State of the Industry

Banking & Financial Markets

IBM

Contents

Executive summary

Geopolitical instability and the exponential growth of technology in early 2025 are amplifying the distinct challenges and opportunities in banking and financial markets. Notably, AI—particularly agentic AI—stands out as a potential catalyst for significant reinvention within this evolving landscape. The pressures of trade wars, tariffs, and shifting economic alliances require financial institutions to quickly reassess their strategies and investments to adapt faster than they are used to. For banks grappling with strained profitability, elevated cost-to-income ratios, and muted market evaluations, the stakes couldn't be higher. The choice is clear: adapt and lead, or risk falling further behind.

Based on data from IBM Institute for Business Value studies and the expertise of our industry leaders, we offer a high-level view of the industry today with a focus on the impacts of major technologies. Select case studies demonstrate how companies are successfully using advanced technologies to improve operations and customer experiences.

Note: unless otherwise indicated, data points within this asset reflect responses from banking and financial markets survey respondents.

After a period of steady convergence, the banking industry is now marked by contrasting financial performances.

In an era of economic and political uncertainty, banks with strong tech foundations are leading through AI adoption, integrated models, and market dominance.

Success demands secure, scalable AI and a transformed risk culture—where every banker becomes an AI risk manager.

Market & technology trends

Banks face an era of economic and political fragmentation.[1]

Macroeconomic tensions

The emergence of hyperinflation in major advanced economies led to a sharp increase in interest rates. The subsequent reversal of accommodative monetary policies provided a temporary boost to bank profits but also introduced stress on credit portfolios.

Within this complex environment, financial performance has become increasingly uneven, with some banks outperforming others across jurisdictions, resulting in a broader dispersion of outcomes.

Geopolitical risks

With major economies undergoing electoral shifts, the political landscape has become more fragmented than ever, influencing the trajectory of future regulations.

Escalating military conflicts are further straining an already fragile global supply chain, exacerbating economic uncertainties.

These developments cast doubt on the reliability of existing monetary frameworks, which are evolving at varying speeds toward Central Bank Digital Currencies (CBDCs), potentially reshaping both local and international payment systems.

Nontraditional competitors

Techfin companies have significantly expanded their footprint in financial services, engaging clients with digital payments and lending opportunities from their hyperscaled platforms. At the same time, a select group of fully digital banks (neobanks) has achieved profitability, proving that their operating models are more resilient than many had anticipated.

As a result, nontraditional competitors are broadening their focus, venturing into less commoditized sectors such as SME banking and wealth management—areas where traditional institutions still hold a strong grip on client relationships.

Meanwhile, established institutions remain deeply engaged in the complex task of modernizing their technological foundations.

Regulatory pressure

Banks are significantly better capitalized today than during the 2008 Global Financial Crisis.

However, the rapid pace of innovation is reshaping capital adequacy requirements, demanding greater adaptability from financial institutions.

While AI has the potential to enhance compliance and risk management with greater accuracy and efficiency, it also introduces new challenges, including risks related to security and bias. To accelerate enterprise-wide transformation, banks must embrace a culture where every banker takes on the role of an AI risk manager.

Trade and turbulence demand transformation.

Is economic uncertainty the new normal?

From trade tensions to geopolitical uncertainty, and from inflationary pressure to volatility in the financial markets, the global economy is in constant flux. Global supply chains face restructuring to address new challenges, while significant cost pressures demand urgent action across entire value chains.

Whatever the scale or nature of disruption, one truth stands out: the ability to adapt and change will define the enterprises that not only survive but thrive through turbulence. Today's challenges call for courageous, transformative strategies—just as they have in every era of upheaval.

Tariffs create tension in banking industry.

The imposition of international trade tariffs is set to accelerate the growing divergence in banks' financial performance across economies and jurisdictions.

Financial institutions will face heightened uncertainty with the ultimate financial impact depending on factors such as the prevailing business model, geographical footprint, diversification, and the ability to adapt to new technologies.

Investment banking and capital markets

Increased volatility in FX, interest rates, and equity markets will grant trading floors new opportunities to earn additional fee income due to increased trading and hedging activity.

Banks' tech-driven capability to expand trading operations while taming computing costs will fuel financial performance.

Retail and commercial banking

Higher inflation and interest rates will heighten credit risks in the short term.

Banks' tech-driven ability to refresh data sets and recalibrate risk models to rebalance lending portfolios will define impact on profitability.

Corporate banking and trade finance

The disruption of the international supply chain may reduce demand for trade finance. The expected deterioration in the credit risk of large corporate clients is likely to impact banks' risk-adjusted profitability in the short term.

Banks' tech-driven efficiency will be the proving ground for financial performance.

Wealth and investment management

Capital market uncertainty may affect investors' appetite for risk taking, potentially reducing fee income due to lower Assets Under Management or Advice.

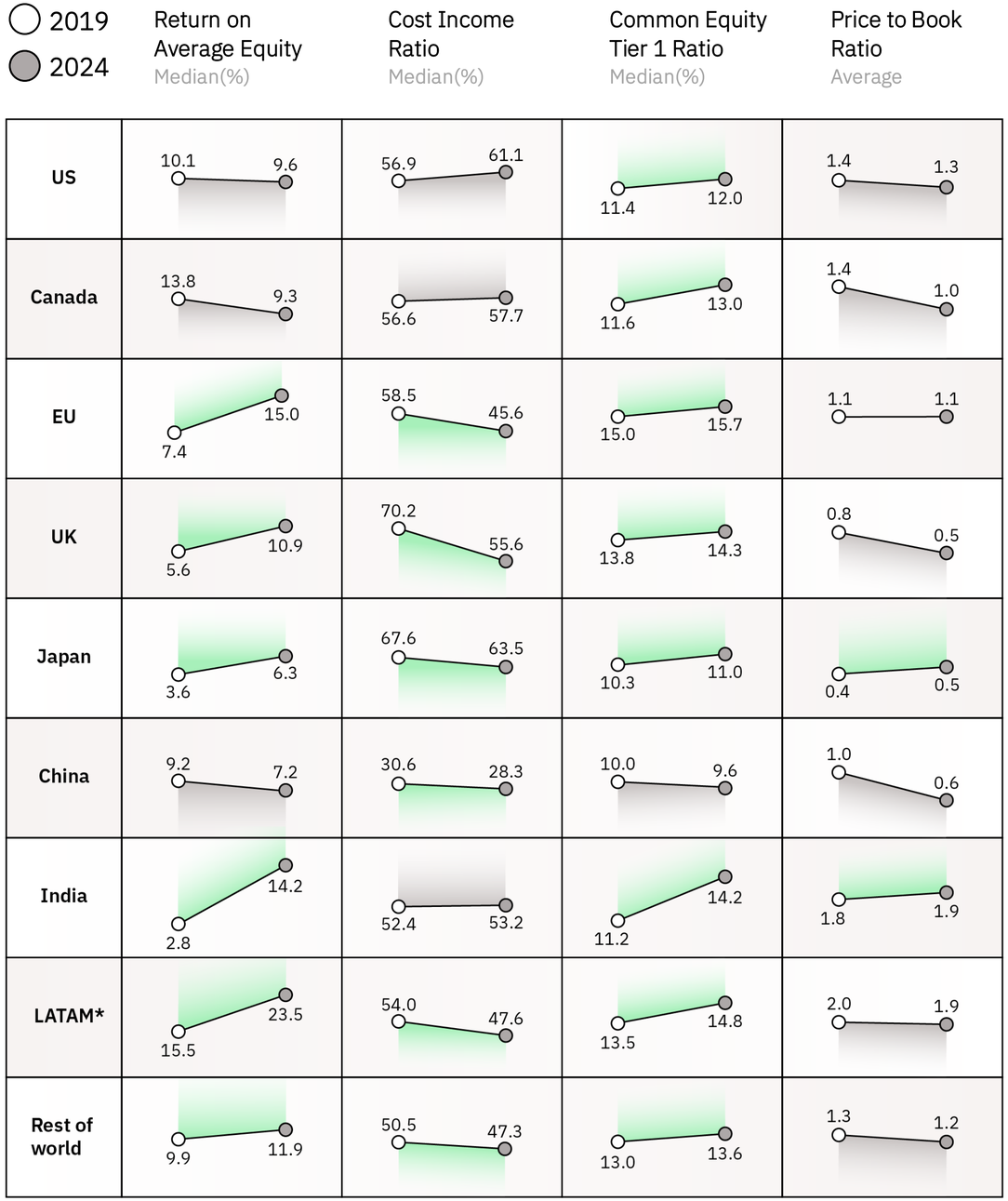
Banks can weather market turmoil by intensifying advisory activity— technology will be a differentiating element in their capability to advise at scale.

Banking performance is becoming more dispersed.[2]

Following the pandemic, financial performance disparities intensified across different regions and within the same jurisdictions.

Return on average equity (ROAE) became more dispersed around the world, as well as within jurisdictions as some banks benefitted more than others from the changing macroeconomic conditions.

By leveraging technology, they are further distancing themselves against the less dynamic institutions.



Key challenges and opportunities

A new era of banking differentiation emerges.

Branches decline while AI reshapes call centers[3]

Branches remain crucial but have been declining since 2012 in major advanced and EU economies, while still expanding in emerging markets.

This decline is driven by mergers and acquisitions, alongside reduced demand and revenue pressures from low interest rates.

At the same time, generative AI is transforming banks' operations and enabling call centers with automated high-touch services.

Since 2012, # of branches is

-38% in Italy

+53% in India

Customer interaction is digital[4]

There is a gap in bank executives' understanding of consumer preferences.

They underestimate the importance of good customer service, mobile wallets, and personalized rewards; and overestimate paying P2P, BNPL.

Mobile wallets take hold in other advanced and emerging economies as consumers prefer to pay digitally across regions for shopping, online bill payments, and dining out.

16%
of retail banking clients worldwide are already comfortable with a branchless, fully digital bank as their primary banking relationship

Platforms beyond banking hold promise[5]

Most banks are still struggling to build the right technical foundations to empower embedded finance strategies. In parallel, they need to build super-apps to integrate fintech onto their platforms.

Industry-specific design frameworks can help accelerate needed transformation toward achieving embedded finance strategies.

Bankers are selecting and prioritizing ecosystem opportunities for embedding finance solutions and expanding business platforms and partnerships.

70%
of executives say embedded finance is either core or complementary to their business strategy

SME market is untapped[6]

The financial landscape is evolving, bringing new challenges: SMEs struggle to access sustainable finance due to heavy reporting requirements.

Banks can enhance their relevance to SMEs by adopting tech-led innovations, reducing operational costs, and managing risks.

However, they risk falling behind by delaying investments in embedded finance and generative AI, which are key to shaping the future of digital experiences.

57%
of executives say banks can get the most value from directly orchestrating retail- or small-to-medium enterprise (SME)-oriented ecosystems

Key technologies and their impact

Modern technologies pave a path forward.

Hybrid cloud by design

“Hybrid cloud by design” is more than just a cloud strategy; it is a comprehensive method for businesses to operate more efficiently and effectively.

By adopting this intentional approach, organizations can overcome the complexities of a disconnected IT estate, achieve higher ROI, and drive business outcomes through integrated, automated, and scalable solutions.

3x higher ROI
from IT programs over five years when organizations adopt hybrid-by-design principles as per IBM analysis of more than 50 client organizations[7]

Secure by design

"Secure by design” prioritizes the security of customers as a core business requirement, rather than merely treating it as a technical feature.

Key principles include implementing strong access controls, encryption, and regular vulnerability assessments, ensuring that security is built into every layer of a system.

Banks can minimize risks and protect data and systems from the ground up.

#1 investment priority
to generate business value for CIOs/CTOs is a unified security and compliance control framework[8]

Data, automation, & AI

Data, automation, and AI are key to driving efficiency, insights, and innovation.

Using data to inform decisions, leveraging automation to streamline processes and reduce human error, and applying AI to enhance capabilities such as prediction, personalization, and decision-making empower banks to optimize operations, improve customer experiences, and drive innovation in a rapidly evolving digital landscape.

Together, banks can operate more intelligently, effectively, and at scale.

66% of CEOs
say the potential productivity gains from automation are so great they must accept significant risk to stay competitive[9]

Quantum

Quantum computing is an emergent field of cutting-edge computer science harnessing the unique qualities of quantum mechanics to solve problems beyond the ability of even the most powerful classical computers.

Banks can harness the potential of quantum computing targeting real-world use cases such as prediction, risk profiling, and portfolio optimization.

55%
of BFM CEOs view quantum computing as an opportunity for their company[10]

Select industry key performance indicators

Drive insights and decisions with industry benchmarks.[11]

Growth and innovation metrics

These metrics help banks assess their growth trajectory and make strategic decisions. For example, in this digital age, growing the proportion of self-service transactions is an important growth signal.

Benchmark (80th percentile):

75%

Self-service transactions as a percentage of all retail banking transactions

Cost and efficiency metrics

These metrics reflect banks' ability to control expenses, allocate resources, and generate profits. For example, banks need to understand operating costs relative to net revenues. Those with the lowest ratios are the most efficient.

Benchmark (80th percentile):

35%

Cost-Income Ratio

Risk and compliance metrics

These metrics help ensure banks are adhering to regulations, managing risks, and maintaining operational efficiency. For example, fraudulent payments pose a significant risk and can result in financial losses, reputational damage, and potential regulatory penalties.

Benchmark (80th percentile):

15%

Fraudulent payments as a percentage of all payments

Strategic imperatives

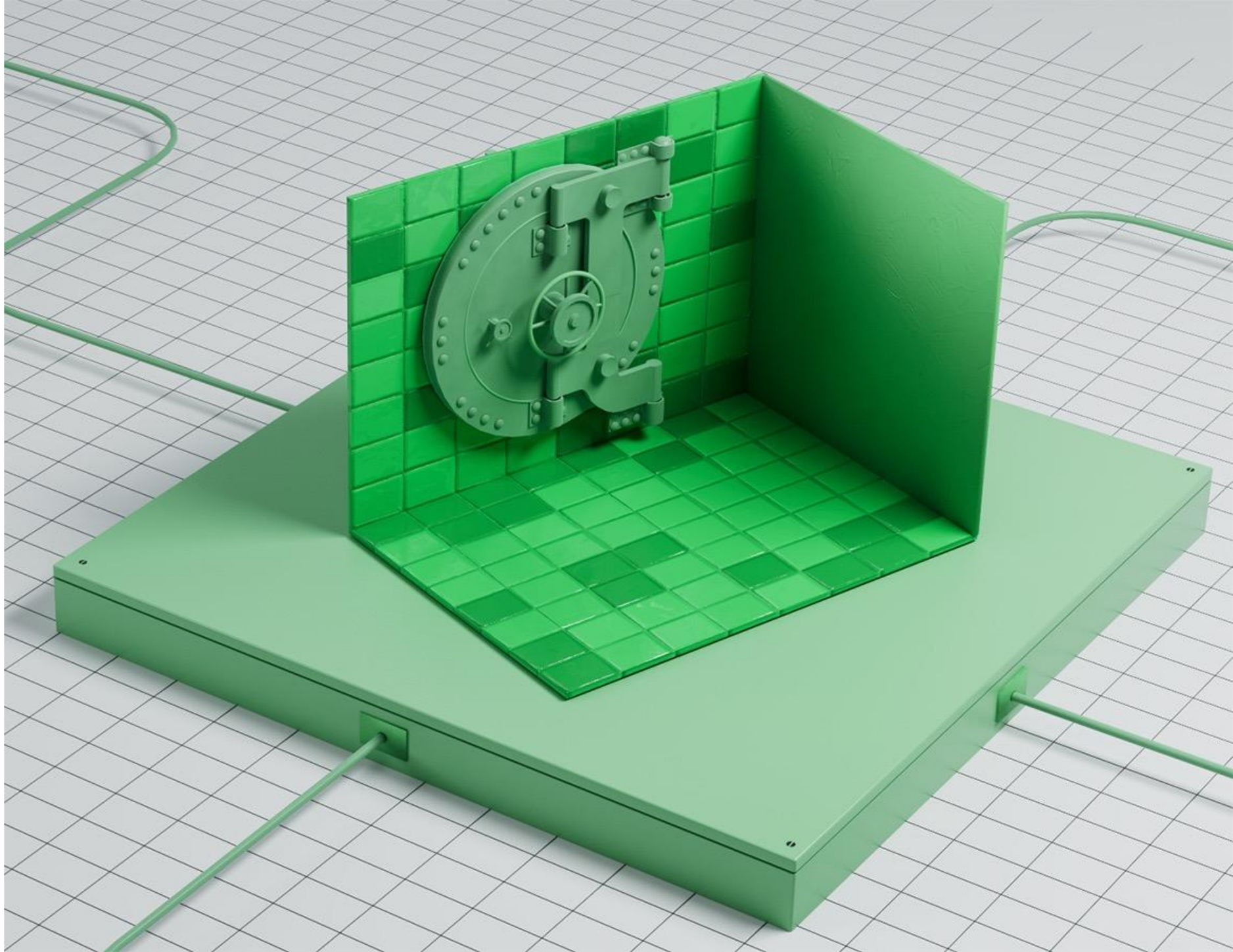
Business model innovation

Product and service innovation

Efficient and productive operations

Risk and compliance

Governance



What to know
Business model innovation

Business innovation must strike a balance between growth, efficiency, and risk.

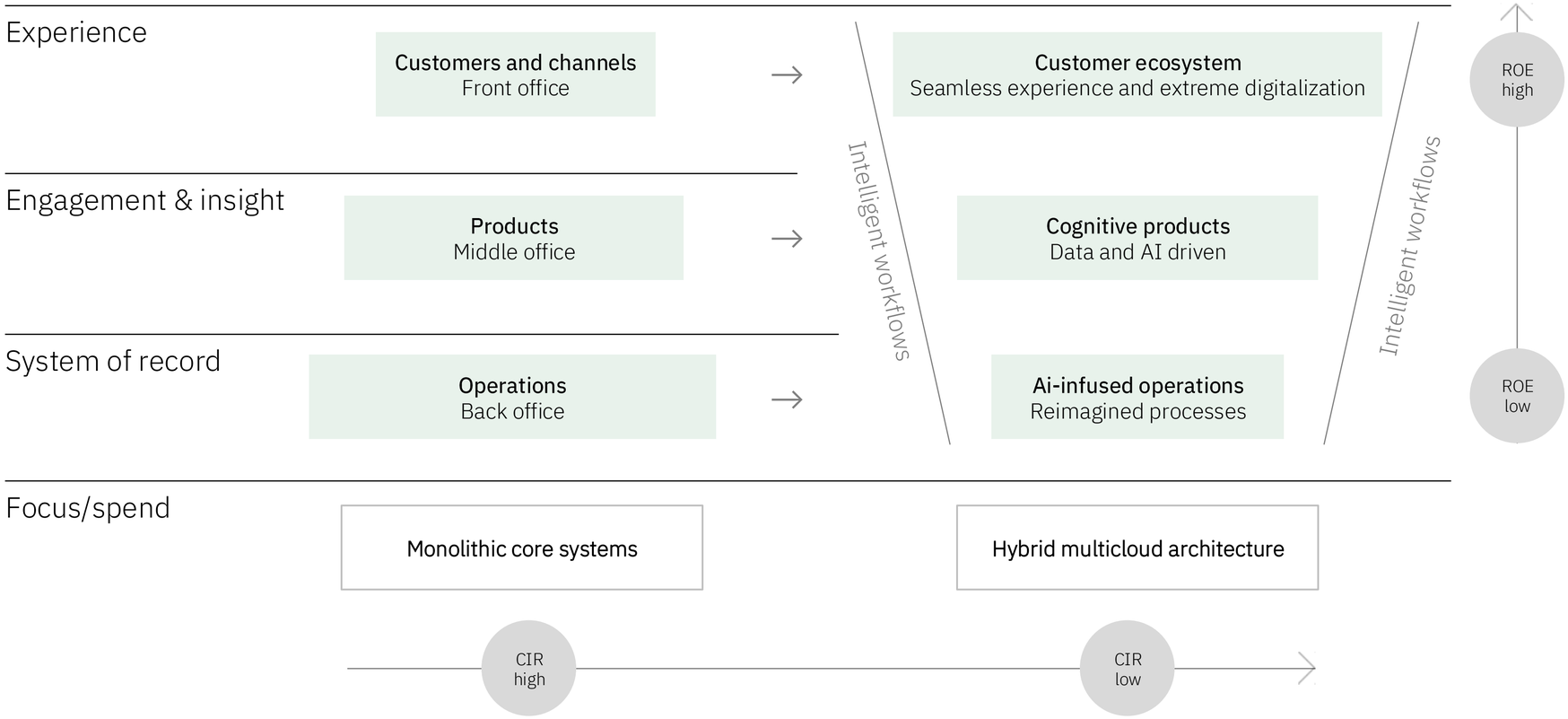
Despite progress in digital transformation, banks' Return on Equity (ROE) has been constrained since 2008. Business model innovation proved hard for many banks, due to insufficient integration of business and technology into a seamless strategy.

At the same time, Cost-Income Ratio (CIR) remains elevated, particularly in major advanced economies: 61.6% in the US and 53.6% in the EU, compared to 50.4% in LATAM and 30.9% in China.[12]

Although regulatory capital strengthened CET1 (Common Equity Tier 1), the fast pace of innovation can introduce new risks. More than 60% of banking CEOs say they must accept significant risk to harness automation advantages and enhance competitiveness.[13]

AI, hybrid cloud, and quantum are inverting the traditional banking architecture.[14]

Achieving higher profitability and efficiency, while remaining prudent, demands a renewed risk management culture—one where every banker becomes an AI risk manager—and a transformation of banking operations that flips the operating pyramid.



What to do
Business model innovation

44%

of cross-industry CEOs say that focusing on short-term outcomes is the top barrier to innovation[15]

46%

of consumers in the other advanced and emerging economies tap mobile wallets as their payment preference when dining out, while 72% of US consumers still swipe plastic cards[16]

57%

of execs expect to get the highest business value with ecosystem platforms for retail or SME clients[17]

Innovate business models in these key areas.

Embedded finance is the orchestration of financial services into nonfinancial platforms through secure APIs.
To execute the strategy, banks must:
- Build an API marketplace that allows secure connectivity with external ecosystems.
- Simplify financial products for frictionless consumption on digital platforms.
- Orchestrate their own nonbanking platforms when desiring to maintain control of client engagement.

Small and medium enterprise markets comprise 90% of all firms, 70% of the workforce, and 50% of GDP worldwide.
As competition increases, banks can win market share if they:
- Reduce the costs to serve by automating onboarding with AI.
- Improve credit risk management by integrating new data points with machine learning.
- Create advisory solutions where employees are augmented to scale their capability to serve a varied ecosystem.

Wealth management services allow banks to gain a more balanced revenue mix by integrating interest rate margins with fee income that is typically generated through human relationships.
To compete at scale, banks must:
- Empower human advisors with point-in-time understanding of client needs and market dynamics through the work of digital assistants.
- Build 360 client views integrating data across the organization and beyond the banking border.
- Automate portfolio analysis and market screening to help clients improve their investment behavior within the context of personalized goals and financial planning.

Banks must articulate their business strategy clearly to distinguish themselves from competitors globally and locally—technology alone is not enough.

Banking solutions and business models must evolve to better match the needs of clients, operating seamlessly inside and outside financial services. Getting there will require close collaboration across the bank—and the entire ecosystem.

What to know
Product and service innovation

As clients increasingly adapt to digital platforms, banks have responded by shifting customer experiences from branches to mobile contact points.

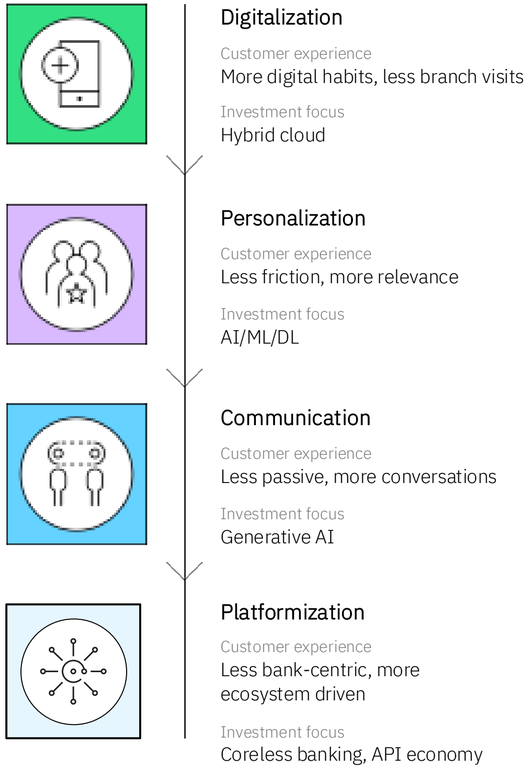
Initially, banks supplemented branches with online services, but as smartphones became dominant, digital banking became the primary engagement platform. A survey of 12,000 consumers revealed that 62% prefer using mobile apps for basic banking tasks. However, basic interfaces failed to address core banking complexities, limiting banks' ability to engage clients effectively. Cloud technology became crucial to improving omnichannel experiences and providing insights into client behavior.[18]

Despite this, new information alone didn't fully shift client intermediation toward digital solutions. While mobile is useful for self-directed users, most banking revenues come from offers, and clients still rely on bank officers for informed decisions. Without adequate conversational touchpoints, clients may turn away from further engagement with digital banks. Machine learning has been applied to make experiences more meaningful and personal, but first-generation chatbots, although offering some conversational support, were limited in their capabilities.

As generative AI matures, it enhances the ability of banks to facilitate digital conversations and offer more value-added client relationships, pushing for more innovation opportunities in the communication with clients as key to digitalizing most relevant banking relationships.

But a fundamental shift is also happening in the way consumers access financial services, demanding to bank seamlessly everyday and everywhere the moment arises. As the platformization of entire economies expands, financials services are also investing in new engagement models that span beyond banking borders.

Evolving with exponential tech



What to do
Product and service innovation

80%

of consumers across ages and markets favor online access for basic transactions (62% mobile, 12% website)[19]

60%

of SMEs say they rely on their banker's support when making important financial decisions, with only 23% relying solely on internal expertise[20]

Innovate key products and services with AI.

Customer care

Clients are 20% more likely to move money to a neobank for their primary banking relationship because of higher quality customer services. And good customer service is the most important service clients expect from payment providers. Banks must:

- Improve the granularity of categorization with AI to better address client needs.21
- Automate customer services with generative AI to focus human engagement on the most critical issues.
- Have people and AI work in tandem to increase quality of conversations and services.

Advisory services

Retail clients are more likely to choose an institution when offered personalized advice and planning tools, while SMEs prioritize these tools to boost operational efficiency. Banks must:

- Customize generative AI solutions with small models calibrated with proprietary data to differentiate on digital interactions.
- Build a multimodal, multimodel framework to tackle the most complex financial queries that define the outcome of competitive financial advice.
- Make industry/sector knowledge available through AI to differentiate financial/business advisory services and drive more transactions with clients.

Payments

These are the backbone of client engagement on digital platforms. As central banks and big tech progressively embrace Central Bank Digital Currencies (CBDCs) and stable coins, banks must size the opportunity to:

- Reengage with consumers via digital wallets that connect retail banking with an ecosystem of merchants.
- Redesign money movement for enhanced integration across trade finance and corporate treasury to improve liquidity management in a post-cash world.
- Promote instant payments across SME operating expenses to retain relevance within a digitally transformed landscape.

Communication drives the customer experience in financial services, and that is where AI is poised to deliver a relationship advantage.

What to know
Efficient and productive operations

While total operating expenses have been growing in the last 15 years, the percentage directed to technology changed less than other expense domains. For instance, the cost of the workforce increased from 50% to 54.6% as a percent of total operating expenses while tech and comms expenses changed from 6% to 6.6%.[22]

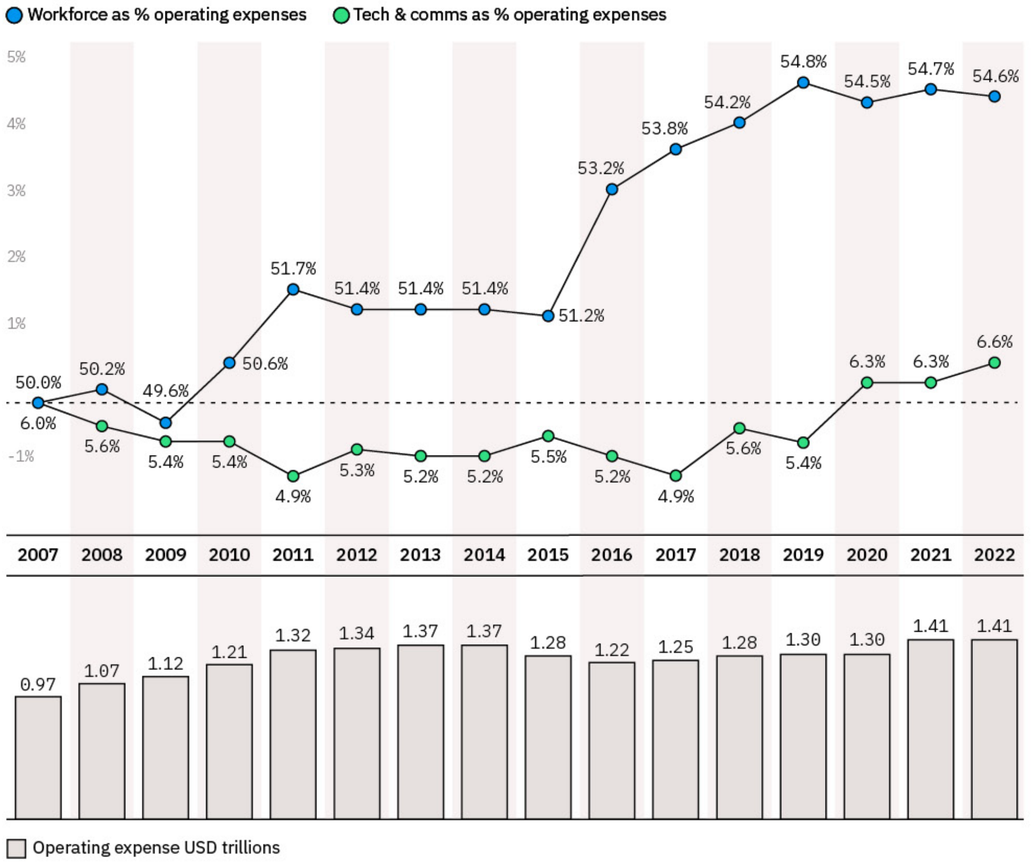
Cost-Income Ratio (CIR) has remained weak since 2008, notwithstanding banks' cost-cutting and continuous investments into more efficient operations.

In the absence of a comprehensive plan for redefining workforce engagement, improved efficiency doesn't translate immediately into operational savings. Realizing the full potential of AI-driven efficiencies necessitates not only reskilling but also adopting a new talent mix.

Crucially, unlocking the value of new skills and talent requires a change in the way people work, co-create, collaborate, and execute, as using AI becomes an integral part of their daily lives.

Evolution of workforce and tech expenses since 2007

Total operating expenses have increased, but the percentage of operating expenses directed to technology changed less than other expense domains.



Source: IBM Institute for Business Value analysis of S&P Global data.

What to do
Efficient and productive operations

43%

of CEOs say improved productivity is a key outcome to justify AI investments[23]

37%

of CTOs say there is no clear alignment with enterprise strategy across data, operations, technology, and security functions[24]

Improve cost efficiency and streamline key operations.

Simplicity can fuel innovation.

Efforts to redesign complex operations have frequently been limited to noncritical workloads or focused on new clients. A threefold focus is needed:

- Simplify banking products to make them fit for digital engagement.
- Streamline complex workflows to promote end-to-end automation with AI.
- Upskill the workforce to foster collaboration with agentic AI solutions.

Designing for hybrid cloud is essential.

Complex monolithic processes impede banks' capabilities to redesign values streams for a more dynamic cloud consumption. Banks can reduce migration costs if they:

- Enable more comprehensive analysis of application dependencies with generative AI.
- Automate and re-architect applications with AI.
- Modernize legacy systems and core infrastructure to enable scalability, real-time data access, and interoperability across departments.

Automation is blind to the color of a banker's collar.

The largest share of banks' operating costs is human resources. This underscores the need for a holistic approach to cost management:

- Integrate AI automation with augmentation strategies to promote new ways of working.
- Reduce business and operational complexity to foster easier collaboration and prioritization across teams.
- Upskill the workforce by promoting proactive risk management of AI, which is necessary to scale innovation enterprise-wide.

Despite substantial technology investments over more than a decade, many institutions did not meaningfully improve their cost efficiency. Emerging economies have seen the five-year median average of CIR improve from 47.74% to 39.36%. The regulatory rate hikes of 2022–2023 led to an effective interest income increase, thereby reducing CIR without structural cost benefits.[25]

What to know
Risk and compliance

The next systemic crisis might not be about finance. While operational risk has always existed, the chances of it causing the next crisis are higher than ever.

Why? New digital channels and ecosystems, while designed to be good for business, also bring increased risk—cyber risk particularly.

Traditional best practices for risk will not suffice in a digital, ecosystem-based world.

Institutions increasingly rely on third-party technology providers to support business-critical operations. They are shifting from on-premises to hybrid cloud consumption of workloads and services. As a result, aggregation of operational risks now expands well beyond internal monitoring and risk management capacities. And it is virtually impossible to fully monitor vulnerability, even for close business partners, despite thorough contracting arrangements, standards, and regulations.

The average cost of data breaches has been rising in recent years, heightened by the accelerated digital adaptation from clients and banking workforces. Although financial services are at the forefront of cybersecurity investments, their cost of data breaches was much higher than the global average, second only to healthcare.[26] Facing uncertainty and rogue actors in a digitally interconnected world, cyber resilience needs to become a top priority across entire ecosystems.

In addition, fintech innovation and business transformation are challenging risk and compliance practices. Exponential technologies such as AI and cloud reshape the very definition of the industry. For example, embedded finance extends the scope of open banking, and decentralized finance (DeFi) attempts to create a world virtually without banks. Traditional best practices for risk and compliance are not sufficient to address the digital future.

+32%

of banking execs see the biggest value of generative AI in risk and compliance[27]

What to do
Risk and compliance

Make risk management a core responsibility for every employee.

Regulatory capital increases since 2019[28]

+5.2% in the US

+4.6% in the EU

+6.7% in Japan

+4.4% in Latam

+26.7% in India

Know Your Customer (KYC), Anti Money Laundering (AML), and Fraud Detection

Digital engagement poses new challenges for banks to evaluate the eligibility of new clients and counterparties as they need to comply with KYC/AML regulation and mitigate the growing cost of digital fraud. Banks must:

- Automate end-to-end validation of clients and counterparts using AI to strengthen AML/KYC.
- Leverage machine learning and biometrics to strengthen KYC and detect suspicious behavior in real time.
- Apply AI to mainframe transactions to reduce latency at checkout and allow for 100% anti-fraud checks.
- Adopt zero-trust security principles to continuously validate user identity and device trustworthiness throughout the digital session.

Credit risk management and pricing

As banks expand digitally beyond their borders, they need to transform lending decisions to maintain a prudent approach in the lack of structured/traditional data. Banks must:

- Integrate traditional credit models with cash flow analysis performed by machine learning algorithms.
- Strengthen systemic risk appraisal via AI-driven analysis by tapping into digitally orchestrated ecosystems.
- Generate high-quality synthetic data to train AI models when real-time data is insufficient or not available.

Resilience and compliance

The next systemic crisis may not be financial in nature but operational. And when it comes to operations, it's about technology. Banks must:

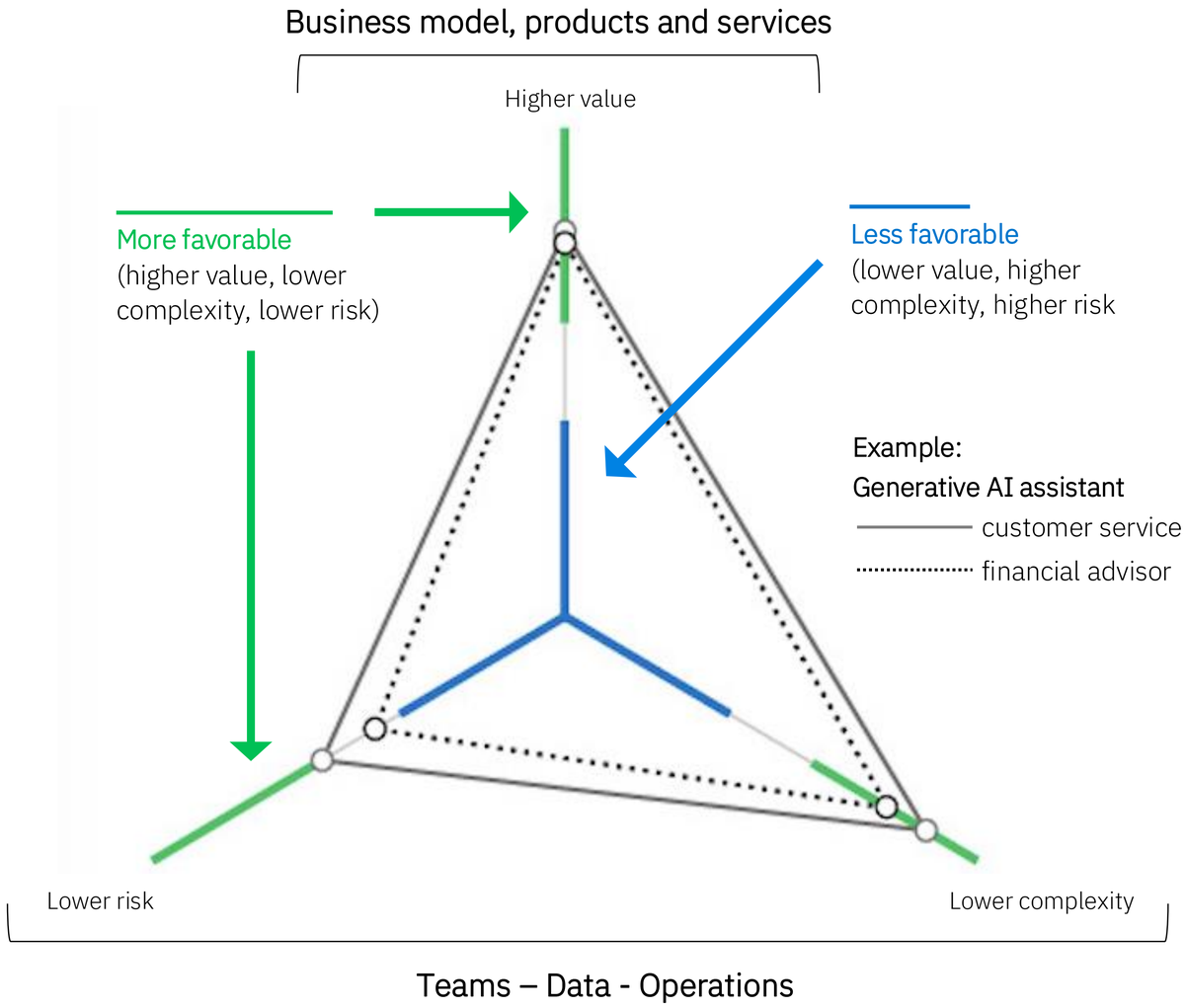
- Review resilience strategies in light of new and upcoming regulations.
- Create digital twins of business-critical processes to help minimize potential downtime and disruption.
- Inform resiliency strategies by considering increasing geopolitical risks.

Sustained banking profits rely on adept risk management.

What to know
Governance

Good governance is essential in the discovery phase of AI use cases to help manage compliance against the expected goals and risk profile of the bank. It is also essential to manage implementation and scaling enterprise-wide.

Each use case can be evaluated in terms of potential trade-offs between expected value (new revenue, improved user experience, cost reduction, and better risk management of operations), complexity (readiness of the organization, talent gap, technology maturity), and risk (hallucination, bias, security, and privacy).[29]



What to do
Governance

60% of CEOs say they're looking into mandating additional AI policies to mitigate risk. While 63% of CROs and CFOs say they are focused on regulatory and compliance risks, only 29% say these risks have been sufficiently addressed.[30]

Manage governance using four guiding principles.[31]

Manage for value

The transformative power of AI makes the definition and ex ante quantification of value a more arduous process compared to other exponential technologies. Banks must:

- Identify, articulate, and quantify the business and economic value of AI initiatives across the enterprise or the specific domain or application.
- Align initiatives on a prioritized roadmap, focusing on potential value at scale.
- Enforce investment discipline given the multitude of use cases and the high costs that challenge the ROI of AI innovation.

Manage for the complexity of innovation

AI use cases may vary in terms of innovation and corresponding feasibility. Banks must:

- Reevaluate data availability and control functions for every use case knowing that the most innovative are the most challenging.
- Support federated innovation across business units and functions, allowing different parts of the business to explore ideas within a controlled, cohesive environment supported by a Center of Excellence.

Manage for risk

As new types of risk emerge, the risk and compliance processes require continuous calibration to address hallucination, bias, legal, and regulatory compliance.

- Define and communicate a risk profile as the core element of governance.
- Enforce a consistent level of acceptable risk through adequate guiding principles, processes, and the IT system configuration.

Manage for scale

Scale requires management of value, complexity, and risk to be executed on a platform that makes governance a competitive advantage.

- Rely on a common enterprise platform for data accessibility, model, and use case approval.
- Promote centralized governance while allowing for more flexibility at the edge of innovation to find the most advantageous balance between risk and opportunities.

Governance is not a one-size-fits-all approach, and every bank must cater to its own perspective. Well-conducted AI governance is the foundation of a well-conducted business—and a compelling competitive advantage—as it directs business action with clarity and effectiveness.[32]

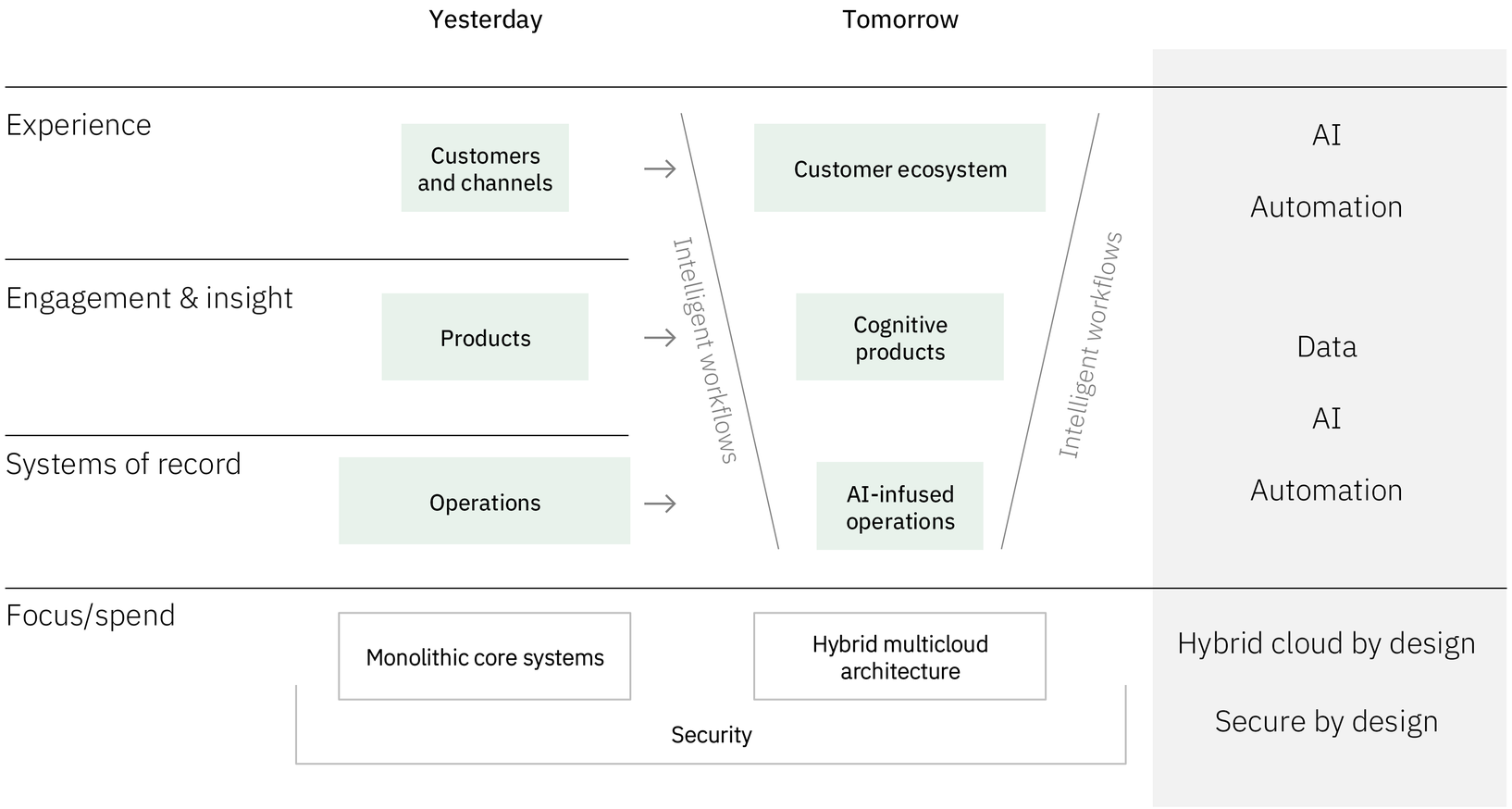
Transformational technologies

Industry architecture

The future banking architecture

Transforming banks' foundations into a next-generation architecture requires strategic technology investments that enhance operations, improve productivity, and redefine client engagement within a secured, risk-controlled environment.

A next-gen architecture leveraging hybrid cloud, data, automation, and AI is key to achieving healthier financial performance.



An intentional approach to architecture is key to modernization.

3x

higher ROI from IT programs over five years when organizations adopt hybrid-by-design principles as per IBM analysis of more than 50 client organizations[33]

What to know

Cloud migration costs have often been underestimated by banks due to several critical factors. These include the complexities of managing application dependencies, the implications of regulatory compliance, the need for cross-departmental collaboration, the extensive efforts required for application rearchitecting, and the reliance on skilled external contractors.

Recent advancements in generative AI offer promising solutions to mitigate some of these challenges, enabling a more comprehensive analysis of application dependencies, facilitating the automated re-architecting of applications to reduce migration-related costs.

Designing for hybrid cloud is essential.

What to do

A hybrid-by-design framework is key to unlocking business value, combining the reliability of mainframes with the flexibility of cloud to drive agility, speed, and innovation. Banks must take intentional steps to modernize their technology estate, harness AI, and integrate systems for future-ready outcomes:

- Rationalize and upgrade mission-critical technology with a fit-for-purpose strategy to optimize performance and reduce costs.
- Use AI to enhance mainframe performance for high-volume transactions such as fraud detection and credit decisioning.
- Streamline data sharing and workflows between on-prem and cloud environments with APIs to enable seamless collaboration and innovation.
- Equip developers with AI tools to automate code translation and refactoring, reducing time-to-value for application updates.

Complexity is the enemy of security– this translates directly into financial risk exposure.

#1

investment priority to generate business value for CIOs/CTOs is a unified security and compliance control framework[34]

79%

of banking CEOs identified cyber risk as the greatest challenge in banking over the next 2-3 years, more than any other industry (45% as global average)[35]

14 years

Financial institution leaders expect that it may take 14 years on average for quantum-safe cryptography to be fully integrated into their business[36]

What to know

In today's interconnected world, complexity is the enemy of security, and that translates directly into financial exposure. This isn't just an IT problem; it's a business issue. Because cybersecurity complexity not only obscures financial institutions' ever-important risk exposure, it actually elevates the cost of their risk.

Imperfect cloud implementations, an expanding vulnerability surface on the AI value chain, and increasing ecosystem interdependencies with business partners due to open finance make cybersecurity a heightened priority. And as banks increasingly migrate to cloud platforms and rely on external partner networks, their exposure to data breaches escalates.

Meanwhile, advances in quantum computing increase the vulnerability of well-established encryption methods. For financial institutions, cybersecurity is more expensive than ever.

What to do

By addressing complexity, organizations can dramatically improve their risk posture, reduce their costs, and unlock improved business opportunities.[37]

Banks must:

- Adopt a streamlined, cross-functional approach to governance, risk, and compliance (GRC)–driving opportunities by integrating their operations, technology, and security functions.
- Enhance performance by consolidating security solutions onto a common platform.
- Increase operational resilience by improving visibility and accountability across the digital supply chain.
- Invest in agentic AI and automation solutions with autonomous capabilities for core IT/IS services such as observability, telemetry, data integration, threat remediation, and recovery.
- Make quantum-safe data encryption the norm by establishing cryptographic agility as a new IT/IS practice area.

Effective data management is a precondition to scale AI enterprise-wide.

67%

of banking executives with AI and data responsibilities say that accuracy is hard to be assessed and are aware that incorrect information can be read as fact[38]

What to know

As financial services become more digital and embedded inside nonbanking ecosystems, new data and client interactions are generated faster than ever and farther away from traditional premises.

Banking has always been a data-centric industry, but generative AI is redefining how data is sourced and utilized. This shift impacts data management practices, bringing risks to the forefront—such as those related to confidentiality, integrity, and availability—demanding a high level of risk management oversight.

Data-rich platforms can help banks better understand customer future needs and offer timely services, transitioning into proactive partners for their clients' financial journeys.

What to do

Maintaining data privacy and earning client trust is essential. Bankers must manage risks carefully while enhancing their risk-taking capabilities by integrating new data and insights into their risk analysis. As a result, the governance of AI becomes a strategic priority.

- Develop the banks API framework on clear industry standards that foster a common taxonomy to access data promptly and securely.
- Refresh data governance frequently to keep pace with the accelerating expansion of data surfaces supporting AI transformation.
- Automate data access and availability, while managing privacy and compliance.

Technologies
Automation

Augment the workforce to reduce cost-to-serve and increase ROAE.

66%

of CEOs say the potential productivity gains from automation are so great *they* ***must accept significant risk*** to stay competitive[39]

What to know

It might be difficult to find the skills required, but banks cannot postpone investments to reskill a workforce that is too often trapped in routine tasks, unable to evolve with the speed of innovation.

To significantly impact financial performance, technology investments must concurrently address automation and augmentation to rebalance bankers' contributions to the bottom line and generate more business value per workforce unit.

AI is an automation advantage as well as an augmentation opportunity—empowering banking employees to reimagine their contributions in a digitally transformed industry.

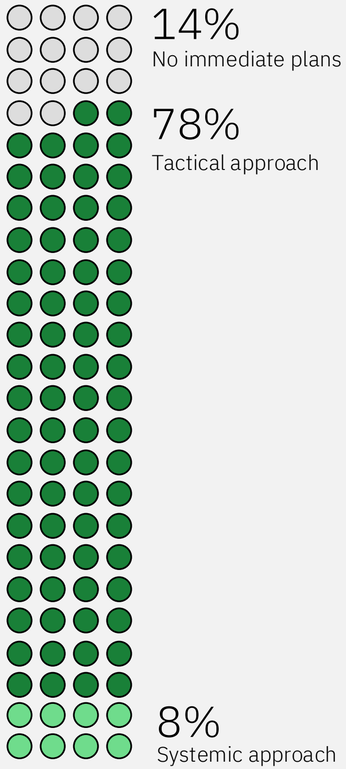
What to do

Banks can optimize workflows with AI and automation. And as agentic AI matures over the next few years, technology can run operations while people run the technology to achieve outcomes. Banks can prepare for the transition to agentic AI:

- Stay up to date on AI and autonomous automation R&D. The field is evolving rapidly.
- Establish forward-thinking education programs to prepare the workforce for working in tandem with AI assistants and autonomous agents.
- Create test scenarios from proprietary data and organizational experience to enable autonomous orchestration of workflows for business impact.
- Redesign workflows to take advantage of collaboration between employees and AI agents.

Bank on artificial intelligence as a foundation for transformation.

86%
of banking organizations are in production or preparing to go live with generative AI use cases[40]



What to know

AI is no longer just a buzzword. It is rapidly becoming a key foundation of banking strategies.

Generative AI and traditional AI models coexist in a multimodel world.

Agentic AI is emerging as the next frontier to innovate banks operations with end-to-end automation of internal processes and client engagement.

However, success requires banks to align their technology spending with robust governance platforms and a new culture where every banker is an AI risk manager.

What to do

To capitalize on the promise of AI, bankers must embrace a business and technology strategy that addresses horizontal, vertical, and foundational dimensions.

- Horizontal—across functions and operations. Centrally transform critical functions to cohesively support multiple lines of business with AI. For example, anti-money laundering can be rearchitected as a service for both retail and commercial banking.
- Vertical—inside business segments. Optimize each business segment for their unique opportunities. For instance, insurance departments can leverage generative AI to reduce the processing time of claims.
- Foundational—technological enablement. Make exponential technology the foundation that drives any operational and business transformation. For example, banks can automate the software development lifecycle, from systems design and coding to the rapid migration of legacy technology stacks.

61% of risk and compliance executives say applying AI to fraud risk detection will provide the biggest boost to business value[41]

61% of risk and compliance executives identify validation as a critical area for investing in people and skills[42]

63% of risk and compliance executives recognize that stress test simulations are vital to assess AI system reliability and identify model deficiencies to be addressed before deployment across the enterprise[43]

Agentic AI can play a transformative role.

What to know

An AI agent is a software system designed to autonomously interact with its environment, reason through complex problems, and execute actions using various tools. It goes beyond traditional software by interpreting goals, creating plans, and acting on them independently.

Emerging AI agents, powered by large language models (LLMs), surpass the capabilities of LLM-based chatbots. These agents are designed to autonomously perform a wide range of tasks beyond natural language processing. They are defined by two key abilities: "under specification," meaning they can achieve a user's goal without detailed instructions on how to do so; and "long-term planning," which involves reasoning through interim decisions that shape future actions to meet the goal. This adaptability makes AI agents ideal for complex, dynamic environments such as financial services (for example, KYC).

The full potential of AI will be unlocked when humans can delegate both simple and complex tasks to these systems, improving outcomes and freeing humans to focus on strategic, high-value work. This shift will mark a tipping point in AI's value. However, human oversight remains essential, even as delegation increases. Organizations must implement AI governance measures to harness this value while mitigating unintended risks.

What to do

Organizations looking to incorporate agentic AI need a strategic, phased approach that balances innovation with risk management. Additionally, they must determine their strategy and approach to developing agents in the enterprise and effective planning to ensure the business value is achieved, the approach is scalable, and implementations are trustworthy. This involves:

– Conducting risk assessments
– Establishing governance structures
– Investing in talent development
– Committing to ongoing monitoring.

The decision to use agentic systems depends on assessing business value and complexity. Agents excel in complex cases requiring flexible decision-making, where benefits outweigh costs, despite higher latency and risks. For example, an integrating application is the automation of Customer Due Diligence (CDD), a key part of the KYC process. Traditionally, it's a slow, manual process where compliance officers handle complex, nonstandard data, causing delays and inconsistencies. Agentic AI is poised to transforms CDD by using autonomous agents that work in parallel to automate tasks, cutting processing times, and boosting efficiency and transparency, thus strengthening trust in the system.

Quantum computing offers opportunities to expand calculations.

55%

of BFM CEOs view quantum computing as an opportunity for their company[44]

What to know

The financial services industry has long leveraged physics for problem-solving, such as the Black-Scholes-Merton model's use of Brownian motion in pricing financial instruments.

Quantum computing is poised to offer similar advantages, particularly in uncertainty management and constrained optimization, enabling first movers to uncover hidden arbitrage opportunities, enhance customer engagement through behavioral data, and respond more swiftly to market volatility. While widespread commercial applications may take years, breakthrough solutions are expected within three to five years, transforming operations across client management, treasury, trading, asset management, risk, and compliance.

Key use cases in banking and finance include targeting and prediction, risk profiling, and portfolio optimization.

What to do

Develop a strategic and collaborative approach to evaluate and prioritize use cases:

- Targeting and prediction. Explore the data modeling capabilities of quantum computers in finding patterns, performing classifications, and making predictions.
- Trading optimization. Understand how quantum computing algorithms can improve portfolio diversification, help rebalance portfolio investments to more precisely respond to market conditions and investor goals, and more cost-effectively streamline trading settlement processes.
- Risk profiling. Evaluate quantum computers' data-processing capabilities, which may speed up risk scenario simulations with higher precision, while testing more outcomes.

In closing

While it is difficult to change the wheel on a moving car, banks are asked to do just that. And they can with the right approach to technology-led innovation and smarter collaboration across the ecosystem of IT and business partners.

- There is no future in digital banking without AI.
- There is no resilience in banking operations without a well-designed hybrid cloud approach.
- There is no competitive ecosystem participation without aligning to industry standards.
- There is no sustained innovation without a unified security framework keeping pace with the expanding threat landscape.

Focus on strategic actions in these areas to successfully transform banks' business models and operations.

Revenue and growth
Financial performance is diverging across geographies and within banking jurisdictions. In our experience, investing in modular core banking allows banks to gain enough flexibility to remain relevant and expand their business even in periods of heightened uncertainty.

Cost and efficiency
Most banks struggled to become more efficient notwithstanding substantial investments in technology. In our experience, simplification, business and IT collaboration, architectural clarity, and AI-transformed operations differentiates banks that are taking the productivity lead.

Risk management and compliance
The tectonic shift in market structures and the application of exponential technology continuously challenge regulatory frameworks and banks' ability to master change comfortably. In our experience, risk and innovation can be successfully balanced when governance and culture are baked into a transparent platform.

Security
New threats are being forged everyday by rogue actors using the same technology that banks adopt to be more secure. In our experience, preparing for the worst with quantum-safe practices and investing in resilience builds banks' confidence today and helps secure their digital future.

Resiliency
In a world that has become more fragmented, operational resilience is not only a regulatory requirement (as DORA in the EU) but a strategic mandate for financial institutions to prevent, adapt to, respond to, and recover from disruptions while continuing to deliver critical financial services. Effective resilience demands robust risk management frameworks, investing in secure and scalable technology, conducting regular stress testing, and ensuring effective incident response and recovery plans.

Banking & Financial Markets

Case studies

Use case: Efficient and productive operations

Banco de Brasília bolsters mainframe infrastructure and management to achieve integration, agility, and security.

Banco de Brasília S.A. (BRB) needed to improve its mainframe monitoring infrastructure with the aim of automating activities, integrating different platforms, and monitoring data and statistics across its entire fleet of servers and services. The institution finalized the migration of its high-platform systems to the IBM z15® mainframe in mid-2018, offering its more than 7 million customers a hyper secure, agile, and hybrid multicloud-ready infrastructure. The monitoring of this new environment was still very incipient, being restricted to a few indicators.

Outcomes

By integrating mainframe monitoring with low-end platform processes, the bank has achieved greater operational efficiency, improved infrastructure performance, and strengthened security measures. Advanced monitoring tools such as the IBM Tivoli® Enterprise Portal and IBM OMEGAMON® Data Provider have provided real-time insights into the bank's entire technological landscape, enabling proactive monitoring and swift resolution of potential issues.

Solution components

- IBM Cloud Pak® for Data
- IBM z15 mainframe
- IBM Tivoli Enterprise Portal
- IBM OMEGAMON Data Provider
- IBM z/OS®
- IBM Db2®

Read the full story →

Use case: Risk and compliance

Belfius unlocks innovation in IT and cybersecurity.

Belfius Bank, a leading Belgian bank, faced the challenge of rapidly evolving financial industry and cybersecurity threats. To stay ahead, Belfius collaborated with IBM Consulting® to evolve its IT and cybersecurity solutions. By contracting with IBM for IBM Security® services and software, and IBM Z® mainframes, Belfius gained visibility and control over its technology while improving its ability to innovate. The partnership provided 24x7 centralized security operations, efficient threat detection and response, and AI-driven efficiencies, enabling Belfius to strengthen its compliance reporting and improve its overall cybersecurity posture.

Outcomes

- 73% of alerts can be processed automatically with machine learning
- 24x7 centralized security operations

Solution components

- IBM Cloud Pak® for Data
- IBM Threat Detection and Response Services
- IBM Security QRadar® Suite
- IBM Z

Read the full story →

"The tighter integration between the Belfius and IBM security teams, combined with the additional AI components of the IBM platform, provides Belfius with enhanced visibility and control over our risk and security posture."

Karine Goris
Chief Security Officer

Use case: Efficient and productive operations

CaixaBank modernizes the call center experience through omnichannel operations.

CaixaBank saw a large increase in support requests and needed to build a system that could effectively scale and route inquiries. They knew that finding a way to unify its systems on a single platform would enhance both the customer and agent experience.

The transformation needed to accomplish three things: efficiently manage the contact center, unify customer service channels, and unify their technology platform—all with a focus on improving the user experience for customers and agents.

Through the Salesforce platform, CaixaBank now provides employees with the right tools and information to make the best recommendations and build customer relationships.

CaixaBank

Outcomes

- **Consolidation:** 50+ service phone numbers condensed to one number
- **High-processing capacity:** IBM Watson® responds to inquiries, providing over 2 million answers each month

Solution components

- IBM Consulting®
- IBM Watson® technology
- Salesforce

Read the full story →

Use case: Risk and compliance

Dun & Bradstreet minimizes business risk and supplier evaluation with AI.

Dun & Bradstreet's procurement customers faced a significant challenge in evaluating and managing supplier risk, with manual processes lacking real-time visibility and resulting in time-consuming effort. To address this, Dun & Bradstreet collaborated with IBM, leveraging IBM Consulting®, IBM watsonx Orchestrate™, IBM Garage™, and IBM Cloud® to develop "D&B Ask Procurement." This AI-powered solution provides comprehensive, instantaneous insights into supplier risk evaluation, fraud potential, and revenue-based scores, enabling customers to make strategic decisions and mitigate risks. The solution combines the strength of Dun & Bradstreet's Data Cloud with IBM's AI expertise and technology, delivering a more efficient and effective way to assess supplier risk.

dun & bradstreet

Outcomes

- 10%–20% reduction in time for procurement tasks
- Empowers users with real-time monitoring to anticipate potential supplier issues, to take preemptive measures, and secure continuity and stability throughout their value chains

Solution components

- IBM watsonx Orchestrate
- IBM Consulting
- IBM Garage
- IBM Cloud

Read the full story →

"Our team was impressed by the depth of experience the IBM team brought to the table and the capabilities available through watsonx Orchestrate."

Gary Kotovets
Chief Data and Analytics Officer

Use case: Efficient and productive operations

Nationwide realizes the potential of AI with expertise and innovation.

Nationwide Building Society faced the complex challenge of safely and responsibly adopting generative AI technology to transform its operations.

To address this, Nationwide collaborated with IBM Consulting® to establish a society-wide AI strategy and operating model, creating an AI Centre of Expertise powered by Microsoft Azure OpenAI Service. The centre defined clear technical patterns and delivery principles for safely adopting and deploying AI technology, empowering employees and customers.

IBM Consulting provided data science expertise and strategic guidance on AI adoption, helping Nationwide develop a comprehensive AI strategy and governance model.

nationwide

Solution components

- IBM Consulting
- Microsoft Azure OpenAI Service

Read the full story →

> "We are very excited to embark on our gen AI journey. Like the rest of the world we have been captivated by the technology and the possibilities."

Suresh Viswanathan
Chief Operating Officer

Use case: Product and service innovation

NatWest works with IBM again to create the upgraded version of its virtual agent—Cora+.

Since the launch of its Cora digital assistant in 2017, AI—particularly IBM watsonx® technology—has been a cornerstone of NatWest's customer service strategy. Building off its current success, NatWest chose to work with IBM again to create the upgraded version of its virtual agent—Cora+.

Powered by IBM watsonx Assistant™ and built on IBM Cloud®, Cora+ delivers sophisticated, human-like interactions to customers across NatWest's website, mobile app, and social media platforms. To create this updated solution, NatWest's business and technology teams joined with the IBM Client Engineering staff to build an initial proof of concept, which was subsequently shifted to full production.

NatWest Group

Solution components

- IBM watsonx Assistant
- IBM Cloud
- IBM Client Engineering

Read the full story →

> "We're seeing some pretty transformational outcomes being delivered through [Cora+]—up to 150% improvement in satisfaction with some of the questions we're answering."

Miles Hillier
Product and Technology Director,
AI NatWest Group

Use case: Efficient and productive operations

Resona Holdings uses AI to be a leading retail bank by prioritizing trust and transparency.

Resona Holdings Inc. embarked on a mission to optimize its IT infrastructure and elevate customer service. By deploying IBM Fusion HCI, they seamlessly integrated a solution that combats financial crime threats systems into a container platform, thereby simplifying administration and cutting expenses. This IBM solution also bolstered system reliability and accelerated application deployment. The result was marked by heightened operational efficacy, improved client interactions, and robust data management capabilities.

Outcomes

- Simplified management
- Cost reduction
- Enhanced resilience

Solution component

IBM Fusion HCI

Resona Group
Resona Holdings

[Read the full story →]

"We are aiming to provide an IT environment that is effective in the active use of IT and information for the early realization of retail No. 1."

Mr. Koji Kamesui
IT Planning Department
Resona Holdings, Inc.

Mr. Masayuki Sakoda
Compliance Department AML Financial Crimes Office
Resona Holdings, Inc.

Mr. Kazutomo Komatsuzaki
IT Planning Department
Resona Holdings, Inc.

Mr. Shohei Nishino
Digital Platform
Resona-Digital-I, Inc.

SBI + IBM

Use case: Product and service innovation

An intelligent platform puts State Bank of India customers first.

SBI formed a vision for a comprehensive online platform with four pillars: a digital bank for convenience, a financial superstore offering investments and other financial services, an online marketplace with lifestyle products from partners, and an overall digital transformation with analytics that connected these options end to end.

To truly create a mobile financial marketplace serving millions of customers, as a strategic ally, IBM offered data-driven expertise that uses advanced analytics to help drive billions of dollars in business value for the bank. IBM also worked with SBI to design intelligent workflows and build a robust system of security and stability to support the solution.
This intelligent platform empowers SBI employees to work smarter and deliver an exceptional customer experience.

Outcomes

- 64 million app downloads
- 9 million daily logins
- 7 million bank account openings
- 10 million cardless ATM withdrawals
- 100+ digital customer journeys implemented since launch

Solution components

- IBM Consulting®
- IBM Garage™ Methodology
- IBM Garage Enterprise Design Thinking®
- IBM DataPower® Gateway
- IBM Cloudant®
- IBM DataStage®
- IBM Cloud® Application Performance Management
- IBM Cognos® Analytics
- IBM SPSS® Statistics
- IBM Db2® Database
- IBM WebSphere® Application Server
- IBM FileNet® Content Manager
- IBM API Connect®

Read the full story →

"We launched the digital bank mobile marketplace end to end in three months' work. It would've been impossible to do this if we did not have the IBM Garage methodology."

Rajat Saxena
CIO Data Platform, AI CoE, Data Integration Nationwide

Use case: Efficient and productive operations

TPBank enhances internal efficiency to maximize business benefits.

TPBank struggled to acquire new credit card users from its existing customer base, resulting in lower-than-expected take-up and conversion rates. To address this, TPBank collaborated with IBM to develop Credit Card Propensity models using IBM Watson® Studio, IBM Watson Machine Learning, and IBM Watson Pipelines. These models helped identify potential leads, increase conversion efficiency, and ensure credit quality. By leveraging IBM Cloud Pak® for Data, TPBank reduced development and operation time of new models by 30% to 40%, streamlining model development and deployment.

TPBank

Outcomes

- 24% conversion rate of credit card propensity model
- 15 data science and machine learning models developed and deployed with IBM Cloud Pak for Data in 2024
- 30% to 40% reduction in development time of new models
- 17% decrease in time taken for model deployment, from 36 working days to 30 working days

Solution components

- IBM Cloud Pak for Data
- IBM Watson Studio
- IBM Watson Machine Learning
- IBM Watson Pipelines
- IBM Analytics Engine
- IBM Red Hat® OpenShift®

Read the full story →

"Adopting IBM AI solutions such as Watson Studio, Watson Machine Learning, Watson Pipelines, and IBM Analytics Engine has helped the bank enhance operational efficiency and reduce development time of new models by 30% to 40%."

TPBank

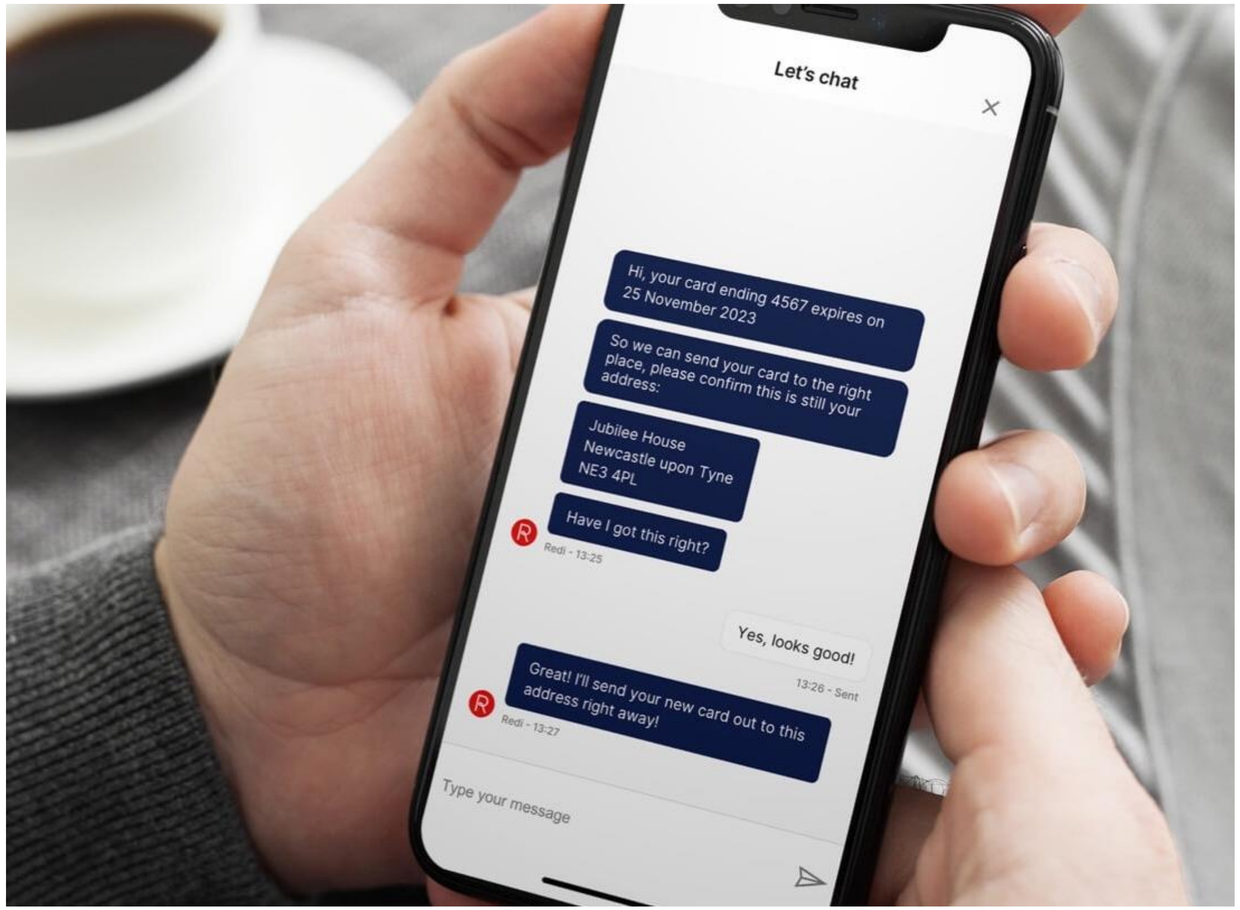
Use case: Product and service innovation

Redi, the AI-powered banking virtual assistant, boosts customer engagement.

IBM Consulting® advised Virgin Money to develop an AI-powered conversational assistant, named Redi, accessible through the bank's mobile app. With Microsoft technology as its foundation, the new assistant would interact directly with customers using natural language understanding (NLU) and connect to the company's core systems through APIs, enabling customers to make changes to their accounts in real time.

Solution component

– IBM Consulting



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■ "We have benefited from a truly exceptional IBM support team on the ground to steer us away from mistakes that have been made by other high street banks when they deployed similar services, making us an efficient fast follower."

Adam Paice
Head of Digital Proposition
Virgin Money

Banking & Financial Markets

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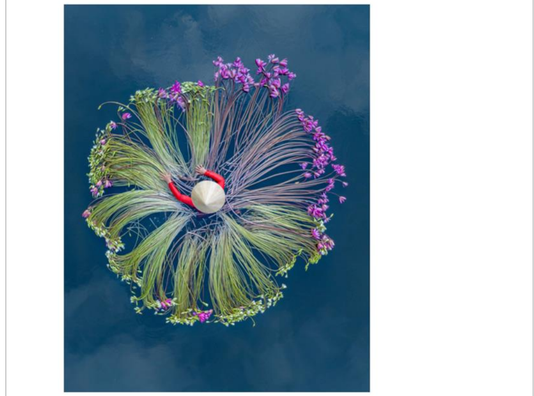

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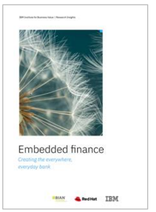

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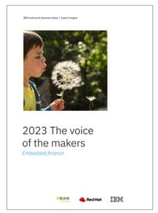

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