



Changing the game:
the impact of artificial
intelligence on the banking
and capital markets sector

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1. Where are banks in the AI journey?

1. Where are banks in the AI journey?

Artificial intelligence will likely determine the banking and capital markets sector's winners and losers in the coming five years. The journey has already started.



Artificial Intelligence (AI) is already here and shaping the wider world banks operate in. In automotive, Tesla and others delivered AI technology for sophisticated driver-assist functions, with an eventual end goal of autonomous vehicles operating on public roads.¹ The life sciences industry has been realizing value from AI for drug research and new molecule discovery, as it can draw insights from massive data sets faster, process data and automate workflows more efficiently, and convert insights into actions to improve business performance – from molecule to market.² In public safety and security, for example in the United Kingdom, London's Metropolitan Police has trialled live facial recognition (LFR)³ cameras in specific areas, to accelerate identification of individuals the police are looking for. Regulating for the evolving use of AI is an ongoing challenge to lawmakers, for example the European Union's AI Act is intended to protect health, safety, fundamental rights, democracy and the rule of law, and the environment from potential harmful effects – while supporting innovation, particularly among European SMEs (small and medium enterprises).⁴

Within this evolving societal context, AI is not new to the banking and capital markets (B&CM) sector. It has been in production for years in specific functions, including algorithmic trading and trade surveillance. But the arrival of Generative AI (GenAI) marks a new era, exploding the number of potential use cases and putting benefits in the hands of the workforce.

Considering the sector outlook more generally, the coming years continue to include macroeconomic and geopolitical uncertainty. Any number of unforeseen events may emerge from an already cloudy crystal ball. However, in a five-year timeline, we in Deloitte Global Financial Services see AI as the single biggest controllable opportunity for players to improve their competitiveness.

AI now allows banks to tackle challenges of scale in a way that, previously, would have required many extra staff. If a particular function in a bank could be done better or faster by adding one hundred extra trained staff, it's likely that AI can be transformative for that function. AI offers vast additional operational capacity, at low marginal cost compared to hiring the equivalent processing capacity as staff.

But more than that, the game in which players are competing will likely change. AI is on the threshold of a paradigm shift. Through the work we do with banks around the world we see leading innovators already making the step from AI as an 'instrument of strategy' (i.e., accelerating delivery of today's business plan) to a 'determinant of strategy', where tomorrow's business is planned around new AI capabilities. JP Morgan Chase, which topped Evident Insights AI Index (which benchmarks how ready banks are for the incoming wave of transformation that AI will bring) for a second year⁵, sees the transformational impact that AI can have and plans to spend \$1 billion or more a year on AI capabilities.⁶

AI now allows banks to tackle challenges of scale in a way that, previously, would have required many extra staff.

An important point is that we do not see AI displacing humans from the workforce at large scale. Rather that AI augments the workforce and drastically scales up processing capacity and quality. The role of the human workforce will naturally shift to a higher level, with a greater focus on design, oversight and exceptions management, as well as having more bandwidth for the relationship-based, customer-facing roles where human emotional intelligence is vital.

Across financial services (FS) sectors, we are seeing the green shoots of AI value being realized. Bloomberg was among the first to announce training their own model, with BloombergGPT providing a means for users to query and interact with complex financial data using natural language.

An important point is that we do not see AI displacing humans from the workforce at large scale.

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FS sector	Industry examples of AI-enhanced capabilities
Retail banking	<p>NatWest reduced fraud by 6% as a share of UK Industry (19% to 13%), including a 90% reduction in account opening fraud since 2019 which all contributed to reducing operational costs. On the income side they achieved a 5x increase in click-through for personalized lending on customized customer offers.⁷</p> <p>Reduced credit card delinquency by 32% (brighterion by Mastercard).⁸</p>
Corporate and transaction banking	<p>UK banks have been fully automating the loans underwriting process up to US\$100,000 (we have seen up to US\$250K).⁹</p> <p>JPMorgan Chase developed a GenAI model to analyze statements from the U.S. Federal Reserve to determine the nature of policy signals.¹⁰</p> <p>Citigroup uses GenAI to assess the impact of new US capital rules.¹¹</p> <p>Goldman Sachs is working on various projects which will incorporate GenAI into its business practices. Among the most mature of the projects include writing code in English-language commands, and being able to generate documentation.¹²</p> <p>Morgan Stanley is using machine learning to identify personalized investment ideas and suggest the "Next Best Action".¹³</p>
Investment banking (IB) and capital markets	<p>Projected 27% productivity increase across investment banks and 27%–35% front office employee productivity by 2026.¹⁴</p>
Insurance	<p>Underwriting teams at a specialized insurer experienced a 113% productivity increase using generative AI-supported workflows for underwriting submissions relating to bespoke policies.¹⁵</p>

2. What impact can AI have on the bottom line and how?

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Successful innovators can achieve a 5-15% improvement in cost-income ratio over the next five years.

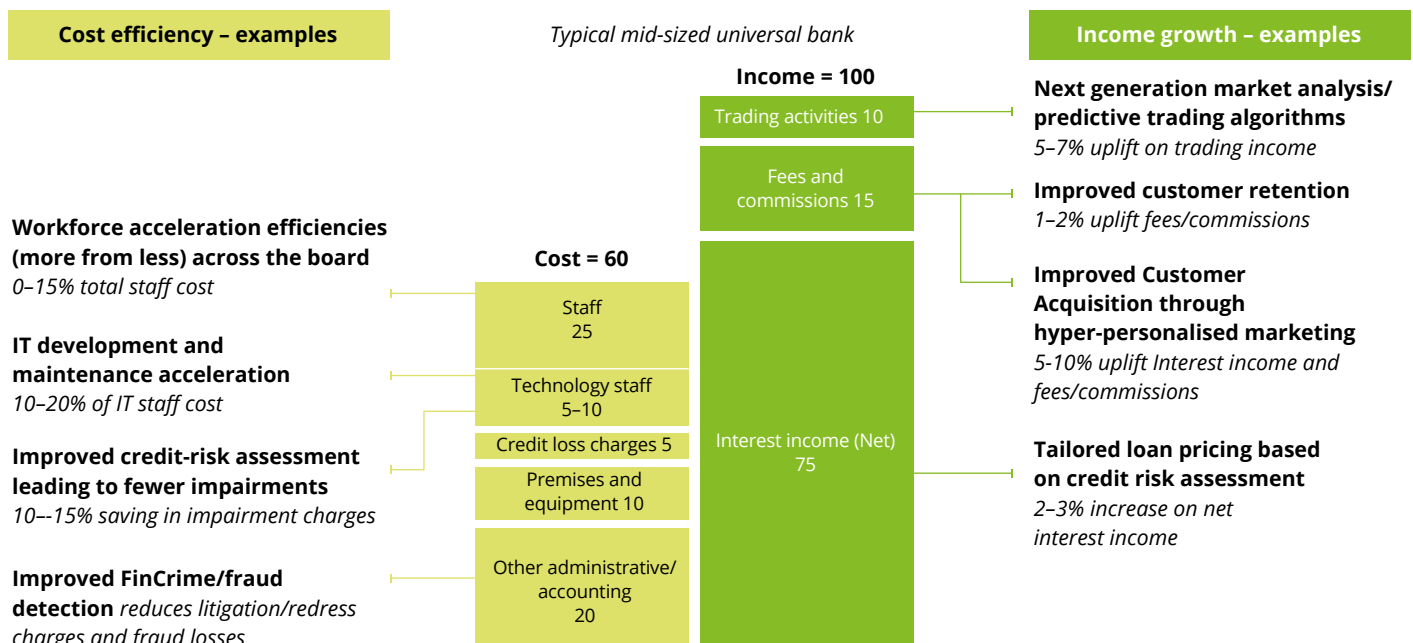
The recent B&CM industry hype around AI could appear as the latest fad – another topic attracting much discussion but not ultimately leading to sustained operating margin uplift. Most banks have invested in strategic innovations in recent years as cloud, data and digitization technologies have advanced. Not all banks have yet achieved material improvement to their bottom line from these investments, particularly where they bolted new systems and capabilities on to existing technology estates, introducing additional cost and complexity without decommissioning legacy components.

However, the banks that have learned how to deliver innovation in their organization will continue to outperform with AI, i.e., “the winners will keep on winning”. Successful cloud, data, analytics and digitization initiatives have provided the foundational capabilities for AI.

AI will likely now act as the conduit that accelerates business impact and magnifies value realization. We look at this more closely later in this paper.

Ultimately, the significance of AI to the sector will be assessed on the extent that this innovation delivers sustained operating margin uplift. Here we consider the “size of the prize” given a typical cost-to-income ratio profile today and expected AI benefit themes.¹⁶ We see potential for a 5-7% positive contribution in 2-3 years, and 10-15% in 5-7 years. This view considers a wide range of banks, and smaller, more nimble organizations including those with currently high cost-income-ratios (CIRs) would find greater opportunity to achieve the higher end of this 5-15% range of improvement.¹⁷

Figure 1. Cost reduction examples



Source: © 2024 Deloitte research. For information, contact Deloitte Global.

Note: this is an indicative ‘sizing’ view based on a typical cost/income profile in the industry and our ranged estimates of the potential of AI to improve performance in specific areas. The examples shown are not exhaustive. Broad-brush costs for implementation/operating costs of AI, and for reduction/redeployment of headcount are considered, while noting these may vary significantly across different organizations. The cost-income profile shown is informed by third party market data from Refinitiv, Factica, Statista and selected publicly available Bank Annual Reports as available in Q4 2023.

Where will the benefits come from?

AI, including GenAI, can bring advantages such as:

- **Increased efficiency** – automate repetitive tasks, freeing human resources for more complex, creative or customer facing engagement.
- **Improved accuracy** – process vast amounts of data with greater precision and fewer errors than humans, leading to more accurate predictions and outcomes.
- **Enhanced personalisation** – analyze customer preferences and behaviours to create tailored experiences, improving customer engagement.
- **Predict trends** – make data driven decisions, detecting trends and predicting changes in the market.
- **Creativity** – new possibilities to create new possibilities for products, services and business models fostering innovation and growth.
- **Cost savings** – streamlining operations, reducing errors, and enabling better decision-making, AI can help save costs and allocate resources more effectively.
- **Protection** – improving the effectiveness of financial crime and loss prevention capabilities.
- **Accessibility** – Make the services more accessible and affordable.

However, given AI risks and the evolving regulatory landscape, AI without appropriate human supervision may not be suitable for:

- Critical, fast-moving operations where timely human supervision/intervention is not yet feasible.
- Customer/staff facing activities requiring human emotional intelligence (EQ).
- Regulatory-sensitive activities.

We see three key modes for achieving value through AI, all of which combine AI and human strengths:

1. A focus on productivity through personal agents;
2. A focus on improving quality and process performance through specialist agents; and,
3. Large scale re-imagining of end-to-end processes using the multi-modal capabilities of AI.

The persona of core “agent modes” in which humans and AI interact to implement the operating improvements that can deliver financial impact. We stress the point that the benefit in all three modes comes through combining human and AI strengths, not through large scale replacement of humans with AI. Institutions should develop and strengthen the human skills to allow for adoption and value realization.

These modes will be leveraged in creating value across the financial institution.

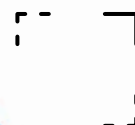
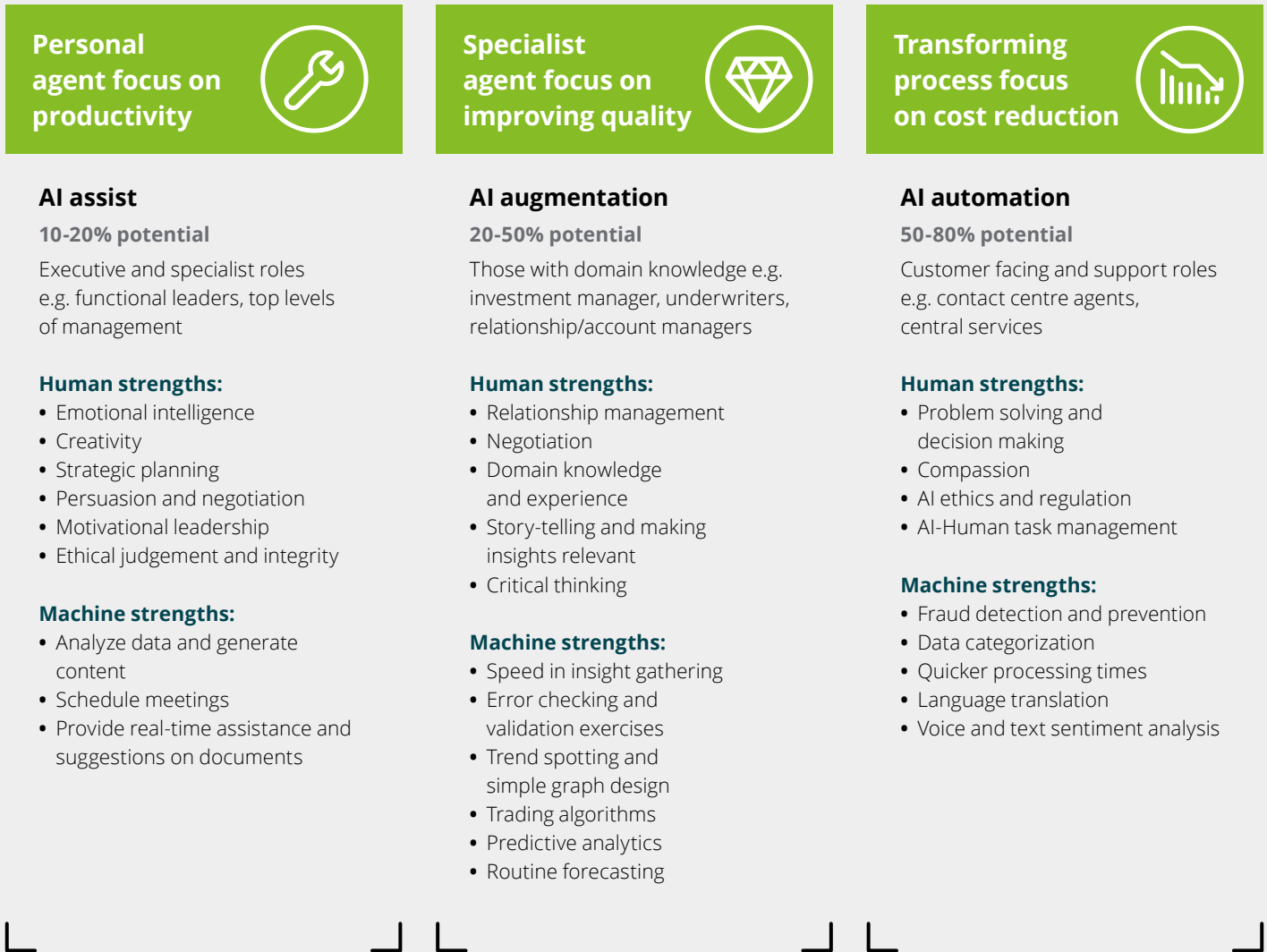


Figure 2. Examples of AI personas



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Driving down cost through efficiencies and loss prevention

Most banks are currently building AI business cases around cost reduction, and this is no surprise.¹⁸ It is easier to get funding approved for initiatives which drive out cost. The impact tends to be delivered quicker and benefits tend to be more directly attributable to the investment made. As AI grows in its ability to take on the increasingly sophisticated tasks that previously required human action, the opportunity grows for banks to perform a wider scope of activities faster and better, doing more with less.

Key cost reduction themes will likely include:

1. Workforce acceleration

A “marginal gains” approach to deploying many productivity improvements across the human workforce. At the most basic level, this will include automation of repetitive tasks such as data entry and analysis, search and query, draft production of many varieties of operational content (meeting minutes, communications) and summarizing large documentation. This is the type of “text and images” productivity support perhaps most associated with GenAI, particularly among newer users.

However, we see that the art of the possible is rapidly expanding, with more specialist acceleration use cases including data governance and management, data quality and remediation, model development and analytics.

Workforce acceleration will likely require widespread uplift in workforce skills with AI in the same way as staff previously became proficient in typing, spreadsheets and calendar management and other functions which historically were performed by specialist resources only.

AI applied: various proprietary GenAI tools are being deployed in compliance teams to summarize large sets of documentation issued by government and regulators.¹⁹ This rapidly makes the key takeaways and major insights available to compliance teams and business staff in frontline roles.

2. Engineering transformation

Specifically, to benefit bank’s large technology functions, GenAI can already generate and optimize software code, reducing the time to write, while improving quality. As many software engineers in banking information technology (IT) tend to be relatively inexperienced and requiring oversight from senior engineers, GenAI “co-pilots” have the ability to accelerate production releases and make maintenance less onerous.

AI applied: a Portugal based institution has deployed an AI-powered converter tool that converts software code from legacy COBOL-based systems to their target Oracle platform to accelerate a core platform modernization program. The large language model (LLM) based converter automatically generates functional documentation of the legacy COBOL code and creates a target metadata schema to accelerate the technical specification and build of the new data platform.

A second use case is the ability for GenAI to consume millions of lines of legacy code that is undocumented, and rapidly extract business rules/requirements to accelerate modernization. Deloitte practitioners are already leveraging these capabilities to accelerate client’s transformations and modernize our own products internally.²⁰

Cost efficiency examples



3. Loss avoidance

Risk management, fraud prevention, cyber, legal and other brand protection functions have high potential for improvement through AI. These functions tend to be improved by speeding up processes, expanding scope of processes, and providing wider sets of data inputs to improve process performance – all of which AI readily supports. Specifically, AI-enhanced credit risk management improvements can result in fewer loan impairments and write-off charges. Fraud prevention and financial crime (FinCrime) processes can be accelerated and expanded using AI to review a wider set of input data sets to uncover new insights on actors and ultimately reduce losses.

AI applied: Legal outcomes prediction. A Middle-East based bank is trialling a GenAI tool based on past contracts and litigation outcomes. The tool examines the contracts and other documentation involved in legal disputes and helps the legal team better predict likely outcomes of legal matters, as well as highlight potential risks in new contracts.²¹

Growing revenues through new capabilities and improved retention

While more difficult than cost-cutting, players will likely also invest to grow revenue. Revenue growth is a key challenge for banks due to the relatively limited number of “opportunities to influence”. Consider supermarkets, which have practically limitless opportunities to influence consumer purchasing behaviour through ranging, discounts, multi-buy offers and more. Unlike supermarket customers, how often do retail banking customers re-mortgage, change current account or take on a new loan or credit card?

Conversion rate for any sales campaign is a critical metric for AI to improve. When consumers do switch financial products, pricing/rates are a key factor in the decision, as is trust, and the quality of relationship that the consumer perceives with the bank – influenced by service level and relevance of interactions and offers. AI can improve all of these factors, while reducing cost to deliver. We see a number of key revenue-impacting themes:

Income growth examples



1. New capabilities for growth

We see that banks will invest in revenue-generating capabilities across business lines, including:

- a. **Insight-driven pricing:** real-time customization of pricing (e.g., preferential lending rates) to make highly competitive offers to target customers based on enhanced measurement of their credit risk.
- b. **Hyper-personalized marketing:** improved conversion rates based on insightful identification of individual prospect and customer/client needs, and highly-tailored communication.
- c. **Next generation trading algorithms:** trading income uplift from enhanced market insight and automated trading decisions.

AI applied: A UK-based universal bank has increased click-through rates on its personal lending offers by five times, through personalized offer content and improved target selection.²²

2. Customer experience and retention

AI-powered digital agents (e.g., chatbots) can reduce customer wait times by addressing an increasing range of complexity of customer requests. While certain customer journeys (e.g., those associated with large transactions, bereavement etc.) must remain as person-to-person interactions, the improved responsiveness of digital customer service agents can improve customer experience and retention rates. Increasingly, the quality of AI interaction with humans will improve as AI technology develops—adjusting the AI agent’s behavior according to the behavior/emotions of the customer.

AI applied: Service content management. A Netherlands-based institution has implemented a natural language processing (NLP) chatbot to support front-line staff in delivering a more insightful customer experience. The tool enables service staff to query wide datasets in real-time based on live customer requests, rapidly returning relevant responses from product catalogue, account fees, terms and conditions, policies etc. The next phase will enable customers to interact directly with the chatbot as a digital agent.

AI applied: Advanced chatbot. Bunq, a Netherlands-based neobank, has recently introduced its very own generative AI platform called Finn. This innovative platform is designed to impress customers with its exceptional ability to provide answers to a wide range of money-related queries. Finn features a chat-style text box that allows users to ask questions or seek advice about their bank account, spending habits, savings, and other financial matters. The platform is capable of combining data to provide answers that go beyond simple transactions, such as helping users recall past experiences like “What was the name of that Indian restaurant I visited with a friend in London?”²³

3. How will the sector⁺ :: landscape change and who will be successful? ...

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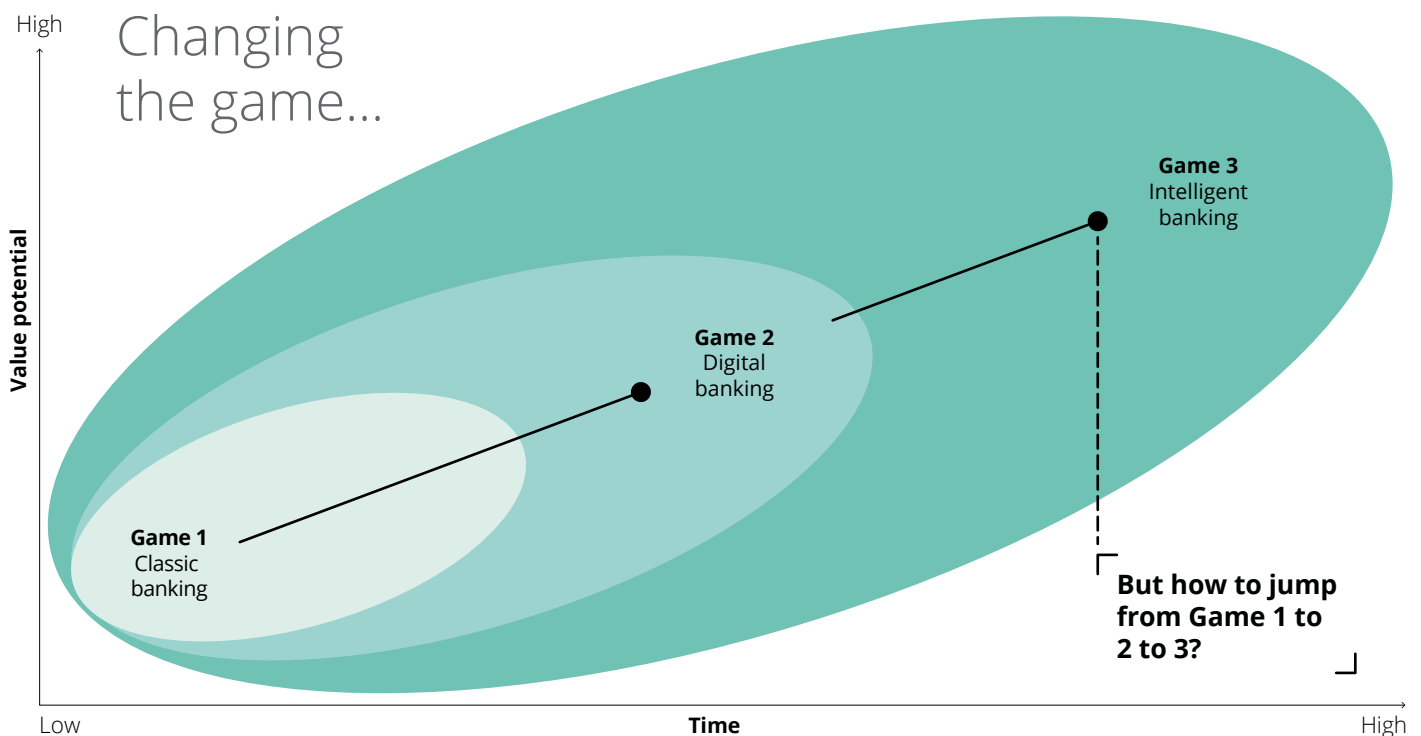
AI is changing the game – who will be the new winners?

The competitive landscape will likely be redrawn, with sector's probable winners and losers determined by the speed and effectiveness with which their AI initiatives enable evolution of their business operations, products and services.

As mentioned earlier – for leading institutions, AI is already making the paradigm shift from being an instrument of strategy, to a determinant of strategy.

Figure 3. How AI is changing the game

Game 1	Game 2	Game 3
<ul style="list-style-type: none"> • Same processes – lower cost • Step change in efficiency and productivity (cloud, automation) 	<ul style="list-style-type: none"> • New processes – same business • Transform customer experience, personalise products/services (digital, data, AI) 	<ul style="list-style-type: none"> • New business – strategy, segments, products, service, experiences • Distinctive definition of purpose / contribution to society • Expanding the Art of the Possible (AI/ GenAI)



So, who will be successful?

Banks expected to capture the biggest benefits from prior waves of technology-enabled innovation (e.g., cloud, digital, data) will continue to outperform in their value creation from AI. This is because leaders in innovation have already invested in the key organizational enhancements, including culture, governance, data management and agile delivery methods, needed to capitalize on the AI opportunity.

In many ways, substantial prior investment in the innovations (cloud, data management etc.) mentioned above has prepared the ground for value creation from AI. All of these investments required considerable capital expenditure that has constrained the bottom-line benefits realized to date. However, as above, the organizations that have successfully invested in these ambitious infrastructural changes will find AI to be the conduit that now accelerates the unlocking of value.

How?

Key technical foundations

- **Cloud**, where done well, has delivered readily-scalable computing power and accessible data provisioning, that abstracted data away from the complexity of legacy architectures while reducing total cost ownership of the IT estate. It also forced banks to learn how to assess and manage the risks associated with introducing third-party dependencies to the infrastructure supporting core business processes.
- **Automation** put in place the governance and risk management capabilities to oversee automated operations.
- **Data governance** may have been implemented initially for compliance purposes but has established the organizational accountabilities, policies, quality improvement methods and understanding of organizational data assets to provide trusted datasets as inputs to AI use cases.
- **Digital banking** has evolved customer expectations to be more comfortable with self-service, real-time, insight-driven and reduce reliance on bank staff for many interactions, while streamlining key front-to-back processes e.g., client onboarding, loan fulfilment.

Execution is critical

The players which have realized benefits from prior technical innovations have learned and refined the delivery methods that work in their organization. Typically, these have included consideration of:

- **Governance** – putting in place sufficient oversight to adequately assess and mitigate the spectrum of risks, without unduly constraining delivery;
- **Culture** – benefits are well communicated, business function owners expect to embrace emerging technology to improve process performance;
- **Idea to value** – strong processes are embedded to generate ideas for value delivery from innovation, assess feasibility and investment case, rapidly deliver the best ideas into production and scale;
- **Talent** – hiring and learning/development approaches that build adequate skills and capacity; and,
- **Partnerships** – engaging with the wider market ecosystem, forming partnerships with technology and service providers best placed to assist delivery.



Realizing the value from AI will take more than simply enabling the technology. In recent history there have been great expectations that technology transformation will drive significant efficiency gains only to deliver underwhelming results. Global chief technology officer of Dell Technologies Inc, captures the frustrations of many senior executives with the sustained investment required: "I must've had ten conversations last week where CIOs were bemoaning that they had run out of money or blown their [cloud] budget off.²⁴ "Why could it be different this time? The past investments (e.g., cloud, automation) have been parts of a solution but ultimately have not yet delivered transformational bottom-line value. In the case of cloud, organizations may have built the new capabilities but not yet switched off what these cloud-based solutions were intended to replace. In the case of automation, it was possible to automate parts of a process with great precision but the technology struggled with inferencing and being intuitive; it was a brittle solution in areas that required elasticity to be effective.

AI is already interacting with the workforce in a more natural way and opens the doors for entirely different processes. Solutions for these processes can now be developed not as 1's and 0's but rather with natural language providing great flexibility and speed to solution.

Therefore, true value to banks will be delivered when costly and long duration processes are reconceived. As banks evolve in maturity with AI and GenAI they will begin to give front line employees increasing autonomy and improved tooling that will enable increasing revenue (see "insight-driven pricing") while also reducing non-value add work (e.g., data entry). But once that tooling is in place and banks begin to reconceive processes there must be a focus to continue to redeploy staff to higher value roles.

The continuous upskilling of teams who use these new tools to do more is not a one-time effort, it should be built into the talent model and measured. Banks who simply implement AI and GenAI to augment existing processes will likely not see the full value realization and could in fact only see increased costs. Banks who leverage AI and GenAI to support continuous transformation and improvement can take the foundational investments already made (e.g., cloud and data) and unlock further value.

Considering these points, the FinTech subsector is likely to move quickest, due to distinct execution advantages. Namely:

- The relative simplicity of their current operating models (considering products, processes, technology, data and organization) makes them less encumbered by the constraints of legacy systems and processes. They still have the flexibility to jump straight to newly-conceived processes without lengthy re-engineering of legacy.
- They typically have a culture tilted to more rapid growth and innovation – their greater risk appetite means they will be willing to push AI capability to customers and into production processes sooner. But there are risks associated with doing this, before having the appropriate guardrails and risk infrastructure in place.

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4. What is special about generative AI and where is this technology heading?



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GenAI is a branch of AI currently attracting much attention, as it allows for the generation of increasingly sophisticated content (e.g., text, code, audio, images, videos, processes) based on algorithms that imitate existing content, using statistical predictions learned from large sources.

The fast-improving apparent quality of this content suggests that GenAI can play a large role in business functions traditionally considered to require solely human intelligence.

What is different about GenAI and why all the excitement?

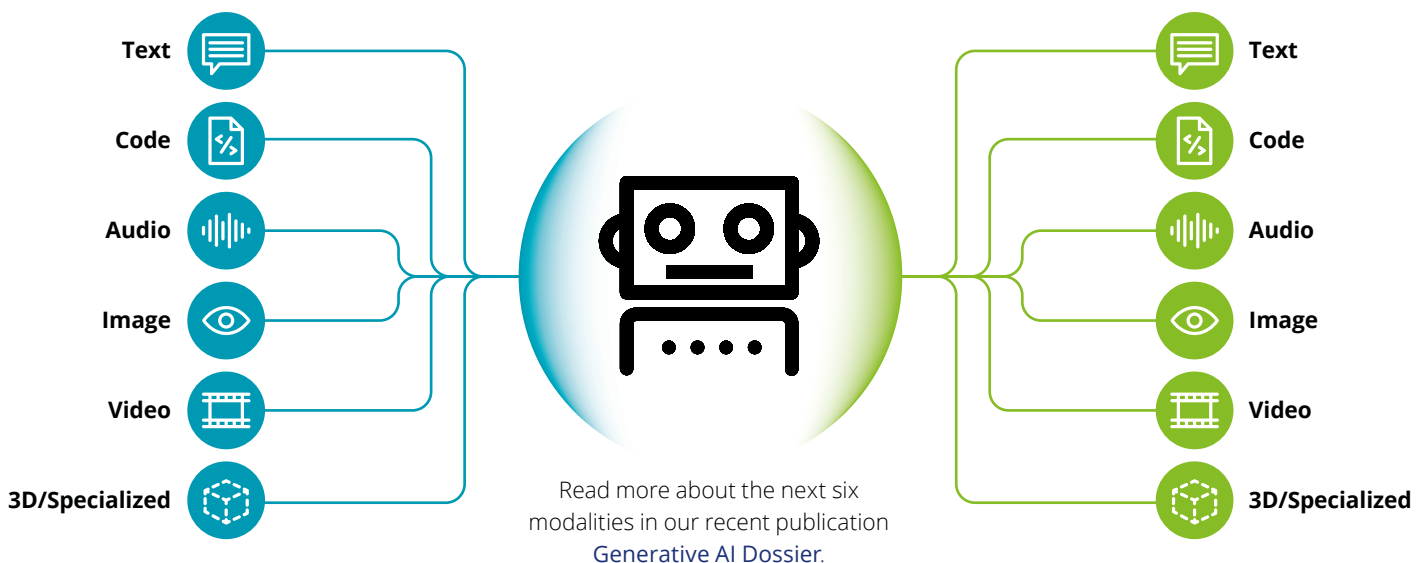
GenAI rapidly generates sophisticated content, based on vast bodies of source information, designed to imitate what a skilled human being could produce. This could be for example summarizing large volumes of documentation, writing an opinion piece, developing software code, producing images/video to a given specification, preparing a sales presentation or defining rules to measure data quality.

GenAI is about more than just text:

Gen AI is capable of working with multiple “modalities” of content, with the ability to process one modality as input and generate another as output (not all combinations shown in figure 4 are currently possible). Gen AI is able to produce sophisticated content output including software code, PowerPoint presentations and three dimensional (3D) models.

GenAI is predicted to be the start of a new era for AI. The technology will continue to evolve with focus on multi-modal communication and intelligence built into human interactions. +

Figure 4. AI modalities



Source: © 2024 Deloitte research. For information, contact Deloitte Global.

The increasing sophistication and apparent quality of this generated output is compelling, and points to an opportunity to augment organizations' human workforce's at large scale.

What is it good at?



- Tasks that a human would do far slower, generating content based on research, or vast amounts of information.
- Spotting trends or anomalies across large datasets at speed, that a human may miss.
- Augmenting human teams to accelerate output of a function or expand coverage.
- Producing specialist content on demand – e.g., images, video, 3D models.
- Increasing customization, i.e., with GenAI effective scale, supports “segment of one” in customer relationship management.

What are the limitations?



- It is just **imitating** human output by predicting statistically what human generated content would look like based on vast volumes of previously published content.
- It **cannot “sanity-check”** or challenge the output (although other forms of AI can do this).
- It can **construct statements** that may appear plausible but are simply **untrue** (known as **hallucinations**).
- It can be **biased**, amplifying the inherent biases in source content.
- It depends heavily on **quality of source content**.
- Large computing power required leading to potentially greater carbon emissions associated with AI.²⁵
- No EQ – does not adapt interaction with human beings based on emotions of the human user.

In future developments, we see AI evolving to display improved apparent EQ with humans, responding appropriately to facial and speech cues to become increasingly suitable in customer service agent roles.

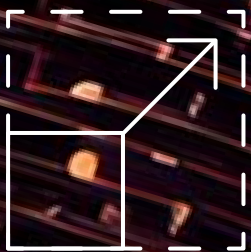
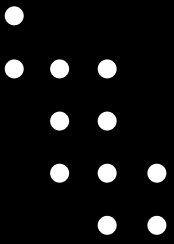
GenAI is already being used: According to Deloitte UK's [Digital Consumer Trends 2023](#) report, around a third of users (32%) claimed to have used GenAI for work.²⁶ This is 8% of the UK population, or approximately 4 million people. Given the lack of corporate policy and governance, it is reasonable to assume that much of this use was unsanctioned, and without proper education employees may have been at risk of sharing confidential information and failing to recognize hallucination and bias.

Where will GenAI go from here?

GenAI will continue to evolve. We see three themes of increasing maturity:

- 1. General intelligence:** the mimicry of human thinking will likely mature to include reasoning, making new inferences and predictions based on complex inputs. It will start to form perspectives and views that challenge human thinking. Currently GenAI focusses on distilling, summarizing and producing human-like content.
- 2. Expanded modalities:** the available combinations of input/output modalities will increase, with greater sophistication in the production of specialist output such as financial engineering constructs, systems architecture design, audit opinions and risk control assessments.
- 3. Artificial EQ:** interactions will become more human-like, developing the ability to change tone and respond appropriately to human emotions. This will be particularly impactful, making AI suitable for an increasing number of human-facing use cases.

5. How will banks embed AI across the value chain?

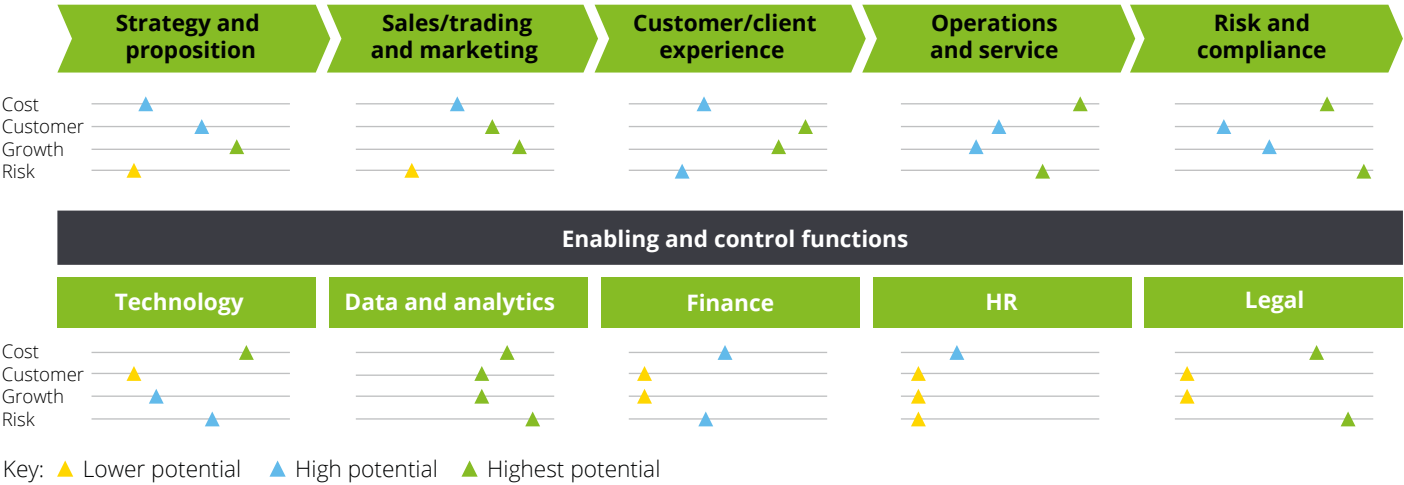


5. How will banks embed AI across the value chain?

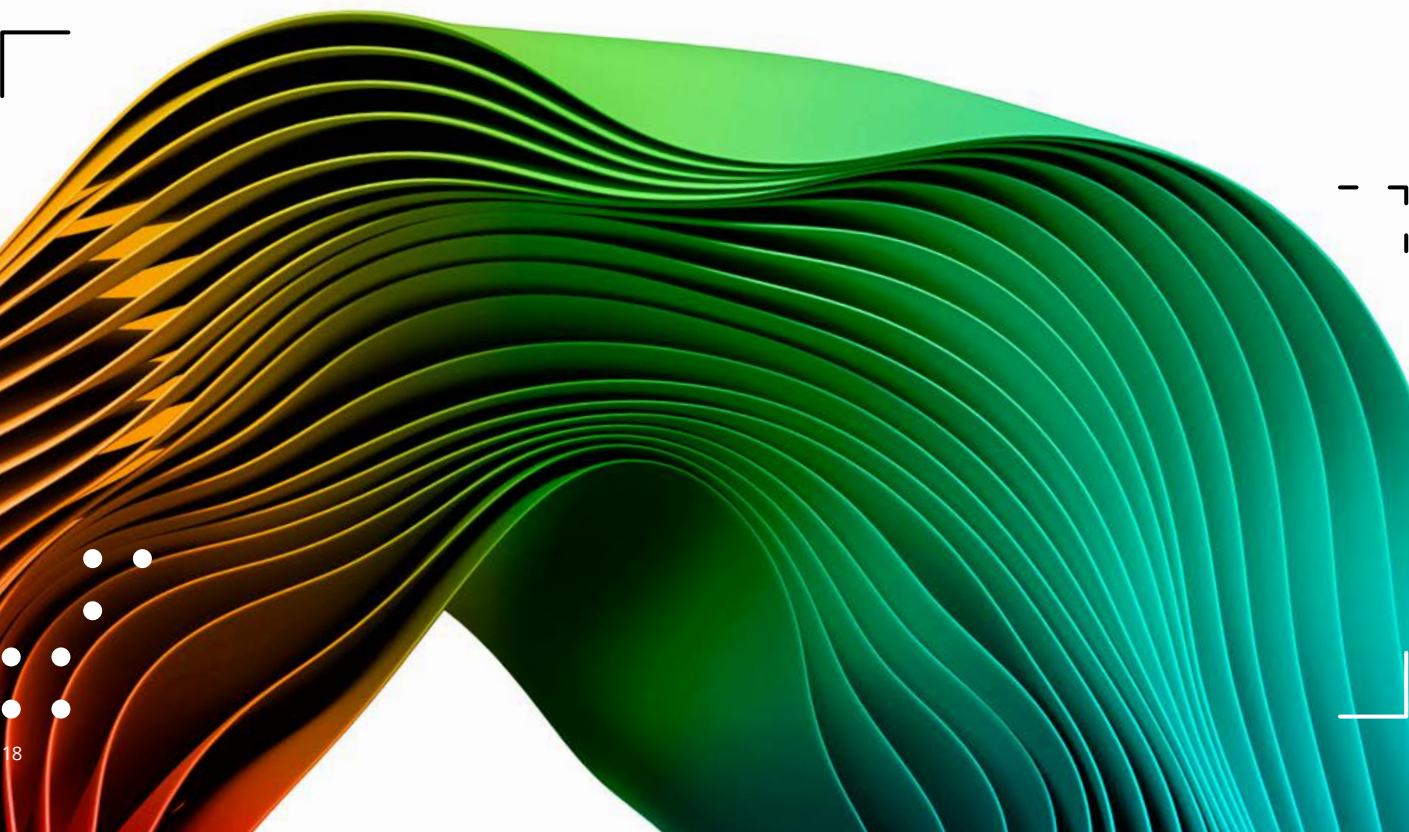
We see value creation being achieved via the build of an inventory of combined human/AI agents, deployed right across the value chain.

Initially, these agents would improve provide marginal gains in workforce productivity, and performance improvement of specific processes through quality improvement and/or automation. The operating model will look like today, but will be faster, better, cheaper, and less risky. Depending on organizational priorities, i.e., achieving cost efficiencies, risk reduction or focussing on the customer experience and growth agenda, different functions across the Bank will have differences in potential. Below we set out focus areas for different organizational priorities against a simple universal banking value chain.

Figure 5. Value chain focus areas according to organizational priorities



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Marginal gains: Impact of combined AI and human capability across the value chain

We expect that whichever components of the value chain are prioritized, results will come from building and implementing enhanced and/or new capabilities that combine human and AI strengths. Deloitte has defined an initial priority set of over 50 banking-specific use cases, many of which we are already working with clients to implement, which will likely have widespread impact across the entire value chain. A selection of examples, including the business challenges they address, are described below. We use the word “agent” to indicate a new capability that combines AI and human inputs in its operation.

Value chain component	Typical business challenges	AI opportunities
Strategy and proposition	<ul style="list-style-type: none"> Increased competition Specialist resource constraints Internal siloes across propositions Lack of data to inform strategy and proposition development 	<ul style="list-style-type: none"> Research agents to summarize and perform trend analysis of market, customer, channels and products to support strategy and proposition development.
Sales/trading and marketing	<ul style="list-style-type: none"> Evolving customer/client landscape and expectations Identifying individual needs and tailoring products/ services accordingly Omni-channel marketing and personalized content Financial market volatility 	<ul style="list-style-type: none"> Hyper-personalization communication and personalization agents driving personalized messaging and marketing campaigns based on market available data, interaction data (voice, digital), etc. Creative content creation (multi-modal) to accelerate delivery of the marketing content and aligned to brand, legal and compliance policies.
Customer/client experience	<ul style="list-style-type: none"> Lack of customer/client-centricity Capturing and managing customer/client feedback throughout touchpoints Establishing seamless omni-channel presence integrating physical and digital experiences Availability of insights to customer/client profile for service agents/risk management (RMs) 	<ul style="list-style-type: none"> Virtual agent scaling the operations centre automating end-to-end client experience. Assistant for channel engagement (RM, call-center, branches and email) improving efficiency, driving improved customer experience.
Operations and service	<ul style="list-style-type: none"> Straight-through-processing and real-time capability “One pattern for all” model in legacy systems/ processes restrict personalization Poor data management restricts quality insights and impairs service levels Fragmented onboarding and service journeys due to organizational/ technical silos 	<ul style="list-style-type: none"> Client/customer on-boarding by gathering information, assessing trustworthiness and seamlessly onboarding them onto new products. Customer service managing complex requests seamlessly, helping customers engage with their bank and providing them with useful responses. Fees collection and recovery services for early detection and helping draft appropriate communications.

Risk and compliance	<ul style="list-style-type: none"> • Complex and evolving regulatory requirements, particularly for global institutions/organizations. • Emerging risks due to rapid technological change – particularly AI and cyber. • Poor data management hampers the ability to monitor, measure and manage risks. • Balancing risk appetite and growth ambitions. 	<ul style="list-style-type: none"> • Regulatory compliance by detecting, alerting and generating triggers for the customers. The summarization for compliance reporting. • Financial crime support activities like, narrative generation. Adverse media screening and other potential fraudulent threats. • Cyber detection services to look for any anomalies and detect patterns.
Technology	<ul style="list-style-type: none"> • Leveraging technology to improve operational efficiency, enhance customer experience, maintain compliance and ensure security – all while remaining agile and competitive in an evolving financial landscape. • Legacy systems with poor real-time capability. • Skills and capability challenges in retaining knowledge of legacy/proprietary systems and new technology. 	<ul style="list-style-type: none"> • Delivery of engineering and operations support to drive quick delivery of products/solutions to market.
Data and analytics	<ul style="list-style-type: none"> • Banks are data-intensive organizations and yet data required for critical business processes can be fragmented, poorly understood and not of fit-for-purpose quality. • Increasingly stringent regulatory requirements increase the load on business and chief data office teams. • Increasing dependency on data and analytics to deliver business growth objectives. 	<ul style="list-style-type: none"> • Accelerated insight production where business can use where natural language to query complex datasets without reliance on technical data staff. • Greater coverage of data governance standards, where GenAI accelerates data profiling, definition and quality improvement.
Other enabling and control functions	<ul style="list-style-type: none"> • Complex financial regulation. • Costly legal litigation and disputes. 	<ul style="list-style-type: none"> • Focus on functions like, HR, finance, legal, etc. to develop specialist agents to integrate into business processes providing summarization, question and answer (Q&A) chatbot or writing documents.

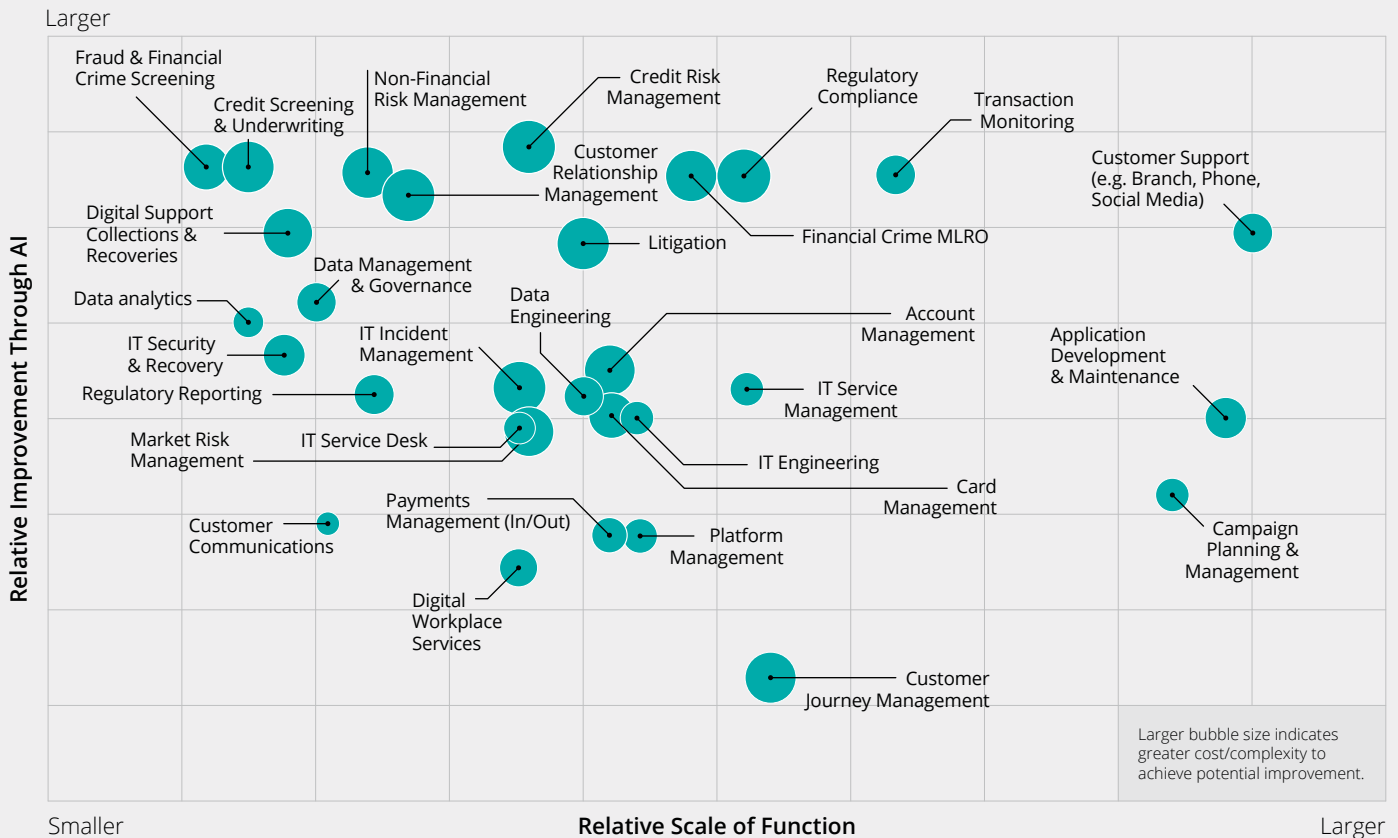
Deloitte has defined an initial priority set of over 50 banking-specific use cases, many of which we are already working with clients to implement.

Depending on organizational priorities and ambition, banks should look in depth for opportunity in specific functions

If **cost efficiency** is the priority, then banks should look at the largest functions, and those where the nature of processes mean that AI can deliver substantial efficiency or cost avoidance benefits. Our analysis of level 2 processes indicates that the technology organisation, risk and compliance and customer experience offer particularly high potential for cost savings. In Figure 6 we set out a view of the highest potential level 2 processes for cost efficiency, organized by the relative scale of the function and the level of cost efficiency and/or avoidance expected.

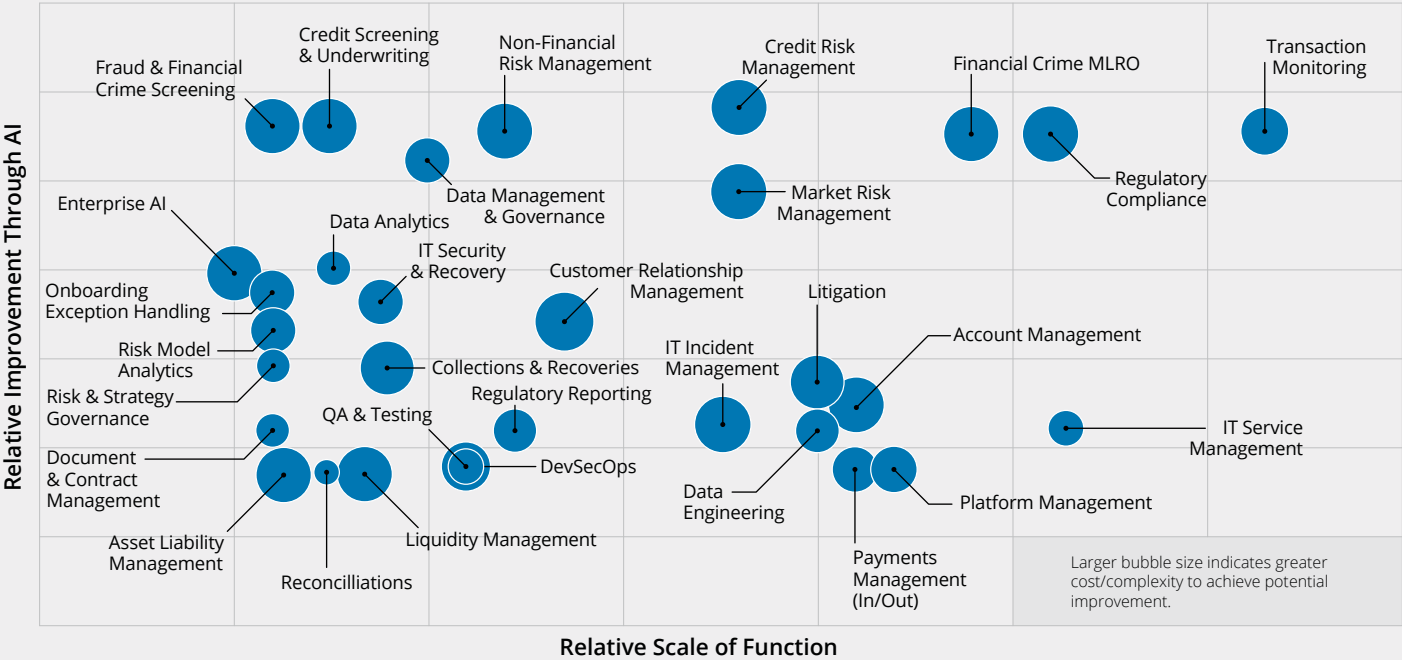
Figures 6, 7 and 8 are based on Deloitte research and analysis of the value chain across banking clients. The research also identified multiple “strings of pearls”, i.e., chains of related processes which can be re-imagined end-to-end to help deliver substantial additional value. Please contact the authors to discuss the applicability to your organization.

Figure 6. Cost efficiency agenda – bank functions with greatest potential benefits from AI



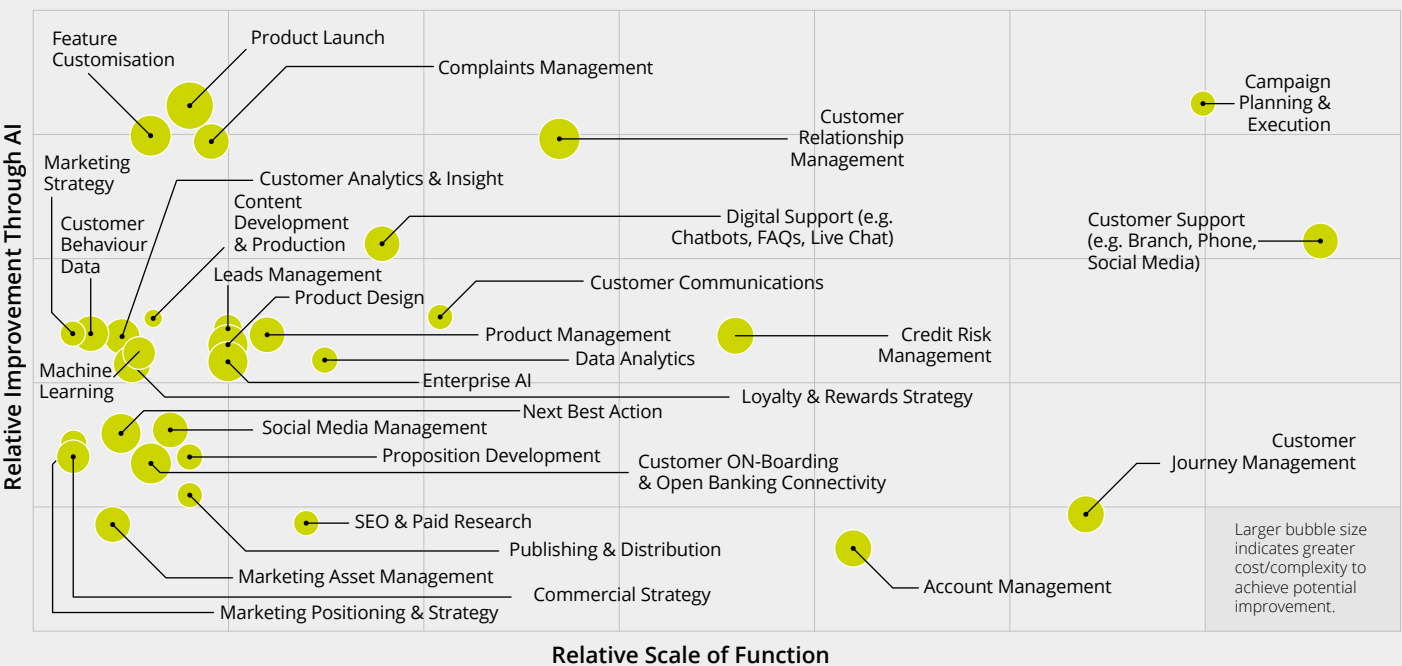
Similarly, where **risk reduction** is prioritized, the largest opportunities appear within risk and compliance, data management, service operations and legal functions. Note we see correlation in priority focus areas for the cost efficiency and risk reduction agendas, for example in transaction monitoring, financial crime and regulatory compliance. This is because risk events in these areas have high cost implications.

Figure 7. Risk reduction agenda – bank functions with greatest potential from AI



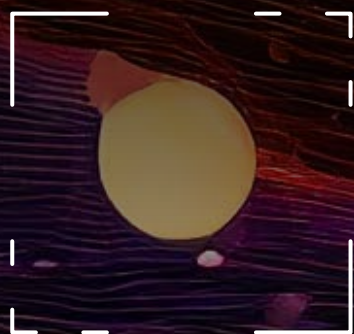
Finally, organizations prioritizing customer/client experience and growth agenda will likely naturally focus further up in the front office sales, marketing and service functions, and in tailoring product/service features and pricing. Interestingly, we see credit risk management as a key enabler of growth, where greater precision in credit-risk assessment enables insight-driven pricing of lending to secure the most desired customer segments.

Figure 8. Customer and growth agenda – bank functions with greatest potential from AI



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6. What risks must be managed and how?



6. What risks must be managed and how?

Key risks

In many ways, deployment of AI to scale up operations raises similar enterprise risks as outsourcing to a third party. The role of bank staff changes to one of definition, governance and accountability, rather than direct execution of the process in question. The bank is accepting a certain level of increased risk (requiring mitigating controls) for the benefits that come from increased processing capacity and lower cost.

Key risks that should be addressed include the following:

Misuse of AI: incidents involving malicious actors are a real threat. For example, where deepfake techniques have been used to successfully imitate a customer, gaining access to their account commit fraud. Deepfake in this case is an artificial, AI-generated video or sound recording designed to convincingly appear authentic.²⁷

Environmental impacts: Greater use of AI will naturally require greater computing power, in turn leading to greater energy consumption in the data centers. This is a competing factor against industry net zero commitments and climate change impact disclosure and reporting requirements.

Amplification of biases: Underlying datasets contain inherent biases that will be amplified once the models are trained on them, potentially exacerbating any discriminations based on gender, race and other characteristics. This could expose banks to litigation and/or regulatory consequences.

Cyber risk: The risk of irresponsible application of AI is associated with the various use cases that will likely get contemplated (e.g., using LLMs for heightened automated cyber threats). Additionally, where AI starts to form substantial components of an organization's operations, lack of transparency into precisely how the AI is functioning may leave the organization unable to design appropriate controls and cyber protections.

Sovereignty restrictions: The risk of sovereignty relates to the expectation that AI models trained on certain data sets are subject to sovereignty/residency regulations and will be required to be run only on data centers within that jurisdiction. Additionally, organizations with global processes, for example trading operations, will face complex challenges in satisfying divergent local regulations across the jurisdictions in which they operate.

Future regulation: The risk of lack of certifications concerns the possibility that LLMs may face future regulation as they are increasingly used for insights, advice, etc. (e.g., similar to how lawyers must pass the Bar exam).

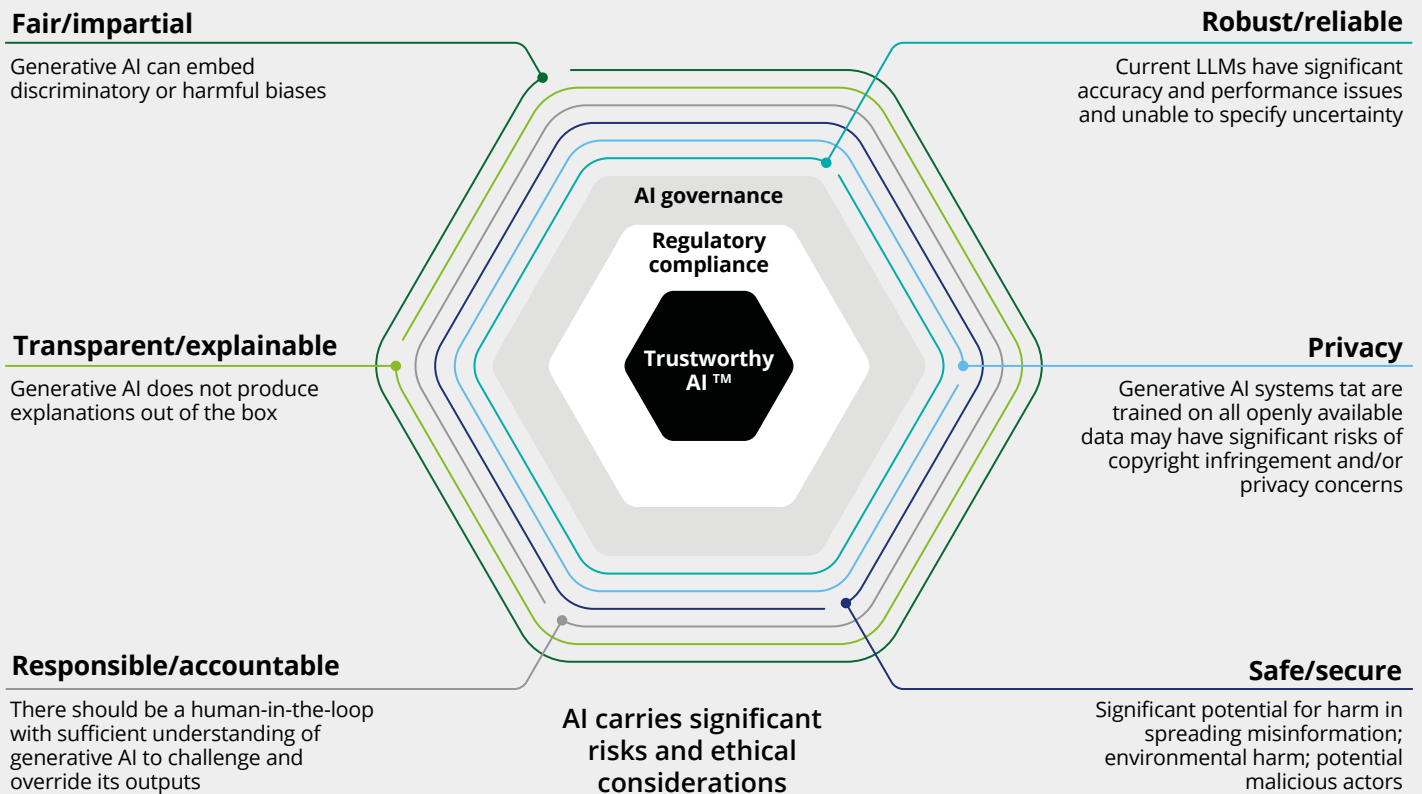
Autonomous vs. human intervention: The risk of safe usage is associated with how and where LLMs are used (e.g., using LLMs to generate autonomous action for machinery in a factory floor).

Fight for talent: Across the industry, the need for skilled science, technology, engineering, and mathematics (STEM) capability, including data science, is on the rise. Organizations will likely struggle to retain talent, and will need to put in place upskilling and recruitment initiatives.

In many ways, deployment of AI to scale up operations raises similar enterprise risks as outsourcing to a third party.

Building trust

Figure 9. Deloitte's trustworthy AI framework



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Deloitte's Trustworthy AI framework

sets out guardrails to address key risks. These guardrails include:

- **Secure environments:** Train LLMs in secure environments in a data center or on cloud to reduce probability of leakage of company information.
- **Enterprise data sets:** Train LLMs with data sets that are governed within an enterprise rather than the wider internet.
- **Large language model operations (LLMOps):** Form dedicated team(s) focused on operating, managing, and governing the models to prevent drift over time and for rooting out biases.
- **Restricted usage:** Restrict initial usages of generative AI to increase accuracy of inferences; then scale once there is a growing sense of comfort.
- **Audit trail:** Persist the data that LLMs are trained on to trace the data, map the lineage, and have an audit trail of what type of data was used.
- **Trust but verify:** Keep humans involved throughout the process to assist in validating and verifying the generated output and to monitor the AI's accuracy.

7. What are the key considerations for safe and effective execution? ... Principles for success + ::

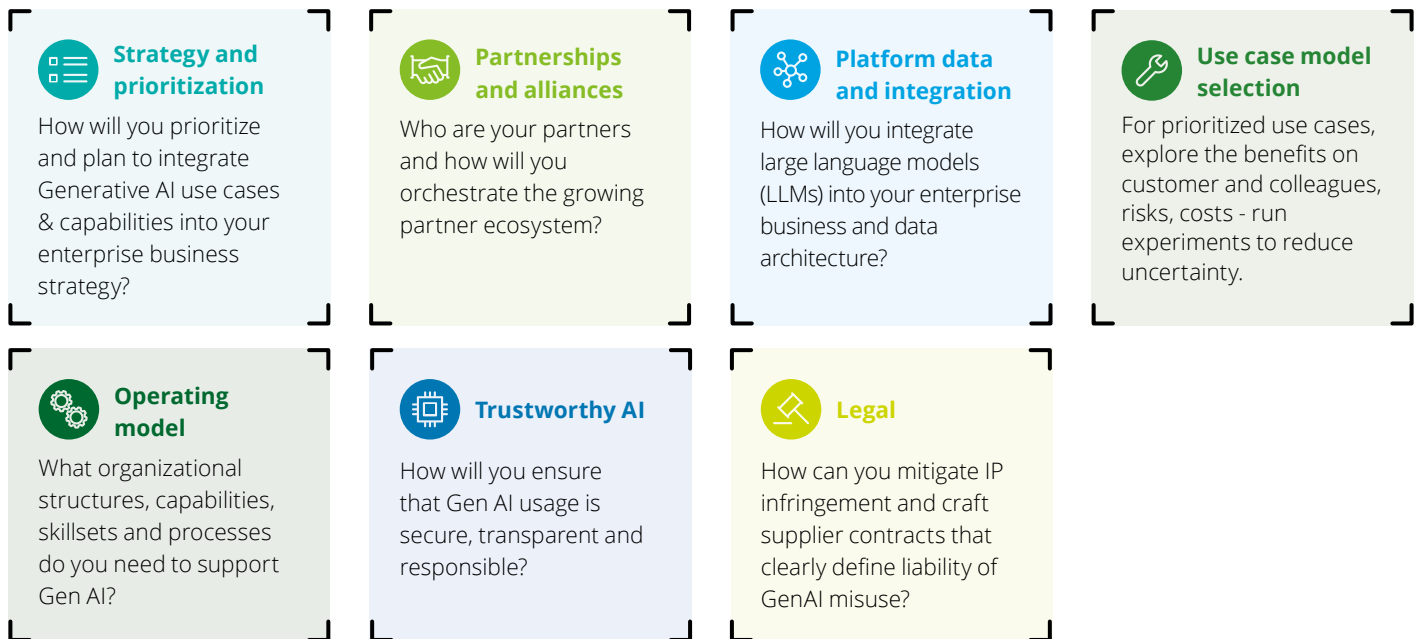


7. What are the key considerations for safe and effective execution? Principles for success

Executing AI with intent

Banks should execute with a clear vision, that addresses the following concerns for the specific shape of their enterprise.

Figure 10. Business concerns to address



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Managing the input data

AI output can only be as good as the quality of data and content available as input. Additionally, AI outputs, particularly those that drive decisions impacting customers, should be transparent, fair, lawful, ethical and secure. Strong governance is critical to support traceability, reduce hallucinations and manage bias. This is only possible if enterprise source data assets are understood, owned and managed.

Most banks have established data governance capabilities that provide a level of control over data flows, ownership, quality, definitions and modelling. These governance capabilities have traditionally been applied to granular data attributes (particularly where needed for the Basel Committee on Banking Supervision's standard number 239 [BCSB239] requirements),²⁸ however models should evolve to govern far larger datasets.

Human-centred design

Humans are critical to the design, development and successful operation of AI. Additionally, human staff should retain accountability for AI operations, being able to oversee AI processes and take action where necessary to manage unwanted behaviours or outcomes. This means AI functionality should support human interactions that are transparent, explainable and intuitive.

Humans are critical to the design, development and successful operation of AI.

8. How to get started, scale and drive adoption



8. How to get started, scale and drive adoption

Collaborating with several leading banking clients on their journey to transform business performance through AI. Our experience highlights the criticality of organizational and cultural evolution alongside a set of technological and programmatic must-haves.

Achieving sustained value requires organizational evolution

As mentioned in earlier sections, we see sustained value being delivered through new capabilities that combine human and AI strengths. Accordingly, organizational development to manage AI is as important as the technology itself and requires a set of steps forward.

- **Mindset evolution:** Move beyond the endless cycle of near-term proof of concepts, and place long-term bets on AI in key areas.
- **Leadership evolution:** Set leadership goals against measurable AI targets and value, to drive evangelism and accountability.
- **Investment evolution:** Treat AI investments as core enablers of enterprise business strategies and not as experimental investments.
- **Cultural evolution:** AI should be seen as a skill that all employees will need to embed in their ways of working (particularly GenAI).
- **Execution evolution:** Move beyond the front and back-office method and adopt a “two in the box” approach where business and IT are set shared goals.

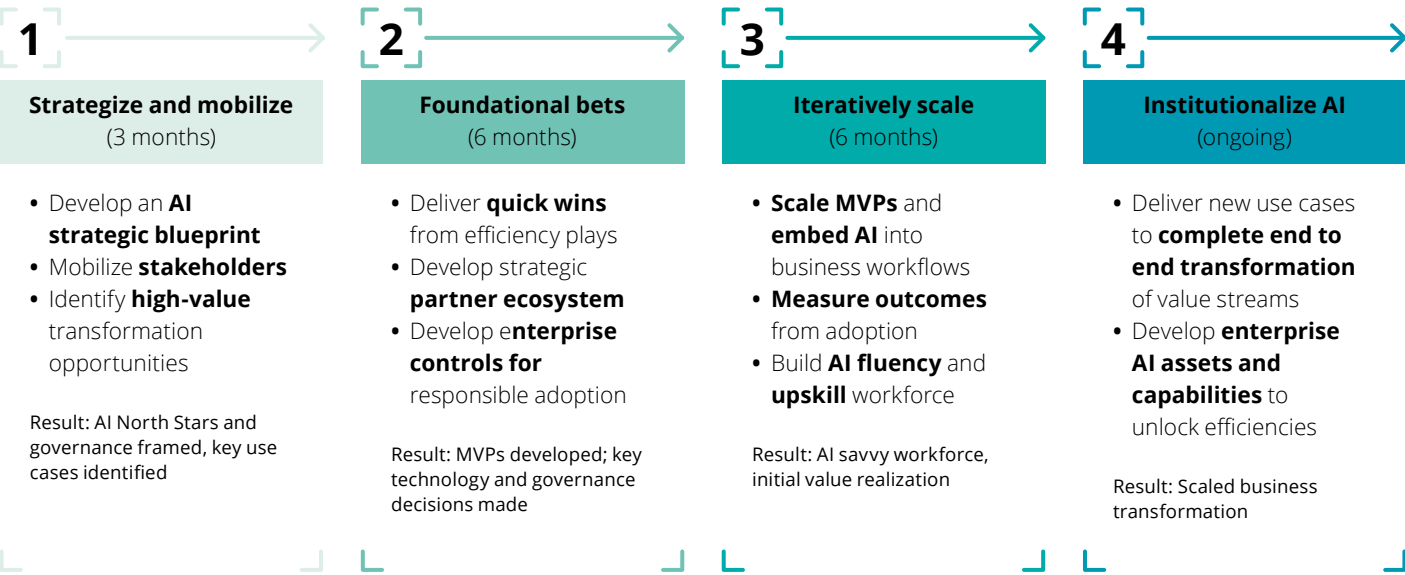
In executing the AI strategy, key building blocks need to be established early on

We believe the following are essential building blocks for standing up an effective AI change agenda. These building blocks span vision, governance, people, process and technology.

1. **Strategic blueprint:** Define the business ambition with clear short- and long-term goals and investment commitments.
2. **Operating structure:** Build a model to source, prioritize, govern and develop AI/GenAI capabilities.
3. **Value realization:** Stand up a value tracking mechanism to measure outcomes and optimize investments.
4. **Capabilities and technology:** Create a technology and partner roadmap to enable AI/GenAI requirements.
5. **Ways of working:** Build enterprise AI fluency and optimize the delivery and usage operating model to maximize adoption.
6. **Responsible AI:** Establish ground rules and promote accountable and ethical use of AI.

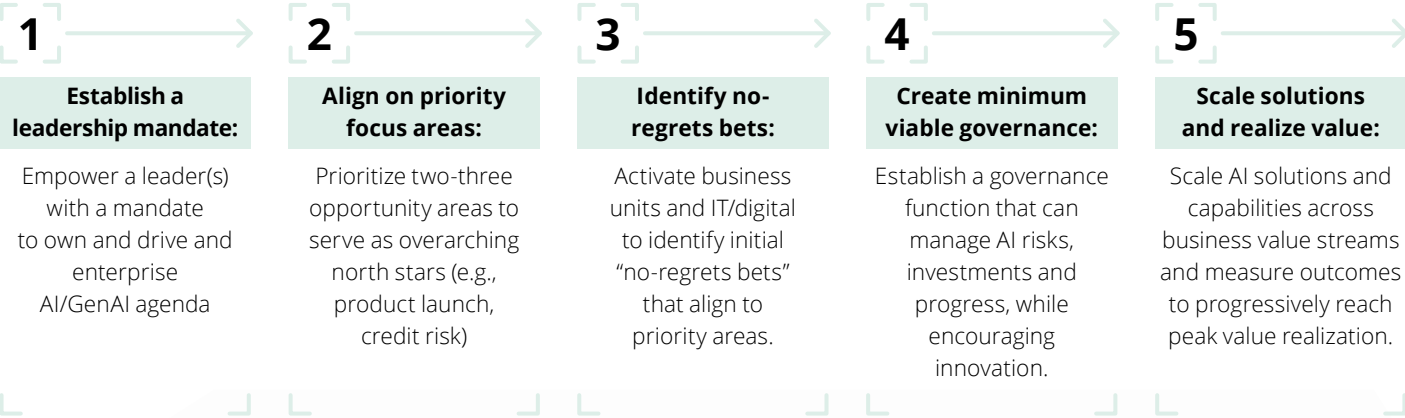
We target an 18-month journey to driving value and scale

Figure 11. Timeline for driving value and scale



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How to get started?
Our tested action plan:



9. Contacts +



9. Contacts

For further information, or to discuss your AI challenges, please contact us.



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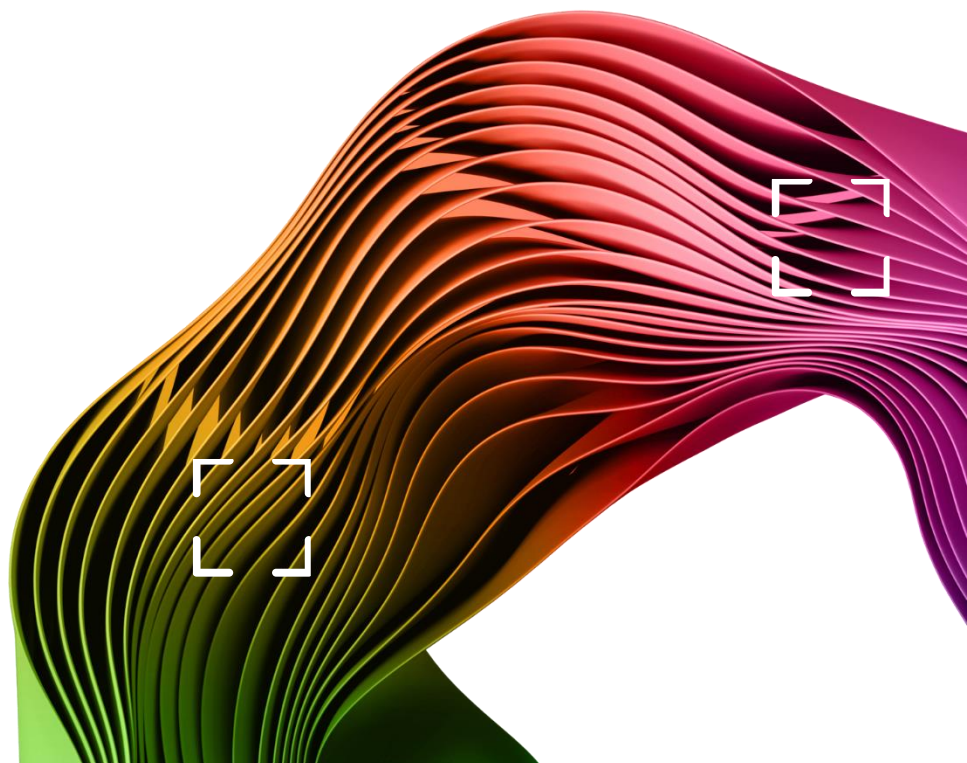


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Endnotes

- 1 "Autopilot and Full Self-Driving Capability". Tesla. March 2024.
- 2 "AI in pharma and life sciences". Deloitte. 2024.
- 3 "Facial recognition technology". Metropolitan Police. 2024.
- 4 "The EU AI Act" Deloitte Insights 2024.
- 5 "Jamie Dimon's JPMorgan and other North American banks are so far ahead in the AI race that one indexing boss says it's now a question of 'Can others catch up?'" Fortune. April 2024.
- 6 "JPMorgan to invest \$1bn or more a year in AI, Daniel Pinto says". Nikkei Asia. August 2023.
- 7 "Data strategy roundtable". NatWest Group. June 2022.
- 8 "Credit risk datasheet". Brighterion. 2020.
- 9 "2024 banking and capital markets outlook". Deloitte Insights. October 2023.
- 10 "JPMorgan Creates AI Model to Analyze 25 Years of Fed Speeches". Bloomberg UK. April 2023.
- 11 "Citi Used Generative AI to Read 1,089 Pages of New Capital Rules". BNN Bloomberg. October 2023.
- 12 "Goldman Sachs developing dozen generative AI projects – exec". Reuters. November 2023.
- 13 "The Future Of Work Now: Morgan Stanley's Financial Advisors And The Next Best Action System". Forbes. May 2020.
- 14 "Unleashing a new era of productivity in investment banking through the power of generative AI". Deloitte Insights. July 2023.
- 15 "Case study – Markel uses Cytora and achieves +100% productivity uplift to fuel growth". Cytora. September 2023.
- 16 Sourced from Refinitiv, financial statements of global 25 major universal banks.
- 17 Sourced from "Refinitiv", "Factiva", "Statista" selected Bank Annual Reports as available in Q4 2023.; "Deloitte AI Institute". 2024.; "Gen AI Dossier". 2024.
- 18 Rethink: How banks can drive down cost and protect profit". Avanade. 2020.
- 19 "Gartner Says Legal, Compliance and Privacy Leaders Rank Rapid Generative AI Adoption Their Top Issue in the Next Two Years". Gartner. December 2023.
- 20 "Modernization and Code Generation". IBM. 2024.
- 21 "How generative AI is gaining momentum in Mena". Arabian Gulf Business Insight. October 2023.
- 22 Data strategy roundtable". NatWest Group. June 2022.
- 23 "Bunq launches GenAI chatbot." Finextra. December 2023.
- 24 "CIOs Still Waiting for Cloud Investments to Pay Off". Wall Street Journal. September 2022.
- 25 "The surge in AI is straining the U.S. power grid". Fast Company. March 2024.
- 26 "Digital Consumer Trends 2023". Deloitte. August 2023.
- 27 "Deepfake". Cambridge Dictionary. 2024.
- 28 "Basel Committee on Banking Supervision. Principles for effective risk data aggregation and risk reporting". Bank for International Settlements. January 2013.



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