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FIS

TAB Global report on technology transformation strategies and priorities among leading banks in APAC

Driving World-Class Bank Transformation in Asia Pacific

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IMPORTANT NOTICE

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Foreword

Digital transformation is at the heart of banking's evolution, with banks in Asia Pacific (APAC) leading the global charge. These institutions are not only adopting advanced technologies and modernising technology stack, but also reshaping their business models to integrate embedded finance, open banking and real-time payment systems. As digitalisation accelerates, APAC banks are redefining the standards for operational agility and customer-centric innovation. However, this transformation necessitates a careful balance between innovation and business, as well as operational resilience.

This whitepaper, commissioned by FIS and produced by TABInsights, draws on in-depth interviews with over 10 of the region's leading banks to explore how they are redefining digital transformation. It highlights the strategic priorities that are shaping their transformation efforts, including the capabilities they seek to strengthen, the technologies they are prioritising and areas they are modernising to stay agile and competitive.

This paper focuses on emerging strategies to modernise technology stack and drive transformation for long-term success in a rapidly evolving landscape.

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Message from FIS

Kanv Pandit

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The rise of banking modernisation continues in Asia Pacific, with major technology transformations happening throughout the region. In many ways, Asia Pacific banks are leading the way globally through the delivery of new hyper-personalised, intuitive banking experiences, designed to address the ever-increasing demands of your customers.

Today, there's a gap between what you have and getting it to work the way it should. You want to power innovative experiences for your customers, but cost and risk stand in the way. If you manage your bank's roadmap, you know that getting there is a journey that takes making current and new work together in harmony. You need a partner that moves you forward from your starting point and is accountable for creating value quickly.

At FIS®, we're working with banks across the region as your problem-solving partner. As the inventors of financial technology, we combine decades of expertise with the industry's most comprehensive, composable ecosystem to make financial technology drive value for our Asia Pacific clients. This starts by derisking the journey to power better experiences that deliver growth, differentiation and efficiency.

There are many options and considerations for how to approach banking modernisation. At FIS, we believe the bank modernisation journey should first be grounded in your needs and strategic goals. Understanding your drivers and priorities for bank modernisation, and what you're looking to achieve from a strategic perspective, is key to delivering the right outcome.

FIS' approach enables your financial institution to modernise at a pace that reflects your needs and strategic ambitions. We're uniquely placed to deliver a modernisation journey toward a composable technology ecosystem, driven by business benefit.

FIS has significant presence across the whole Asia Pacific region, providing core banking, payments and card processing to major banks across the region and supporting millions of end-users through the provision of agile modern technology. Our Asia Pacific customers are often the first adopters of new technologies, highlighting the innovation and thirst for excellence that drives bank executives like you.

This requires a trusted partnership, as modernisation is a major journey for any financial institution to embark on. But it's a critical one that delivers real, tangible and – in some cases – nearly immediate benefits.

Together, we can fuse reliability with innovation to architect your banking future. Read on to understand how.

Executive summary

Asia Pacific (APAC) banks are setting the global benchmark in digital transformation. Their strategies emphasise three key priorities: curate, connect and collaborate. Banks are redesigning customer experiences using data and insight. They are focusing on connecting systems and stronger technology foundation to scale and meet evolving business needs. Broader collaboration across the ecosystem is driving new business models and revenue streams.

Banks in APAC are outpacing their peers in digital banking and payments: In several markets, large unbanked populations are fuelling demand for digital banking. Millennials and Gen Z make up nearly 30% of the population, and mobile-first banking has become the primary customer channel. Our research shows that on average, over 63% of APAC bank customers are digitally active, with several leading banks conducting over 90% of transactions digitally. The region leads the world in real-time payment volumes and is home to 40% of the globe's 250 digital banks. These advancements have been enabled by progressive regulation, including digital banking licences, frameworks for real-time payment, digital identity infrastructure and compliance oversight.

Ecosystem integration drives financial inclusion and service experience:
The expansion of fintech, digital banks and 'super apps' is reshaping financial services in the region. Emerging models in embedded finance, Banking-as-a-Service (BaaS) and new industry partnerships are intensifying competition and pushing incumbents to modernise. These developments enhance financial inclusion and enable integrated, accessible service models for customers.

Technology investment as a competitive advantage: Large APAC banks invest an average of about 5% of their total income annually in technology, exceeding peers in Europe. This supports high operational efficiency, with the average cost-to-income ratio (CIR) at 46%, the lowest globally. Strong returns on assets and liquidity underpin sustained innovation, strong business growth among leaders with stable headcounts. Key strategies and trends in transformation for leading banks in APAC

Redesigning insight-driven customer-centric experiences and digital journeys: Banks are focusing on strategic levers to retain their leadership in digital banking. They are prioritising data, digital, technology transformation, and talent to deliver personalised engagement and business growth. The focus on personalisation is redefining service models, deepening customer relationships and enabling intelligent, data-led services. Open banking and application programming interface (API) ecosystems are extending access and integrating financial products into users' daily platforms.

Leading banks are actively modernising core technology and architecture to meet current business needs and prepare for future growth

Agile and real-time banking with modernised core: Operational agility and the ability to innovate are key priorities. Seven out of 10 large banks are modernising legacy core systems, and 90% of leaders are adopting modular, microservices-based architecture to enhance scalability and speed. Cloud-native deployments and expanded APIs are being prioritised to enable faster product development and fintech collaboration.

Cloud as a driver of scale and speed: Cloud technology is becoming central to scaling innovation and transaction volumes. Hybrid and private cloud models dominate, balancing regulatory compliance with workload security. Banks are prioritising cloud-native infrastructure

for artificial intelligence (AI) and real-time data processing, especially in non-critical systems. Many large banks still prefer to retain core systems on-premises or on private cloud.

'AI-first' strategy reshaping next generation (next-gen) banking: AI is no longer just an enabler—it is becoming foundational for future banking. 90% of leading banks are scaling AI, especially across processes for operational efficiency, customer service, personalisation, risk and fraud management. Generative AI (GenAI) and large language models (LLM) are being adopted, initially for operational automation and gradually for more role-specific models for specialised functions. Ethical AI governance is emerging as a key priority.

Cybersecurity, operational resilience and compliance are now embedded in digital strategies. Banks are strengthening risk frameworks and adopting AI-driven financial crime tools. High-availability architectures targeting 99.99% uptime are becoming standard.

APAC banks must now shift from transformation to reinvention. Future competitiveness will depend on becoming AI-led, data-driven, cloud-native and ecosystem-integrated institutions.

- **Agile, cloud-native banking infrastructure:** Core banking modernisation is no longer optional. Modular, API-first, cloud-native platforms (MACH architecture) will enable real-time scalability and business agility in innovation.

- **Open finance and embedded banking ecosystems:** The shift from product-based banking to experience-driven ecosystems is accelerating. Embedded finance in super apps, digital marketplaces and e-commerce will unlock new revenue streams and deepen customer integration.

- **AI at scale** – AI will move from isolated use cases to a key strategy, differentiating leaders from laggards. Banks must adopt AI at enterprise scale, streamline development and innovation, deploy agentic AI for complex decisions, and redesign workflows for AI-human collaboration. Ethical, unbiased AI and governance will be critical. Real-time data flows and decentralised data frame-works will drive intelligent decision-making. Institutions must integrate the necessary scalable infrastructure and intelligent automation.

- **Resilience and regulatory readiness:** Cyber risks and compliance pressures demand zero-trust security models and active-active architectures. Real-time risk intelligence, AIled fraud detection and regulatory agility will be essential to thrive. Regulatory technology (RegTech) investments will support real-time risk management and adaptive compliance.

- **Automation and intelligent operations:** A combination of AI, robotic process automation (RPA) and hyper-automation will streamline enterprise-wide processes. End-to-end process redesign will drive efficiency, scalability and cost-effectiveness.

- **Emerging technologies and sustainable finance:** Banks must plan for investment in foundational infrastructure for quantum computing, blockchain and new emerging business models using digital assets and decentralised finance (DeFi), while exploring the convergence of AI with augmented reality/ virtual reality (AR/VR) and internet of things (IoT). These technologies will reshape product design, security and engagement models. ESG-aligned finance will drive investment in sustainable technology.

- **Workforce transformation and AI-augmented talent:** The future workforce will be AI-augmented. Banks must invest in reskilling, AI literacy and cultural change to align people with digital-first business models. Banks must evolve from cost-driven models to innovation-led growth, fostering a culture of agility, experimentation and rapid adoption of new technologies.

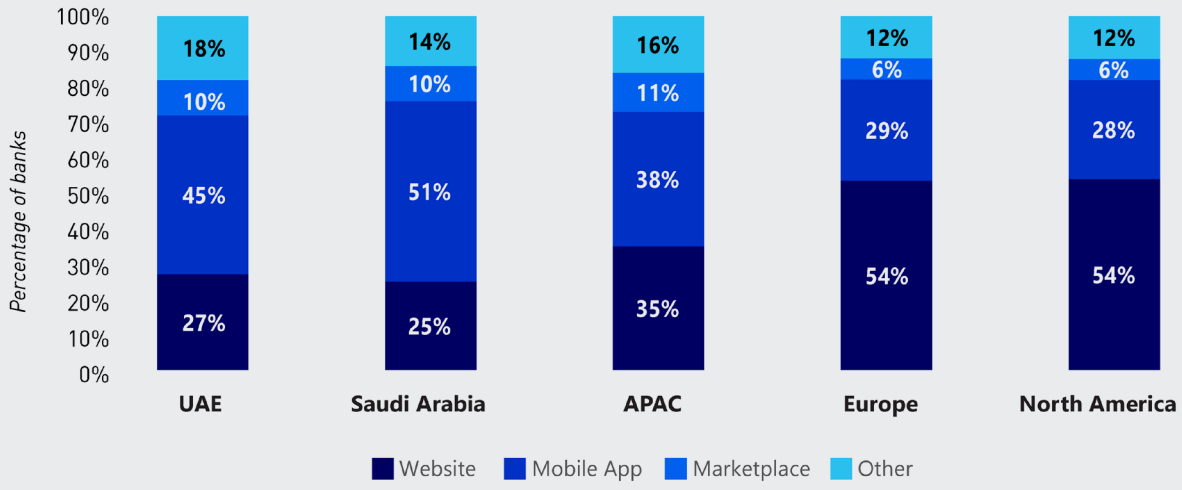
Going forward, the institutions that master data and AI-driven, agile and secure organisations that can embed themselves in the daily customer ecosystem will lead the next era of banking.

1.Introduction: The APAC advantage

APAC banks lead in digital engagement and real-time payments: Banks in this region are at the forefront of digital transformation, driven by rapid technological adoption, evolving consumer expectations and financial inclusion goals. Countries like Vietnam, Indonesia and the Philippines, with large unbanked populations, are experiencing a surge in demand for digital banking. Millennials and Gen Z, who make up nearly 30% of the region's population expect mobile-first experiences, prompting banks to invest in seamless onboarding, personalised services and intuitive digital interfaces. Mobile banking has become the primary channel for 38% of APAC banks.

Mobile as the primary digital channel for about 40% of APAC banks

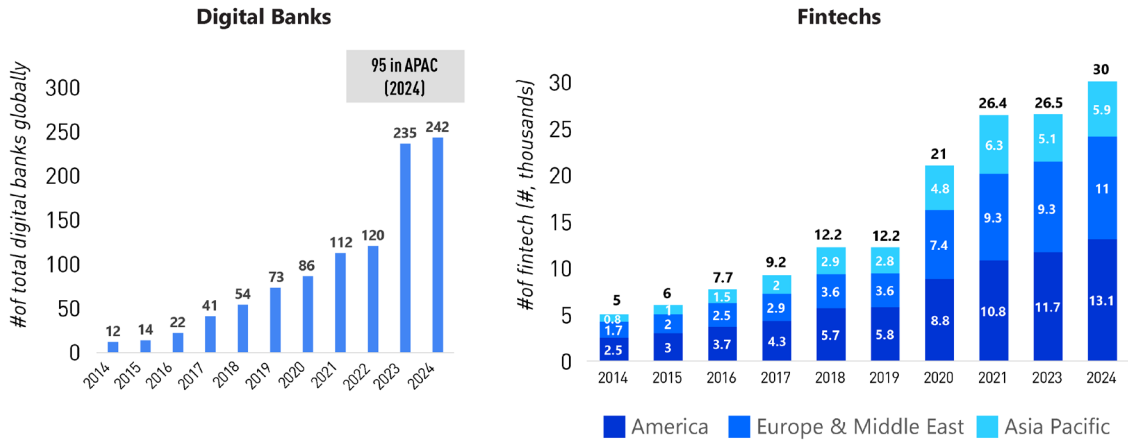
Figure 1: Most frequented channel for accessing digital services (2024)



Source: TABInsights

Expanding ecosystem of tech-enabled digital banks and fintech

Figure 2: Growth in digital banks and fintech (2014-2024)



Source: TABInsights

Asia leads in real-time payments, powered by government support, high mobile penetration, and a thriving fintech ecosystem. India, China, Thailand and Singapore have built real-time payment and digital identity infrastructures that surpass those in Europe and North America. India's Unified Payments Interface (UPI) processed 172 billion transactions in 2024, setting a global benchmark, while Thailand's PromptPay had 24 billion transactions. Meanwhile, QR code-based payments, such as Alipay and WeChat Pay, dominate retail and peer-to-peer (P2P) transactions.

Fintech and digital banks are reshaping the market: APAC is home to 40% of the world's 250 digital banks, supported by progressive licensing frameworks. Singapore, Hong Kong, Malaysia and the Philippines collectively issued over 20 digital banking licences, opening the market to tech players.

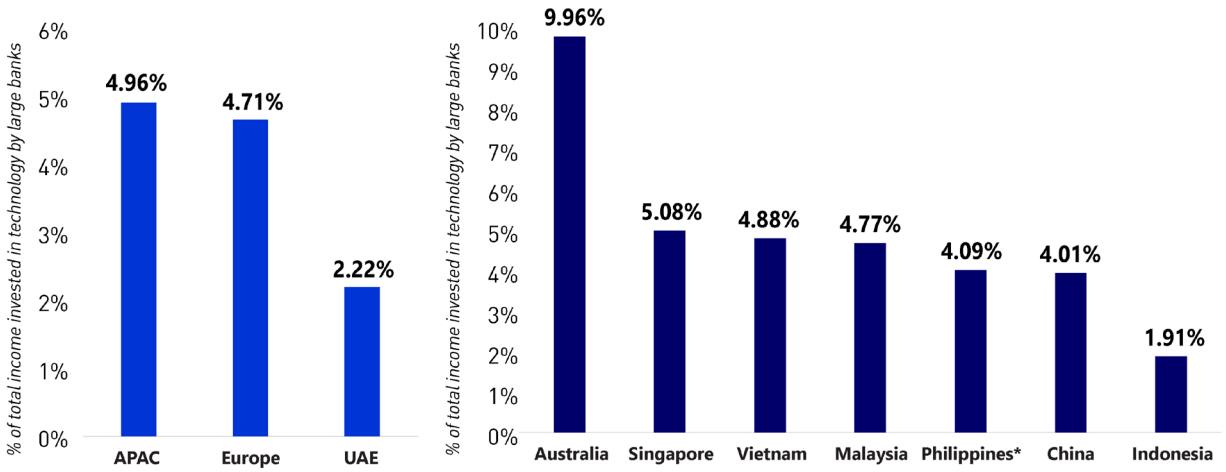
These digital-first banks leverage agile, next-gen infrastructure to capture market share from incumbents, while fintech platforms continue to expand in payments, lending and blockchain. This competition is pushing traditional banks to accelerate their digital transformation.

Beyond banking - The rise of embedded finance and partnership-driven innovation: APAC banks are integrating financial services into everyday digital platforms, creating a seamless banking experience. Embedded finance models and BaaS allow banks to monetise new revenue streams, including wealth management, insurance and lending, beyond traditional banking. Regulators are enabling this transformation with open banking frameworks, sandboxes and data-sharing policies, fostering cross-industry collaboration.

Banks are collaborating with fintech platforms, superapps and digital ecosystems to expand customer reach and enhance loyalty. Several banks have created their superapps with lifestyle offerings, while others partner with fintech and superapps to integrate finance into daily life, making banking more accessible and engaging. Fintech-led super-apps, like Gojek and Grab, already operate as central digital hubs for millions, spurring partnership-driven models for leading banks and fintechs to widen ecosystem reach.

Large banks in APAC spend about 5% of income on technology

Figure 3: Estimated average technology spending by large banks in 2024



Source: TABInsights
Notes: Estimates only for large banks in each selected countries in APAC; Philippines data is until December 2023; Australia is until March 2024

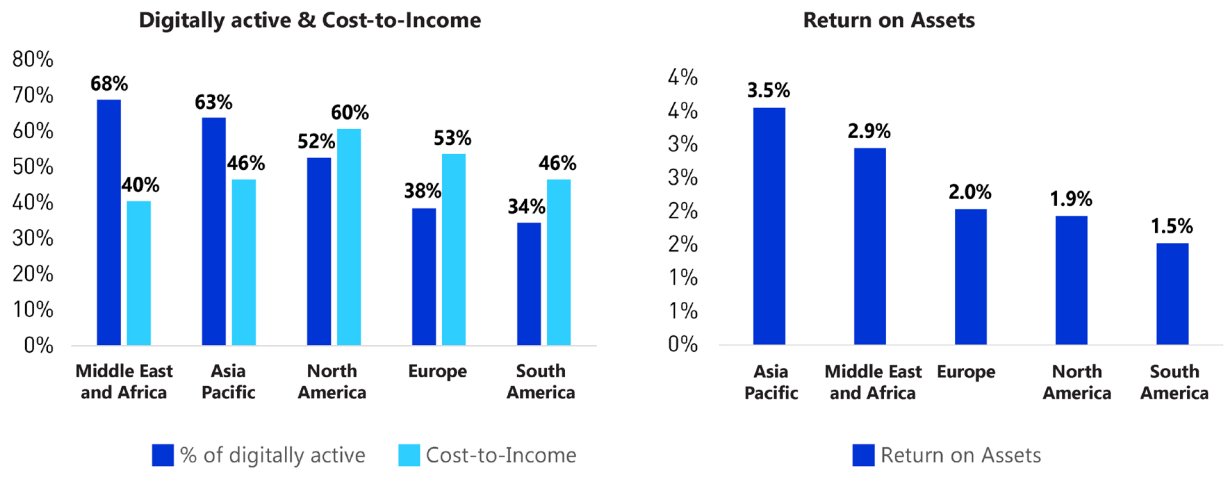
High investment in technology accelerates transformation: On average, leading large banks in Asia spent an estimated close to 5% of their income on technology in 2024, higher than peers in Europe, which spend about 4.7% of their income. Large banks in Australia and Singapore spend relatively more than their peers.

Increasing technology spending, particularly on "change the bank," is driving innovation and transformation initiatives in banks. Some leading large banks target about two-thirds of their technology expense on transformation.

Efficiency, resilience and regulatory readiness: APAC banks are among the most operationally efficient globally, achieving the lowest CIR at 46%. Digital adoption and technology transformation have reduced operating costs while improving customer engagement and service delivery. High returns on assets further incentivise digital transformation.

Banks in APAC lead in profitability and cost efficiency

Figure 4: Comparison of key banking metrics across banks in different regions



Source: TABInsights, S&P
Notes: APAC excludes China; FY 2023

Banks in APAC hold strong liquidity ratios at 131% net stable funding ratio (NSFR) and a 200% liquidity coverage ratio (LCR), offering stability and the financial flexibility to accelerate technology-driven digital transformation.

Meanwhile, regulators are enforcing stricter compliance measures to enhance resilience. The Monetary Authority of Singapore (MAS) mandates banks to identify critical services and implement robust recovery plans. The Australian Prudential Regulation Authority (APRA) is strengthening operational risk management and board-level accountability. Several regional regulators are also enforcing stricter data privacy laws and stronger cybersecurity frameworks.

Growing cyber threats and fraud risks have increased regulatory pressure, with real-time fraud detection and transaction monitoring now mandatory in many APAC markets. These developments are pushing banks to invest in RegTech and to balance security and fraud prevention with user experience.

Future-ready banking: The road ahead: Banks are preparing their technology foundations for the next wave of transformation and emerging technologies. AI, blockchain, automation and cloud adoption are reshaping banking, making digital transformation an ongoing imperative rather than a one-time initiative. Emerging technologies such as Web 3.0, DeFi, agentic AI, immersive experiences and quantum computing are on the horizon. Several leading banks have started preparing for these developments.

Given these dynamic industry changes and the region's rapid economic growth, banks in APAC are not just transforming quickly, they are setting the global benchmark for digital banking innovation.

On average, leading large banks in Asia spent close to 5% of their income on technology in 2024, higher than their peers in Europe

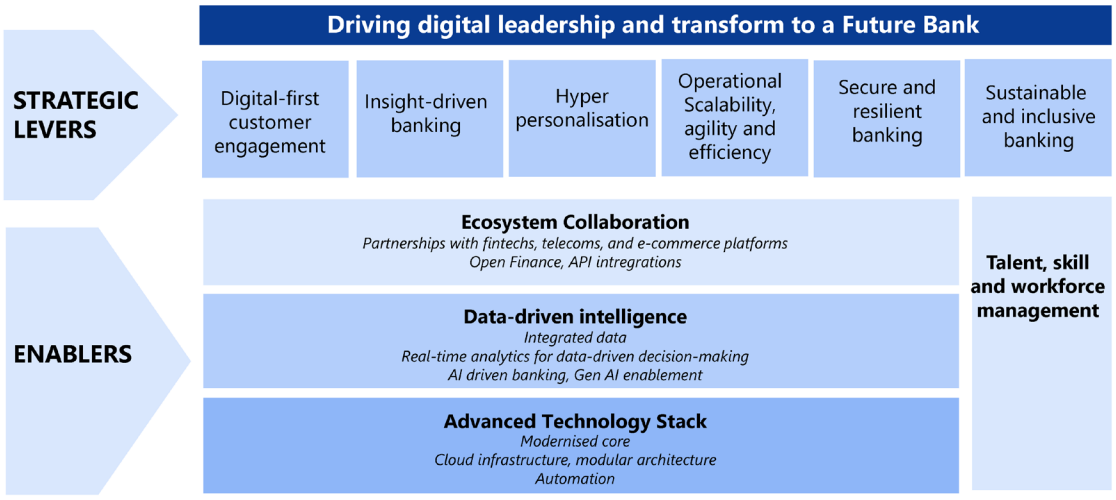
2. Strategic elements of transformation

2.1. Key strategic drivers and objectives for banks

The APAC banking industry is undergoing rapid transformation, driven by digitalisation, evolving customer expectations, regulatory shifts, growing competition and emerging risks. Insights from discussions with over 10 leading large banks in the region reveal the current strategic priorities driving their transformation journeys.

Banks focus on strategic levers to build leadership in digital banking

Figure 5: Key strategic focus of digital transformation among leading banks in APAC



Source: TABInsights

Customer-centric experience as a key driver: Most surveyed banks are prioritising enhanced digital engagement and data-driven personalisation to deliver more customer-centric experiences. There is an increased emphasis on integrating financial services into digital ecosystems, reaching new customer segments and responding more effectively to customer needs. Banks aim to become the central platform for customers' daily financial needs, transforming the banking experience and empowering customers through smarter, real-time banking services.

Advanced analytics play a central role in driving productivity, offering hyper-personalised recommendations and tailored services. Mobile-first strategies are improving accessibility and engagement by delivering dynamic product offerings.

Strong focus on business enablement with modern technology foundation: Constantly growing digital transaction volumes, and the need for operational scalability, efficiency and resilience, have pushed technology modernisation to the forefront. Leading banks are prioritising the modernisation of technology stacks to drive agility while ensuring regulatory compliance. Banks are accelerating back-end modernisation, adopting cloud computing and upgrading core infrastructure. This is accompanied by a strong emphasis on process automation.

Shift to data- and insight-driven banking: Banks increasingly prioritise data-driven decision-making, with advanced analytics embedded across their operations. Leading banks are investing in real-time data capabilities and integrated data platforms

to drive new revenue models. AI-driven predictive analytics are refining customer engagement strategies and sales. Industry leaders also highlight the increasing focus on ethical considerations and data privacy frameworks.

Ecosystems expansion, open finance and business growth: Most leading banks are focused on ecosystem expansion, improving customer access and revenue streams through fintech partnerships, embedded finance and open banking initiatives. Financial products are increasingly integrated into e-commerce, ride-hailing and fintech platforms. These enable banks to explore new market opportunities and expand their geographical presence. They are prioritising embedded financial services, small and medium-sized enterprise (SME) financing, digital lending capabilities and instant loans on third party platforms. Some banks are also expanding features such as gamification, loyalty programmes, instant approvals and in-app shopping to enhance customer engagement.

Banks are accelerating back-end modernisation with cloud computing, core infrastructure upgrades and increased process automation.

Regulatory compliance, cybersecurity and resilience remain critical: Geopolitical risks, rising cybersecurity threats and regulatory complexities continue to drive investment in resilience. Additionally, sustainability and environmental, social and governance (ESG) initiatives are gaining traction, with green financing, carbon-neutral commitments, and ESG-aligned lending becoming integral to banking strategies.

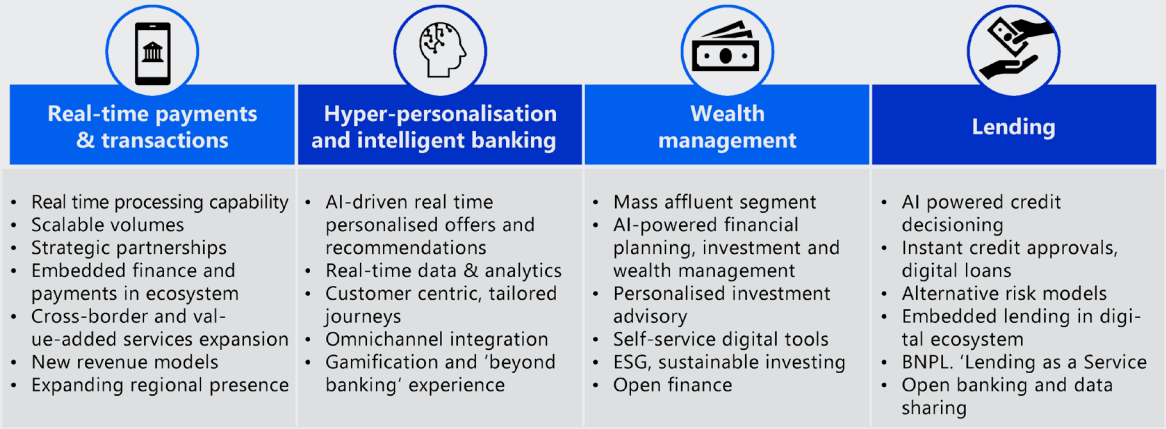
2.2. Key business priorities for banks

Leading banks in APAC are refining digital strategies across business lines to drive customer and business growth. They are focusing on more personalised and intelligent capabilities in traditional banking areas while seeking expansion into new growth avenues. Large banks are expanding their regional presence and cross-border services.

Banks are focusing on advanced insights to drive stronger loans growth and digital enablement especially for SMEs. SMEs are emerging as a key growth area, with

Banks are strategically prioritising and enabling business segments for future growth

Figure 6: Key business focus areas



Source: TABInsights

banks offering tailored tools for financial insights, cash flow optimisation, and support in e-commerce, accounting and human resources (HR) operations. For corporate customers, leading banks now offer integrated 'beyond banking' services, improving cash, financial reconciliation and business management. Wealth and investment services are also expanding, with enhanced digital offerings for private banking services.

Sustainability now plays a central role in banking strategy, with ESG-aligned lending and investment services forming an integral part of their offerings.

2.3. Transformational leadership and cultural change

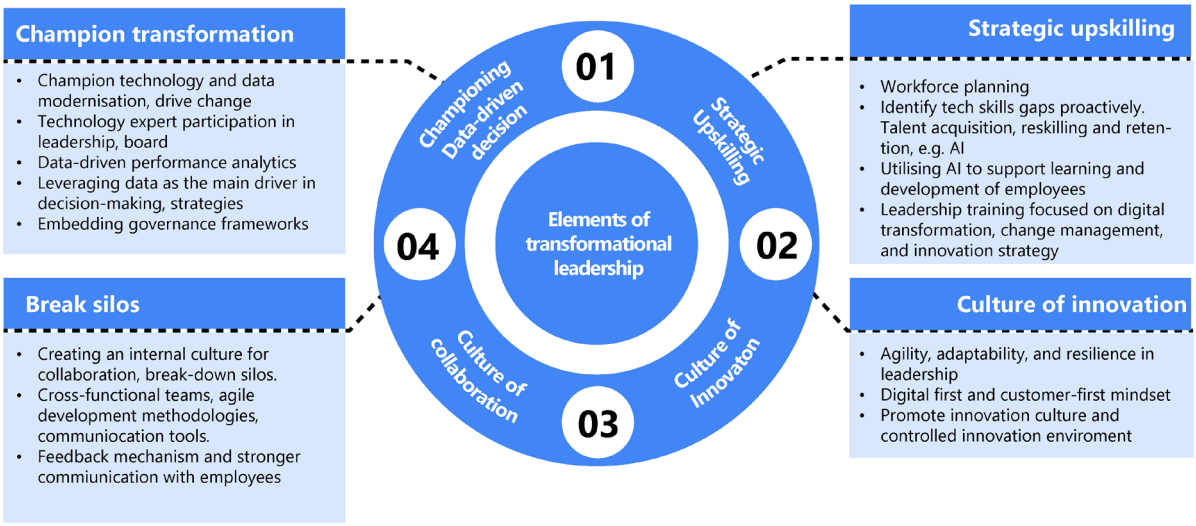
Given these strategic imperatives, leading banks are pursuing holistic transformation, encompassing people, processes and technology to innovate with speed and prepare for the future. Strong vision and leadership are critical for championing enterprise-wide transformation.

As banks accelerate their digital transformation, success will depend on their ability to enable holistic transformation. Leading banks realise the need to bal-

Banks are focusing on advanced insights to drive stronger loan growth and digital enablement, while offering integrated 'beyond banking' services to corporate customers.

Digital transformation demands a fundamental shift in leadership

Figure 7: Elements of transformational leadership across banks in APAC



Source: TABInsights

ance customer-centric innovation, operational efficiency and regulatory resilience, laying the foundation for technology-driven growth. They focus on data, talent and an innovation culture.

Banks are adding global talent to their leadership team and hiring global consultants to strategise and drive change. Leading banks are actively focusing on expanding technology teams, as well as reskilling staff, given the growing adoption of emerging technologies such as AI and cloud.

They are embracing agile methodologies, moving from traditional silos to a more efficient, collaborative and cross-divisional teamwork approach. Leading banks plan for holistic change across people and processes to redesign the customer-centric journey, with talent management as a core pillar of their organisational transformation.

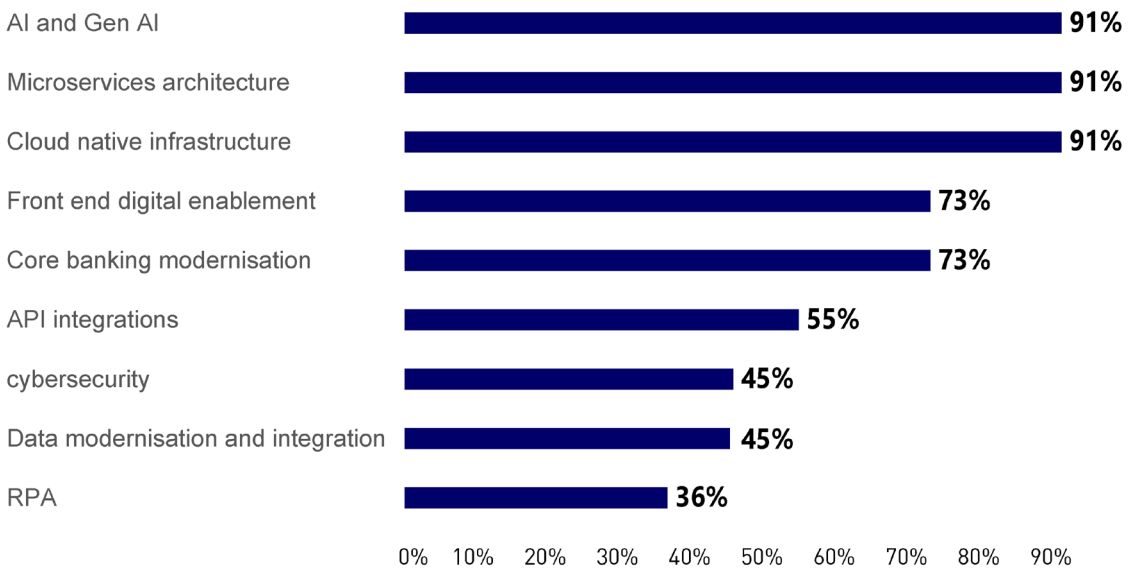
3. Key transformation technologies

3.1. Current technology priorities

As APAC banks continue their digital transformation journeys, there is a clear shift towards building robust, scalable and flexible technology infrastructures. Most banks have prioritised digital banking and mobile-first capabilities, recognising that these are essential for providing seamless customer experiences. However, an increasing number of banks are also emphasising the need for solid back-end infrastructure that will support long-term innovation and future growth.

Leading banks in APAC focus on AI enablement and technology foundation

Figure 8: Current key technology priorities of selected leading banks in APAC



Source: TABInsights Based on the responses of 11 banks

Discussions with leading large banks in APAC show that 90% of surveyed banks are actively investing in AI initiatives. These signal a broader shift towards data-driven, customer-centric banking. In parallel, composable architecture and cloud adoption have become central to banks' long-term strategies. Core banking modernisation remains a key priority for many banks, ensuring that systems are upgraded to meet future business demands. Banks are also expanding open banking capabilities, positioning themselves to thrive in an increasingly interconnected financial ecosystem.

3.2. Core system advancement and modernisation approaches

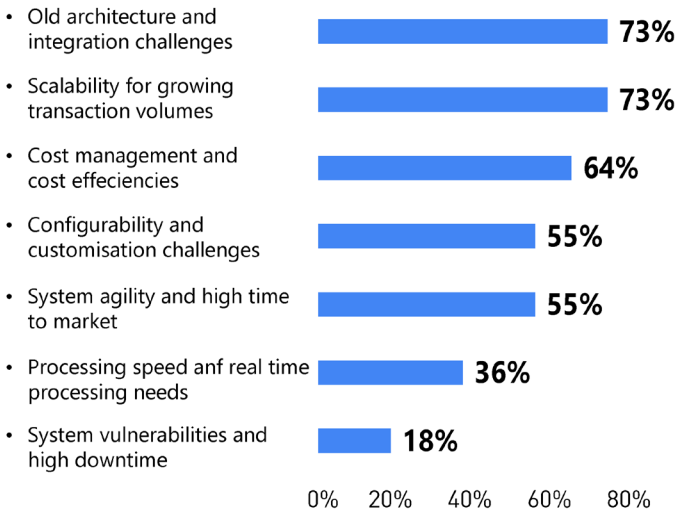
- ***3.2.1. Key challenges and concerns with legacy core systems*** Discussions with banks highlight current limitations in legacy core systems, driving the need for technology transformation. High costs, outdated architecture, scalability limitations and integration constraints hinder banking operations.

- ***3.2.2. Evolution of core banking systems***
  The industry is seeing the evolution of core systems from monolithic systems to next-gen platforms, designed for scalability, real-time processing and seamless integration with service partners. Leading banks are modernising their tech stack and core banking platforms. Meanwhile, new digital-only banks are often born on cloud native next-gen platforms, gaining a competitive edge.

- ***3.2.3. Core transformation approaches of banks in APAC***
  Survey shows that over 70% of banks are modernising their core systems, but with varied strategies depending on system capabilities, customisation

Outdated architecture and scalability are the topmost challenges

Figure 9: Key challenges faced by banks in legacy core

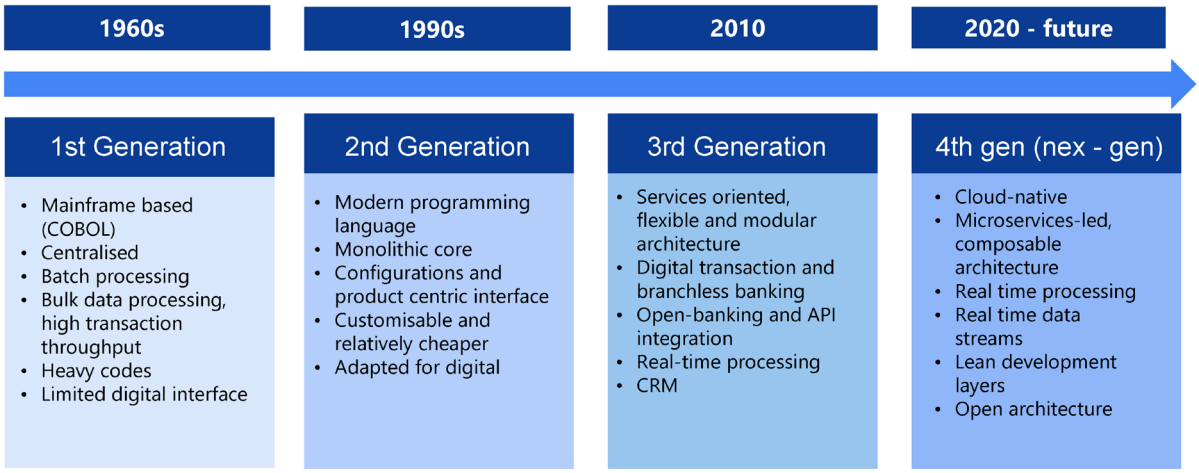


- **Outdated architecture and limited flexibility:** Limited flexibility, rigid architectures and outdated programming languages with limited API capability.
- **Scalability and performance limitations:** High transaction volumes, slow response times and throughput issues. Resource-intensive processes add operational complexity.
- **High maintenance costs and complexity of upgrades:** Highly customised architectures led dependencies, difficult upgrades, shortage of legacy-specific expertise and high operational overheads.
- **Limited real-time processing:** Batch processing-based systems with limited real time and instant transactions and analytics.
- **System downtime and resilience issues:** High downtimes for updates, lower service availability. Outdated software led security vulnerabilities.

Source: TABInsights

Core banking has evolved to next-gen, cloud-native architectures

Figure 10: Evolution of core banking systems



Source: TABInsights

and business complexity. There is no 'one-size-fits-all' approach. Most large banks prefer a phased modernisation, while some smaller banks opt for a big-bang core replacement. Some banks are partnering with core banking vendors to accelerate modernisation and exploring cloud-based platforms for faster deployment

Complete core replacement strategy

A full core replacement can enable significant performance gains and a clean break from legacy constraints, accelerating innovation. However, extensive customisations, integration with peripheral systems and large-scale data migration pose challenges and risks in the implementation. This is often a lengthy and complex transformation that needs to be well-planned.

Some APAC banks have recently undertaken full core transformations: Vietnam Maritime Commercial Joint Stock Bank (MSB) migrated to a modern, open- architecture core, shifting from proprietary to a private cloud system. This allowed the bank to double transaction capacity, achieve millisecond response times and reduce maintenance costs. Another large Vietnamese bank replaced its core with a composable architecture and lean core, enhancing scalability and service delivery.

Another bank in the Philippines is currently implementing a core system hosted on a private cloud while transitioning to composable and containerised architectures.

Among other recent examples, BIDV in Vietnam implemented a new core banking system that enhanced its scalability and service delivery capability.

Modernising the existing core

Some banks with complex products and extensive customisations prefer gradual modernisation of the tech stack. A common approach is 'hollowing' out the core by extracting major applications out to the core (such as payments, lending, reporting), reducing processing loads and improving flexibility. By

Over 70% of banks are modernising their core systems, with varied strategies depending on system capabilities, customisation and business complexity.

Traditional banks pursue modernisation pathways to futuristic capabilities

Figure 11: Common core technology modernisation goals

Current	Target
• Batch processing • Lack of real time, event driven data • Monolithic, legacy architecture • Closed system, difficult to integrate • High downtime, maintenance time • Slow response time, high time to market • High operating, maintenance costs • Inflexible, heavy customization • Talent shortage for old systems	• Real-time processing • Real time data ingestion and streams • Microservices-based modular architecture • Cloud-native • Open, Advanced API • Agile, high availability • High-cost efficiencies • Faster development, product release • Continuous deployment • Stringent security standards

Source: TABInsights

Many large banks prefer the gradual modernisation of their core and architecture

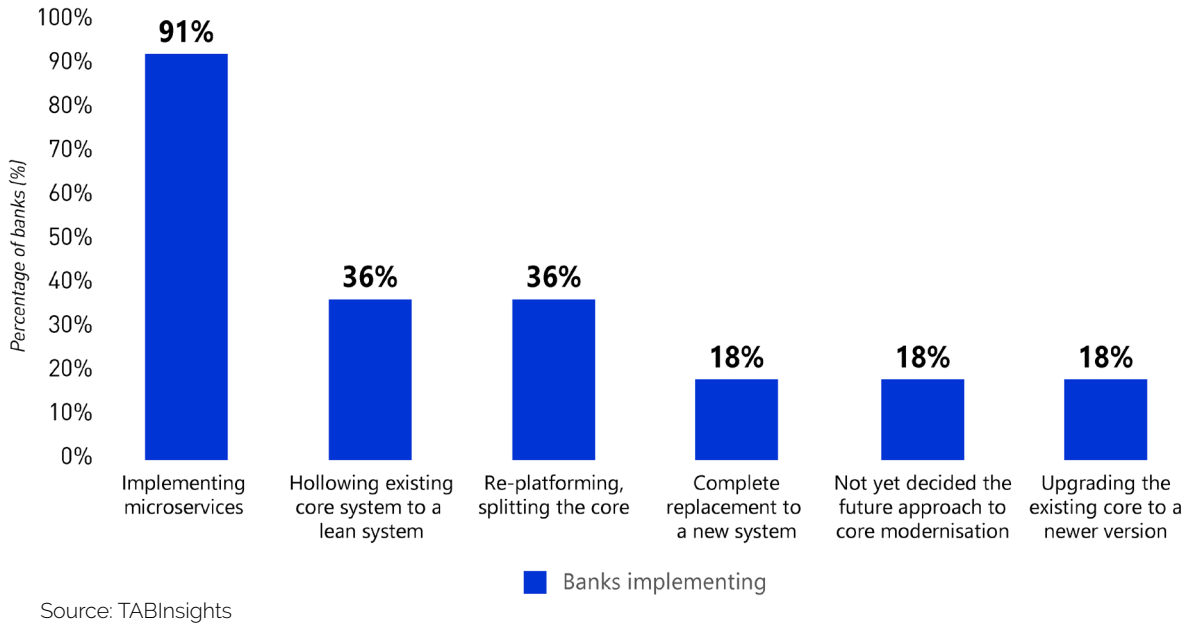
Figure 12: Common approaches in core modernisation

Core Banking modernisation approaches in APAC banks			
Gradual modernisation			**Full replacement**
Orchestration, Re-factor, Re-platform	**Lean Core (Hollow-out)**	**Dual/multi-Core (Split the core)**	**Complete core replacement**
• Gradually upgrade and re-platform existing core instead of replacing. • Includes upgrading to newer versions, adding hosts • Adopting microservices • Code transformation. • Lower risk but not complete overhaul and longer transition time	• Reduce processing load by extracting key applications from existing core (e.g., payments, lending, reporting) and manage externally • Extends the lifespan of the legacy core with less disruption but does not fully eliminate legacy constraints.	• Split into two or more separate parallel core systems • Focus on innovation and real time with the new core • Reduces transaction bottlenecks and enhances performance but higher operational and architecture complexity.	• Complete replacement of the legacy core. • Shift to advanced capabilities, tech overhaul • More popular with small banks, digital banks • Stronger performance improvements, complete legacy overhaul. But is high risk and more complex and challenging.
Kasikorn Bank, TP Bank, RCBC, BCA	**Security Bank, Techcombank, RHB**	**TP Bank, Kasikorn Bank, Security Bank**	**BIDV, MSB**

Source: TABInsights

Large banks prefer architecture modernisation and 'hollowing out existing core'

Figure 13: Current approach in core modernisation in selected banks in APAC



Source: TABInsights
Based on responses from 11 leading banks in APAC

implementing applications outside the core, they aim to improve flexibility, scale the transaction processing capability and improve speed. Banks are also shifting business logic into orchestration layers, keeping lean core systems for their main processing functions of deposits, loans and statement of records. Few banks also explore a shift to dual dual-core systems model.

Nine out of 10 banks surveyed are adopting microservices architecture to modernise their tech stack to enhance agility, scalability and operational resilience.

A leading bank in the Philippines had moved its general ledger and reporting function out of core banking system. It also split the system into two units—one for CASA (current account and savings account) and another for lending. This modular approach improved flexibility, stability and innovation speed while ensuring minimal disruptions. Decoupling integration layers allowed faster system updates, reducing time to market.

RHB Bank in Malaysia has moved statements, product innovation and product bundling outside its core system. This improved its processing capability, flexibility and speed. Adopting product bundling solutions facilitated it to manage complex product configurations outside the core system.

Tien Phong Commercial Joint Stock Bank (TP) in Vietnam has upgraded to a newer version of its core banking system. The bank is now exploring a dual-core model, one for real-time digital transactions and the other for traditional banking services. This upgrade increased its transaction speed significantly, improved concurrency and scalability for growing transaction volumes.

Several banks focus on refactoring and optimising the performance of the system by adding infrastructure and modernising the architecture.

Kasikornbank in Thailand is facing challenges due to high transaction volumes and decided to add a new host system. This doubled its capacity and scale for the next five years, while it evaluates the next-gen core capabilities for the future.

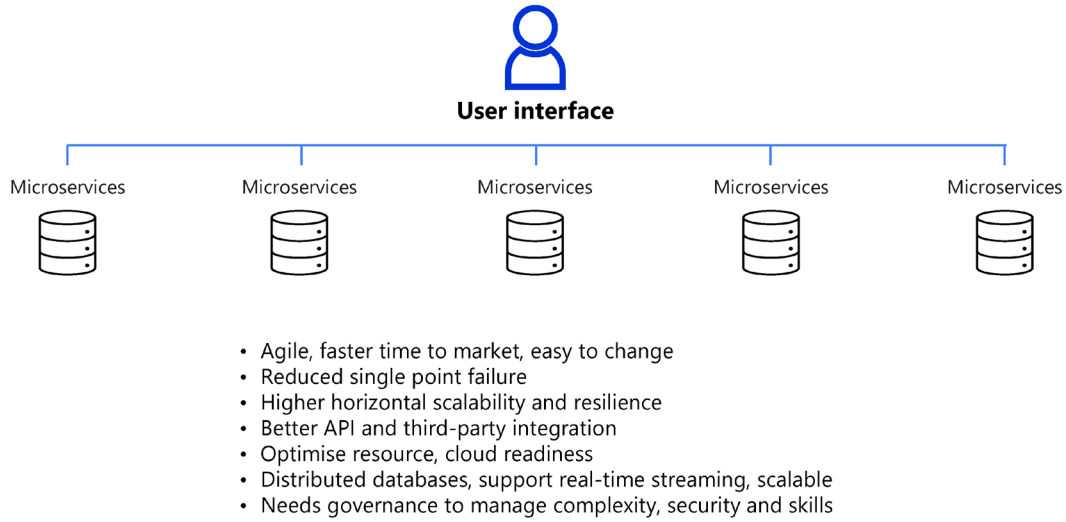
Bank Central Asia (BCA) Indonesia wanted to scale its mainframe-based core system to grow transaction value. It added logical partitioning within the core banking, enabling segregation of workloads to optimise performance and scale efficiently. The bank now plans to split its core into separate units to better manage the growing transaction volume. It will have two active machines and one backup machine to double the transaction capacity.

3.3. Composable microservice architectures for modular scalability

Nine out of 10 banks surveyed are adopting microservices architecture, as they aim to modernise their tech stack to enhance agility, scalability and operational resilience. Microservices allow applications to be built as independent, loosely coupled services, each handling a specific business function. These services communicate via APIs and can be developed, deployed and scaled independently. If one part of the system fails, the others keep running, ensuring minimal disruption to services.

90% of leading APAC banks are transitioning to a microservices architecture

Figure 14: Features of microservices architecture



Source: TABinsights

BCA upgraded its technology architecture to handle a 35% increase in transaction volumes. By transitioning from a monolithic to a microservices-based system, the bank enabled a modular and agile tech stack, allowing it to scale specific components as demand grows. Micro front-ends decentralised front-end logic, enabling independent user interfaces. The bank also adopted distributed databases, separating transactional and non-transactional data to scale storage. Additionally, indexing was introduced to optimise core banking system performance. These changes significantly improved its transaction processing capability per second.

Several other banks are focusing on orchestration layers using microservices and APIs, enabling real-time data streaming. Leading banks are focusing on containerised environments, which improve deployment speed, horizontal scalability and concurrent user capacity.

3.3.1. API for seamless collaboration

Leading banks are expanding APIs to enhance customer experience, improve operational efficiency and build digital partnerships. APIs facilitate real-time transactions, personalised services and ecosystem integration with fintechs, payment networks and digital platforms. By embedding APIs into core modernisation strategies, banks are reshaping operations into more open, collaborative and data-driven ecosystems. Key benefits include:

- Enhanced customer experience through seamless digital interactions and service expansion.
- Real-time data exchange improves transaction speed and service accuracy.
- Open banking and fintech collaboration enhance access to new markets.
- Accelerated product development and service integration, enabling faster digital

products, embedded finance and streamlined customer onboarding

- New revenue models through API monetisation and partnership-based BaaS.

Expanding ecosystems through APIs: Leading banks target an API-first strategy to fuel growth, integrating the digital journey. This is improving productivity, flexibility and bank-agnostic connectivity across fintechs, merchants and corporate partners. Several banks aim to expand financial inclusion through ecosystem, connecting with rural banks, microfinance institutions and payment systems.

RCBC in the Philippines, is expanding its ecosystem through strategic partnerships with fintechs, focusing on collaboration, coopetition and co-creation to better serve Filipinos. Notable partnerships include GCash, a leading fintech; Higala for its open payment platform; and CIBC Canada, for fee-free remittances to Filipino Canadians. The bank is connecting smaller financial institutions to national payment systems like InstaPay and PESONet and exploring BaaS and Lending as a Service (LaaS) for corporate banking integration. Recently, RCBC launched Digital 2.0, featuring an API Marketplace for creating platform-based services and is using APIwiz to manage and govern APIs in real-time, starting with digital remittance APIs.

A leading state-owned bank in Vietnam is advancing open banking through secure data sharing and seamless API integration with partners. The platform offers real-time payments, automated document collection and a developer portal for easy API deployment and enterprise resource planning (ERP) system integration. With over 400 partners, the bank has boosted digital transaction volume, enhanced customer experience and operational efficiency.

API marketplaces are gaining traction, offering a platform for organisations to discover, access and integrate third-party APIs.

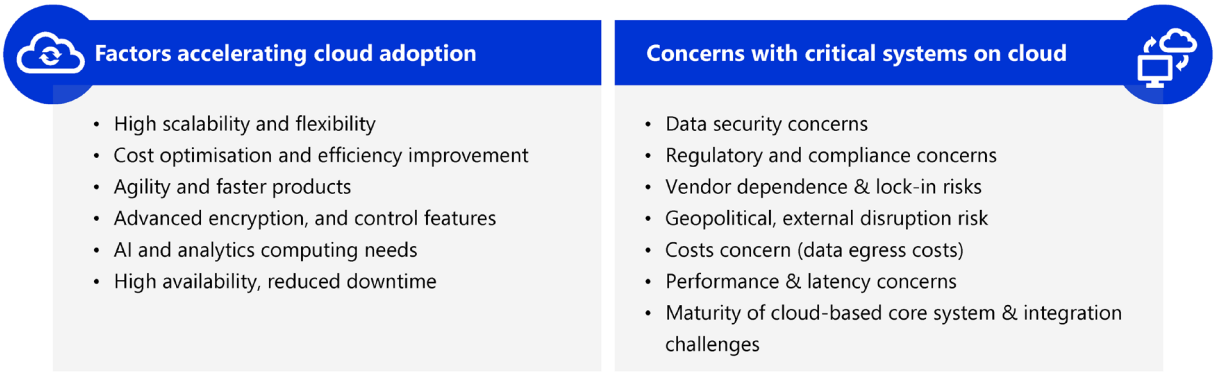
As API adoption grows, banks must also mitigate security risks, data privacy, authentication and fraud prevention. Leading banks are strengthening API security with tokenisation, OAuth-based authentication and regulatory-compliant data-sharing frameworks. API governance frameworks include robust encryption, tokenisation, and multi-factor authentication. Many also implement customer consent mechanisms to ensure compliance with evolving data protection regulations.

3.4. Cloud adoption in banks

Most leading banks in the region are actively exploring cloud adoption, though strategies and pace vary. Many banks in the region are already migrating non-critical systems but they remain cautious about migrating critical systems to the public cloud due to regulatory, security and operational concerns.

Scalability and efficiency needs accelerate cloud adoption, but concerns remain in migrating critical systems to the public cloud

Figure 15: Key drivers and concerns in cloud adoption



Source: TABinsights

3.4.1. Factors impacting the adoption of cloud

Leading banks are accelerating cloud adoption to improve processing speed, resource optimisation, scalability and enable faster deployment of digital services. Cloud-based elastic computing enhances high-volume transaction processing, optimising resource allocation. It optimises infrastructure costs, minimises reliance on physical servers and improves service uptime. Real-time AI-driven systems increasingly rely on cloud-supported compute-intensive models.

Despite these benefits, many large banks retain core systems on-premise or in private cloud due to concerns over data ownership and security breaches. Regulatory restrictions—such as data sovereignty laws—often mandate onshore storage, limiting full-scale cloud adoption. Heavy reliance on cloud providers and potential macroeconomic and geopolitical risks also remain a concern.

While the cloud reduces hardware costs, the data transfer and egress fees can escalate expenses, requiring strict cost governance. Some banks also pointed to latency issues in mission-critical workloads and the cloud systems' ability to meet the complex financial services capabilities requiring high configurability.

3.4.2. Cloud adoption strategies

While the cloud strategies vary across banks, the following are the key emerging trends:

Hybrid cloud strategy as preferred model: Many banks are adopting a hybrid cloud strategy, combining on-premises, private and public cloud to optimise performance, security and compliance. Some large banks use public cloud for non-critical systems, AI workloads and customer-facing applications due to its scalability. Some banks

have prioritised high-volume systems like real-time payments, customer onboarding and customer relationship management (CRM) to the cloud, while private cloud is favoured for customer-sensitive data and critical systems. Selected few banks are transitioning majority systems to a public cloud but have a hybrid instance with data back-up on-premises.

Critical systems still on-prem: Eight out of 10 banks currently keep core banking systems on-prem, with some upgrading it to the private cloud. Most banks are prioritising non-core applications to cloud-first.

BCA developed its private cloud infrastructure, shared across all subsidiaries for greater synergy. It focused on the standardisation of architecture, infrastructure, services, security and flexibility, while also enabling the bank to scale with the public cloud providers when needed. It plans to keep the core banking systems on-premises due to data privacy, infrastructure and security concerns.

Cloud-native for new developments: While banks may not yet be fully cloud- native, many banks target that new applications are built using cloud-native with containerisation. Some banks fully rearchitect applications for cloud scalability, while others take a lift-and-shift approach.

Vietnam Technological and Commercial Joint Stock Bank (Techcombank) invested $500 million towards digital transformation including cloud migration. It has now migrated majority of its compute power to public cloud, supporting its high transaction volumes and growth. To alleviate security concerns, the bank currently maintains an on-prem database back-up. This, along with broader digital enablement, allowed the bank to scale to meet its customers growth from six million to over 15 million customers within four years. Cloud reduced its production time, optimised lending decisions and enhanced the use of analytics. Its core system, though currently on-premises, is also planned to be migrated to cloud in the future.

In another example, Tien Phong Commercial Joint Stock Bank (TPBank) in Vietnam moved around 80% of its systems (excluding core) to the cloud and ensures that all new developments are cloud-ready. Migrating retail banking to the private cloud enabled the bank to double its customers and transactions while maintaining the same operational team, cutting hardware costs by 60% and significantly reducing downtime.

Regulatory landscape drives cloud strategy: Regulatory requirements and guidance heavily influence cloud adoption decisions. Banks move critical workloads to the public cloud based on data residency laws and regulatory advisory. They also evaluate the presence of in-country cloud infrastructure from global providers when making decisions.

3.5. AI application in banks

Across the region, there is an accelerated adoption of AI and ML, with 90% of surveyed banks in APAC already experimenting with AI and GenAI use cases across functional areas.

3.5.1. Evolving applications of AI

AI and ML have transformed banking operations with advanced analytics and predictive insights, driving widespread adoption. Over the past few years, GenAI and LLMs have democratised the use of AI. The real shift is occurring with Agentic AI, where banks are beginning to test autonomous decision-making agents, paving the way for self-learning, scalable automation in banking operations

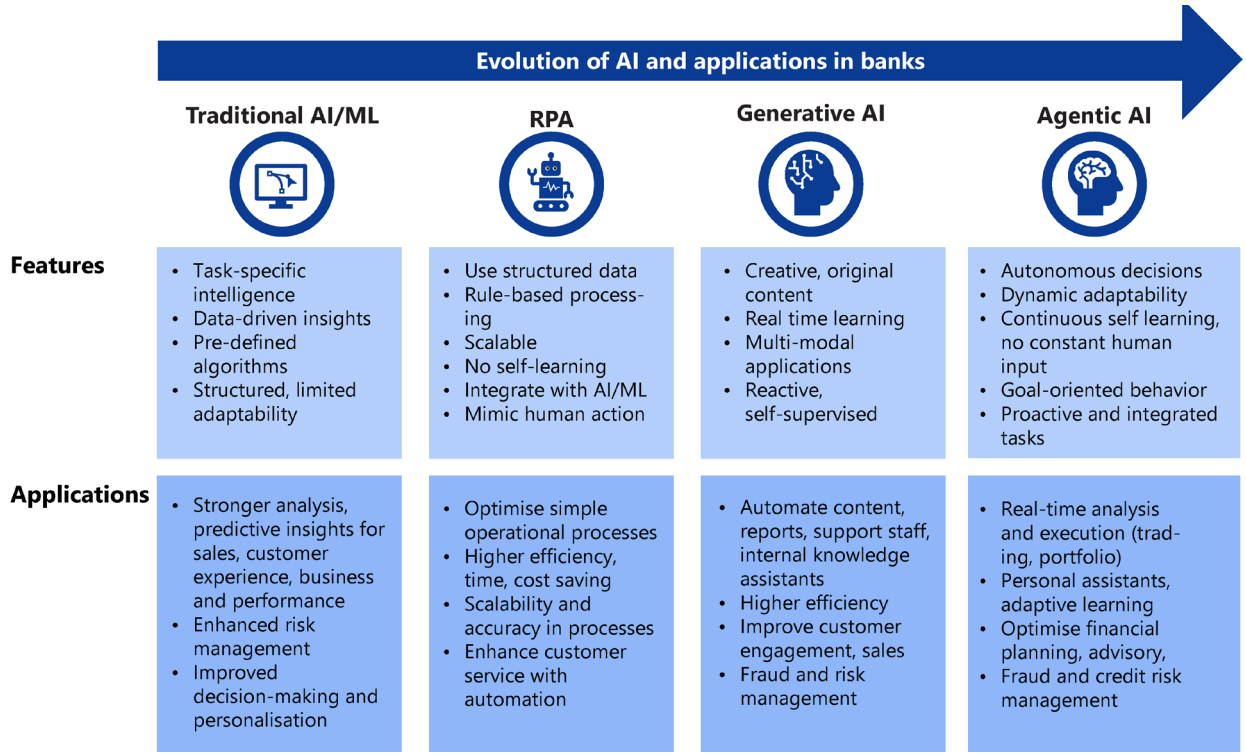
3.5.2. Emerging AI and GenAI use cases

APAC banks are rapidly scaling AI and GenAI to streamline operations, reduce costs and enhance decision-making. Leading banks are deploying AI across a range of processes.

Kasikornbank actively uses AI in credit scoring, underwriting, marketing and fraud detection. It developed its own LLM to enhance productivity in system development, coding, testing, deployment and monitoring. Its AI coding assistant has improved software development efficiency and speed, reducing development time by at least 20%. The bank has a multi-functional committee to explore more potential use cases of GenAI.

From automation to autonomy: AI has evolved from ML models to GenAI and Agentic AI

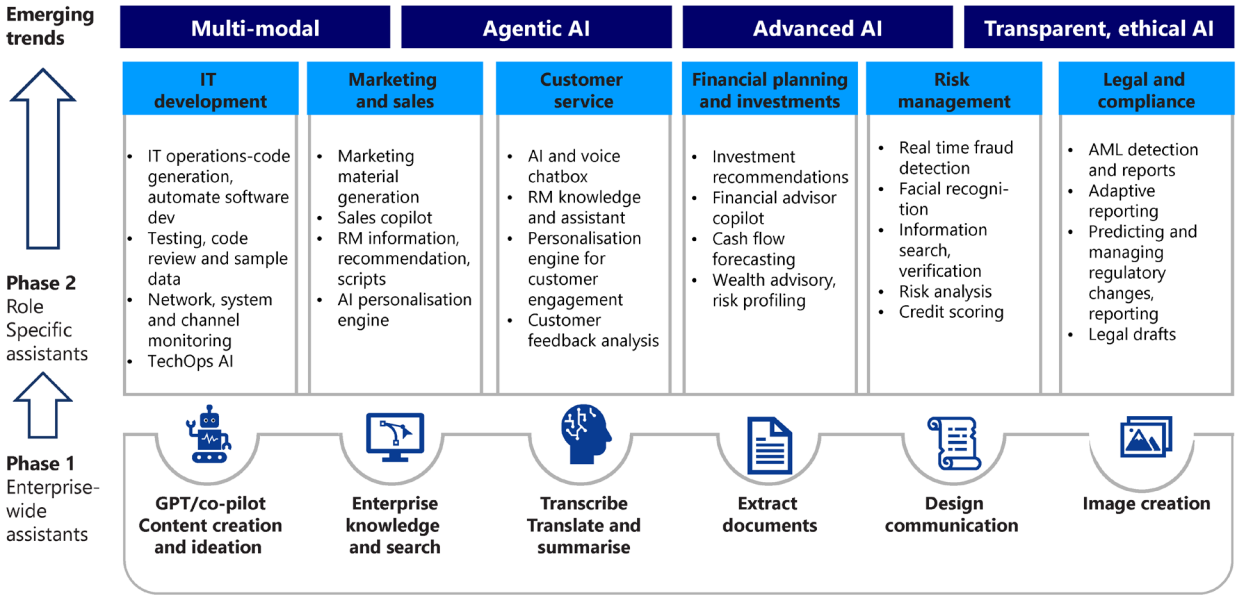
Figure 16: Evolution of AI technology applications in APAC banks



Source: TABinsights

FIs have embedded AI and GenAI across the enterprise-level and role-specific applications

Figure 17: Expanding applications of AI and GenAI across operations



Source: TABInsights

Hong Leong Bank launched an AI personalisation engine that combines AI, big data and cloud technologies to deliver real-time recommendations and meaningful customer interactions. It has an AI application powered by Nvidia graphics processing units (GPUs) to manage repetitive internal tasks and workflow optimisation. It also implemented use cases in delinquent follow-ups, voice bots for telemarketing, call centre support, document verification and error detection in trade finance.

A leading bank in Singapore initially focused on several universal models that improved the operational efficiency of many of its employees. Now, it is focusing more on role-specific models that focus on specific operations, enabling cost, time and manpower savings.

Some banks have significantly increased cross-sell ratios with AI-driven segmentation. AI is improving investment recommendations and cash flow analysis.

Banks are strengthening risk management, improving collection efficiency and credit approvals with AI. Real-time fraud detection, AI-driven facial recognition and intelligent risk analysis are improving security. FIs have embedded AI and GenAI across the enterprise-level and role-specific applications

Industry leaders are centralising model management and applications. Leading banks are now focusing on specialised AI agents with multi-modal capabilities

that can perform end-to-end tasks and make precise decisions. AI agents capable of working autonomously and collaborating with other AI systems on more complex tasks are emerging. Beyond task automation, banks should plan for a transition to self-optimising systems that continuously learn, adapt and improve using real-time data and predictive analytics. There is an increased focus on AI governance, regulation and ensuring ethical and transparent AI applications.

3.5.3. Data strategy for AI readiness

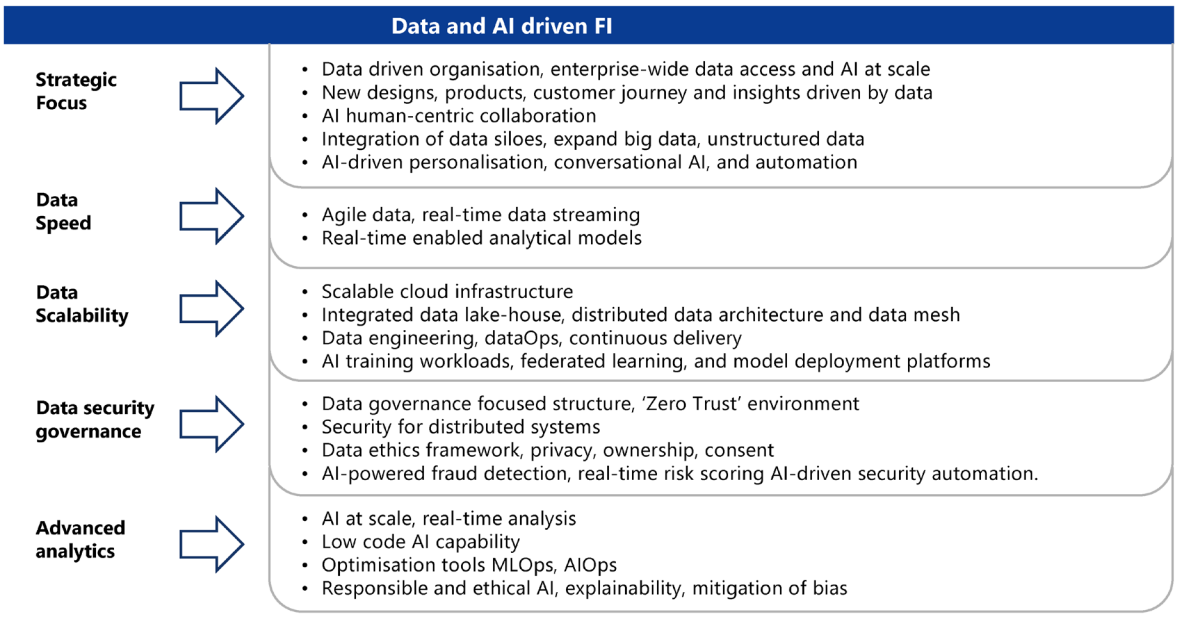
As banks scale transaction volumes and build integrated ecosystems, a robust data strategy is critical to overcoming siloed systems, slow processing and fragmented integration.

Cloud-native infrastructure with integrated data lakes and data mesh architectures is improving data ownership, faster analytics, seamless data sharing and customer experience. For instance, A leading bank in the Philippines implemented a centralised data lake and a real-time data stream, enabling digital banking services to function independently of the core system.

Governance and security remain key priorities, with banks adopting AI Centres of Excellence (CoEs), zero-trust security models and privacy-compliant frameworks to balance innovation with compliance. Investments in MLOps, AIOps and AI-driven automation are driving hyper-automated, data-driven financial ecosystems.

Banks invest in real-time data streaming and decentralised data frameworks to drive data-led decision-making

Figure 18: Evolving data and requirements



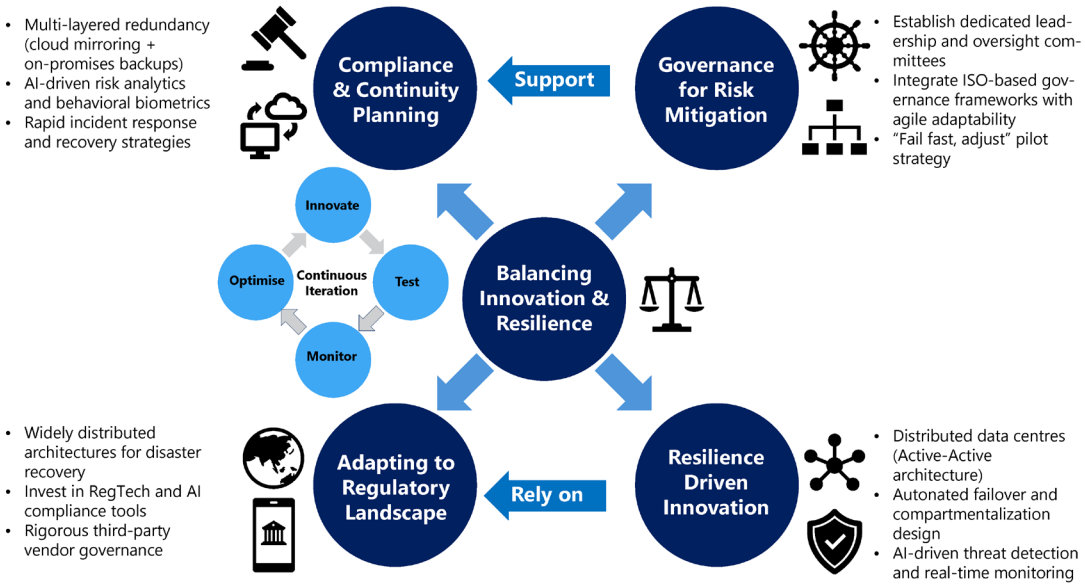
Source: TABinsights

4. Balancing innovation and resilience

4.1 Governance framework for risk mitigation Effective governance is crucial for structured transformation, with leading banks establishing dedicated leadership teams and oversight committees to align digital initiatives with institutional strategy. Some banks integrate ISO-based governance frameworks with agile adaptability, allowing for rapid yet controlled updates with rollback provisions. Some banks use a "fail fast, adjust" approach to pilot small-scale projects before full-scale deployment, mitigating risks and refining risk management frameworks. Board and senior leadership engagement is essential to oversee transformation outcomes and ensure scalability.

Banks must reinforce resilience to ensure stability, security and tech compliance

Figure 19: Elements and framework for ensuring resilience with innovation



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Leading banks are employing active-active architectures across distributed data centres to ensure redundancy and automated failover

Banks are adopting zero-trust models to create a more secure and resilient environment

4.2 Resilience-driven innovation

To embed resilience into their digital strategies, some leading banks are employing active-active architectures across distributed data centres to ensure redundancy and automated failover. Some institutions use a "designed-to-fail" strategy to automatically shift operations in case of system failure, ensuring 99.97% service availability. Others use compartmentalisation to isolate critical functions and prevent disruptions.

With the rise in cyber threats, banks are adopting zero-trust models to create a more secure and resilient environment. These models treat every access request as a potential threat, verifying it before granting access. They are prioritising AI-driven threat detection and real-time monitoring. AI-based data replication, end-to-end encryption and automated recovery solutions help mitigate cyber risks and system failures. Managing vendor risk is

also crucial as banks increasingly rely on third-party providers. Strengthening vendor oversight, implementing rigorous testing and continuous monitoring are essential for resilience.

4.3 Compliance and continuity planning

Resilience requires proactive preparedness. Banks are increasing investment in redundancies, backup solutions and alternative access points to sustain operations during disruptions. Multi-layered redundancy strategies, such as cloud mirroring and on-premises backups, prevent system outages. AI and ML are enhancing cyber resilience by enabling faster anomaly detection, real-time fraud prevention and intelligent risk control. Banks are integrating AI-driven risk analytics, behavioural biometrics, location analysis and device fingerprinting to strengthen security while refining incident response strategies for rapid containment and recovery.

AI and ML are enhancing cyber resilience by enabling faster anomaly detection, real-time fraud prevention and intelligent risk control

4.4 Adapting to the regulatory landscape

As regulations evolve and become more stringent, banks must adapt quickly and ensure compliance. Investments in RegTech solutions, AI-driven monitoring and automated risk assessments support compliance with AML, data sovereignty and consumer protection mandates. AI-driven transaction screening and fraud detection enhance regulatory adherence and risk mitigation.

Regulatory bodies across APAC mandate disaster recovery frameworks and operational resilience, making distributed and failover architectures essential for compliance. Institutions must also strengthen third-party governance, ensuring external partners meet stringent security, compliance and resilience standards. Flexible orchestration layers in banks are enabling rapid adaptation to regulatory changes.

As regulators increase focus on net-zero targets, banks must accelerate the transition to carbon-neutral banking models, integrate energy-efficient infrastructure and invest in green technologies to support

5. Strategic recommendations for banks

Banks must embrace innovation to build future-ready institutions

Figure 20: Key strategic recommendations

- Modernise core systems through microservices, cloud-native (MACH) architectures
- Adopt an API-first approach for open finance and ecosystem integration
- Scale enterprise-wide AI, data-driven decision-making and hyper-automation
- Build embedded resilience with zero-trust security and active-active architectures
- Prepare for emerging technologies like quantum, DeFi and immersive banking

Source: TABInsights

i. Modernise core technology through MACH architectures

Banks must plan a roadmap to transition to a lean, agile, next-gen core system capable of supporting future business requirements, growth and transaction volumes. They should accelerate the shift to microservices, API-first, cloud-native and headless (MACH) architectures to foster agility and innovation.

Given the complexity of operations, large tier-1 banks should plan for incremental modernisation, beginning with the decoupling of existing platforms into a composable architecture. Decoupling front-end interfaces from back-end systems through a "headless" architecture can accelerate innovation and allow banks to quickly adapt to customer digital needs. Large banks should fast-track the migration to cloud-native systems, starting with non-critical applications and scaling up using containerisation and orchestration. Hybrid or multi-cloud strategies will provide greater flexibility, control and improved security.

Smaller banks, with less complex operations, should aim to leapfrog into agile, composable systems more rapidly. They can leverage cost-effective, managed cloud services, particularly for non-sensitive operations to enhance efficiency and scalability. Meanwhile, new digital ventures should be built entirely on cloud-native platforms to ensure they are future-ready from the outset.

ii. Adopt an API-first approach for open finance and ecosystem integration

Embedded finance and platform-driven ecosystems will be the cornerstones of the next phase of banking, enabling integrated services and personalised experiences. This transformation will rely heavily on API-driven ecosystem integration. An API-first approach is essential, ensuring that all services are designed to integrate with third-party platforms, thus creating an open finance ecosystem. Banks must develop robust, secure API layers to facilitate real-time data exchanges and promote industry collaboration. As APIs evolve, banks must ensure their systems can support self-monitoring and self-healing capabilities and invest in comprehensive API governance frameworks.

iii. Scale enterprise-wide AI, data-driven decision-making and hyper-automation

Banks should transition from AI pilots to an enterprise-wide AI strategy, driving intelligent decision-making across processes. This requires an integrated data foundation, supported by scalable infrastructures such as data lakes and decentralised data mesh architectures. A cloud-based data strategy will help reduce costs while enabling efficient scalability.

Banks must adopt real-time data streams to support instant insights and recommendations, shifting from reactive to proactive decision-making with real-time and predictive analytics capabilities.

Centralising their AI strategy and aligning it with business goals will be crucial. As multi-modal and agentic AI evolve, banks should redesign operations to integrate AI and human workflows. This includes reimagining operational processes by embracing the convergence of AI, RPA, agentic AI, and intelligent workflow orchestration.

iv. Build embedded resilience with zero-trust security and active-active architectures

Embed complete resilience into every layer of banking infrastructure to ensure operational continuity while managing risks and regulatory compliance. A Zero Trust security model implemented across multi-layered systems ensures continuous monitoring and authentication at every access point. For large banks, active-active architectures and multi-region failover systems will assure service delivery, even in the event of regional outages. Smaller banks should focus on cost-effective, agile solutions that can integrate with their existing systems. Adopt automated failover systems and data redundancy strategies to ensure business continuity during disruptions.

v. Prepare for emerging technologies like quantum, DeFi and immersive banking

To stay at the forefront, banks must proactively plan for emerging technologies. Quantum computing holds the potential to revolutionise complex financial modelling and optimise processing speed, but it also poses risks to current encryption standards. Banks must invest in quantum-safe cryptography and hybrid computing environments that integrate both classical and quantum computing to begin early real-world experimentation.

Blockchain is already being leveraged by banks for secure, real-time cross-border payments, trade settlements and smart contract execution. The convergence of DeFi with traditional banking offers new business models and revenue opportunities. Banks must focus on creating interoperable models for decentralised technologies while ensuring they comply with regulations and maintain high security standards.

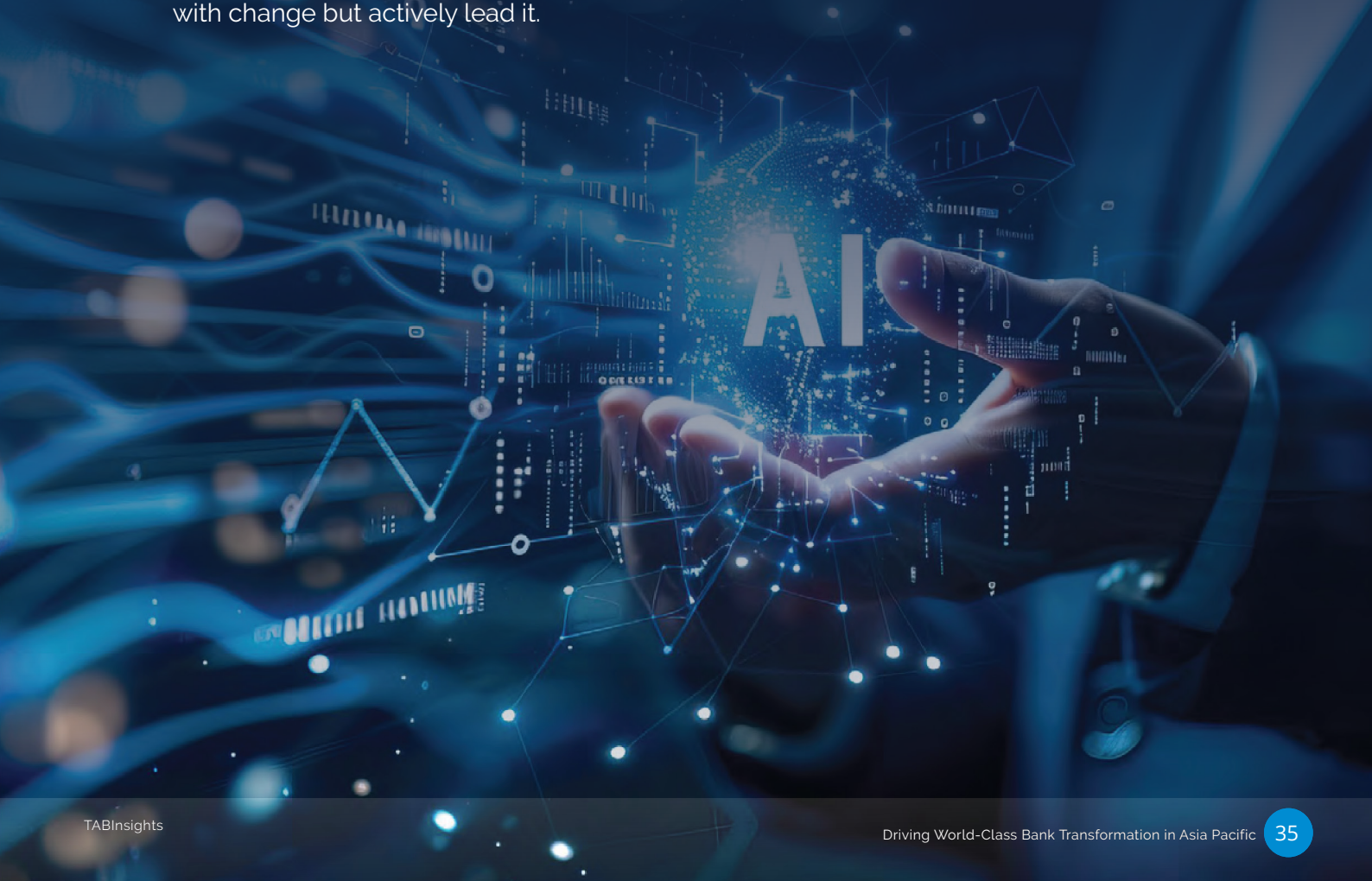
Additionally, the rise of immersive banking through AR/VR technologies requires a forward-thinking approach. Banks must integrate these technologies into their digital strategies to enhance customer engagement and redefine user experiences.

6. Outlook

Technology and digital transformation alone will not guarantee success. To stay ahead of the curve, banks must cultivate a culture centred around innovation that prioritises technology-enabled business expansion. This involves embedding innovation strategies at every level of the organisation and fostering a mindset that embraces change and quickly adopts emerging technologies. An agile culture will enable banks to meet the evolving needs of customers and adapt to a dynamic market environment with speed.

At the same time, significant investment in reskilling and upskilling will be necessary. As AI and automation reshape roles and workflows, banks must plan for the displacement of traditional jobs while simultaneously retraining their workforce for the future. Acquiring the right skills for new technologies and business models will be crucial to maintaining a competitive edge.

Future banking leaders must invest in both technology and the people who will drive success. It is essential to build a workforce and leadership pipeline that is ready to embrace innovation, handle disruption, and lead the integration of financial services into broader ecosystems. Empowering transformational leaders will help banks navigate and lead through ongoing change. Success will belong to institutions that not only keep pace with change but actively lead it.



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