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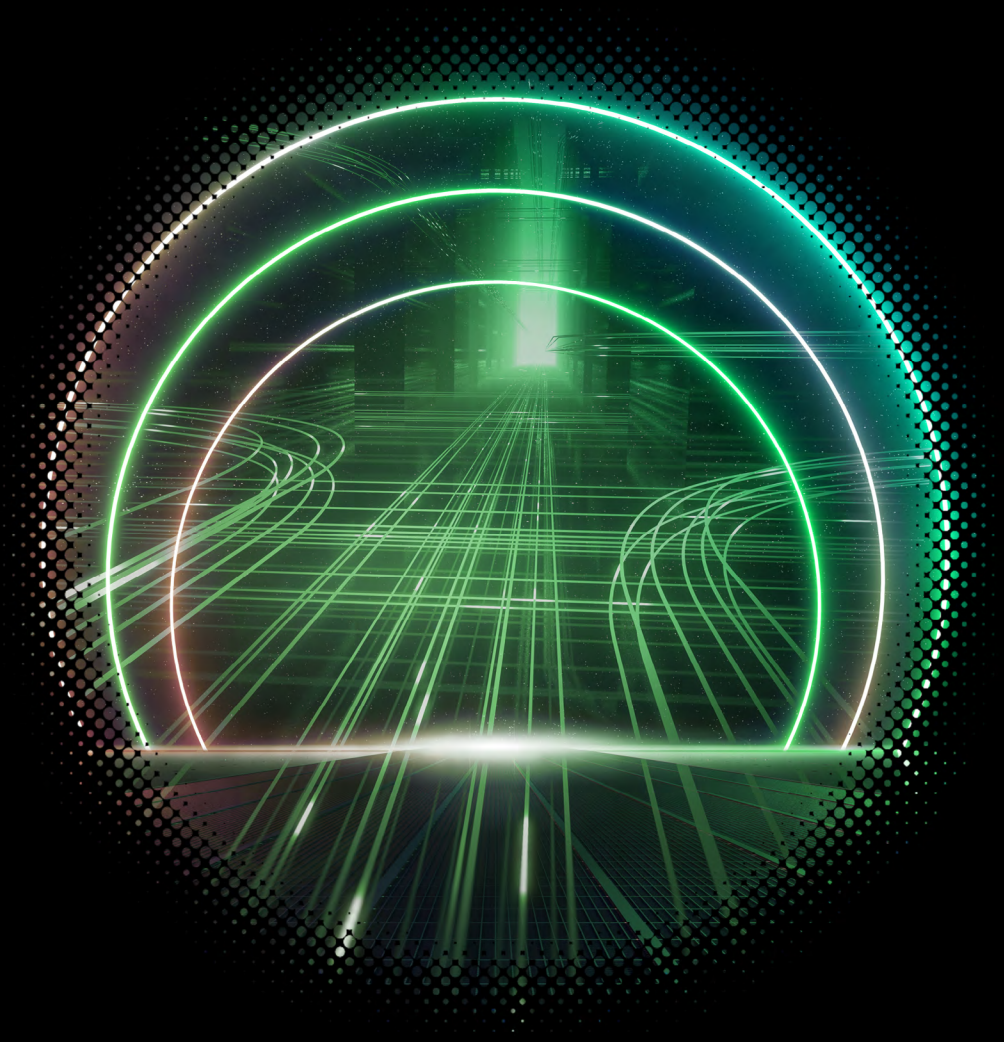


The multiplier effect

The imperative for coordinated technology deployment in financial services

More from the World Economic Forum and Deloitte

The future of financial services (2015)

The future of financial infrastructure: An ambitious look at how blockchain can reshape financial services (2016)

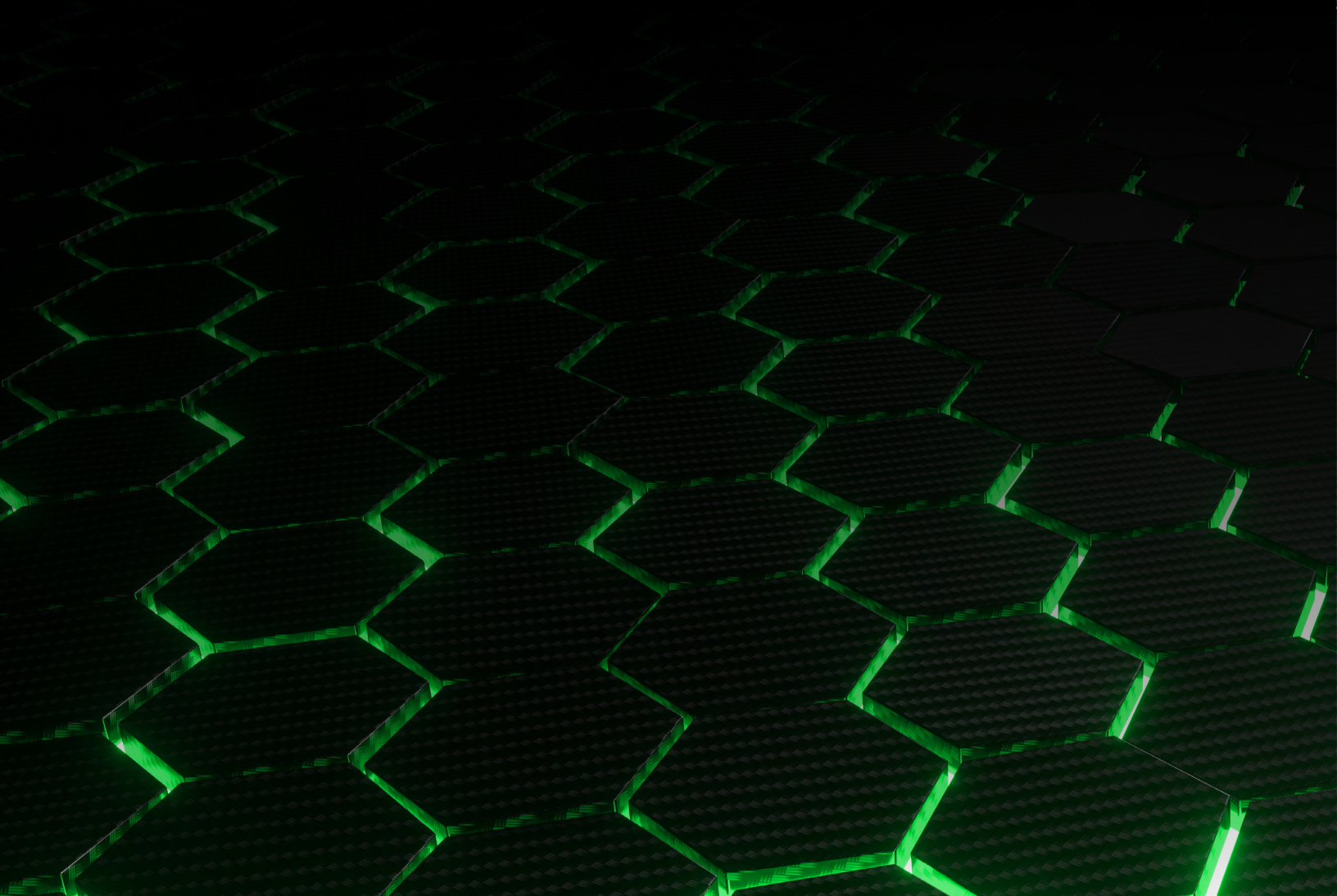
Disruptive innovation in financial services: A blueprint for digital identity (2016)

Beyond Fintech: A pragmatic assessment of disruptive potential in financial services (2017)

The new physics of financial services: How artificial intelligence is transforming the financial ecosystem (2018)

The next generation of data-sharing in financial services: Using privacy enhancing techniques to unlock new value (2019)

Navigating uncharted waters: A roadmap to responsible innovation with AI in financial services (2019)



Contents

Prelude

Dear colleagues,

Two years of exploring the future of artificial intelligence (AI) in financial services revealed a critical need to examine the intersection of AI and other emerging technologies. This prompted the World Economic Forum (the Forum) and Deloitte Consulting LLP (Deloitte) to widen our lens of inquiry.

Over the course of a year, we carried out more than 200 interviews with leading subject matter experts and senior executives across the spectrum of financial services—including banking, payments, insurance, investment management, and capital markets. We also ran nine workshops in financial hubs around the world. The result is our latest report, Forging new pathways: The next evolution of innovation in financial services, which discusses the multiplier effect that can occur when emerging technologies are clustered strategically and applied to business problems in financial services. The document you're reading now is a summary of those findings.

Our aim is to provide executives, regulators, and policymakers with a perspective on:

- New value propositions that financial institutions could offer at the intersection of emerging technologies
- Cross-sector opportunities that emerging technologies might create, with implications for competitive dynamics and market structures
- The capabilities that emerging technologies could unlock, individually and in combination

We hope this report sheds some light on the impact of emerging technologies on the future of financial services and helps decision-makers craft responses that balance innovation with the protection of consumers, markets, institutions, and society.

Sincerely,

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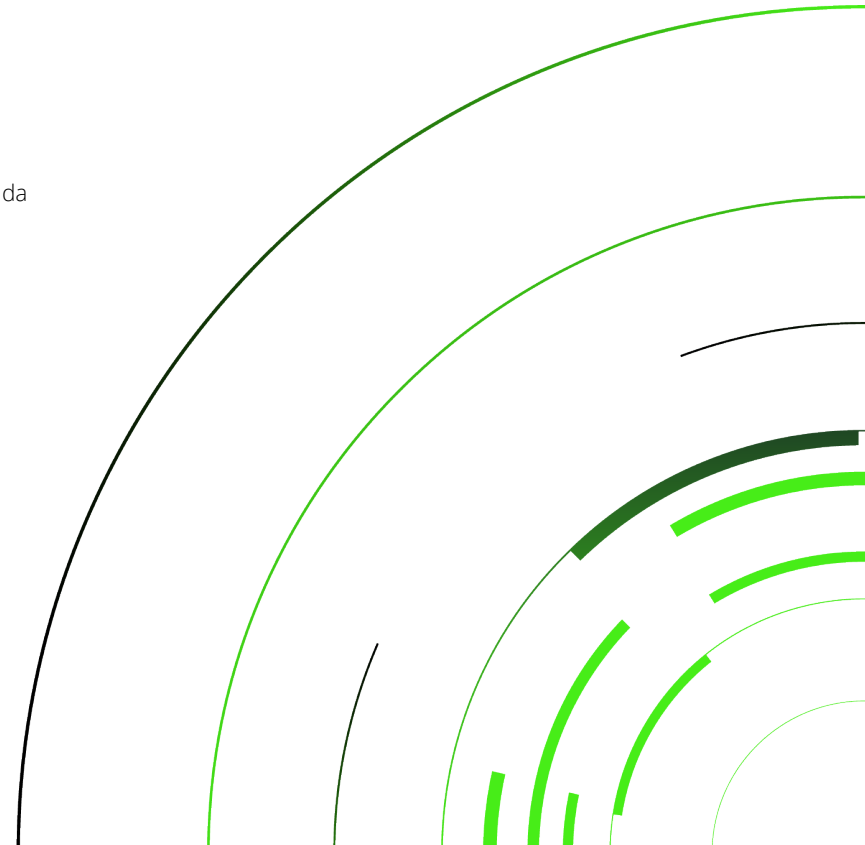


Setting the stage

Financial institutions today have gained the permission to pursue innovation at a pace and sophistication seldom seen before. Recent industry forces such as rising competition from non-traditional players, growing demands from customers across all segments, and increased flexibility from regulators have emphasized the imperative for innovation across the industry.

Despite this permissive environment, the industry is still playing innovation catch-up. Financial institutions continue to be burdened by legacy infrastructure and a lack of clear direction on how emerging technologies will shape and impact their strategic direction. And while technology is but one component of this equation, the sheer number of potentially transformative technologies maturing in a similar timeframe—and the complex ways they can interconnect—implies that strategic decisions can no longer be technology agnostic.

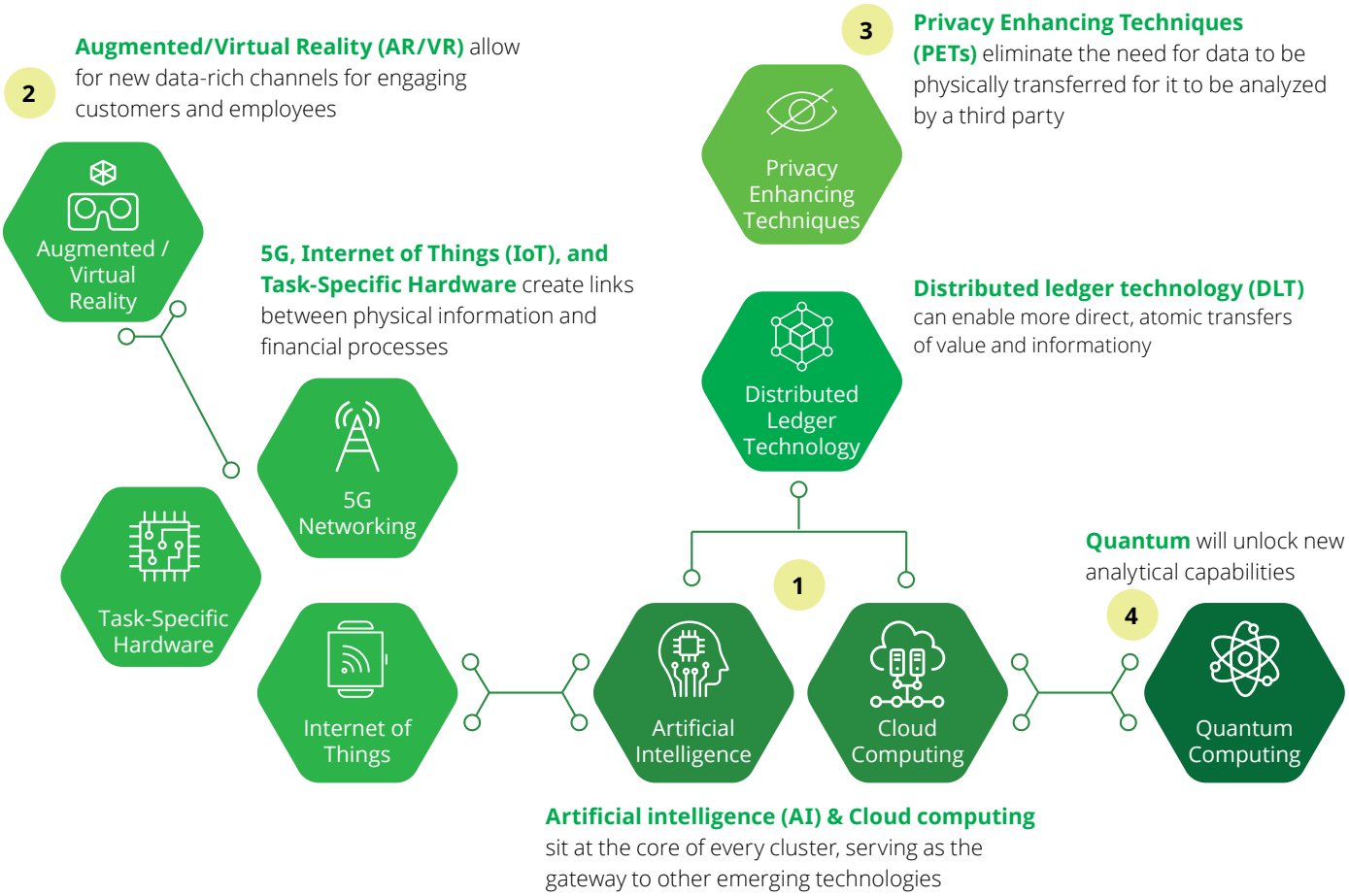
The financial services industry finds itself at a critical juncture. Both the opportunity and capability for transformative innovation are within reach for those willing to rise to the challenge. But will incumbent institutions take bold strides to transform infrastructures, operating models, and value propositions? Or will they allow the opportunity to pass them by? Of course, the latter route could invite further pressure from disruptors or increase exposure to future crises.

While the answer to this question will define the calculus of winners and losers over the coming years, one thing is clear: Though powerful individually, when combined emerging technologies introduce an evolved set of capabilities poised to modernize the architecture of the financial institution of the future. More specifically, Figure 1 shows four common ways emerging technologies work together to unlock new opportunities.

As a first step, financial services executives should have a clear perspective on the new capability sets that emerging technologies unlock. However, capabilities alone are only part of the puzzle. More important is understanding how these capabilities actually translate into new market structures and operating models in financial services, and the value propositions that institutions can develop to pursue them.

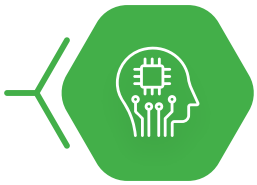
Industry leaders have shared stories of how technology conversations have become central to the senior executive and even board levels of institutions around the world. This points to a shift in how financial institutions will strategize and operate. Playing to win increasingly means considering the role technology will play when making strategic decisions, and specifically what the most effective combination of human and digital capabilities will be.

Figure 1: Common clusters of emerging technologies



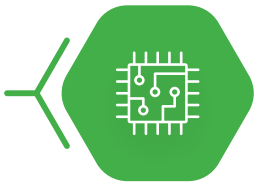
Source: *Forging new pathways: The next evolution of innovation in financial services*

Artificial intelligence (AI)
AI is a suite of technologies—enabled by adaptive predictive power and exhibiting autonomous learning—that extend the human capabilities of sensing, comprehending, acting, and learning.



Cloud computing
Cloud computing is the delivery of on-demand, remote computing services (such as data storage or computing power) over the internet.

Task-specific hardware
Task-specific hardware refers to a set of related computing devices that can be used to accelerate or optimize the training of AI models and improve AI-based inference.

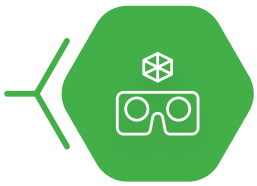


Distributed ledger technology (DLT)
DLT refers to a digital ledger of transactions or contracts (e.g., a database) supported by a replicated, synchronized, and decentralized network.

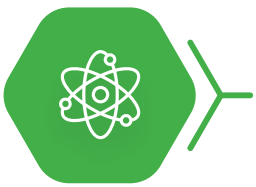
Internet of Things (IoT)
IoT refers to physical objects that generate, transmit, and act upon data (or otherwise communicate with other devices) over the internet.

5G networking
5G networking is the next-generation standard for cellular networking technology, promising improved speeds, higher network densities, lower latency, and greater network security (among other benefits).

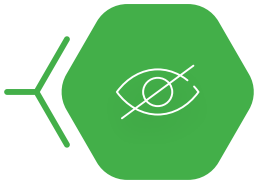
Augmented and virtual reality (AR/VR)
AR/VR reality refer to two distinct but highly interrelated classes of technologies that integrate the virtual world with the real world.



Quantum computing
Quantum computing relies on the physical phenomena of nature to manipulate information via quantum mechanics. Because of these effects, quantum computers have the potential to massively increase computational power for a range of specific problems, including optimization, simulation, and machine learning.



Privacy enhancing techniques (PETs)
PETs such as zero-knowledge proofs and multi-party computation—eliminate the need to physically transfer data before a third party can analyze it.



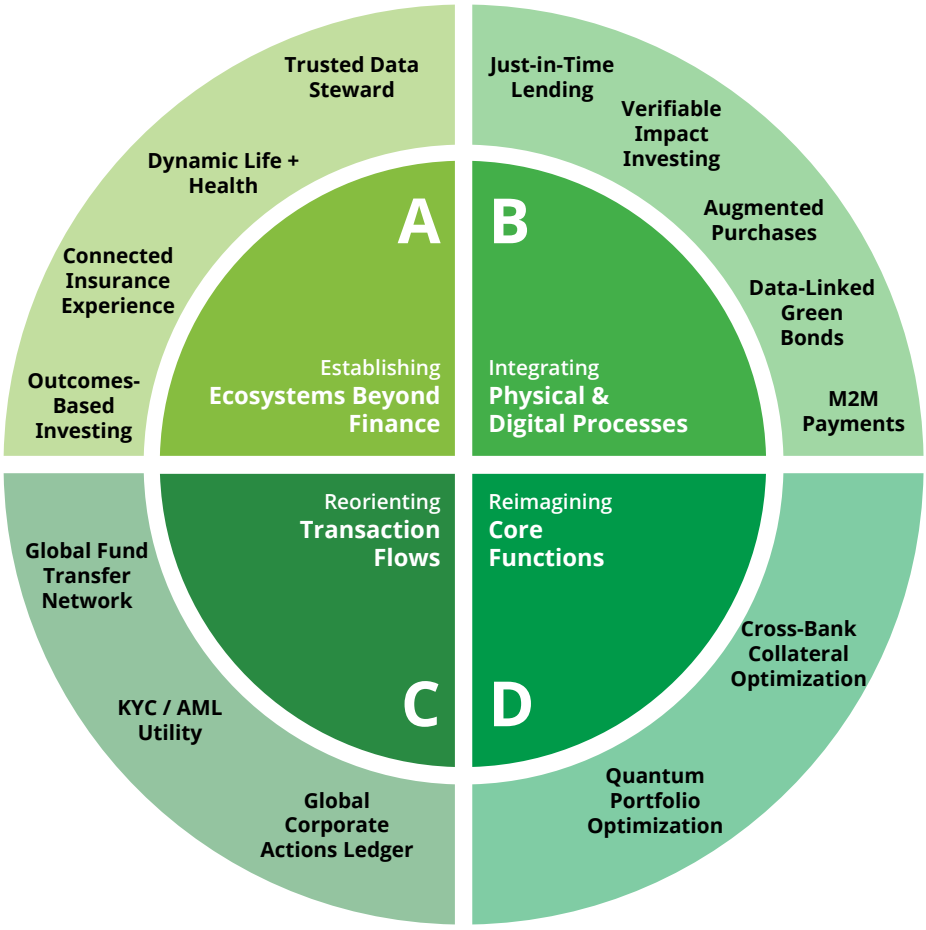
Pursuing innovation pathways

Assembling emerging technologies into common clusters, and exploring the capabilities that these clusters unlock, provides insight to where innovation is likely to progress in financial services. We discovered a set of prominent "innovation pathways" that appear poised to shape the industry's future—on their own as well as collectively.

These pathways, representing four of the most likely areas of structural transformation to result from the intelligent clustering of emerging technologies, are highlighted in Figure 2. The outer ring of the diagram shows an illustrative set of use cases that represent future value propositions indicative of the structural transformation described in the pathway.

The following discussion explores each innovation pathway in more detail, including the conditions under which the evolution is most likely to occur, the underlying capabilities driving this evolution, and highlights a key indicative value proposition for the pathway.

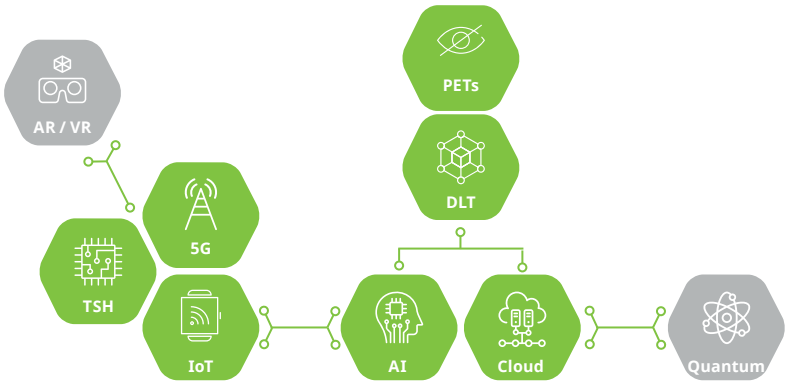
Figure 2: Innovation pathways enabled by clusters of technology



Source: *Forging new pathways: The next evolution of innovation in financial services*

Pathway A: Establishing ecosystems beyond finance

On pathway A, firms can combine financial and non-financial offerings by building on strong ecosystem relationships in order to deepen engagement, protect customer data, and create entirely new value propositions.



Enabling technologies can:

- **Reduce data sharing risk** by creating combined sources of information that can be queried and analyzed without actually sharing the underlying data
- **Secure data provenance** by making it easier for firms to trace information, reconcile data with collaborators, and keep malicious actors from doctoring information
- **Facilitate transaction autonomy** with smart contracts that eliminate manual labor around agreement reconciliation and transaction processing

Disruption is likely to occur where:

Financial products can be embedded in non-financial contexts

This could be a new source of customers—and data—for financial institutions. However, it could also limit the ability to build deeper customer relationships because the institution is often not the party who has direct access to customers.

The future state: A home purchase from an online platform that embeds parametric flood insurance.

Customers struggle to make financial decisions

Advice and ancillary services could become key differentiators for companies in highly competitive industries. Meanwhile, the customer data flowing into financial institutions could help them further tailor and improve their offerings.

The future state: A personal financial management tool that also offers personalized recommendations for career planning and job searching.

Disjointed data pools meet high trust bars

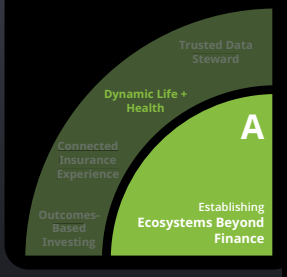
As consumers gain more control over their data, financial institutions could become the trusted intermediary that helps them manage it.

The future state: A digital identity exchange and consent management platform developed by a financial institution, allowing clients to securely share sensitive data held by other parties.

Steps institutions can take:

- **Elevate partnership management.** As ownership over key capabilities and distribution channels is further distributed across an ecosystem of partners, elevate the role of procurement and partnership management to a core strategic function
- **Modernize accountability frameworks.** Support the development of cross-sector frameworks that distribute liability and accountability (e.g., for data security) fairly across financial and non-financial players
- **Map partners to customer journeys.** After establishing a deep understanding of the broader customer journey, use this as the basis for identifying potential partners, prioritizing partnership targets based on strategic ambition, and developing a value-added ecosystem

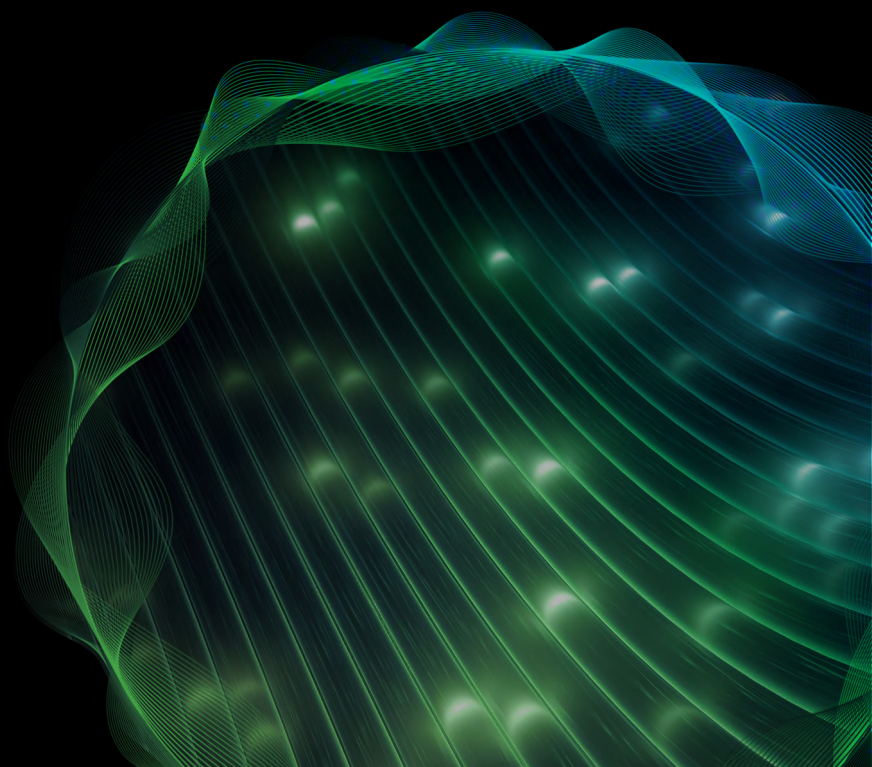
Use case
Dynamic life + health insurance



The takeaway: By curating an ecosystem of financial and non-financial parties into a single offering and facilitating the secure flow of data, a dynamic life and health offering could help align incentives among the insurer (from better risk management), the consumer (from a healthier lifestyle), and other parties in the ecosystem (from increased sales).

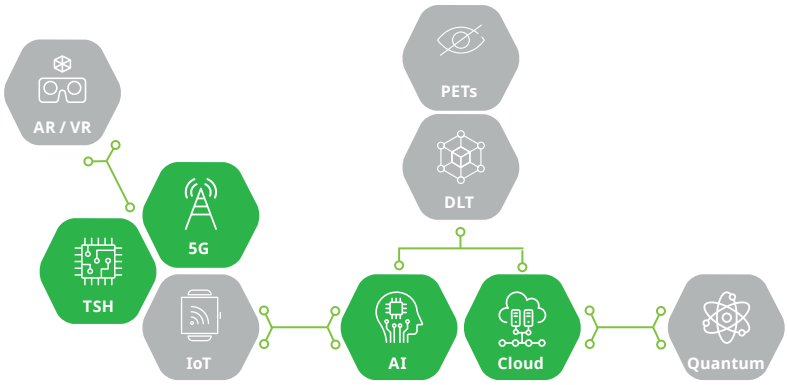
Emily is shopping for groceries when she receives a push notification on her mobile phone from her grocery app. The push notification suggests that by purchasing a healthier grocery basket, Emily can earn rewards from her insurance provider. Later that day, Emily's fitness tracker notifies her that she earned additional rewards from her insurer for going to the gym and meeting her weekly fitness targets. Emily can redeem these rewards for personalized benefits like at-home equipment, or bank the rewards for future use.

A few days later, Emily goes to her routine dentist appointment. Her insurance company immediately reimburses her for the cost of the appointment and notifies her of the payment. At the end of the month, Emily receives a progress update from her insurer which states the total rewards she earned and a (potentially lower) life insurance premium. Emily also receives personalized tips for how she can live a healthier life—and earn additional rewards—next month.



Pathway B: Integrating physical and digital processes

Along pathway B, emerging technologies can embed data about physical processes into financial products. This way, firms can improve risk and value assessments, assure the identity of transaction initiators, confirm the provenance of physical information, and optimize product distribution.



Enabling technologies lay the groundwork to:

- **Monitor physical assets and inventories** connected to 5G networks, providing near real-time data that AI can analyze in the cloud
- **Detect anomalies** so that data streaming from IoT devices stays accurate
- **Augment the world around us** by automatically classifying objects or people

Disruption is likely to occur where:

Shifts from moment-in-time to continuous adjudication occur

With continuous adjudication, institutions could give customers more reasons to stay loyal by offering them richly predictive and preventative insights. Firms could also improve their ability to predict financial outcomes based on data from the physical world, such as foot traffic through a store.

The future state: A bank makes ongoing decisions about credit and risk-worthiness from real-time information streams that physical assets produce.

Physical assets can make financial decisions

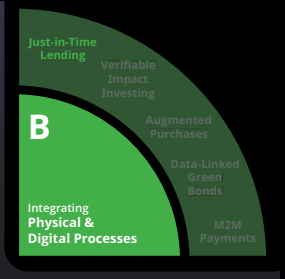
The convenience of making financial transactions through a physical asset could help first movers capture transaction flow from competitors. That said, manufacturers (like automakers) might demand a share of the fees.

The future state: A vehicle accepts digital payments from customers who want to rent it and offers loans to customers who want to purchase it.

Steps institutions can take:

- **Promote digital identity development.** Support the development of cross-industry digital identity framework(s) that standardize and coordinate the flow of data across individuals, institutions, and assets to help verify data provenance and ensure security
- **Reassess data needs.** Periodically reevaluate the data being captured to locate blind spots, determine where information is being underutilized, and assess where the cost of accessing data may outweigh the benefits of collection
- **Invest in flexible infrastructure.** Adopt cloud-based infrastructure in order to coordinate the integration of multiple data-centric technologies across the institution and standardize processes to modularly integrate new technologies and sources of data

Use case
Just-in-time lending



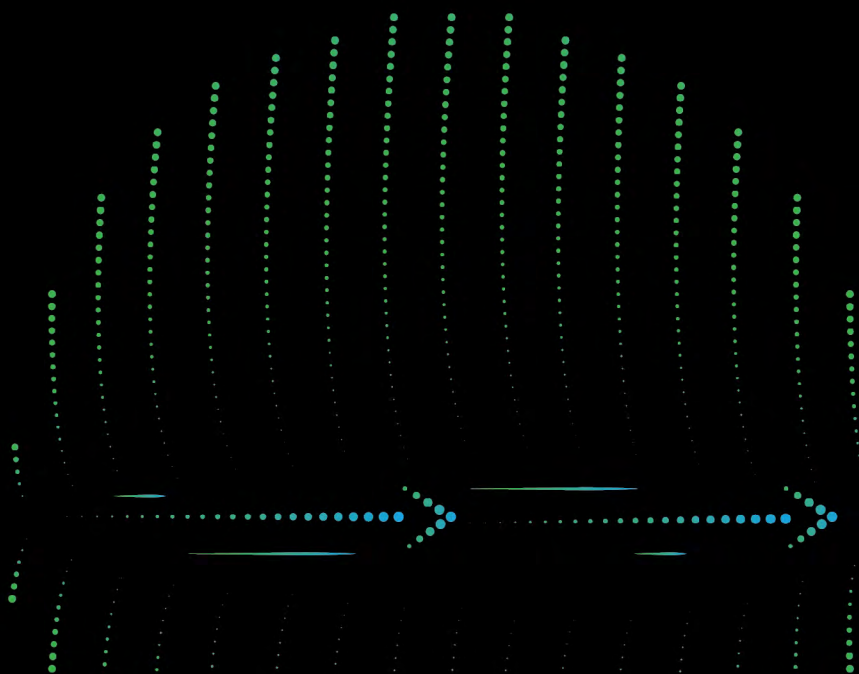
The takeaway: Small and midsize enterprises could benefit from tailored business advice and lending products that grow with their business. The financial institution could also reposition itself as a strategic advisor and source of trusted operational advice.

Paul runs a small manufacturing business in Australia. Lately, his business has been growing so rapidly that he often struggles to obtain funding when he needs it.

Paul and his bank work together to connect their credit engine to his operational and financial data. They also collaborate to install IoT sensors on critical machines for maintenance and use monitoring. Between the flow of real-time information and the use of AI decisioning tools, the bank can (subject to specific parameters) proactively lend to Paul when a new order comes in or when key equipment breaks down.

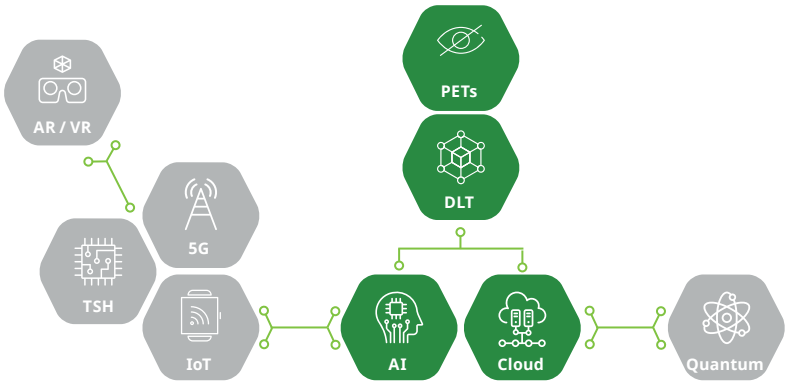
For example, if the model identifies a discrepancy between Paul's cash on hand and the raw materials needed for a new order, the model will automatically underwrite a loan and continually adjust the rate based on incoming data. This saves Paul from completing multiple applications and gives him more time to focus on his business.

The bank also uses this data, combined with relevant marketplace data, to equip Paul with personalized tips on how he could reduce costs, optimize staff, and make other operational improvements. This eases friction and positions the bank as an important strategic advisor to Paul.



Pathway C: Reorienting transaction flows

Pathway C involves making use of modern data and value-transfer rails to pursue more automated and direct movements of assets and funds between participants.



Enabling technologies make it possible to:

- **Facilitate transaction autonomy** with smart contracts that reduce the manual effort around agreement reconciliation and transaction processing, while allowing payments to flow autonomously
- **Create centrally distributed data sources** that let insights flow among institutions without sharing the underlying information
- **Conduct atomic transactions and settlements** between counterparties which, in some markets, can reduce the need for intermediaries

Disruption is likely to occur where:

High intermediation meets lack of centralization

Intermediaries who take a fee for facilitation services could lose that revenue when counterparties transfer funds directly over a single network. By eliminating intermediation, transaction chains could not only become shorter, parties could also share information in new ways—for example, through a utility dedicated to carrying out Know Your Customer (KYC) processes.

The future state: A retail bank sends a cross-border payment directly to a counterparty bank, instead of through a complex correspondent corridor.

An entire lifecycle can be captured on a single platform

Capturing entire markets or lifecycles on the same platform implies wholesale reengineering of current operations. Meanwhile, the development of fundamentally new rails could reshape how the industry carries out transactions. (For instance, a single, global fund transfer network for all currencies would be significantly different from how remittance is done today.)

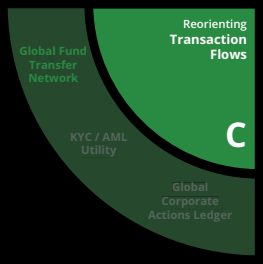
The future state: Participants use a common digital infrastructure to issue, process, and act upon all corporate action types.

Steps institutions can take:

- **Contribute to collective efforts.** Empower teams to collaborate with peers on ambitious infrastructure modernization work and develop systems to capture and disseminate key learnings and predictions for the future across the organization
- **Strengthen regulator relationships.** Engage regulators early and often in forward-looking conversations about transaction flow reorientation to quickly surface potential challenges and build early buy-in
- **Ensure cross-enterprise ownership.** This pathway relies on processes and technologies that may still be nascent and owned by siloed innovation teams. Consider centralizing these teams and sharing accountability for the application and success of their capabilities across the enterprise

Use case

Global fund transfer network



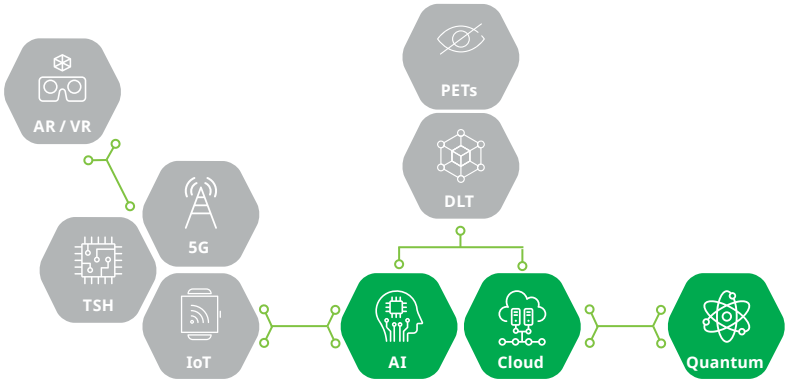
The takeaway: The global fund transfer system of tomorrow could be faster and more transparent by applying emerging technologies such as DLT and AI.

A US truck manufacturer wants to make a cross-border payment to a part manufacturer from Japan. Typically, this process would involve sending funds through a complex chain of correspondent banks. From there, the bank would carry out a combination of straight-through processing and manual data entry. Several days would likely pass before successfully completing the payment. This process can result in errors and poor data traceability as a result of the multiple points of contact.

With DLT, many intermediaries may be omitted from the process, and the financial institutions representing the two companies can interact directly with one another to complete the funds transfer much faster. DLT can make the system more transparent and efficient. It can also create a more seamless customer experience for the truck manufacturer, who is able to make an instant, atomic payment to its vendor and get real-time updates on the status of the funds.

Pathway D: Reimagining core functions

Pathway D leads to the ability to perform more granular, accurate, and robust calculations.



Enabling technologies offer the chance to:

- **Increase optimization speed** by solving complex problems faster than a traditional computer
- **Devise more robust ways** to monitor and classify transactions in real time, or dynamically optimize portfolios
- **Prepare data** for experimenting with quantum computing

Disruption is likely to occur where:

A central data organization layer can be developed

A central data layer could help institutions unlock more sophisticated insights, drive greater collaboration, and prepare for AI and quantum computing.

The future state: A partnership-driven organization organizes data from a multitude of sources to paint a big picture of individual customer activity.

Resource allocation involves a tradeoff between speed and accuracy

Breaking the tradeoff between speed and accuracy could significantly reduce opportunity and liquidity costs.

The future state: An investment bank has the ability to optimize collateral usage across desks in near real time.

Regulatory compliance or revenue pools depend on risk simulations

Improving the speed and accuracy of simulation techniques could reduce compliance risks, improve trading margins, and allow institutions to develop more accurate models.

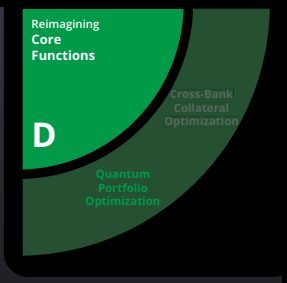
The future state: Firms can more accurately model Value-at-Risk for Basel III compliance using quantum algorithms, significantly reducing capital costs.

Steps institutions can take:

- **Invest in data process modernization.** Invest in data processes that can ingest and structure disparate sources of high-quality information and link them to critical cross-enterprise intelligence and decision-making layers
- **Develop exploratory quantum partnerships.** Develop strategic partnerships with emerging quantum leaders to better understand how quantum capabilities can be leveraged in your specific context and overcome lack of deep subject-matter knowledge across the financial services industry
- **Educate leadership early.** Improve the flow of valuable information between the organization's sensing and scanning function(s)—which may involve more junior or frontline employees—and executive teams to proactively ensure technological fluency

Use case

Quantum portfolio optimization



The takeaway: By applying quantum computing, AI, and cloud, financial institutions may consider a larger set of assets and potential trading strategies to optimize their portfolios in near real time.

Portfolio managers can instantly rebalance their portfolios by accounting for factors like regulatory requirements, volume limits, and percentage limits. Historically, this has been a computationally intensive calculation that can take several hours, if not days, to complete. As a result, banks in the past have had to sacrifice accuracy of the calculation (e.g., simulated annealing, threshold accepting, etc.) in order to make faster, more efficient portfolio decisions.

By applying quantum computing to help solve the combinatorial optimization of the portfolio, the portfolio manager may simultaneously process more portfolio combinations to find rapid, more accurate results. The result can be a significant improvement in overall portfolio performance.

What would it take to realize the value of these innovation pathways? A regulatory regime that has oversight of non-financial players like cloud providers, for one. Talent strategies that emphasize alternative labor pools and working arrangements are another condition. Firms are also likely to need streamlined methods of integrating quality data and connecting them to core analysis tools. Finally, firms should consider more modern ways to execute. This might include setting up multifunctional project teams, gathering feedback from multiple stakeholders, delivering work in smaller increments, and more.

Shifting competitive dynamics

As they become widely available, emerging technologies may raise the competitive standard across the board—making their adoption necessary but insufficient as a sustainable advantage over the long term. To see how this can play out, consider the effect these technologies can have on current differentiators like:

- **Operational efficiency.** The emergence of a "best of breed" operational stack, accessible on the cloud, may eliminate cost advantages from more efficient operations
- **Product development.** Standardization in financial services (think open source financial products) may make it easier to license and assemble new offerings
- **Connectivity.** Lower connectivity costs and standardization may allow institutions of all sizes to readily connect with new ecosystem partners
- **Data access.** Open data initiatives—alongside inexpensive hardware and standardized connectivity—may make it easier to access financial and non-financial data with customer consent
- **Customer convenience.** Democratized access to AI and automation, for example, may make straight through processing and one-click product purchases the norm

Eventually, financial institutions may find sustainable differentiation only in how effectively they can assemble new capabilities enabled by emerging technology clusters, execute with internal resources and third parties, and establish deep, trusted relationships with customers.

At the same time, financial institutions may find access to emerging technologies largely controlled by a range of non-financial service providers. For instance, cross-institution DLT networks may end up being jointly managed by a group of financial institutions, regulators, and others. Large cloud providers may continue to dominate online AI services, affecting areas such as operations (KYC tools), analytics (credit modeling), and cybersecurity (real-time fraud detection). Moreover, if customers own the IoT devices that can be linked to risk pricing—or the AR/VR devices that can enable new payment experiences—they may become the ultimate arbiters of consent over data streams.

All this can lead to new interdependencies and opportunities for financial institutions. A sophisticated approach to evaluating "fourth party" providers may be the key to developing and managing partnerships with many different types of organizations.

Potential implications for the financial institution of the future

Marketing and sales

Strive to deeply understand the customer to offer proactive solutions (e.g., just in time loans), while relentlessly protecting their personal data and limiting potential "creep factor."

Manufacturing and operations

Elevate procurement and vendor management, empowering these functions to asses each partner's capabilities and their contribution to the firm's ecosystem with a strategic lens.

Compliance and risk

Be alert to vendor lock-in and new vulnerabilities that emerge as a result of working with partners (e.g., data sharing risks, dependency risks, etc.).

Talent

Assemble internal and external resources that create the most effective mix of technology-in-residence and best-of-breed third-party capabilities.

Breaking down old barriers

Financial institutions have long endeavored to get to know their customers and offer personalized, tailored financial advice. Emerging technologies can help firms gain a more complete understanding of customers across products and channels by mitigating data fragmentation and ensuring high data quality. They can also increase the effectiveness of AI and other algorithms and reduce the risk of data compliance breaches.

Emerging technologies can also garner quick results when put to work sensing customer needs. For example:

- Cloud-based AI services could use real-time data from IoT devices to predict funding needs and customize a loan product.
- DLT networks that use PETs could securely combine data from multiple institutions (without sharing the underlying data) and run it through a robust AI-based fraud detection model that proactively protects customers.
- IoT could feed information into an AI model that senses impending insurance loss events and pushes corrective recommendations to a customer's mobile device.

As financial institutions learn more about the customer, they can identify even more moments of need and respond with a tailored product or service.

But age-old industry barriers around talent, data security, and regulatory compliance can stymie efforts to carry out new technology-driven solutions. The good news? Emerging technologies can help here as well. For instance, cloud-based platforms can store and maintain the data that new AI applications need to write code autonomously (e.g., model selection), reducing the need for technical talent to achieve a specific outcome.

To mitigate data liability, DLT can keep a record of data transfers among multiple parties. PETs can do the same by allowing third parties to examine data without directly accessing it. Meanwhile, look for AI to turn complex regulatory and operating environments into a machine-driven set of rules that could be built into firm algorithms. Someday soon, regulators may even be able to monitor tokenized assets and central bank digital currencies so that regulatory breaches have less chance to occur.

Potential implications for the financial institution of the future

Marketing and sales

Seek out non-traditional partners that have captured the attention of target customers to embed financial products and services into other platforms to create a more comprehensive customer offering.

Manufacturing and operations

Think systemically about how data flows across the organization, the processes that consume the data, and the resulting actions that the processes cause.

Compliance and risk

Proactively engage regulators when designing new infrastructure models, and plug regulators into internal systems so they can get the information they need on demand.

Consider the systemic effects and potential new vulnerabilities of streamlined systems against the value of time-based frictions and centralized, intermediated processes.

Talent

Develop a talent strategy specific to working with partners, including identifying areas where it makes the most sense to "rent" top talent from third parties and establishing intra-organizational structures that allow for rapid testing and diverse teaming.

Bear in mind though that technology can create as many problems as it solves. For instance, real-time interactions in the securities market may reduce settlement times but cause liquidity requirements to go up in response. Real-time payments may prompt banks to develop stronger identity and authentication processes because they have almost no time to verify transactions.

Then there are the potential issues around disintermediation—such as small and midsized institutions being excluded from a global fund transfer network due to cost, or exchange rate risk going up because alternative payments (e.g., stablecoins) lack interoperability across networks. In the end, we may discover that some frictions are not only unavoidable but necessary to maintain stability, liquidity, and good governance in the financial system.

Tackling systemic industry challenges

Malicious actors may have access to the same emerging technologies that financial institutions deploy. This can leave new capabilities vulnerable to attack via:

- **Advanced decryption techniques.** Quantum computers may one day be stable enough to reliably decrypt many of the most widely used public and private encryption algorithms, including many of the ones that financial institutions commonly use to encrypt sensitive data today.
- **Real-time feedback loops.** IoT devices may be manipulated as they provide real-time feedback to other systems (e.g., weather data to inform algorithmic derivative trading). Vulnerabilities in widely used IoT devices and protocols could allow malicious parties to inject fault data that could move markets.
- **Peer-to-peer (P2P) transactions.** Fraudsters can apply social engineering to trick users who transfer assets over P2P networks. Such networks are quickly becoming a dominant method for transferring small amounts of money and for small businesses to receive payments.

These and other vulnerabilities can send firms in search of ways to boost their operational security and resiliency. The most effective defenses will cover entire ecosystems, secure data in new ways across participants, and address the ever-important human element.

However, the challenges don't end there. Applications of emerging technologies can create ethical, social, and environmental challenges—as well as reinforce any that already exist. For instance, quantum computers—the same ones that promise to help institutions make more accurate financial decisions—are inherently unexplainable, which could make it nearly impossible to detect embedded sources of bias. The cloud market is highly consolidated, raising the risk of vendor lock-in. And the outsized energy consumption of popular DLT consensus protocols—like the proof of work protocol that underpins popular cryptocurrency blockchains like bitcoin—could significantly increase the industry's carbon footprint.

Grappling with these challenges can slow deployment across the financial services industry. Sooner or later, however, each financial institution could very well find itself not only balancing the risks and benefits of emerging technologies but actively managing them against broader ethical, social, and environmental agendas.

Implications for the financial institution of the future

Marketing and sales

Proactively educate customers on how to protect their personal information, serving not just as a protector of customer's financial wellbeing but as a trusted advisor when it comes to data security.

Manufacturing and operations

Transmit sensitive data to and from partners more securely by leveraging PETs to prevent man-in-the-middle attacks and protect information sent over unsecure networks.

Compliance and risk

Look into ecosystem-scale solutions to monitor and detect fraud and verify user identity, set security standards for emerging technologies, and hold partners accountable for fraud, security, and other related issues at their end—working closely with relevant regulators.

Talent

Address people-related vulnerabilities by training staff to be aware of ransomware and other social engineering attacks, or by reviewing insurance for adequate coverage of cyber risks.

Concluding thoughts

The examples and implications in this report are but a few of the ways that emerging technologies can come together to create new opportunities, alter competitive dynamics, and increase the impetus to tackle systemic industry challenges. In this scenario, financial institutions become more:

01

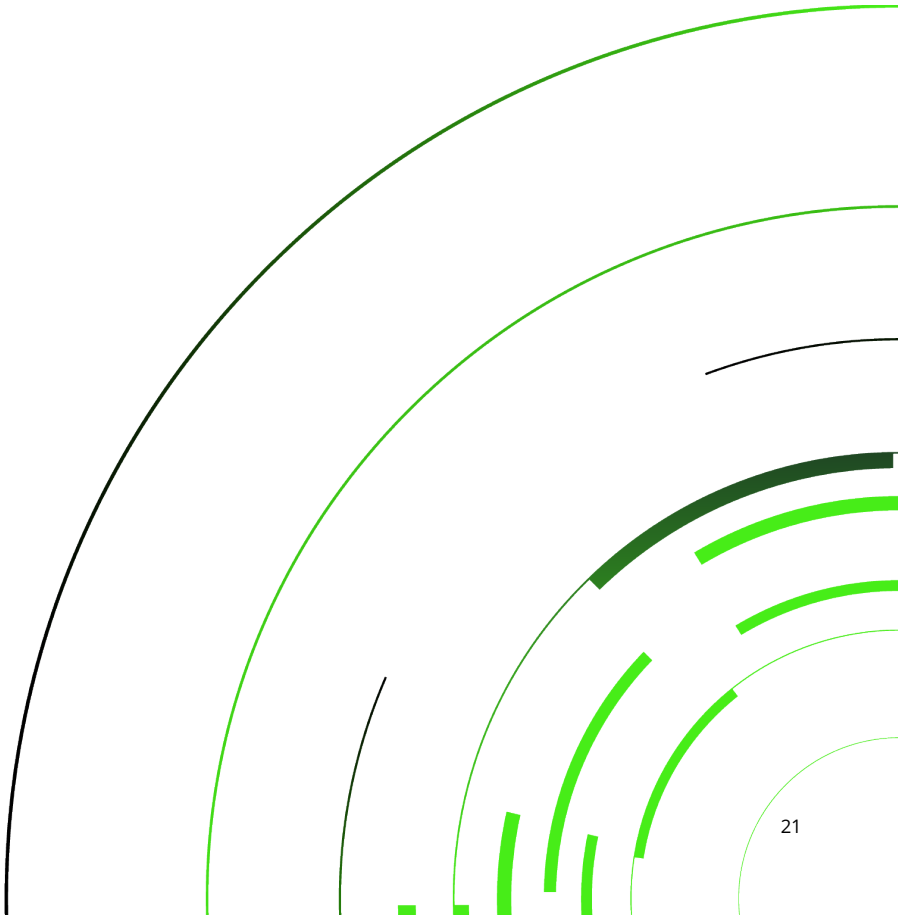
Ecosystem oriented.
Industry boundaries blur as financial and non-financial products are embedded in new ways to fulfill broad customer journeys. Meanwhile, eroding barriers (technical as well as competitive) to collaboration improve the business case for partnering with peers to create mutually beneficial offerings

02

Customer obsessed.
The fight to capture scarce moments of customer attention—and build exclusive partnerships that drive unique advice, personalization, and complementary offerings—give rise to rapid and closely monitored feedback loops

03

Coordinated and agile.
Data analysis, storage, and transfer technologies help financial institutions readily link disparate sources of information, enhancing coordination and decision-making agility while breaking down organizational silos



At the same time, firms (alongside regulators and policymakers) will have to contend with an operating environment that is:

01

Highly democratized.
Wide access to emerging technologies eliminates most of the competitive advantage associated with speed and efficiency, pressing institutions to get back to competitive basics like assembly, execution, and relationships

02

Fraught with new challenges.
Without careful deployment, technology clusters are prone to create new governance challenges or exacerbate old ones, leading to investments in ultimately undesirable market structures

03

Liberated of old assumptions.
Innovators rethink traditional talent operating models, develop new approaches to manage the challenges associated with risky data collaborations, and build closer and more transparent relationships with regulators

That being said, conditions for action have never been stronger. Institutions today have license to pursue these opportunities at a pace and sophistication seldom seen before.

We welcome your questions and ideas, and invite you to reach out to any of us by email. If you're interested to learn more we invite you to read the Forum report which this piece is based on, Forging new pathways: The next evolution of innovation in financial services.

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