



Banking in 2035: How emerging technologies will transform the way we bank

Seamless, highly-personalized experiences will be enabled by advances in quantum computing, artificial intelligence, decentralized finance, digital ecosystems, and biometric security.



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Introduction - Life in 2035

The year is 2035. You wake up and check your finances through a voice-activated digital assistant, who appears as a hologram of Elvis. After being authenticated via voice and fingerprint biometrics, the late King of Rock and Roll – who would have been 100 – provides a snapshot of your spending, savings, and investments in a personalized dashboard containing all your accounts and financial data in one place.

You ask your assistant to pay a utility bill through a lightning-fast decentralized finance network. You also request an overview of the performance of your diversified crypto portfolio and carbon-neutral investment fund. The Elvis hologram confirms the transactions and provides complete visibility into your financial position across accounts and asset classes before you can say “a little less conversation.”

Next, while still in bed, you desire to discuss your home’s mortgage options. The avatar instantly pulls up your financial profile and credit history using quantum machine learning algorithms. It provides tailored recommendations on mortgage products that align with your financial goals, adjusting key variables in real time to show you the optimal solutions.

As futuristic and fanciful as this may seem, this is how banking in just over a decade could – and arguably should – look and feel. This fantasy might become a reality by investing smartly in the right areas and harnessing emerging technologies’ power. A world of frictionless, integrated, and highly personalized experiences is within reach.

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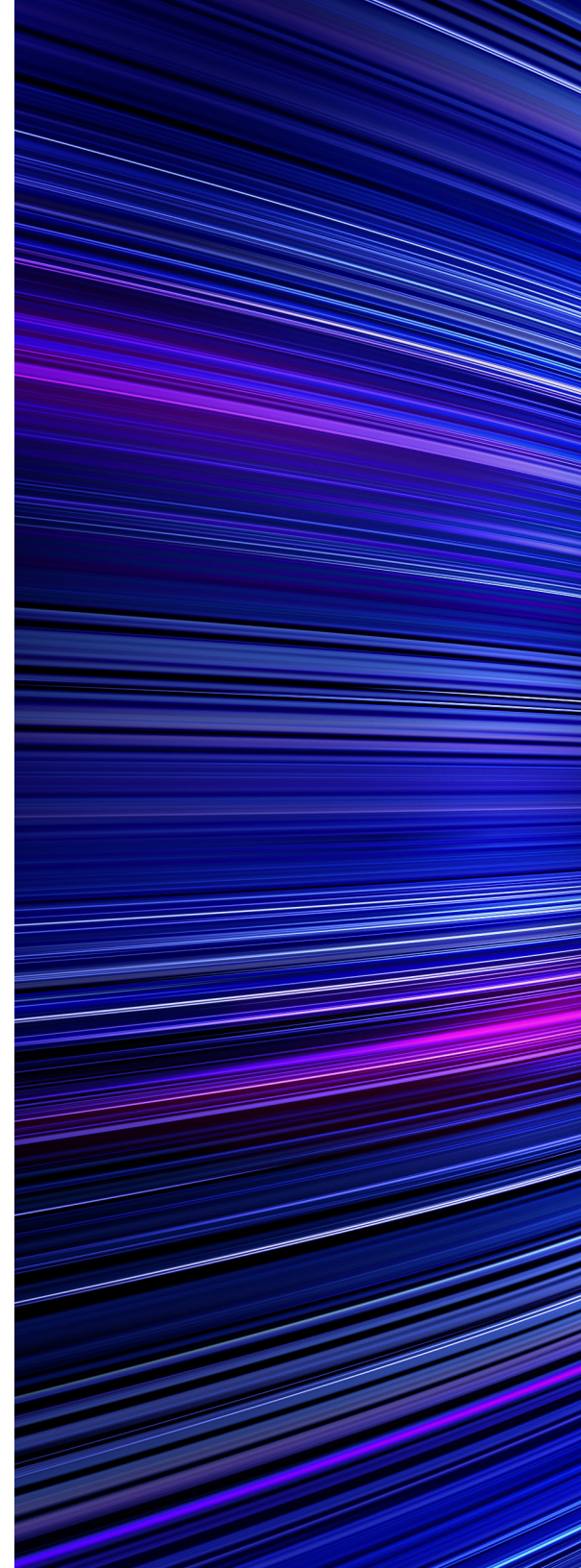
Innovations to reshape banking

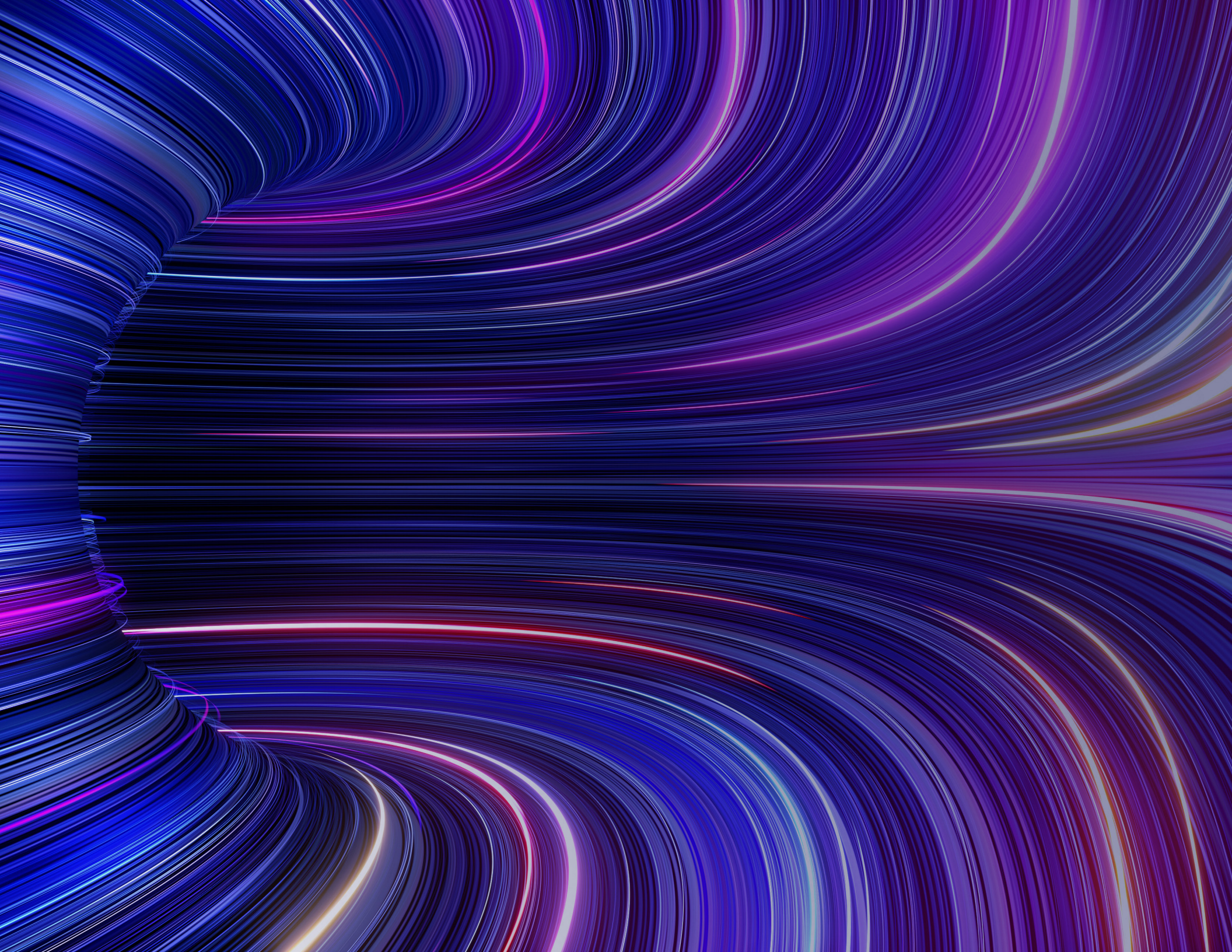
Whether you opt for an Elvis avatar or not, today's financial services industry will be almost unrecognizable in 2035 – and hopefully won't leave you “all shook up” – thanks to five key technology trends already impacting finance today. Namely: quantum computing, artificial intelligence, Decentralized Finance (DeFi), digital ecosystems, and biometric security.

Together, these innovations will reshape banking as we currently know it, changing how financial services operators interact with customers, manage risk, process transactions, and provide holistic services.

The next dozen years will see an evolving landscape defined by shifting consumer demands, evolving regulatory frameworks, and the pervasive influence of tech adoption. The stage is set for a crashing wave of change reshaping the entire financial system from top to bottom.

Imagine how the trends listed above might develop to supercharge banking in 2035. Here are a handful of predictions.





Quantum computing unlocks hyper-personalization

One of the most transformative impacts of quantum computing will be enabling real-time hyper-personalization of financial services. Traditional computing faces limitations in processing and deriving insights from massive datasets. But quantum introduces game-changing power to analyze financial big data combined with deep learning algorithms.

Banks will leverage these capabilities to understand each customer's unique needs, preferences, and values. When you walk into a bank branch, a biometrically authenticated quantum AI assistant will already have an intimate grasp of your financial personality, risk appetite, and life goals. Conversations will be natural and intuitive as assistants converse in your preferred language and tone.

To optimize investment returns, a financial services operator will construct your custom investment portfolio in seconds by running so-called [Monte Carlo simulations](#) across millions of asset combinations. Quantum machine learning will predict your cash flow needs and recommend custom lending options like a revolving credit line or micro-loan for an upcoming large purchase. You'll no longer need to fill out lengthy applications.

Even traditionally manual processes like risk assessment will be transformed by quantum AI. Algorithms will incorporate your unique financial circumstances and behaviors into credit, fraud, and compliance models in real time. Previously underserved consumers will have expanded access to personalized financial products.

Returning to the present day, investment in quantum initiatives hit \$35.5 billion across multiple continents in 2022, according to [World Economic Forum](#) research. The integration of quantum technologies is expected to be used to create new innovative products and services and improve the efficiency of financial markets.

HSBC and Wells Fargo are already conducting quantum experiments, while startups like Qraft are honing quantum AI algorithms. As these capabilities advance, personalization will be core to the banking experience.

The expectation is that quantum computers will be used to solve complex financial problems that are presently challenging for traditional computers. This advancement will lead to new financial products and services, such as quantum-based trading algorithms and insurance products.

However, quantum computing presents a double-edged sword for cybersecurity. While its immense computational power threatens current encryption methods, it also offers opportunities to develop new, more secure algorithms and enhance fraud detection capabilities.

Consider today's 'classic' computers would require roughly 300 trillion years to decode a 2,048-bit digital key, whereas a 4,099-qubit quantum processor would need just 10 seconds, [calculates CNET](#).

Financial institutions can invest in quantum-resistant encryption algorithms, rendering current decryption methods obsolete. Additionally, quantum computing could enhance fraud detection capabilities by analyzing large data sets and identifying patterns that traditional computers might miss.

Indeed, quantum offers a three-pronged defense system.

- **Quantum cryptography** could be used to create unbreakable encryption systems for financial transactions, making it more difficult for hackers to steal financial data.
- **Quantum machine learning** might be used to develop new algorithms for fraud detection, risk assessment, and portfolio optimization.
- **Quantum sensors** will detect counterfeit currency, track financial transactions, and monitor market activity, preventing fraud and ensuring the integrity of financial markets.

The convergence of quantum technologies and the financial services industry can provide greater accuracy, efficiency, and security in the products and services shaping the industry in 2035.



AI will automate and secure banking as we know it

AI is on track to disrupt banking profoundly by 2035. Already, banks are using AI chatbots to handle customer service queries and for process automation. But the AI of the future will far exceed today's capabilities. Integrating quantum power and generative techniques will unlock unprecedented applications.

Smart contracts running on decentralized networks will settle complex interbank transactions and derivatives trades near-instantaneously with complete transparency. Real-time analytics of operations data will allow AI to monitor risks and anomalies and initiate preventive measures continuously. Fraud identification models will leverage biometric surveillance and quantum pattern recognition to flag threats before they occur.

Compliance procedures like KYC (know your customer) and AML (anti-money laundering) will be fully automated and run seamlessly in the background during account opening. Creative, generative AI techniques and tools will help banks innovate – from designing sustainability-linked investment products to providing underserved consumers personalized coaching and financial advice at scale.

By automating repetitive tasks and enhancing prediction, AI will allow human bankers to focus on building meaningful customer relationships and providing strategic guidance.





In this future, financial institutions will collaborate extensively with tech innovators, AI specialists, and policymakers to ensure responsible and equitable development. Regulatory frameworks will have evolved to accommodate AI's impact on financial services, striking a balance between innovation and consumer protection.

In 2020 – before generative AI went mainstream – [McKinsey estimated](#) that AI technologies could potentially deliver up to \$1 trillion additional value for global banking each year.

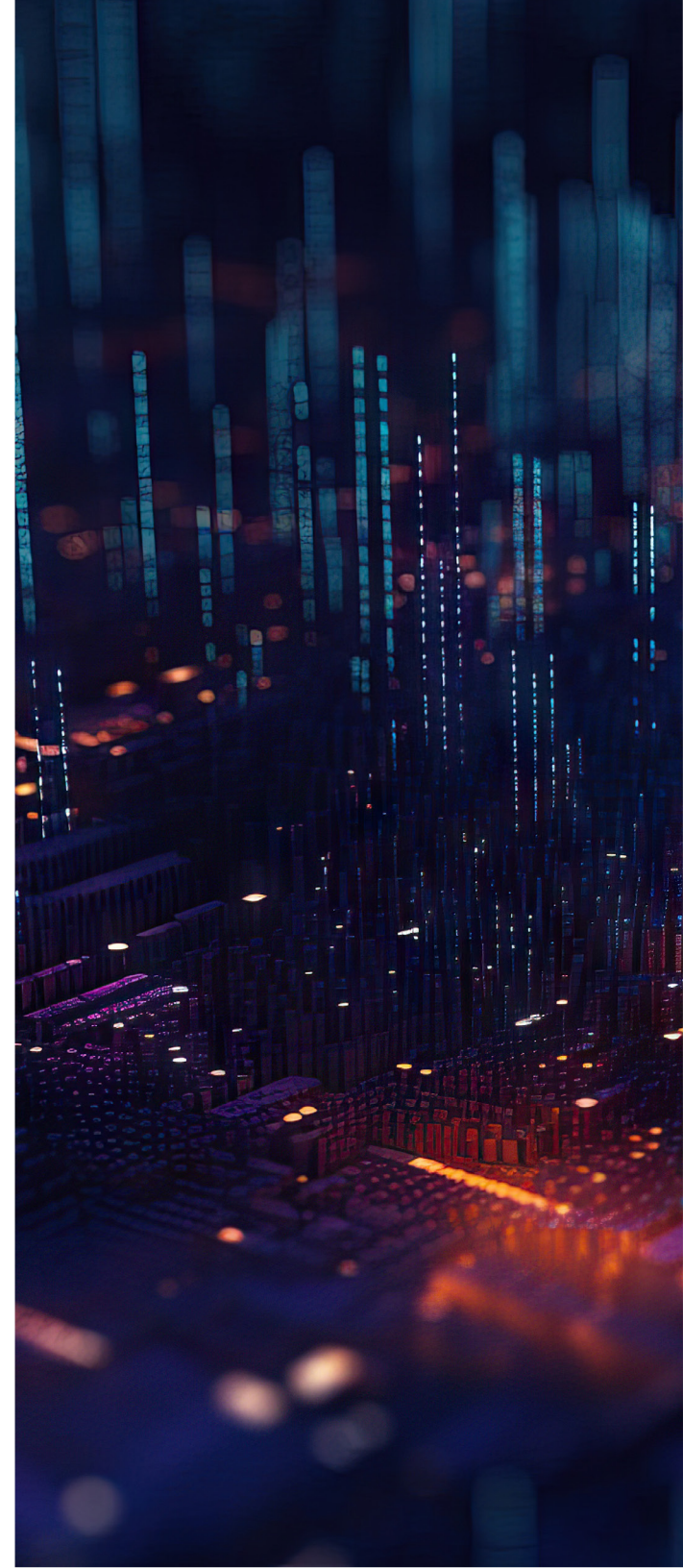
DeFi and cryptocurrencies will redefine how money moves

Decentralized finance, which removes financial intermediaries through blockchain networks, and cryptocurrencies, will fundamentally change how money moves and banking operates by 2035. Direct access to crypto assets, peer-to-peer transactions, and yield-generating open platforms will become mainstream thanks to integrations by trusted financial institutions.

Your bank may provide access to regulated stablecoins fully collateralized by currency and government bonds to enable instant domestic and cross-border money movement 24/7. Customers can directly exchange currencies during foreign travel or split bills across currencies in real time without fees or delays.

Banks will also allow clients to tokenize and trade assets, including real estate, precious metals, intellectual property, and more, through licensed decentralized exchanges wired into the traditional finance system. And open lending platforms will enable peer-to-peer loans using cryptocurrency as collateral. Interest rates could be set algorithmically based on supply and demand.

Banks embracing crypto today, like Goldman Sachs and DBS, will have a first-mover advantage as DeFi matures from its early days. Their critical role will be integrating decentralized finance into trusted and secure platforms.





Additionally, the widespread adoption of crypto and decentralized finance can potentially expand financial access and independence. In 2022, the [World Economic Forum](#) reported that almost one quarter (24%) of adults had no bank or mobile account.

Yet decentralized models could reduce geographic, regulatory, and cost barriers to financial services. The transparent and programmable features of crypto and smart contracts also promote trust.

Further, central bank digital currencies (CBDCs) will become a reality, reshaping cross-border transactions and monetary policies.

These digital currencies will provide:

- The foundation for a streamlined and efficient financial ecosystem.
- Facilitating peer-to-peer transactions.
- International trade.
- Even programmable smart contracts.

CBDCs will not merely coexist with traditional currencies. They will reshape the core of the financial industry, promoting financial stability, reducing friction in transactions, and fostering innovation and inclusivity.

Digital ecosystems and embedded banking weave finance into daily life

The embedded finance trend of integrating financial services into non-financial platforms is gaining significant traction already with companies like Uber, Amazon, and Apple. This convergence will accelerate greatly by 2035.

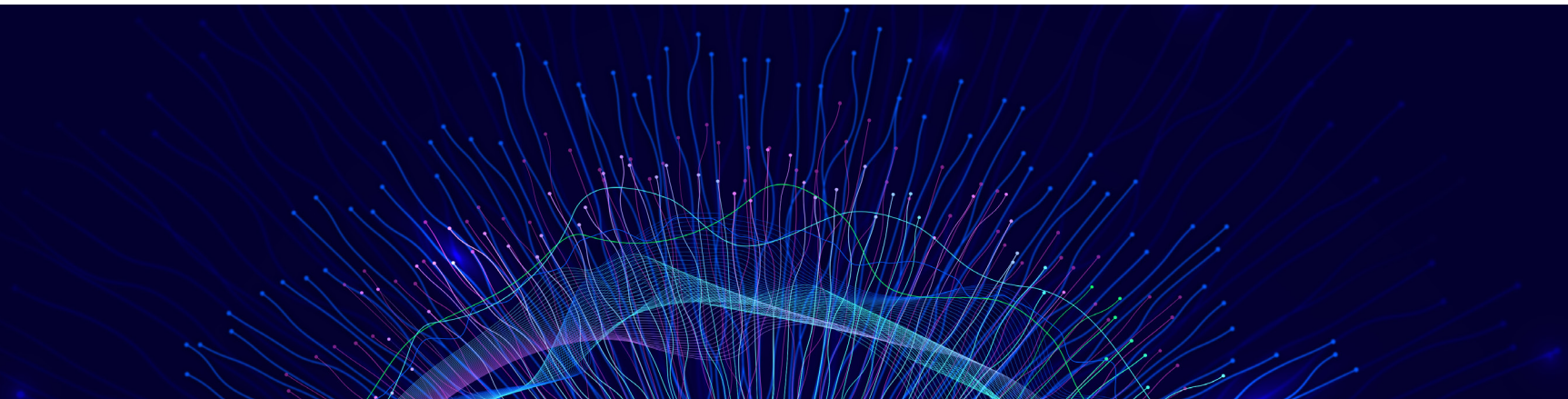
Your digital interactions – whether messaging friends, shopping online, or riding in an autonomous vehicle – will seamlessly blend personalized financial features powered by banks and fintechs behind the scenes. For example, when grocery shopping online, you can apply for and receive real-time approval on a microloan through your bank to cover the purchase.

During your self-driving commute, your car software may detect you are close to the mileage limit of your auto lease. It will automatically initiate a personalized lease extension for your review and biometric e-signature – no need to schedule meetings or submit applications. Your financial needs will be anticipated and met in daily life.

Digital ecosystems are already having a significant impact on the financial service industry. From embedded finance to open banking and peer-to-peer (P2P) payments and wallets, the industry's new collaborative operating models are evolving how financial services are accessed, delivered, and experienced.

Moreover, leading technology firms like Amazon and Apple already have financial licenses and offer services like credit and payment tools. Rather than disrupt banking, their embedded finance strategies will foster collaboration between banks, fintechs, policymakers, and big tech to meet customers wherever they are digitally. The alliances to deliver this seamless experience will require leadership and an ecosystem mindset.

If central players act with care, they will pave the way for a financial industry that is both technologically advanced and socially and environmentally responsible.



Biometrics will make banking invisible

The proliferation of biometric authentication using fingerprints, facial recognition, iris scans, and more will provide the security scaffolding to make banking invisible in 2035. Passwords and PINs will go the way of the dodo. Your unique biological identity will be your banking passcode.

Because biometric traits like retinas and voices are challenging to replicate, this will enable more convenient and secure customer experiences. You may access your account via voice assistant just by speaking. Authorizing payments could involve looking at your phone. Transferring money to friends would only require a quick selfie.

Seamless biometric logins will also facilitate the adoption of virtual reality in banking. Imagine visiting a photorealistic metaverse bank branch for personalized financial advice from anywhere in the world or previewing your dream home in virtual reality after being instantly approved for a mortgage via fingerprint.

Banks like HSBC and Citibank are already replacing passwords with biometric recognition. As ethical frameworks are established for collecting biometric data, customer privacy and control will remain paramount. Biometrics, combined with advanced encryption, will drive security while removing friction from banking.







03

The runway for 2035

The convergence of quantum computing, AI, DeFi, digital ecosystems, and biometrics will profoundly reshape the banking experience over the next decade. But pioneering banks are already laying the groundwork to realize this hyper-personalized, seamless future.

J.P. Morgan is preparing for quantum disruption across trading, risk management, AI development, and security functions. Wells Fargo has an in-house Startup Accelerator piloting quantum, AI, and decentralized solutions. Goldman Sachs offers customers crypto investment vehicles and has invested in fintechs, merging DeFi with traditional banking.

Certainly, the technology landscape will look vastly different in 2035 with significant advancements in computing power, intelligent systems, decentralization, and biometrics. But amid this change, banks must keep financial access, inclusion, and sustainability central to ensure technology elevates humanity.

Leaders today recognize that being digital-first is not enough. Competing in 2035 requires becoming “technology-infused,” willing to explore frontier solutions early and build new capabilities long before concepts reach mass adoption. It means reimagining every aspect of operations, architecture, and talent development through a technology lens.

By adopting this future-focused mindset, banks can begin laying the groundwork to integrate powerful – but ethically designed – emerging technologies into experiences that wow customers and deliver tangible value.

Ultimately, the future of banking will be defined by those who take decisive action today to shape it for the benefit of customers and society. The runway to 2035 is open. It’s time for institutions to accelerate and elevate banking to the next level.

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