



BANK ON KNOWLEDGE

The Future of Generative AI in Service of the Banking Industry.

Q2



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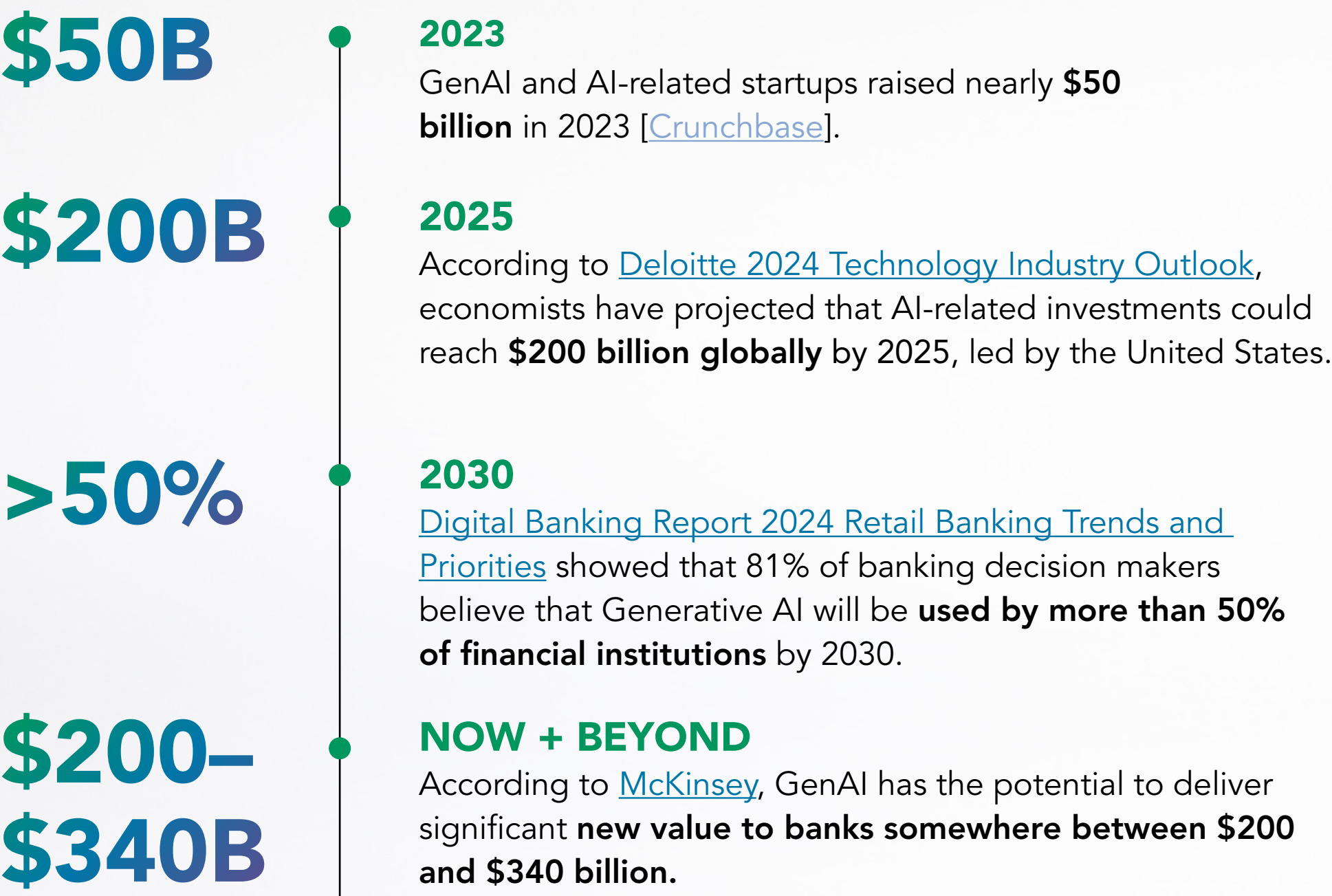
A Look Ahead

GenAI in the service of banking.

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Let's get a few things straight

Generative AI (GenAI) is here to stay



There are as many definitions of GenAI as there are applications using it. Perspective is everything. Let's put a formal stake in the ground.

Q2 defines GenAI as a subset of AI technologies designed to create new content, ideas, or data that resemble or enhance original, human-generated work. By leveraging intelligent algorithms, large language models (LLMs) analyze and learn from established datasets by understanding patterns, styles, and structures. Unlike other forms of AI, GenAI produces novel outputs — ranging from text, images, and music to code and beyond — based on the prompts and directions that a human gives it.

It's time to... define, explore, experiment, test, learn, and prepare for a positive, profitable future that will surprise, delight, and cement lifelong customer relationships.

It is making an impact quickly.

What GenAI does and doesn't do in banking

The two key concepts to take away from our definition are “enhance original, human-generated work” and **“based on the prompts and directions that a human gives it.”**

GenAI doesn't:

Replace human insight.

Replace the knowledge of bankers.

Take people's jobs.

GenAI is not:

An existential threat to the banking industry.

GenAI does:

Support better, data-driven human decision-making.

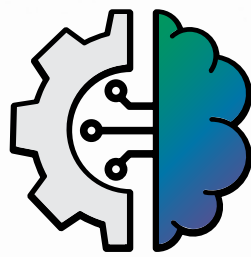
Allow bankers to tap into collective intelligence, best practices, and successful strategies to provide a better service for customers.

Remove the mundane and make room for higher value work like building better customer experiences, imagining creative marketing campaigns, and securing lifetime banking relationships.

GenAI is:

A powerful enabler of better lifetime relationships with customers or members.

Of course, all of this is only true if you approach it with the right strategic mindset.



Think Iron Man's suit vs. Ultron or the Terminator

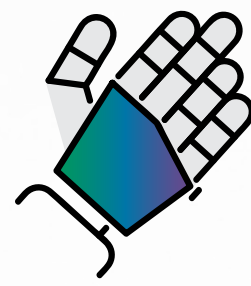
In the Marvel universe, take Jarvis, the AI engine integrated into Tony Stark's Iron Man suit. Stark uses insight and intelligence beyond human capabilities to do good. Compare this with Ultron, an AI that seeks to replace humanity, viewing itself as superior.



Think smart glasses vs. autonomous drones in surveillance

“For me, GenAI is more like equipping security personnel with smart glasses, which provide them with critical information and enhanced vision rather than autonomous drones, which remove human judgment.”

Adam Blue, EVP and CTO, Q2 eBanking



Think prosthetic limbs with AI vs. fully autonomous androids

“The analogy is advanced prosthetic limbs that restore or enhance human capabilities, as opposed to the concept of fully autonomous androids that could function independently of humans. I know which world I want to live in.”

Corey Gross, VP and Head of AI Center of Excellence, Q2

Building GenAI in service of the banking industry

Banking is a challenging, regulated industry, and we would argue that the successful adoption of GenAI in our industry will require human oversight and deep industry knowledge for a substantial period of time. Until we and the regulators are confident that AI-generated responses align with ethical standards, regulatory compliance, and customer needs, this is our working equation for success.

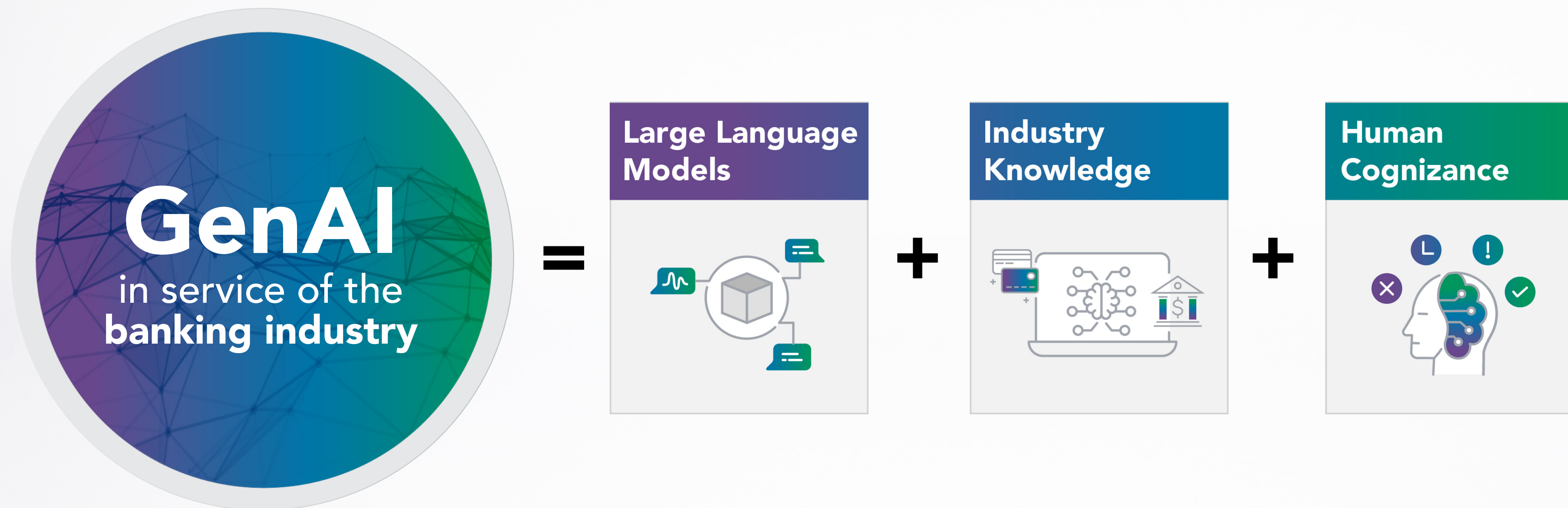
THE Q2 VIEW

“AI and new language models have the potential to transform banking, but they must be connected to a knowledge model that has a robust set of data, specifications, and instructions that trains the technology on how to operate within a specific industry.”

Kirk Coleman, President, Q2

The Q2

Equation for successful GenAI



Large Language Models

Deep learning models that are pre-trained on a large collection of banking data that use advanced machine learning algorithms to learn the patterns and structures of human language to generate natural, intelligent responses to user queries or prompts.

Industry Knowledge

Deep knowledge of the banking industry to:

- Ensure model training is ethical and compliant.
- Ensure the correct interpretation and ethical use of insights created using GenAI.
- Ensure that any GenAI outputs meet stringent regulatory requirements.

Human Cognizance

The addition of human decision-making and oversight are critical to building GenAI solutions for banking. Only humans can ensure that AI-generated responses align with ethical standards, regulatory compliance, and customer needs while mitigating potential risks and biases.



Let's get down to ethics

If you want to accelerate the positive outcomes that GenAI brings, you need to hold yourself to higher standards than you believe the regulators will. And make no mistake, regulatory scrutiny is coming from multiple directions.

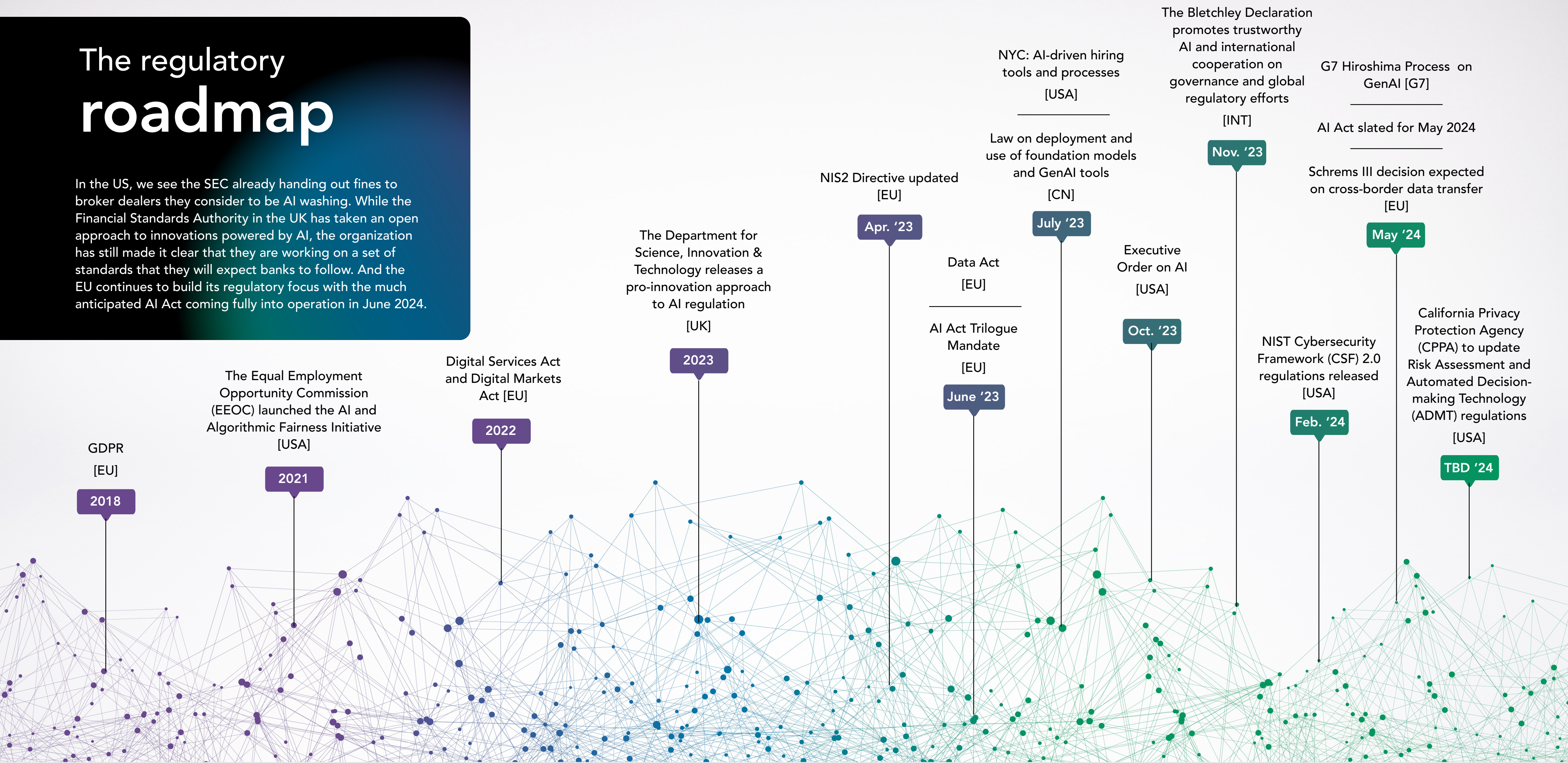
A REGULATOR'S PERSPECTIVE ON TRANSPARENCY

"Technology marketed as artificial intelligence is expanding the data used for lending decisions, and also growing the list of potential reasons for why credit is denied, creditors must be able to specifically explain their reasons for denial. There is no special exemption for artificial intelligence."

Rohit Chopra, Director, Consumer Financial Protection Bureau (CFPB), Sept 19th 2023

The regulatory roadmap

In the US, we see the SEC already handing out fines to broker dealers they consider to be AI washing. While the Financial Standards Authority in the UK has taken an open approach to innovations powered by AI, the organization has still made it clear that they are working on a set of standards that they will expect banks to follow. And the EU continues to build its regulatory focus with the much anticipated AI Act coming fully into operation in June 2024.



A guide to: Establishing ethical AI

Before you buy or build solutions, understand your risk tolerance, establish ethical and governance frameworks, and prepare for regulatory and compliance requirements.

If you would like to go deeper into our way of thinking, VP and Head of Q2 AI Center of Excellence, Corey Gross gives you a guided tour of our own AI Center of Excellence. Learn how Corey and his team approach the ethical and effective use of GenAI by:

- Informing governance process on acceptable, responsible, and ethical uses of AI.
- Accelerating and incubating ideas together with our subject matter experts.
- Innovating new solutions to ensure that we all stay ahead of the GenAI curve.

[READ MORE](#)

GOVERNANCE:
Appoint multidisciplinary committee; define roles/responsibilities; establish and continually review code of conduct

PROCESS:
Risk/reward planning; measurement, monitoring, and risk alerting; vendor, regulator, and access management

CULTURE:
Ethical leadership; regular training; safe “see something, say something” policy

TOOLS AND TECHNOLOGY:
Data strategy; algorithmic transparency and tracking; solution architecture

RISK PROFILE:
Establish institutional ethics; regulatory compliance review/guidance; apply risk taxonomy to AI initiatives

A pragmatic perspective on what GenAI can really do

Despite what you may have read, GenAI is not the answer to every banking challenge.



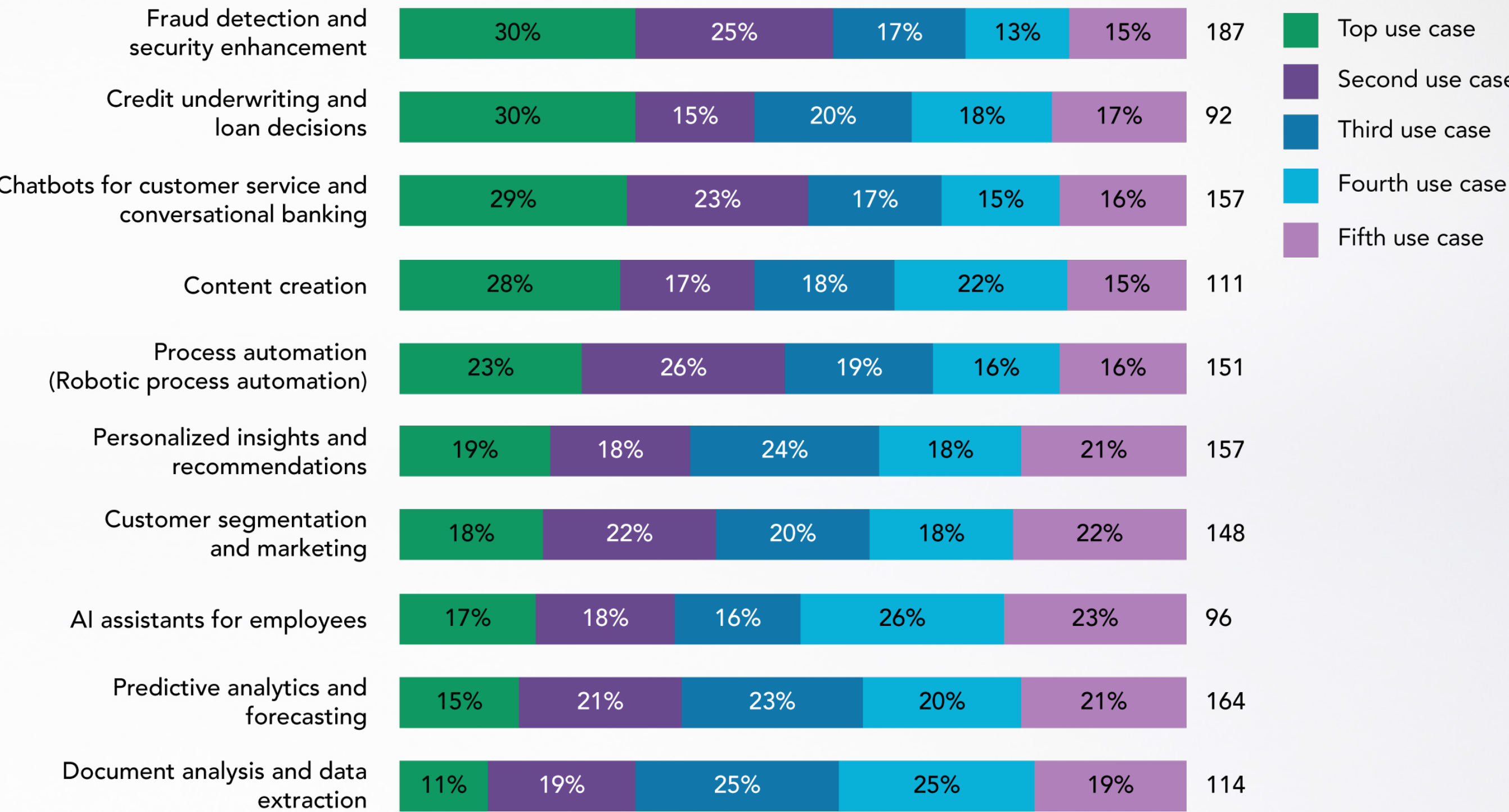
The realities of: GenAI in banking today

GenAI is primarily used in the back office today, where there are simpler workflows and it can be deployed most easily and effectively.

Current use cases are focused on automating critical, repetitive processes. For example, fraud detection, security, loan origination, and delivering more intelligent automated service experiences.

Our current levels of understanding, trust, and technological sophistication indicate that the winners will be the banks and credit unions that start strategizing for the future now but focus early investments on high-potential and lower-risk applications.

Current dominant AI use cases in banking

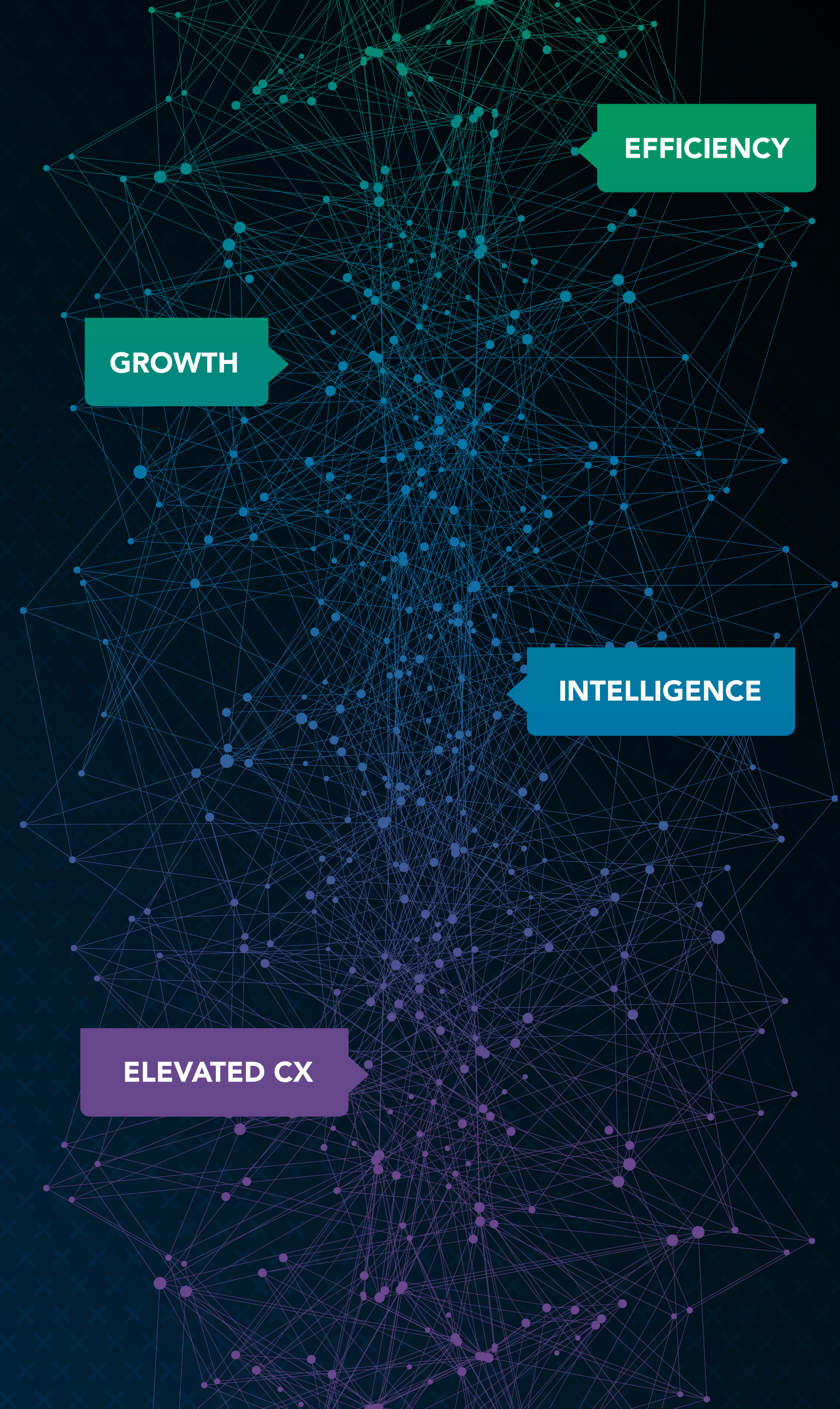


Source: Digital Banking Report Research, 2024 Digital Banking Report.

4 ways that GenAI is poised to make a significant impact in the banking industry

The potential of GenAI is limitless, but we see GenAI making immediate and substantial impacts in the service of banking in four primary ways:

- Driving strategic growth
- Powering operational efficiency
- Leveling the playing field between larger and smaller institutions
- Delivering collective intelligence



GenAI in service of: Strategic growth

McKinsey’s calculations show that corporate and retail banking have the most to gain from the appropriate deployment of GenAI.

For corporate banking, the highest potential is enhanced human-in-the-loop decision-making, automated risk assessment models, and operational efficiencies through automation.

Retail banking stands to benefit from the personalized exploration of enhanced banking experiences, improved customer service through GenAI interfaces, and the next best offer, marketing innovations.

You can’t argue with the potential upsides of \$321 billion and \$306 billion respectively.



Industry potential of AI across saving costs, driving revenue, and market growth



Assumes 0% overlap of traditional AI and generative AI (generative assumes the lower end of value at stake), top-down estimation based on projected growth and value pools.
Source: The economic potential of generative AI: The next productivity frontier, McKinsey Global Institute, June 2023; QuantumBlack, AI by McKinsey traditional advanced analytics and AI analysis.

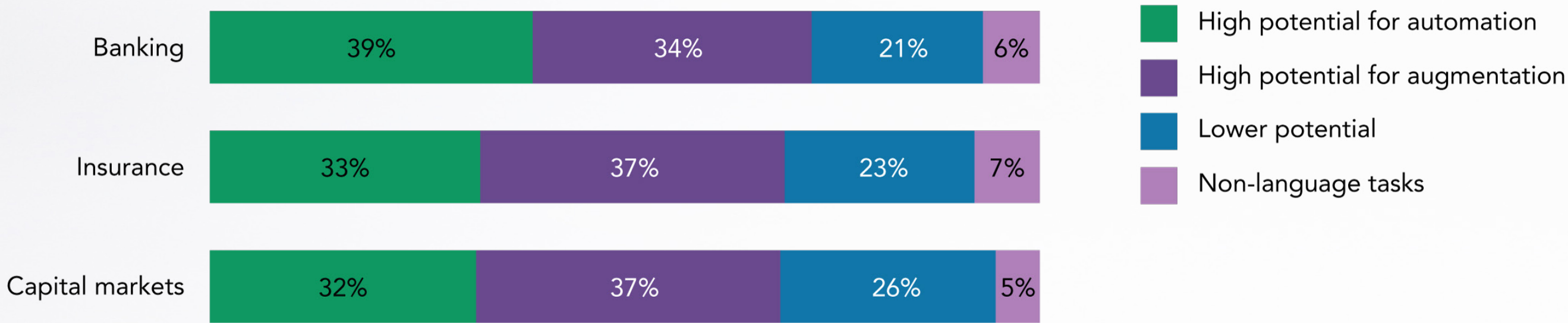
GenAI in service of: Operational efficiency

Accenture identifies banking as the prime sector for AI-driven process automation, with 37% of processes ready for disruption.

Another significant portion of current workflows (34%) is highlighted as ripe for GenAI enhancement (i.e., paving the way for incorporating our human-in-the-loop strategies to bolster efficiency and build synergistic partnerships between humans and AI).

Banks and credit unions that reevaluate workflows and optimize task-based activities that facilitate human-AI collaboration are poised for accelerated growth.

Work time distribution and potential AI impact within financial services



Source: Accenture Research based on US BLS May 2023 and O*Net



THE Q2 VIEW

“GenAI tools can be trained to be accurate in the way that humans are accurate and assess complexities the way humans can. But they are automated and can scale at a level that no human ever could. Your teams still train the models, and the models are learning from real-world bankers. But, ultimately, the back-office team is freed up to focus on higher value, revenue-generating work in service of customers.”

Adam Blue, EVP and CTO, Q2

GenAI in service of: A level playing field

The biggest players may be off to the races, but rest assured that they are just scratching the surface of the true potential of GenAI.

Morgan Stanley	Customer service within wealth management	Launched an AI chatbot in partnership with OpenAI, focusing on enhancing wealth management services
 NatWest Group	Operational efficiency and customer service	Collaboration with Amazon Web Services (AWS) leveraging AWS GenAI solutions to augment customer support and banking operations
JPMORGAN CHASE & CO.	GenAI for investments	IndexGPT, a GenAI service for investment advice
Goldman Sachs	Code writing	GenAI for in-house developers
 OCBC	Back-office efficiency and collective intelligence	AI chatbot for its 30,000 employees, including those at Bank of Singapore, to automate tasks and enhance customer service

Do you want to go deeper into how GenAI is essential for smaller financial institutions?

Find out why we regularly caution smaller financial institutions, community banks, and credit unions not to wait too long to build their GenAI strategies.

Smart GenAI tools could enable larger institutions to reduce the minimum viable market and minimum viable customer size they can target. Find out how to be ready to defend your territory.

[READ MORE](#)

GenAI in service of: Collective intelligence

Collective intelligence is the body of knowledge that grows from a group or within an institution.

When groups of people work together, they create intelligence that cannot exist on an individual level.

Components of collective intelligence include how you make decisions as a group, how you form a consensus, how you get ideas from different sources, and how people are motivated by competition.

Harnessing collective intelligence is valuable in any regulated industry, but it is crucial for navigating the dynamic financial landscape in particular. Traditionally, leveraging collective intelligence has been about documenting and sharing institutional knowledge through training and doing the job. GenAI takes it to a new level by providing a way to analyze, structure, and unearth new insights about best practices, successful sales activities, regulatory compliance, and bank policies—easily and in real time. We will use one of our established GenAI solutions to illustrate the point.



Case study of GenAI in the service of banking: Q2's Andi® Copilot

What is Andi Copilot?

Launched in 2017 as part of Q2's PrecisionLender™ solution, Andi is the pioneering AI copilot originally designed for commercial relationship managers, offering real-time, relevant guidance and best practice recommendations based on successful historical deals, bank policy, and regulatory compliance requirements.

Over the past seven years, it has gathered data from interactions across 150 banks and 29,000 bankers, processing about \$1.6 trillion in loans annually. This vast experience has shaped the Andi knowledge model, which now integrates traditional banking insights with advanced GenAI language capabilities, enriching the platform's advice on bank policies, procedures, and workflows.

Andi copilot personifies GenAI in service of the banking industry by capitalizing on LLMs, deep industry expertise, and human oversight.

What does Andi do?

Andi Copilot helps make commercial bankers be more efficient and effective in five ways.

1. **Drives efficiency:** Andi automates the things computers do well, accelerating 40 to 60% of time bankers spend on clerical tasks, allowing them to focus on higher-value, client-facing lending services.
2. **Drives profitability:** Andi uses industry and institutional data to deliver client-specific coaching to bankers in real time as they work deals—making them smarter and more effective.
3. **Automates the next required actions:** Commercial loan workflow involves multiple systems, often requiring the same data multiple times. Andi sequences activity, seeking permission to execute.
4. **Assists with loan pricing best practices:** Using industry and institutional data, Andi offers optimal pricing for loans to ensure offers are competitive for both the bank and the borrower.
5. **Reminds and educates on bank or credit union policies:** Andi ensures that loans are executed flawlessly every time with a compliance audit trail.

What's next for Andi copilot?

We invite you to watch our short video that explains where we are heading next. Learn how we're expanding Andi into a platform that will enable us to deliver AI copilots across our portfolio. And we are integrating GenAI technology to make it more capable and accessible than ever before.

[WATCH THE VIDEO NOW](#)

If you are interested in joining the Andi Early Adopter Waitlist, you can sign up here:

[SIGN UP NOW](#)

THE Q2 VIEW

"Andi Copilot offers a more intuitive way of letting commercial bankers interact with AI so that humans don't have to spend as much of their time behaving like computers. They can do human stuff and let this ChatGPT-like interface take on more of those tasks to reduce time and sweat."

Corey Gross, VP and Head of AI Center of Excellence, Q2

Are you ready?

Getting ready to build the right GenAI solutions takes time, planning, and a level of institutional confidence to take the first step. Based on the conversations that we have with banks, credit unions, and our customers every day, we have built a GenAI maturity model to help you assess where you are and what you need to do next.

AN INDUSTRY INFLUENCER VIEW

“You can’t get through a topic of conversation without GenAI coming up [when speaking to senior executives at financial institutions]. There’s the excitement of what this technology could mean in terms of the ability to actually have LLMs that can be used and interface with natural language and what that can mean for the industry. But bank clients are asking for a controlled environment where they can learn fast.”

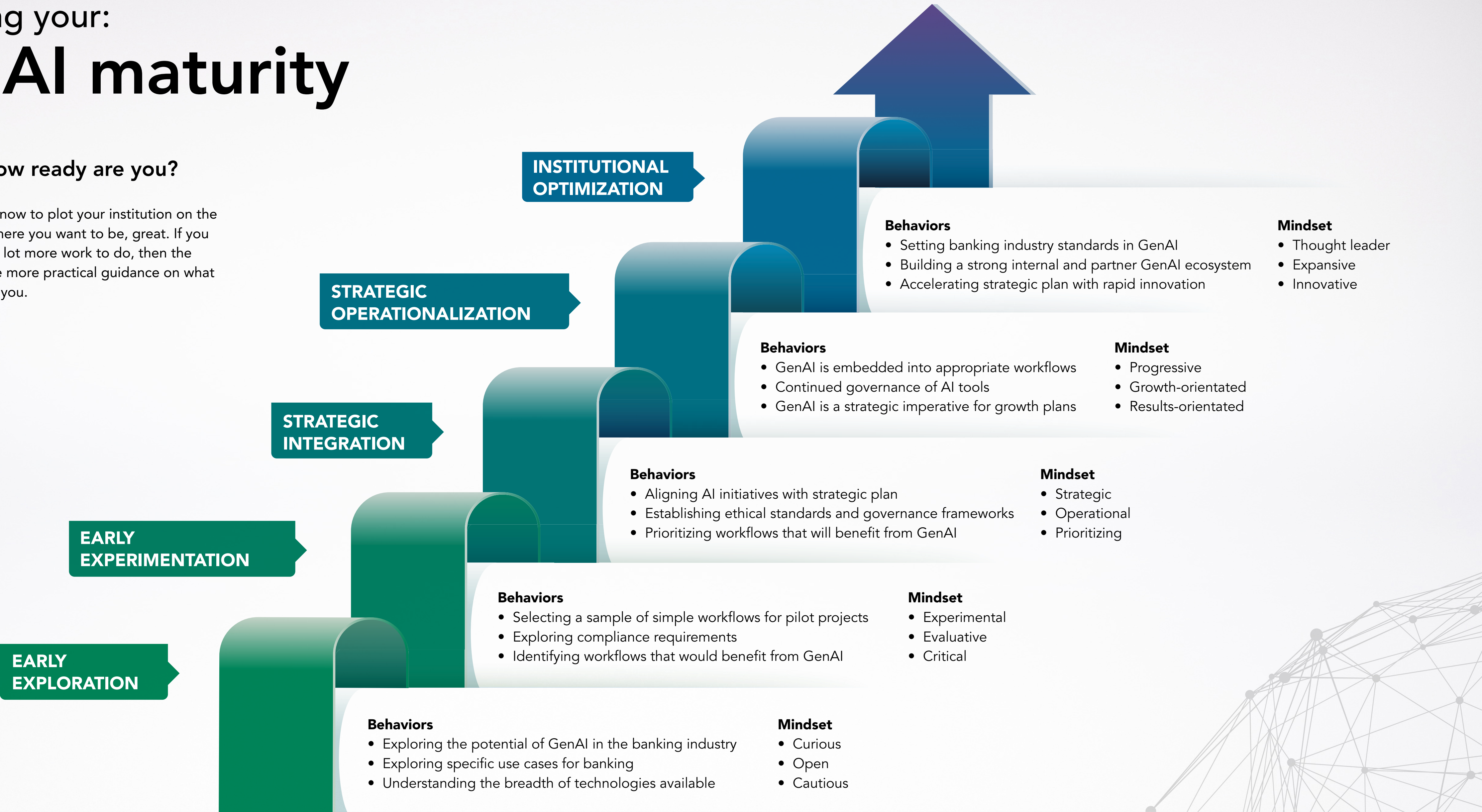
Bill Borden, Corporate Vice President, Worldwide Financial Services, Microsoft

[Source: American Banker. AI copilots: How are banks using them, and do you need one?](#)

Assessing your: GenAI maturity

ACTIVITY: How ready are you?

Take a few minutes now to plot your institution on the model. If you are where you want to be, great. If you feel that you have a lot more work to do, then the next few pages give more practical guidance on what GenAI could do for you.



3 steps to successfully implement GenAI in your bank or credit union

Do the right thing, not the shiny, bright thing.

The potential benefits and application of GenAI in banking make the idea of investing quickly very tempting. But there is a reason that 70 to 80% of AI projects are reported to stall or fail.

The temptation to do something, anything, can be hard to resist. But doing the right thing means making fundamental decisions about how you evolve your workflows, your data infrastructure, your compliance process, and your culture.

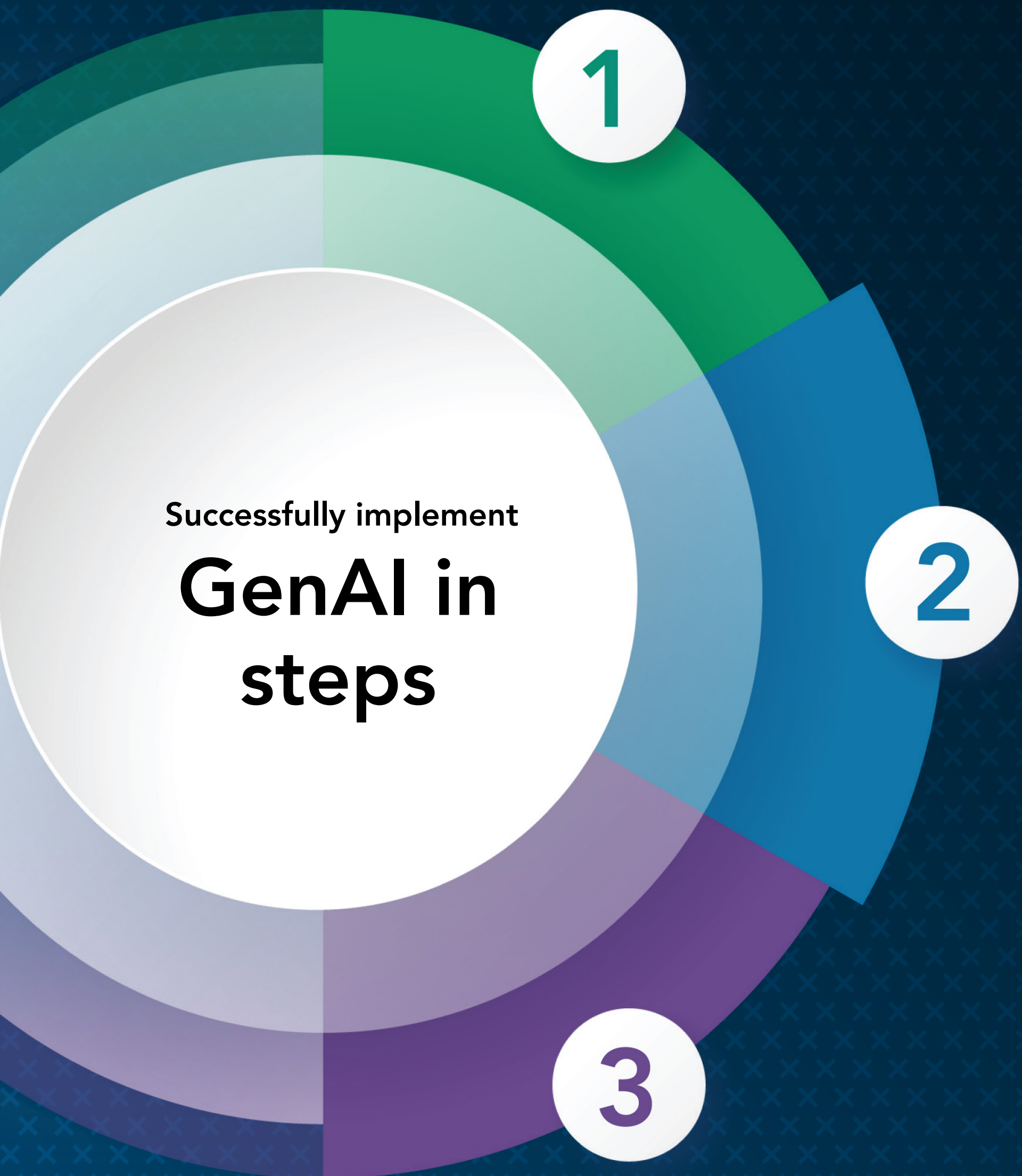


AN INDUSTRY INFLUENCER VIEW

“Sadly, beneath the aspirational headlines and the tantalizing potential lies a sobering reality: most AI projects fail. Some estimates place the failure rate as high as 80%—almost double the rate of corporate IT project failures a decade ago.”

Professor Iavor Bojinov, Harvard Business Review, Dec. 2023

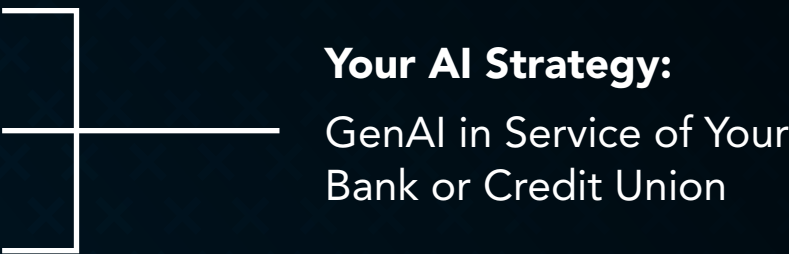
Source: [Harvard Business Review](#).



Start with strategy

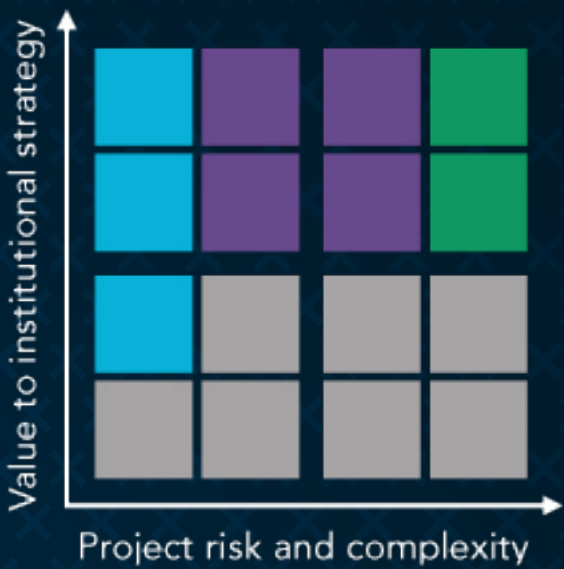
Review your organizational goals and explore how, where, when, or if GenAI will enhance your strategy and accelerate your goals.

- Your Business Strategy
- Your Customer Experience Strategy
- Your Employee Experience Strategy



Work out where you'll win

Take the introduction of GenAI one step at a time. Focus on learning with simple AI integrations and build up to revolutionizing how high-value work is supported.



- CRAWL: High impact/lower risk and complexity**
Simple, low risk (e.g., process automation)
- WALK: High impact/moderate risk and complexity**
GenAI enhances workflows, information sharing, and collective intelligence
- RUN: High impact/high risk and complexity**
GenAI enhances integral CX and mission-critical workflows

Pick your partners

There are five critical criteria for productive GenAI partnerships. Choosing the right technology partners matters, especially as you move into the walk and run phases of your strategy.

- Experts in banking regulatory compliance
- Has a track record of delivering results to institutions like yours
- Experts in banking workflows
- Understands your current and future appetite for GenAI and meets you where you are
- Focused on delivering outcomes, not selling products or solutions



How to pick a partner: Buying GenAI solutions

What you need to know and what a vendor should be able to tell you.

	Industry knowledge and expertise	Model transparency and explainability	Transformative potential	Anticipated gains	Cultural alignment
What you need to ask	Is your GenAI solution specifically built and managed to meet the needs of banking?	How do you detect and mitigate bias in your GenAI models so we can ensure ethical and fair outcomes?	Can we adapt your solution to our specific needs? If so, how does it scale for evolving requirements?	What operational improvements and efficiency gains can we expect?	Can you meet us where we are today and be a long-term partner in our GenAI strategy?
What to listen for in their responses	PROOF POINTS: <ul style="list-style-type: none">• Knowledge of regulatory compliance and adherence to all requirements• Adherence to general data privacy and security protocols (e.g., GDPR, CCPA, and NIST 2.0)• Ease/requirement for integration with existing infrastructure: core and other banking-critical workflows/tools• Previous experience working with similar institutions	PROOF POINTS: <ul style="list-style-type: none">• Banking industry data used to train models• Source of training data: quality, veracity, availability, and processing methods• Explanation of the model's design including algorithms, architecture, and decision-making processes applied• Deployment of explainability tools (e.g., LIME to regulatory stress test model performance and potential bias)• Human oversight at critical points in essential workflows• Approach to customer transparency and available recourse	PROOF POINTS: <ul style="list-style-type: none">• Ability to add your own data, policies, and best practices to improve and enhance the model• Source of training data: quality, veracity, and availability• Human capacity and requirement to train and retrain model• Model explainability and interoperability	PROOF POINTS: <ul style="list-style-type: none">• A clear performance measurement framework and reporting approach• Customer stories and case studies that report outcomes• Willingness to provide references from existing clients• For innovative, new businesses, a willingness to consider risk or performance-based pricing	PROOF POINTS: <ul style="list-style-type: none">• Crawl, walk, and run optionality• Availability of strategy support from SMEs• Cultural fit with the sales and delivery teams
Decision weighting	30%	30%	20%	15%	5%

What's next?

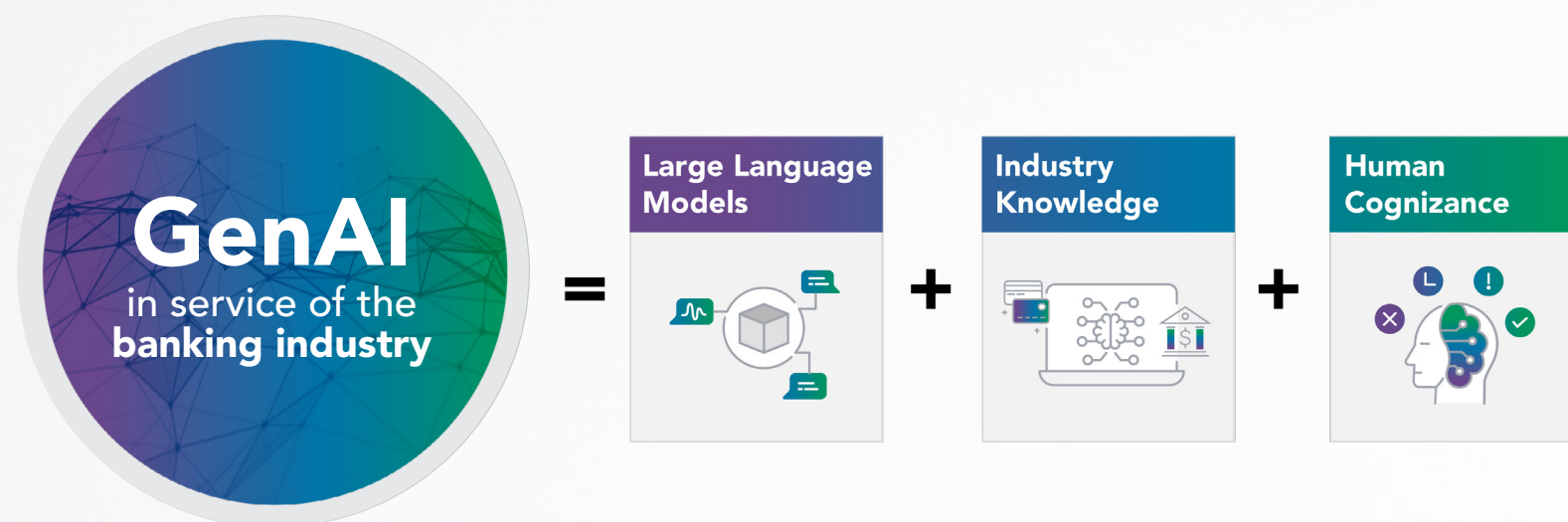
GenAI's future role within banking hinges on strategic integration with existing infrastructure and best practices. Our industry is regulated, we're data rich, and our teams are professionally skilled. But we all spend too much time on low-value tasks. The banking industry is perfectly poised to embrace GenAI, provided it is the right sort of GenAI — the type that augments and enhances the work that bankers do, the type that scales and strengthens collective intelligence.

THE Q2 VIEW

"There is a lot of buzz that AI could be the most transformative technological shift of our generation. At Q2, we believe that GenAI implemented with intent has the power to transform banking. We are excited to go on this journey with GenAI, and we are going to do so safely, responsibly, and ethically. Please join us."

Corey Gross, VP and Head of AI Center of Excellence, Q2

The future of GenAI: In the service of banking



The goal is clear.

We need GenAI solutions that are imagined, built, and trained to be in service of the banking industry.

THE Q2 VIEW

"If you've seen the movie Anchorman, GenAI and LLM are a bit like Ron Burgundy and Veronica Cornerstone. If Ron's cue cards are organized, he's news anchor number one. But when Veronica mixes them up, on-air chaos ensues and regrettable things are said. Ron doesn't think, he reads. So do LLMs. Without a strong source of knowledge, there is a good chance that someone will end up making an on-air apology. Deploying GenAI in service of the banking industry requires deep banking knowledge to make the performance of LLMs credible, ethical, and profitable."

Corey Gross, VP and Head of AI Center of Excellence, Q2

What's next for Q2?

Our goal is to help ensure that our customers and banks and credit unions everywhere are ready and excited to adopt ethical, practical, and compliant GenAI-enabled workloads.

Our goal is to:

- **Keep you informed** about what we are learning and doing.
- **Innovate** faster with a commitment to be practical, pragmatic, and focused on building new ideas and solutions that are not in the service of GenAI hype but in the service of the banking industry.
- **Accelerate** the integration of the Andi Copilot solution across our Q2 Catalyst (commercial banking) and Q2 Engage (consumer banking) suite of solutions in key workflows where GenAI can deliver transformative experiences to users and their customers. We are working on multiple applications for existing customers today and leading development in:
 - Commercial and retail [loan origination](#)
 - [Fraud management](#)
 - [Back-office efficiency](#)
 - Compliance and reporting

Our recommended:

The GenAI to-do list

Get informed

Two perspectives we recommend:

Accenture

BCG

**Learn more
about Andi[®]
Copilot**

VISIT OUR WEBSITE

Get involved

Join our early adopter waitlist.

SIGN UP

About Q2 Holdings, Inc.

Q2 is a leading provider of digital transformation solutions for financial services, serving banks, credit unions, alternative finance companies, and fintechs in the U.S. and internationally. Q2 enables its financial institution and fintech customers to provide comprehensive, data-driven digital engagement solutions for consumers, small businesses and corporate clients. Headquartered in Austin, Texas, Q2 has offices worldwide and is publicly traded on the NYSE under the stock symbol QTWO. To learn more, please visit [Q2.com](https://www.q2.com). Follow us on [LinkedIn](#) and [X](#) to stay up to date.

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