platforms, operating systems, and solutions

▶ Delivering Market-Leading Innovation to Our Clients

▶ Accelerating Revenue and Optimizing Client Delivery

▶ Enhancing Client Delivery through Data Driven Insights

▶ Maximizing Synergies from Strategic Acquisitions (i.e. Finxact)

Fiserv AI Acceleration Hub | Executive Summary

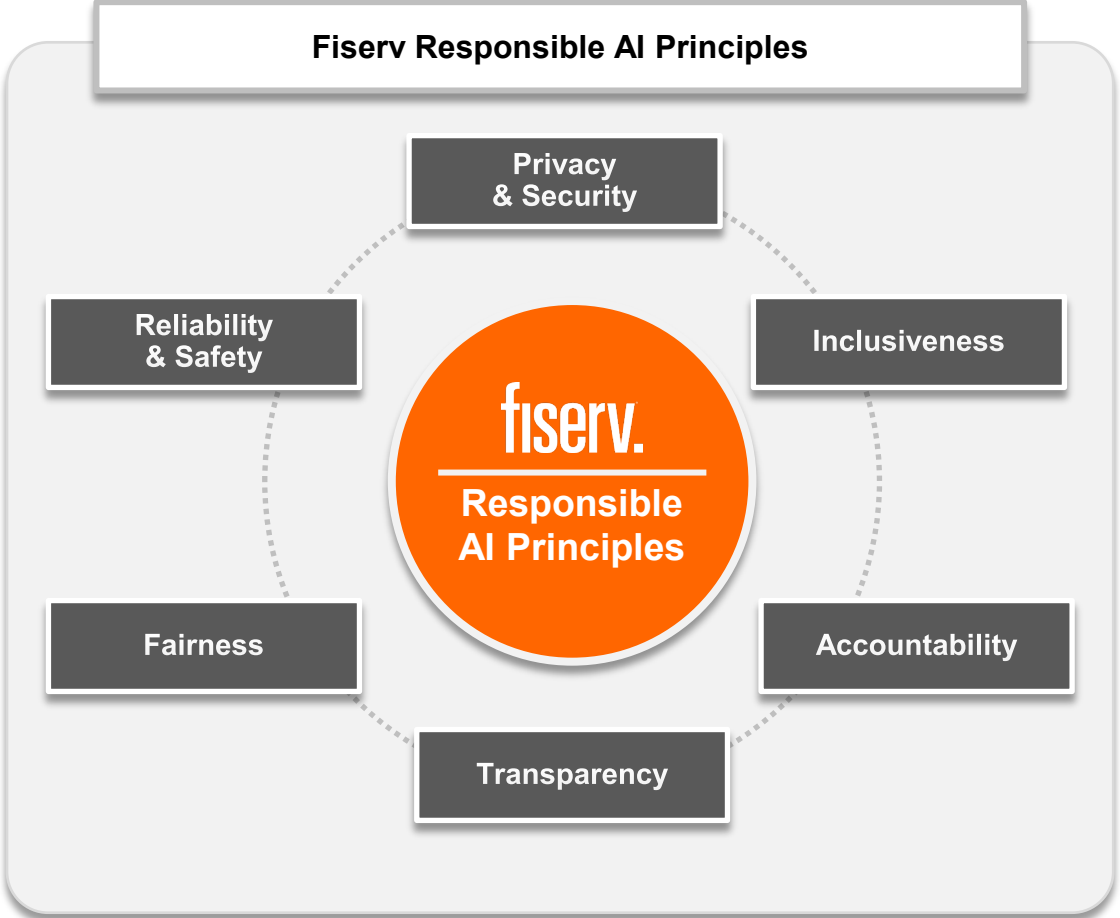


AI
ACCELERATION
HUB

By centralizing governance, code, models and blueprints we can accelerate the use of safe and responsible AI both within Fiserv as well as acting as a trusted advisor to our clients.

Organizing the first phase of the AI Acceleration Hub across 6 parallel workstreams:

- | | |
|---|--|
| <p>1 Governance</p> <p>Defines the rules of engagement with oversight across all AI-related projects across Fiserv</p> | <p>2 Engineering</p> <p>Technical development of Blueprints, Frameworks, Sandboxes, and proprietary Fiserv trained models</p> |
| <p>3 Safety & Oversight</p> <p>Enabling responsible AI via oversight from key stakeholders (i.e. legal, risk, compliance, cyber, ethics)</p> | <p>4 Machine Learning Operations</p> <p>Responsible for Model training and deployment Monitoring, DevOps, and AI Quality Control</p> |
| <p>5 Internal Support / Enablement</p> <p>Enabling the benefits of AI across Fiserv via training & Hackathons, AI lab, and Internal Consulting for ROI</p> | <p>6 Client Support / Enablement</p> <p>Expanding reach of Fiserv's AI capabilities and expertise for clients and new revenue streams</p> |



Mr. Steven Nickolson

Partner & Director of Technology Services

the NBS Group



MARQUETTE
UNIVERSITY

BE THE DIFFERENCE.

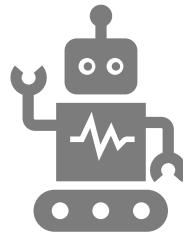
The Dynamic Duo: Artificial Intelligence and Banking

Steve Nickolson
Partner, Director of Technology Services
The NBS Group

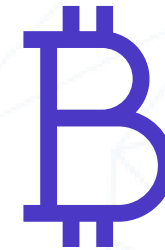
Introduction



With its ability to process vast amounts of data, identify patterns, and make informed decisions, AI is reshaping the landscape of financial institutions worldwide



Understanding AI in Banking: Artificial Intelligence encompasses a spectrum of technologies, including machine learning, natural language processing, and predictive analytics



In banking, AI is utilized to streamline operations, enhance customer experiences, mitigate risks, and drive innovation

Applications of AI in Banking



Fraud Detection
and Prevention



Customer Service
and
Personalization



Credit Scoring



Risk
Management
and Compliance



Algorithmic
Trading

1. Fraud Detection and Prevention

- AI algorithms analyze transactional data in real-time, flagging suspicious activities and patterns indicative of fraudulent behavior. By leveraging machine learning, banks can continuously refine their fraud detection mechanisms, staying ahead of evolving threats.

2. Customer Service and Personalization

- Chatbots powered by AI algorithms handle customer inquiries efficiently, providing round-the-clock assistance. These virtual assistants offer personalized recommendations, assist with account management, and streamline the customer support process, enhancing overall satisfaction.

3. Credit Scoring and Loan Approval

- AI algorithms assess creditworthiness by analyzing diverse data points, including transaction history, spending patterns, and social media activity. This enables banks to make more accurate lending decisions, expanding access to credit while minimizing default risks.

4. Risk Management and Compliance

- AI-powered predictive analytics models assess market risks, identify potential vulnerabilities, and enhance regulatory compliance. By automating compliance processes and monitoring transactions for suspicious activities, banks mitigate operational risks and ensure adherence to regulatory standards.

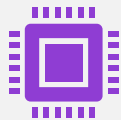
5. Algorithmic Trading

- AI algorithms execute trades based on market trends, historical data, and complex algorithms
- These automated trading systems optimize investment strategies, mitigate risks, and capitalize on emerging opportunities in real-time, driving higher returns for investors
- AI-driven predictive analytics models forecast market trends, assess investment opportunities, and optimize portfolio management strategies

Challenges and Considerations



Despite its transformative potential, integrating AI into banking operations presents several challenges



These include data privacy concerns, algorithmic biases, regulatory compliance, and the need for robust cybersecurity measures



Addressing these challenges requires a multi-faceted approach, encompassing collaboration between banks, regulators, and technology providers

More Challenges and Considerations

- A recent article published by American Banking reflected that a third of banks ban employees from using gen AI.
- About 15% said they have completely banned the use of generative AI algorithms that can be used to create new content — for all employees. Another 20% said they restrict use of gen AI to specific employees for limited functions or roles; another 26% said they don't ban gen AI today, but they are considering putting a policy in place. Asked if they're going to loosen or remove employee restrictions on publicly available generative AI tools in the next year, 39% said no; 57% said maybe.

Broader AI Fears



- Even though more traditional forms of AI like machine learning, neural networks and natural language understanding have been used in banking for decades, surveyed bankers still have worries about the rising use of all kinds of AI.
- Most — 70% — say they fear a loss of personal touch with customers, for instance. More than half (57%) of bankers surveyed said they're concerned that AI could introduce new ethical concerns and biases. Just under half (47%) worry about job losses.
- Half of the surveyed bankers worry about skills degradation, reduction in critical thinking or analytical skills due to the use of AI, causing a brain drain.
- 75% of bankers said stronger guardrails need to be in place to govern the use of AI in banking.
- Regulatory risk is another ever-present worry. "Generative AI requires significant oversight, and that is not in place,"

• <https://www.americanbanker.com/news/a-third-of-banks-ban-employees-from-using-gen-ai-heres-why>

Conclusion

- In the dynamic landscape of banking, Artificial Intelligence stands as a catalyst for innovation, efficiency, and customer-centricity
- By harnessing the power of AI technologies, financial institutions can unlock new opportunities, mitigate risks, and deliver unparalleled value to customers
- As AI continues to evolve, its integration into banking operations will shape the future of finance, driving greater accessibility, transparency, and sustainability in the global economy



NATIONAL BANKING SERVICES
Strategy ▪ Technology ▪ Performance

Steve Nickolson

Partner, Director of Technology Services

(205) 907-7022
snickolson@thenbsgroup.com
thenbsgroup.com



Ms. Sarah Grooms

Senior Vice President, Special Initiatives

Wintrust



MARQUETTE
UNIVERSITY

BE THE DIFFERENCE.

Disclaimer: This is a nascent space, and nothing I say should be taken as anything other than one person's opinions. Certainly nothing I say should reflect negatively on Wintrust Financial Corporation, especially if you are seeing this and are employed as a banking industry regulator.

WINTRUST

FDIC 

The need for AI capabilities

“The need for financial institutions to quickly operationalize their AI capabilities has moved beyond important to imperative. More than supporting risk and fraud analysis and increased productivity, a higher level of AI maturity at banks and credit unions will be a competitive differentiator, increasing business value across the organization.”

-Jim Marous, Co-Publisher, The Financial Brand
August 10, 2022

WINTRUST

AI in the financial services industry today: limited

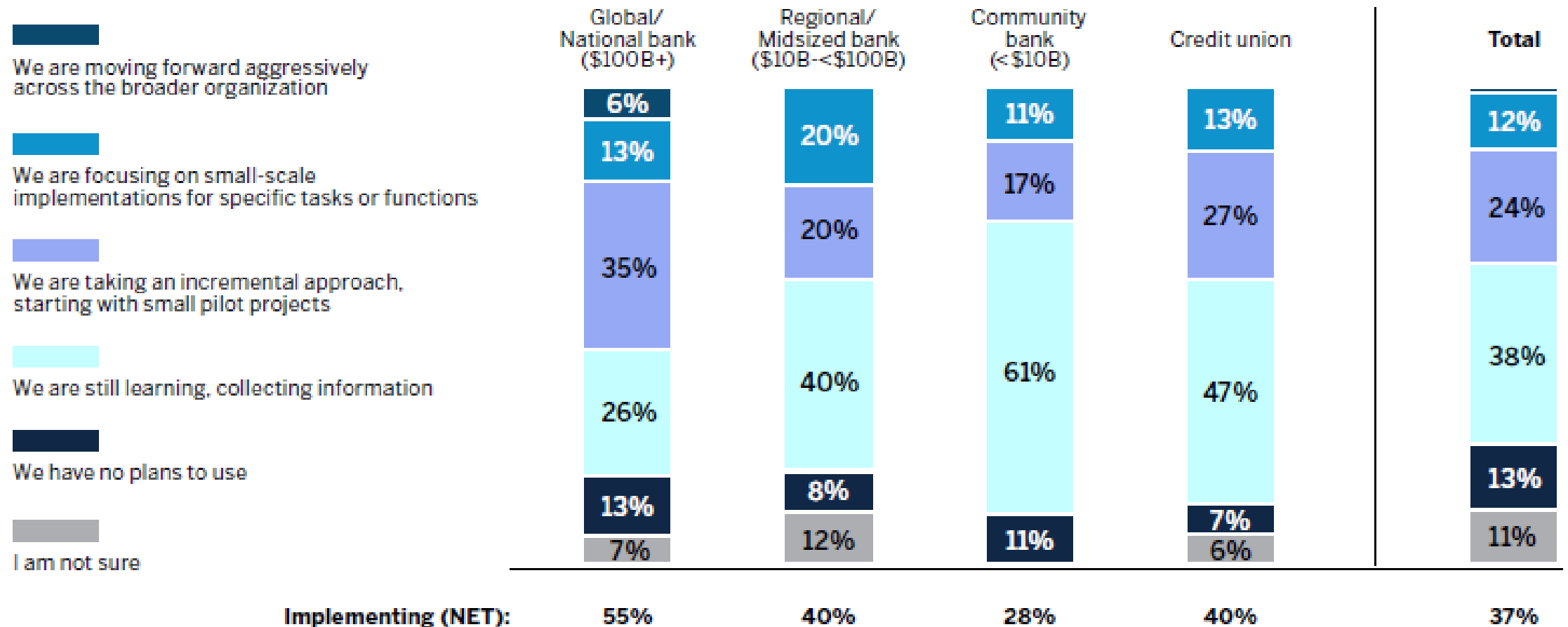
- Cybersecurity tools have long incorporated AI's ability to identify patterns to predict and identify fraudulent behavior, making it easier to mitigate cyberattacks.
- Pattern recognition is also helping banks detect, document and fight against potential instances of money laundering.
- Chatbots have had various use cases for quite some time, and should now evolve as tools capable of searching information and serving it to the customer or employee trying to provide excellent, timely, accurate service.

WINTRUST

American Banker Survey

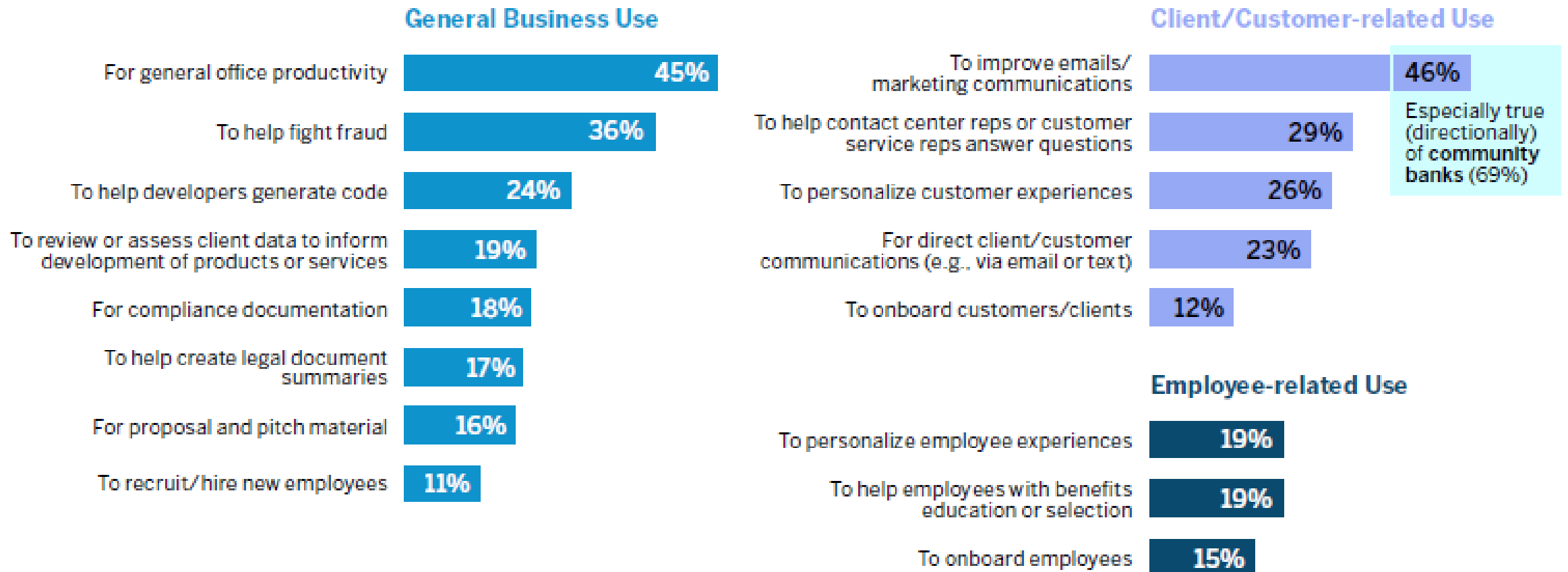
Q: How would you describe the expected pace of GenAI adoption at your organization over the next 12 to 18 months?

By Bank Type



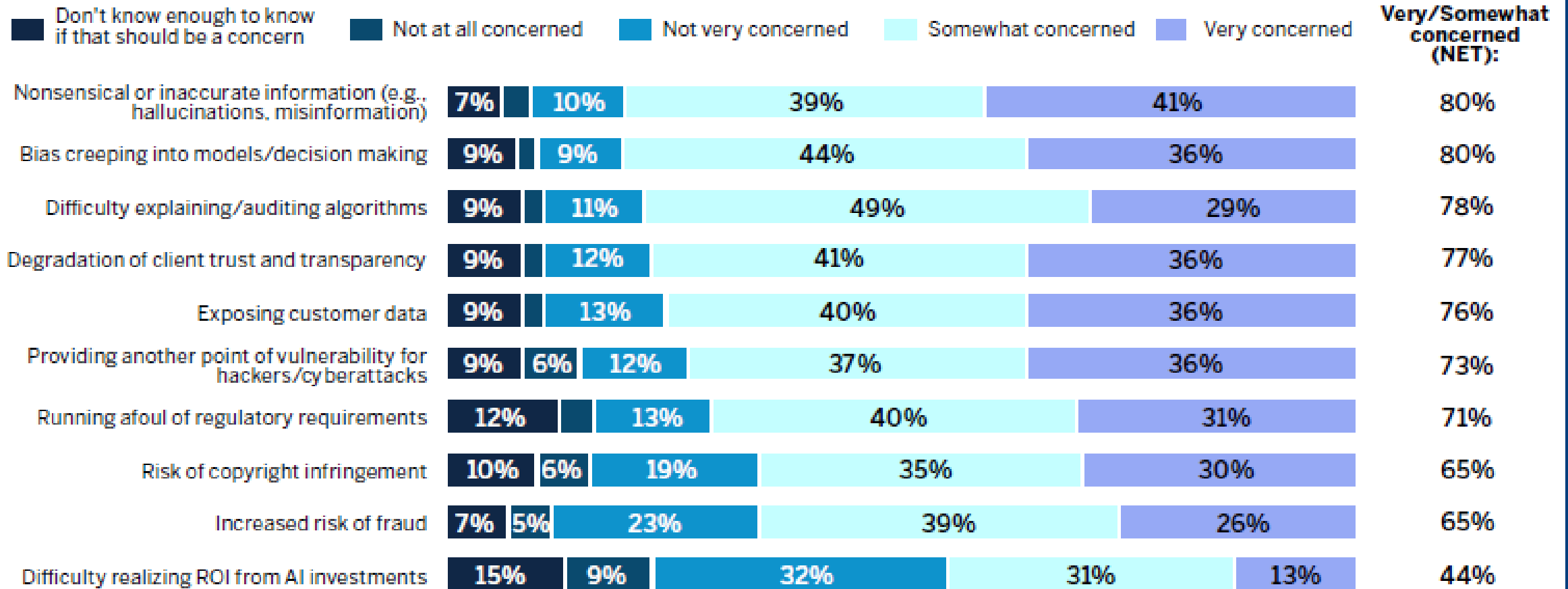
American Banker Survey

Q: In what areas is your organization using or likely to use GenAI to support your business over the next 12 to 18 months?



American Banker Survey

Q: How concerned are you about the following as potential risks to your business from using GenAI?



Generative AI in the financial services industry soon: What *could* it be?

- Fulfill the unmet promises of “Big Data,” particularly as it relates to unstructured data sets
 - CRA
 - Policies and procedures
 - Speeding renewals and reviews
 - Lowering credit losses/sharpening underwriting – internal data
- Improve financial standing
 - Increase financial inclusion by incorporating non-public repayment factors (flip side of the bias coin)
 - Overlay on all spending to find budget categories in one login (tax-time help too)
- More timely, accurate pattern recognition of spending and searching habits that could lead to better “next offer” to help clients reach their goals.
- Automated rule-update engine for models to comply with ever-changing regulations – risk management could be a top use case!

Regulatory Risk

“There’s a real risk that we have a cyber arms race using generative AI with defenders and attackers in a constant struggle,” Barr said. “So we do need to make sure that we are, and banks are, investing in the kind of technology that is useful [to guard against cyber attacks].”

-Michael Barr, Federal Reserve Vice Chair for Supervision

“[AI] might provide incorrect information or might fail to identify that a customer is invoking their federal rights or might fail to protect their privacy.”

-Rohit Chopra, Director, Consumer Financial Protection Bureau

“With AI, fraudsters have a new tool to exploit... they may do it in a narrowcasting way, preying upon our personal vulnerabilities.”

-Gary Gensler, Securities and Exchange Commission Chairman

Model risk, hallucinations, bias...

How do we achieve the promise “safely and soundly”?

- Collaborate internally
- Consider strategically, enterprise-wide
- Seek outside expert advice
- Test and Validate
- Use Appropriate Controls
- Constantly Document and Re-document
- Transparency, including plain language
- Order of operations is important – internal, private, non-client data to start
- Governance/Risk/Compliance (“GRC”) tools are already available to help

Mr. Ryan Miller

Vice President & Sr. Counsel, Innovation Policy

American Bankers Association



MARQUETTE
UNIVERSITY

BE THE DIFFERENCE.

Deployment of AI Applications via Banks' Risk Management Framework

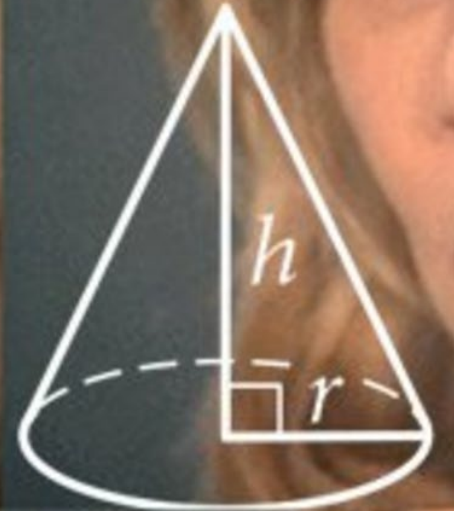
Presented by:

Ryan T. Miller

VP & Senior Counsel of Innovation Policy

American Bankers Association

$$V = \frac{1}{3} \pi r^2 h$$



$$\int \sin x dx = -\cos x + C$$

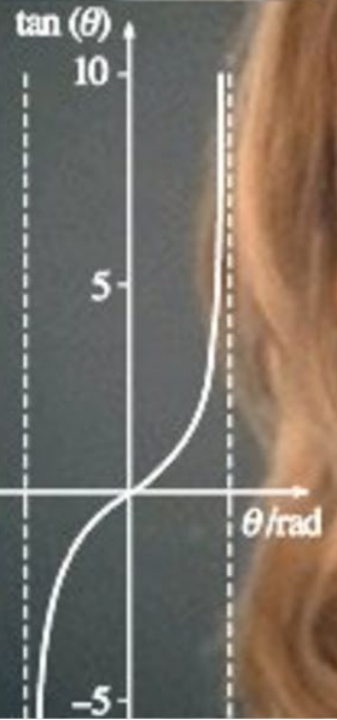
$$\int \frac{dx}{\cos^2 x} = \tan x + C$$

$$\int \tan x dx = -\ln|\cos x| + C$$

$$\int \frac{dx}{\sin x} = \ln\left|\tan \frac{x}{2}\right| + C$$

$$\int \frac{dx}{a^2 + x^2} = \frac{1}{a} \arctan \frac{x}{a} + C$$

$$\int \frac{dx}{x^2 - a^2} = \frac{1}{2a} \ln\left|\frac{x-a}{x+a}\right| + C$$



Changing Bank Organizational Structures

Driven by:

- Technological Advancement
- Evolving Consumer Behavior
- Shifting Regulatory Expectations





ABA AI Working Group

Comprised of:

- Banks of all sizes
- All roles & responsibilities

This promotes understanding of:

- AI deployment throughout the financial services ecosystem
- Cross-functional approach to risks and mitigants



Importantly, AI deployment occurs within a risk management framework subject to regulatory oversight.

Model Risk Management Expectations

- [Federal Reserve SR 11-7](#)
- [OCC Bulletin 2011-12](#)
- [FDIC FIL 22-2017](#)
- [Interagency 21-8](#)

Applicable Laws, Regulations, and Guidance

Most existing laws and regulations are technology neutral; however, they may be applied inconsistently due to ambiguous regulatory expectations.

[Joint statement](#) from the CFPB, DoJ, EEOC, and FTC. AI models must comply with current consumer protection and anti-discrimination laws and the lack of specific AI-specific laws is not an excuse

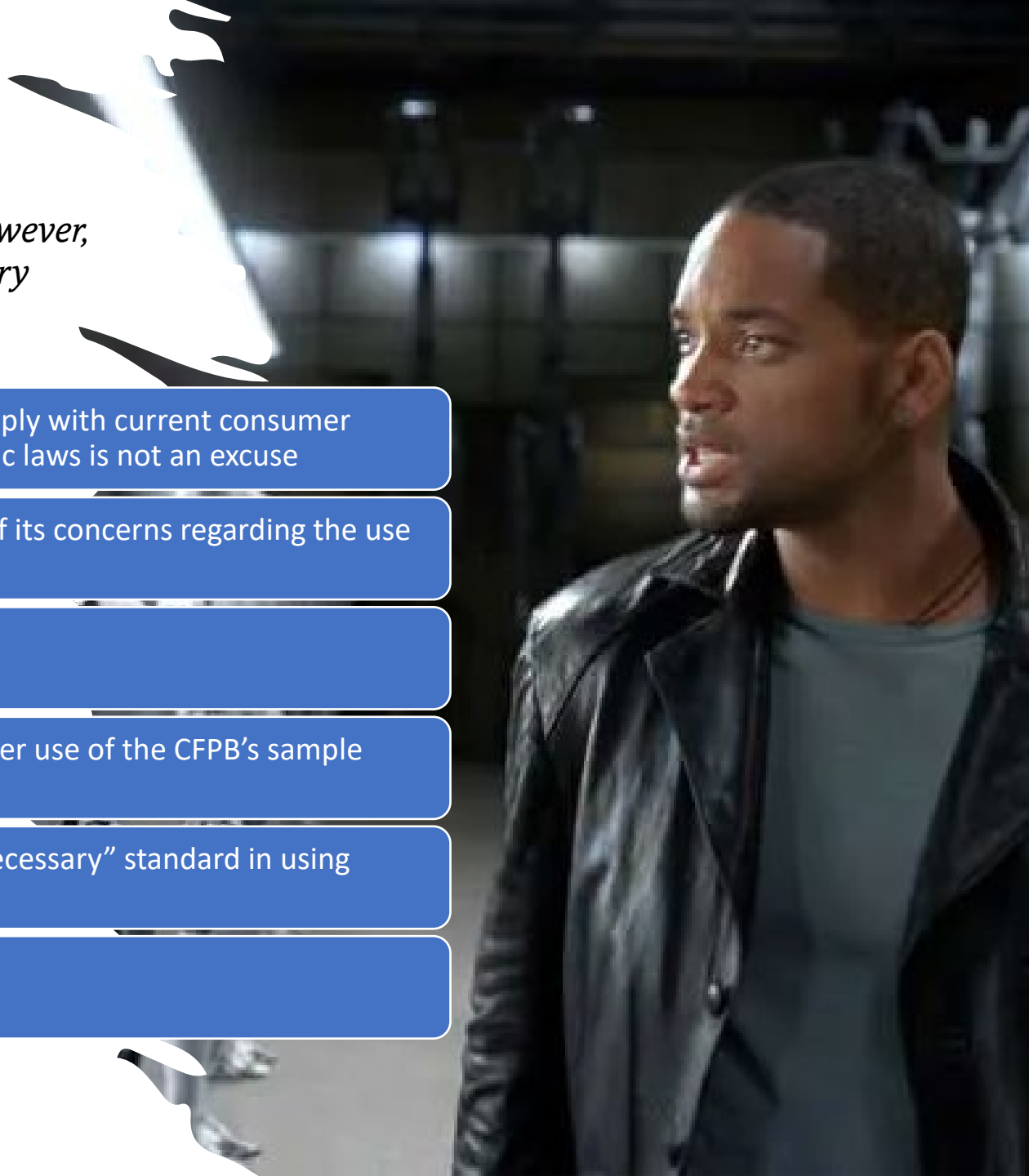
[Advisory](#) from CFPB on “Chatbots in consumer finance,” flagging some of its concerns regarding the use of AI technology when interfacing with customers

Third Party Risk Management [guidance](#) = principles-based

[Circular 2023-03](#): Adverse action notification requirements and the proper use of the CFPB’s sample forms provided in Regulation B

[Section 1033 Proposed Rule](#)- data recipients restricted to “reasonably necessary” standard in using shared information, could impact data used to train AI models

[FCRA SBREFA Outline](#)- proposed limits on so-called data brokers



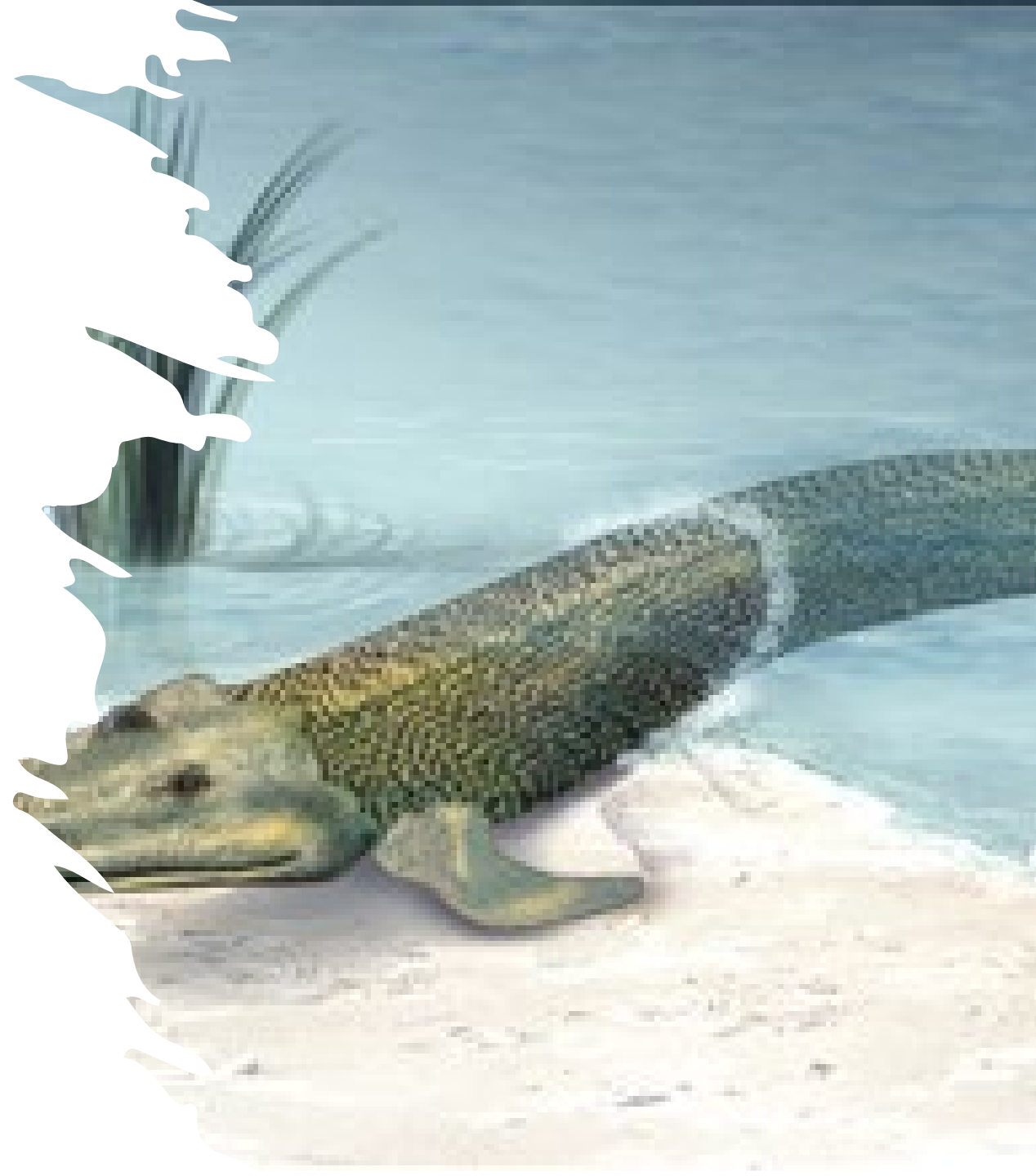


What sorts of risks stem from AI applications?

- Bias- does the output unfairly discriminate?
- Transparency- is it clear that AI is being used?
- Explainability- can you explain what the AI is doing?
- Intellectual Property- who owns AI outputs?
- Cyber and fraud (offense and defense)- how to improve efforts to safeguard the bank, and how are bad actors leveraging AI to commit wrongdoing?
- Privacy- the soft underbelly of AI is the training data. This has been the target of GDPR actions as well as lawsuits under the California Privacy Rights Act.
- Reputational- how does the public feel about the usage of AI?
- Third Party Risk Management- a big one. Most banks do not develop their own models; rather, they obtain them from vendors. Thus, it is vital to be able to explain the model as well as how third parties use AI in their own operations.

Emerging Industry Positions

- We need a common lexicon and understanding of the AI ecosystem;
- We should have an industry-based approach to minimize the impact to banks that already have a history of complying with laws and regulations related to AI;
- Regulations should be technology-neutral, risk-based and tailored to particular use cases;
- We should have a federal standard to avoid a state patchwork that leads to duplicative compliance burdens and inconsistent levels of consumer protection.



Questions?

rmiller@aba.com

(202) 663-7675

www.linkedin.com/in/ryantmiller713

Mr. John Rose

Bank Examiner, Artificial Intelligence & Machine
Learning Systems

Federal Reserve Bank of Chicago



MARQUETTE
UNIVERSITY

BE THE DIFFERENCE.

Q&A



MARQUETTE
UNIVERSITY

BE THE DIFFERENCE.

THANK YOU FOR JOINING US TODAY!!



MARQUETTE
UNIVERSITY

BE THE DIFFERENCE.

“a new generation of bankers”