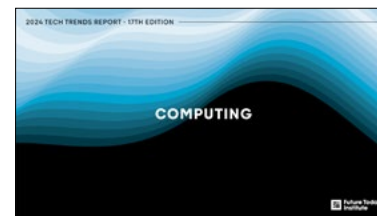
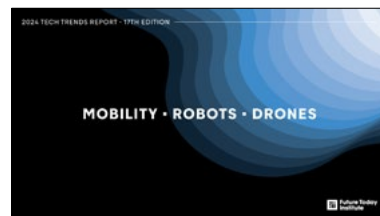


FINANCIAL SERVICES & INSURANCE

FUTURE TODAY INSTITUTE'S 2024 TECH TREND REPORT

Our 2024 edition includes nearly 700 trends, which are published individually in 16 volumes and as one comprehensive report with all trends included.

Download all sections of Future Today Institute's 2024 Tech Trends report at <http://www.futuretodayinstitute.com/trends>.





THE YEAR AHEAD: TECH SUPERCYCLE

The theme for our 2024 report is Supercycle. In economics, a “supercycle” refers to an extended period of booming demand, elevating the prices of commodities and assets to unprecedented heights. It stretches across years, even decades, and is driven by substantial and sustained structural changes in the economy.

We believe we have entered a technology supercycle. This wave of innovation is so potent and pervasive that it promises to reshape the very fabric of our existence, from the intricacies of global supply chains to the minutiae of daily habits, from the corridors of power in global politics to the unspoken norms that govern our social interactions.

Driving this seismic shift are the titans of technology and three of their inventions: artificial intelligence, biotechnology, and a burgeoning ecosystem of interconnected wearable devices for people, pets, and objects. As they converge, these three macro tech segments will redefine our relationship with everything, from our pharmacists to our animals, from banks to our own bodies. Future Today

Institute’s analysis shows that every technology—AR/ VR/ XR, autonomous vehicles, low Earth orbit satellites, to name a few—connects to the supercycle in some way.

The ramifications are stark and undeniable. As this tech supercycle unfurls, there will be victors and vanquished, those who seize the reins of this epochal change, and those who are swallowed whole. For business leaders, investors, and policymakers, understanding this tech supercycle is paramount.

In this 17th edition of FTI’s annual Tech Trends report, we’ve connected the supercycle to the nearly 700 trends we’ve developed. Our research is presented across 16 technology and industry-specific reports that reveal the current state of play and lists of influencers to watch, along with detailed examples and recommendations designed to help executives and their teams develop their strategic positioning. The trends span evolutionary advancements in well-established technologies to groundbreaking developments at the forefront of technological and scientific exploration. You’ll see emerging epicenters of innovation and risk, along with a preview into their transformative effects across various industries.

We’ve visually represented the tech supercycle on the report’s cover, which is an undulating image reminiscent of a storm radar. Vertical and horizontal lines mark the edges of each section’s cover. When all 16 section covers converge, the trends reveal a compounding effect as reverberating aftershocks influence every other area of technology and science, as well as all industries.

It’s the convergence that matters. In isolation, trends offer limited foresight into the future. Instead, the interplay of these trends is what reveals long-term change. For that reason, organizations must not only remain vigilant in monitoring these evolving trends but also in cultivating strategic foresight—the ability to anticipate future changes and plan for various scenarios.

Our world is changing at an unprecedented rate, and this supercycle has only just begun.

A handwritten signature in black ink that reads "Amy Webb".

Amy Webb

Chief Executive Officer
Future Today Institute

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TOP HEADLINES

Financial services are evolving towards a future defined by instant, seamless interactions and robust security.

01 Banks Battle to Keep Digital Pace Amid Tech Evolution

Financial institutions are finding it increasingly difficult to keep pace with the rapid evolution of technology despite ongoing efforts in digital transformation.

02 2023 Bank Failures Eclipse 2008, Signaling Shift to Megabanks

The fall of Silicon Valley Bank, Signature Bank, and First Republic Bank marked a more significant disruption than the 2008 crisis, creating uncertainty for regional banks.

03 Financial Firms Must Revamp KYC in Digital Identity Push

As digital identity technologies advance, financial institutions must overhaul “Know Your Customer” (KYC) policies to make banking interactions and transactions more fluid and secure.

04 Instant Payments Get Closer to Reality with FedNow’s Launch

With the introduction of FedNow in 2023, the financial industry is one step closer to instantaneous payments and real-time financial processing.

05 Banking Infrastructure Enters Its Blockchain Era

Orchestration, routing, and data security are poised to become the most exciting battlegrounds in finance, driven by leading banks’ innovative use of blockchain.

STATE OF PLAY

Financial services are at a crossroads: balancing tech investment and innovation for the long term with a positive experience today.

Financial services institutions and insurance providers are facing a pivotal juncture. Innovation has brought advances like instant payments, digital wallets, and open banking, yet it has also revealed the fragile infrastructure underpinning legacy systems. Though financial groups tout significant technology spending, brick-and-mortar branches are being rapidly closed leaving customers with fragmented services and a need for more consistent access. While many services still require in-person visits, call centers scale back as digital traffic surges, and systems suffer frequent outages.

Legacy financial organizations that are still struggling to modernize face an unpleasant reality. The digital transformation endeavors undertaken in the late 2010s are falling behind a wave of emerging capabilities: innovations like artificial intelligence and decentralized identity are already scaling, putting pressure on existing initiatives. Difficult decisions loom—whether to forge ahead with current modernization efforts, redirect budgets to trail-blazing opportunities, or straddle both at the risk of diluted focus.

The imperative is clear: organizations must redesign technology stacks for a digital-first world, embrace agile innovation, and focus beyond quarterly results to make the long-term investments required to compete in the unfolding revolution.

KEY EVENTS

MARCH 10, 2023

Silicon Valley Bank Collapse

A bank run led to the government's seizure of SVB, the third largest bank failure in US history.

JUNE 5, 2023

Insurers Pull Out of California

State Farm becomes the second major insurer to pull out of California after Allstate announced its move in November 2022.

NOVEMBER 2, 2023

Sam Bankman-Fried Conviction

A jury found Sam Bankman-Fried, FTX founder, guilty of seven fraud and conspiracy charges.

APRIL 20, 2023

Markets in Crypto Act Approval

The European Parliament passed MiCA, which imposes requirements on crypto platforms, issuers, and traders.

JULY 20, 2023

FedNow Launch

The new Federal Reserve digital payments system will allow faster and cheaper cash flow.

LIKELY NEAR TERM DEVELOPMENTS

ACTION IS THE VERB FOR 2024

Financial institutions and insurance providers have spent years experimenting, pondering, and investigating new and influential technologies. To a great extent, the volatile market of the last several years created the optimal environment for thinking rather than doing. But 2024 will be different: New AI standards, scaled CBDCs, and forthcoming stablecoin regulations mark this year as a year of action. If financial institutions and insurance providers leverage this opportunity to make real progress on their technological investment, 2024 could be an inflection point for the industry.



Inflation (Should) Remain Steady

Current views suggest inflation will remain steady this year after cooling in late 2023. While Fed rate cuts will help maintain stability, rising housing and rental costs at the beginning of 2024 have put upward pressure on inflation, making it a space to watch.



US Election Outcomes

In addition to the presidential election, several senate seats are up for grabs in 2024 that could determine key outcomes in banking regulation over the next several years, particularly in Ohio, Montana, and California.



US Stablecoin Regulation

The Clarity for Payment Stablecoins Act of 2023 was passed by the House Financial Services Committee in 2023 in July, leaving many hopeful that the official legislation will pass sometime in 2024. The bill would regulate stablecoins like other financial institutions.



AI Standards Development

Top tech firms are participating in a joint effort led by the US Department of Commerce to create standards around the safe use of AI. While not purely FI-focused, the outcomes will likely inform how banks and insurance companies use the tech.



CBDC Launches

Several countries, including India, Brazil, and Singapore, have planned to launch CBDCs in 2024. While the scale and maturity of the efforts vary, 2024 should serve as a proving ground for whether CBDCs work in the wild.



Technology Investment

A recent survey showed that 92% of banks plan to increase technology spending in 2024. This investment will likely focus on data and AI, leading to strategic hires in specific areas of expertise. Hopefully, these investments will be practical and not experimental.

11 MACRO SOURCES OF DISRUPTION



Technology



Media & Telecom



Demographics



Environment



Government



Public Health



Education



Geopolitics



Infrastructure



Economy



Wealth Distribution



WHY FINANCIAL SERVICES & INSURANCE TRENDS MATTER TO YOUR ORGANIZATION

Expanding Distribution

Open banking frameworks and embedded insurance offerings enable financial institutions and insurers to deliver customized products through third-party platforms and apps. Integrating services with digital ecosystems can substantially expand consumer reach and acquisition without traditional sales and marketing costs.

Streamlining Onboarding

Emergent standards around digital identity verification, e-signatures, and digital wallets allow remote, paperless onboarding of new clients. Auto-validated customer data cuts administrative costs related to application reviews and background checks. These elements of streamlined onboarding enhance profitability through lower acquisition costs and faster account funding.

Optimizing Settlements

Blockchain-based settlement layers and real-time payment rails can reduce transaction times from days to seconds while lowering reconciliation expenses. Legacy back-office systems rely on complex intermediary clearing processes that amplify operational costs. Direct settlement improves cash flows.

Boosting Productivity

Sophisticated automation through AI and machine learning allows financial and insurance providers to optimize everything from underwriting approvals to claims adjustment. This digitization of manual review processes enhances accuracy and efficiency, reducing headcount and improving the effectiveness of human capital.

Ensuring Compliance

As personal data protection regulations emerge across jurisdictions, institutions require new capabilities around managing consent, data inventories, access controls, and surveillance systems. While temporarily increasing costs, data governance is table stakes for institutional trust and mitigates existential regulatory or cyber risk.

Virtualizing Operations

Digitization of customer-facing processes (like online banking apps) continues behind the scenes by virtualizing infrastructure. Transitioning from legacy systems reduces brick-and-mortar footprints, paper processing, manual labor, and associated multi-million dollar expenses.

OPPORTUNITIES & THREATS

Threats

Persistent and escalating cybersecurity hazards like hacking, malware, and phishing scams present substantial data and asset security challenges for financial firms housing sensitive customer information.

Emerging data privacy regulations in major jurisdictions require increased financial sector transparency and customer control, necessitating investments in continuous compliance efforts.

Disruptive financial technology startups promoting innovations such as digital payments, automated advisory, and blockchain are forcing banks and investment firms to adapt rapidly.

Fluctuating macroeconomic conditions, including interest rates, inflation, credit cycles, and potential recessions, significantly sway bank loan books and investment portfolios, posing economic stability risks.

Highly sophisticated fraud threats around identity theft, payment fraud, and more that cost the industry billions annually require ongoing detection and prevention efforts across financial institutions.

Opportunities

Exploring emerging identification technologies from outside banking could unlock avenues to create seamless customer identity verification in-person, online, and on the phone—enhancing user experience across all interaction channels.

Banks have opportunities to build on consumer demand for financial app features by integrating digital offerings like personalized recommendations based on data analysis—capitalizing on desires for more value-added digital wallet capabilities.

Pursuing practical AI applications that increase productivity and efficiency would allow financial institutions to adopt this technology strategically rather than just following the latest trend.

Employing behavioral insights and predictive modeling, including third-party data, to shape preemptive customer offerings aligned with needs could augment the precision of such analytics.

Future-focused infrastructure investment strategies enabling banks to support cutting-edge innovation can position them to stay ahead of evolving market expectations.

INVESTMENTS AND ACTIONS TO CONSIDER

1

Continue to invest in cybersecurity controls, AI-enabled systems for detecting fraud, upgraded data encryption, and refined access governance to comply with emerging privacy regulations and combat the increasingly sophisticated cybersecurity threats that manifest in the modern digital landscape.

2

Evaluate, in detail, all digital transformation efforts, programs, and initiatives against an updated comprehensive ten-year technology roadmap to ensure the modernization updates across business functions are keeping pace with the latest innovations in emerging technologies across industries.

3

Design and implement customer identity management transformation programs consisting of omnichannel capabilities across digital and in-person platforms. These will enable enhancements to identity verification processes that mitigate fraud while expediting customer onboarding and authentication.

4

Allocate additional budget, human capital, and resources towards augmenting predictive risk modeling analytics capabilities via alternative and synthetic data. This will facilitate preemptive adjustments within investment portfolios and other financial assets to mitigate vulnerability more effectively.

5

Provide substantial funding to build more flexible, agile core technological systems that simultaneously support integration with legacy and future cutting-edge innovations, facilitating quicker responses to rapidly shifting customer needs, competitor product offerings, and internal digitization goals.

6

Contemplate new product and service offerings that leverage emerging technologies to create more value for customers, or meet their needs for evolving risks. By integrating cutting-edge solutions such as artificial intelligence and blockchain, companies can enhance operational efficiency and introduce innovative risk management tools.

CENTRAL THEMES

Digital Fragmentation

Despite significant innovation funding, unfinished transitions from aging, on-premises systems have left customers facing intermittent access, frequent outages, and fragmented experiences. A focus on experimental innovation efforts rather than scalable customer-facing capabilities is often to blame for failed modernization efforts. The source of this fragmentation is decades of technical debt burdening financial institutions—sprawling, complex IT estates that have become exceptionally challenging to overhaul. The consequences are emerging at an accelerating pace: customer frustrations, brand erosion, outages during critical transactions, and tightening margins as costs escalate. As competitors increasingly offer integrated, omnichannel client service, outdated financial institutions run the risk of dissatisfied customers leaving for more advanced providers. The growing digital divide has expanded too far to ignore; near-term disruption seems inevitable as decentralized technologies ready a more seamless and integrated alternative.

Neobank Infiltration

Neobanks have narrowed the gap with traditional banks by targeting the digital shortcomings of established institutions. These entities, which capture nearly half of new account market share, leverage modern infrastructures, benefit from lighter regulatory frameworks, and disrupt key revenue streams in sectors like lending and payments. Younger cohorts make up most of their growth: 75% of new accounts originate from Gen Z or millennials, for whom the concept of a checking account has become indistinguishable from payment tools. Neobanks distinguish themselves by offering services such as bill management and negotiation, subscription management, credit score monitoring, and automated savings and investing, all of which are now considered standard features to many consumers. This evolution reflects how neobanks are reshaping the banking landscape, appealing to a tech-savvy, younger demographic and challenging the dominance of traditional banks.

Blockchain Rebound

After a period marked by speculative frenzy and significant fluctuations in Bitcoin's value, the blockchain and digital asset sectors saw a notable rebound with increased institutional interest in October. Despite volatile headlines, the steady enhancement of foundational technologies has progressed quietly. These advancements in global interoperability, execution reliability, and ecosystem tooling are setting the stage for sustained growth. A majority of the world's central banks are exploring central bank digital currencies (CBDCs) and digital asset strategies, signaling a shift towards mainstream acceptance. Innovations in multi-party compute, zero-knowledge proofs, and confidential computing are refining the balance between transparency and privacy. The emergence of an open, programmable, and borderless financial infrastructure suggests technology is no longer the main barrier to widespread adoption. However, significant policy challenges related to digital identity, compliance, consumer protection, and international coordination remain, keeping broader application to speculative trading. Mainstream use appears distant unless regulatory reforms align with technological advances.

CENTRAL THEMES

Cybersecurity Frontlines

As digital expansion accelerates, so does the proliferation of cyber threats. The shift from frequent, minor attacks to selective, high-stakes breaches has seen hackers exploiting vulnerabilities in legacy systems to monetize high-value data on the dark web. Enhanced security measures struggle against sophisticated ransomware that demands payments to unlock customer access, subtly undermining trust despite significant security investments. The relentless need for vigilance against the exploit kits hackers can deploy poses challenges for even the most robust security operations. Smaller entities face the tough choice of outsourcing security, potentially compromising control over vital systems and impacting financial health. Regulatory demands for risk management are essential yet can impede rapid responses to emerging threats. This constant, mostly invisible struggle for cybersecurity underscores the critical battle for system integrity and resilience, highlighting the complex dynamics in protecting digital landscapes.

Balancing Innovation and Policy

Emerging technologies are advancing rapidly, outstripping existing policy frameworks and oversight capabilities. The domain of cryptocurrencies and digital assets, with its complex custodial and transactional protocols, can create particular challenges for regulatory categories designed for conventional financial systems. Similarly, the trade-offs between explainability and performance in machine learning and artificial intelligence raise questions about accountability and fairness in systems. The gap between the pace of innovation and the capacity for regulatory oversight is widening, with central interventions potentially stifling the positive impacts of new technologies. The key to navigating this evolving landscape lies in enhancing organizational transparency and consumer understanding, which are as crucial for success as establishing universal standards. Creating the appropriate approach will require enhancing technological knowledge for business and policy leaders.

Soaring Customer Expectations

Today's digital transformation initiatives are failing to meet consumer expectations. Behind the scenes lie challenges such as integrating new databases, implementing advanced cybersecurity measures, and retiring old technologies. These necessary steps can lead to unfavorable customer interactions, such as systems that require re-identification and system outages and conversions. Today, almost all consumers expect fully personalized advice and consistent experiences across both physical and digital touchpoints. Even one negative interaction can prompt a consumer to consider switching to a different institution. To retain loyalty, brands must integrate physical and digital services and balance automated and human-centered interactions. Traditional brands may have an inherent trust advantage, yet this often relies on customer inertia. As consumer expectations escalate and more alternatives emerge, brands that cannot deliver experiences that fulfill their promises risk losing their competitive edge.

ONES TO WATCH

Alex Chriss, President and CEO of PayPal, for the company's leadership in digital payments, payment experiences, cryptocurrencies, and expanding global payment solutions.

Bradley Leimer, Co-Founder of Unconventional Ventures and Executive Director, Head of Fintech Partnerships and Open Innovation at SMBC, for his take on innovative technologies in banking.

Cathie Wood, Founder and CEO of ARK Invest, for her thematic investing advice and perspectives on leading technological innovation and shifts in finance, such as SEC approvals.

Dr. Dambisa Moyo; Member, House of Lords—sitting as Baroness Moyo of Knightsbridge; Investor, Board member, Author; for her thought leadership on macroeconomics and global affairs.

Daniel Schreiber & Shai Wining, Founders of Lemonade, for their company's disruption of the insurance industry using AI and data analytics, reimagining claims and customer service.

Hiromichi Mizuno, former Chief Investment Officer of Japan's Government Pension Investment Fund (GPIF) and UN special envoy, for his work in innovative finance and sustainable investments.

Jack Dorsey, founder of Twitter & Block, for innovatively fusing social media with finance, significantly shaping digital communication and transactions across platforms.

Dr. Janet Yellen, United States Secretary of the Treasury, for her work leading the Treasury's policies and thought work around CBDCs, the future of money, and the evolution of payments.

Jason Keck, Founder and CEO of Broker Buddha, for transforming the insurance application and renewal process with agency management system (AMS) technology.

Ken Moore, Chief Innovation Officer of Mastercard, for his work leading the organization's perspective on emerging technologies like artificial intelligence and blockchain.

Kristo Käärman, Co-Founder of Wise (formerly TransferWise), for the company's mission to cut through cross-border payment barriers, making transactions cheaper and faster.

Laura Drabik, Chief Evangelist at Guidewire, for her thought leadership and work on the factors shaping insurance's future, including technology and climate change.

Dr. Lisa D. Cook, Member of the Board of Governors of the Federal Reserve System, economist, and professor, for her groundbreaking work on economic policy and financial markets.

Max Levchin, CEO of Affirm, for his ongoing innovations, including developing anti-fraud efforts, co-creating the Gausebeck-Levchin test, and co-founding Affirm.

Michael Barr, Vice Chair of Federal Reserve for Supervision, for his work on regulatory proposals that would raise capital requirements and strengthen oversight for major banks.

Nick Molnar and **Anthony Eisen**, Co-Founders of Afterpay, for pioneering payment flexibility with their "buy now, pay later" service, reshaping retail finance and invisible payments.

Ricardo Lara, California Insurance Commissioner, for his navigation of the state's evolving environment and insurers' actions to decrease offerings due to climate-related risk.

Rodney Williams, Co-Founder of SoLoFunds and Co-founder and Chief Commercial Officer at LISNR, for the LISNR technology's work in contactless authentication and seamless transactions.

Rohit Chopra, Director of the US Consumer Financial Protection Bureau, for his polarizing but impactful perspectives on banking regulation and his work on open banking.

Sallie Krawcheck, CEO and Co-Founder of Ellevest, for developing a digital financial advisor for women emphasizing ethical investment and economic empowerment.

Sam Altman, CEO of OpenAI, for potential developments the company could lead in using generative artificial intelligence in financial services and insurance applications.

Shefi Ben-Hutta, Founder of Coverager, for tracking and analyzing the near-term developments and long-term factors shaping the insurance landscape.

Thasunda Brown Duckett, CEO of TIAA, for her leadership in finance, career-long advocacy for financial literacy and inclusion, and mission to expand retirement savings.

Vitalik Buterin, Co-Founder of Ethereum, for his revolutionary work in finance with blockchain, which is driving the growth of Decentralized Finance and smart contract applications.

BUILDING BLOCKS

11TH YEAR ON THE LIST

DIGITAL IDENTITY

WHAT IT IS

Digital identity is the online presence or persona of an individual, organization, or device, represented by uniquely identifiable attributes and used for digital interactions and transactions. While they used to be somewhat separate, the meteoric rise of digital interactions has caused one's "identity" and "digital identity" to become inextricably linked.

HOW IT WORKS

To date, digital identity is verified through mechanisms like multi-factor authentication, simple biometrics (such as a thumbprint), and digital or electronic signatures. However, new technological capabilities drive this space toward more seamless and invisible authentication. These capabilities apply across many industries but are essential for banking and financial services, where almost every interaction requires authentication.

CLEAR is preparing to roll out the CLEAR Lane of the Future in 2024, allowing CLEAR Plus Members to verify their identity with their face. Other venues are following suit: the Bank of America Stadium in Charlotte, NC, began using facial recognition in December 2023 in partnership with Verizon. Blockchain-based identities also provide an immutable record of one's identity. Sovrin is a blockchain-based decentralized identity network that enables verifiable, self-sovereign identities, allowing users to share only the information necessary for a transaction or interaction.

As more organizations implement digital identity measures, behavioral biometrics, which validate a person by analyzing things like typing speed or mousing patterns, will likely increase in popularity. While regulation may prevent US banks from implementing these measures, banks in Australia have come together to institute the Scam Safe Accord, which requires biometric verification for account openings.

WHY IT MATTERS

At the heart of digital identity technology is the ability to enhance security measures and mitigate the risk of fraud. Digital identity solutions offer robust verification processes, utilizing biometrics, encryption, and blockchain, among other technologies, to ensure that only authorized users can access sensitive financial information and execute transactions. Digital identity technology also simplifies the process of meeting regulatory requirements like Know Your Customer (KYC) and Anti-Money Laundering (AML) by streamlining the verification of customer identities and monitoring transactions for suspicious activities.

In addition to institutional benefits, customers expect seamless, secure, and rapid interactions with their financial service providers. Digital identity technologies could make interactions seamless, leading to entirely ID-free interactions. By simplifying the authentication process without compromising security, financial institutions can enhance customer satisfaction, foster loyalty, and attract new clients.

Implementing digital identity solutions can also lead to significant improvements in operational efficiency. Automated verification processes reduce the need for manual checks, thereby lowering operating costs and speeding up transaction times.

Digital identity technology is more than just a tool for enhancing security; it is a strategic asset that addresses a broad spectrum of challenges financial institutions face.

2ND YEAR ON THE LIST

DATA MINIMIZATION

WHAT IT IS

Data minimization is a principle in data protection and privacy that emphasizes collecting only the data that is directly necessary and relevant for accomplishing a specified purpose. It advocates for limiting the amount of personal data gathered, stored, and used to the minimum required to achieve the objectives for which the data is processed.

HOW IT WORKS

Researchers are developing approaches that leverage technologies like fully homomorphic encryption (FHE) to help organizations meet data minimization standards. With FHE, data is encrypted so that third parties can perform analysis and operations on the encrypted data without ever having access to the unencrypted data. For example, a company could confirm an individual's identity through an FHE-based database without seeing, accessing, or storing personally identifiable information.

A similar approach, differential privacy, ensures that the privacy of individuals in a dataset is protected when statistical analyses are performed. It works by adding a certain amount of random noise to the data or the results of queries on the data, making it challenging to infer information about any individual within the dataset. The goal is to allow data analysts to extract useful aggregate information from a dataset without compromising the privacy of any individual. Differential privacy can be beneficial when implementing AI models to avoid having the model inadvertently learn or reveal sensitive information about individuals from the training data.

Companies are also addressing data minimization needs through consent management; however, this approach can fail if consent is obtained by requiring consumers to agree to a sharing policy they do not fully understand. Other relatively analog solutions include stricter access controls and regular data cleaning and deletion.

WHY IT MATTERS

Data minimization is crucial for financial institutions and insurance companies, especially with both federal bodies like the FTC and individual states enacting stricter data privacy regulations in 2023. These laws mandate limiting data collection and usage, aiming for compliance, enhanced security, and customer trust.

By adhering to data minimization, organizations can reduce the risk of data breaches, enhance privacy protections, and build trust with customers and users by demonstrating responsible data management practices. Data minimization practices, however, may stand in stark contrast to organizations' increasing use of AI: the concept of reducing or minimizing the amount of data an organization has, especially in its raw form, stands at odds with the need to build up a corpus of data to have a sufficiently reliable AI model.

In customer data lakes, reducing the amount of data held can benefit organizations; lowering data storage and processing needs can lead to streamlined operations and cost savings. Moreover, focusing on necessary data improves decision-making quality. Due to less data handling, simplified compliance helps navigate the complex regulatory landscape. Data minimization is strategic, balancing regulatory adherence with operational efficiency, security enhancement, and trust-building.

1ST YEAR ON THE LIST

AI-POWERED CX

WHAT IT IS

Almost three-quarters of leaders have prioritized expanding AI across the customer experience. While CX has been a strong focus for financial services companies and insurers over the past decade or more, artificial intelligence serves as rocket fuel for these companies to further personalize their interactions and experiences.

HOW IT WORKS

The most common application of artificial intelligence to enhance CX is through chatbots or other servicing agents. WatsonX has developed advanced AI chatbots that use natural language processing (NLP) to respond to queries about anything from filing a claim to paying their bill.

While chatbots are an obvious choice for experimentation, other more sophisticated applications are beginning to emerge. Roots Automation, for example, has rolled out InsurGPT, a finely-tuned large language model trained on insurance data to parse documents, including submissions, claims notices, and customer or agent correspondence.

In other cases, companies implement AI in back-office operations to expedite customer decision-making, creating speedier experiences. In one example, Nationwide Insurance partnered with DigitalOwl, a tool that uses AI to quickly summarize vast stores of medical records, increasing the speed of life insurance underwriting.

Some new banking upstarts offer AI-based features like notifications and guardrails: cred.ai issues a credit card that limits your spending based on the amount of money you have in your linked deposit account. As you spend, money is set aside in your deposit account to ensure you can pay it off.

WHY IT MATTERS

The initial investment in AI technology can be substantial, covering both the technology itself and the training and restructuring needed to integrate AI into existing systems. Organizations may feel uncertain about the return on investment, especially since there is no past experience with these AI applications to guarantee improved customer experiences.

Ironically, while AI aims to personalize customer experiences, there's a risk of depersonalization if implemented incorrectly. Over-reliance on AI without human oversight can lead to customer experiences that feel generic or lack the human touch, potentially affecting customer satisfaction and loyalty.

As AI technologies such as chatbots and document processing systems handle more tasks traditionally performed by humans, there will be a decreasing need for a large customer service staff, affecting employment within the industry.

AI applications that are purpose-built for insurance will enable streamlining, automating, processing, and analyzing documents such as insurance claims and medical records. These applications will create operational efficiencies, reduce manual labor, speed up decision-making processes, and shorten the time required for services like insurance underwriting.

1ST YEAR ON THE LIST

AI-ASSISTED DATA MODELING FOR INSURERS

WHAT IT IS

AI-assisted data modeling is a game-changer for the insurance industry, driving significant advancements in risk assessment and fraud detection. By leveraging AI to analyze vast quantities of data, insurance companies can uncover nuanced insights and drive more accurate decision-making.

HOW IT WORKS

A patent application filed by Travelers Insurance in May 2023 outlines a solution to help reduce cargo theft using AI imagery analysis. In this solution, AI analyzes images or sensor data of cargo at various points in time. The system can identify theft, damage, or other loss events by comparing these data points. This approach allows for immediate detection of discrepancies, significantly increasing the chances of quickly preventing theft or recovering stolen goods.

Another patent from State Farm describes the integration of LiDAR (Light Detection and Ranging) and AI to advance spatial analysis, property management, and navigation. The patent encompasses creating and using 3D models to visualize home renovations, optimize object placement, design landscapes, locate utility lines, and manage commercial inventories. Additionally, it includes AI-based recommendations for interior design, generating new floor plans, and facilitating 3D navigation within buildings.

Solution providers are also developing products to help carriers improve their data analysis. Astera ReportMiner automates the extraction of information from unstructured documents, streamlining claims processing and improving underwriting decisions. It uses AI to efficiently identify and extract critical data points from formats like PDFs, TXT files, and spreadsheets.

WHY IT MATTERS

Insurers will have a more comprehensive view of potential risk by leveraging unstructured data sources.

While companies will need regulatory changes to implement AI into pricing, future applications could enable more accurate and dynamic premium settings by analyzing a more comprehensive range of variables, including new data types and patterns that traditional models may not capture. Such premium calculations would more accurately reflect the risk profile of policyholders, ensuring that pricing is both competitive and reflective of actual risk.

Similarly, although it would invite the same level of regulatory scrutiny, AI could significantly enhance the underwriting process by quickly analyzing complex data sets, including non-traditional data sources, to assess the risk associated with insuring individuals or entities. Improved data sets enable more accurate underwriting decisions and the potential for developing customized insurance products. Today, companies could leverage “lite” versions of AI into underwriting processes by ensuring the final decision sits with the human underwriter.

AI models can also predict claims’ likelihood and potential cost, enabling insurers to allocate resources more efficiently and prepare for future liabilities. Automated claims processing powered by AI can also speed up the settlement process, reducing the time and cost associated with claims management. This application is more readily available today due to the lesser regulatory hurdles.

6TH YEAR ON THE LIST

SCALING CRYPTOCURRENCIES

WHAT IT IS

Financial services and insurance companies are integrating cryptocurrencies, leveraging their scalability for efficient products as well as new financial products, like crypto custody, digital asset protection, and efficient transactions. While this offers opportunities like access to new markets, it poses challenges due to volatility, regulatory uncertainties, and security concerns.

HOW IT WORKS

Beginning in 2021, some insurers, including Metromile and AXA, announced they'd accept crypto as payment, with Metromile claiming it is the first insurer to both accept payment and pay claims in crypto. But the list has not grown significantly since then, and the crypto winter and subsequent SEC crackdown highlighted the volatile regulatory environment surrounding cryptocurrencies.

In June, Arch Insurance authorized the Lloyd's of London coverholder Evertas to write up to \$420 million on crime-related policies involving the theft of private keys and provide insurance on crypto mining hardware of up to \$200 million, the highest in the industry. These new limits represent a significant increase from the previous single policy limit of \$5 million from Evertas.

As of September, Deutsche Bank (in partnership with Taurus) joins a growing list of global banks that provide crypto custody services. And more banks may take on crypto custody if the regulatory environment eases. In early 2024, banking associations appealed to the SEC to reevaluate a regulation that requires banks to list crypto assets in custody as liabilities, which forces banks to allocate an equivalent amount of assets. The group argues that altering this regulation would decrease the concentration of risk.

WHY IT MATTERS

The ongoing scaling of cryptocurrency in financial institutions and insurance companies offers organizations new market opportunities, including expansion into new client segments and services. Some companies may begin offering services like those discussed, such as crypto custody, or may develop new innovative financial products that are faster, more efficient, or more cost-effective than traditional offerings.

Financial institutions may also begin implementing crypto-based offerings to streamline transactions or offer new features such as programmable payments or instant cross-border transactions. Crypto also allows for more dynamic funding and payouts, like flexible treasury services.

Financial institutions in this space must be mindful of the developing regulatory environment. While some guidance exists today, other crypto-based laws will be in play in 2024. Institutions must closely watch the evolving regulatory landscape to stay aware of shifting compliance standards or impacts on capital requirements, capital allocation, and risk concentration strategies.

2ND YEAR ON THE LIST

OPEN BANKING

WHAT IT IS

Open banking, the practice that provides third-party developers access to financial data through application programming interfaces (APIs), enables new apps and services while ensuring greater financial transparency. Over the past year, there has been a push toward standardization, particularly as the EU's awaited Payment Services Directive 3 (PSD3) has finally passed.

HOW IT WORKS

In mid-2023, the passage of PSD3 brought renewed life to the open banking discussion. Like its predecessor, PSD2, the directive creates rules about the security of electronic or digital payments, creating uniformity across the EU—a critical element for the success of open banking.

One new patent application from Mastercard introduces a system that improves how payments are routed, focusing on increasing the chances that payments go through successfully. By examining details like the account holder's information and the transaction amount, the system calculates a "likelihood of success" score for each payment. This system can handle accounts held across different banks, calculating a success score for each account. It can also split a payment across multiple accounts, assessing the best distribution to ensure the payment goes through.

Visa is addressing consent management, another critical element of open banking. In one of their most recent patents, they introduced a system that automates user consent management for data sharing and actions taken on their behalf, enhancing privacy and control. When a request for user data is made, the system prompts the user for consent and, upon agreement, records this consent in a secure, immutable ledger. This process ensures that user data is only shared with permission and that all transactions are transparently logged for auditing.

WHY IT MATTERS

Open banking allows third-party providers to access financial data via APIs, fostering innovation and competition. As fintech startups introduce innovative products with this technology, financial institutions and insurance companies must adapt their offerings to compete. This environment encourages the development of tailored financial solutions that meet individual customer needs.

Some innovations may center on personalizing the customer experience. Access to comprehensive customer data enables financial institutions and insurance companies to offer personalized services. They can provide more accurate financial advice, better lending terms, and policies that closely match individual risk profiles. This data integration also simplifies application processes, improving customer satisfaction.

The sharing of customer data raises significant data security and privacy issues. Institutions will need to invest in strong cybersecurity measures and comply with data protection regulations to protect customer information. In addition to security measures, open banking mandates adherence to complex regulations, requiring significant updates to systems and processes. Financial institutions must ensure APIs comply with data sharing and security standards, facing challenges in integrating new technologies and managing third-party partnerships. This level of security will necessitate continuous investment in compliance and technology to navigate the open banking landscape effectively.

SCENARIOS

SCENARIO YEAR 2035

What if open banking evolves into a DeFi hub model?

By 2035, the banking sector has embraced the decentralized financial hub model, marking the next evolution of open banking. This transformative shift is underpinned by the widespread adoption of blockchain technology and cryptocurrencies, seamlessly integrating decentralized finance (DeFi) platforms into traditional banking services. This model revolutionizes how customers interact with financial services and introduces new complex regulatory implications.

In this evolved open banking ecosystem, banks function as secure interfaces between customers and the vast array of services offered by DeFi platforms. They facilitate lending, borrowing, and trading without central intermediaries, leveraging smart contracts to automate and secure transactions. This democratization of financial services extends open banking principles beyond mere data sharing, enabling a fluid exchange of assets and financial services across a decentralized network.

Regulatory bodies have responded to this shift by developing a new framework that ensures these decentralized services' security, transparency, and fairness. Financial institutions and other custodians or organizations that have cryptocurrency on the books must comply with smart contract auditing. These new rules ensure contracts operate as intended and look for code bugs that could alter outcomes. Regulators have also implemented interoperability standards to facilitate seamless interaction among blockchain networks and financial systems, ensuring that DeFi services can integrate with the broader financial ecosystem without compromising security.

This model represents a significant shift in financial services architecture, where regulatory compliance, innovation, and customer empowerment are intricately balanced. It heralds a future where financial services are more accessible, efficient, and secure, driven by the collaborative efforts of banks, regulatory bodies, and the DeFi community.

SEAMLESS INTERACTIONS

3RD YEAR ON THE LIST

FRICTIONLESS
PAYMENTS

WHAT IT IS

Frictionless payments streamline transactions by minimizing user effort, creating a seamless experience. This approach, which includes invisible and embedded payments, integrates or automates the payment process within user interactions, enhancing convenience and efficiency across various platforms and services.

HOW IT WORKS

Block, the parent company of Square, CashApp, Afterpay, and other popular paytech companies, is attempting to make payments more accessible with one of their new patents, which describes a system that integrates payment and content provider platforms to make accessing digital content easier and more secure for users. The system also uses machine learning to personalize content recommendations and improves security by minimizing the need for users to enter sensitive information.

Israeli payment firm Nayax is creating a method for making digital payments using a web browser instead of a permanent digital wallet app. Users receive a URL via text message that, when clicked, installs a temporary digital wallet on their mobile device to complete a transaction. This wallet communicates with payment terminals using the device's NFC technology and is automatically deleted along with any payment information after the transaction, enhancing security.

Visa has introduced a method for embedding payment tokens directly into digital photos and other media metadata. This setup links each image to the copyright owner's account, allowing for easy and secure purchasing of media by embedding all necessary information, like price and copyright details, within the photo. The embedded data eliminates the need for intermediaries and simplifies buying and selling copyrighted images, ensuring copyright owners are directly compensated for their work through a seamless transaction process.

WHY IT MATTERS

Financial institutions, payment providers, and insurance companies can use the rich data from frictionless payment transactions to develop personalized financial products and services. Banks can leverage analytics to understand customer preferences and behaviors, offering tailored advice, personalized loan and credit options, and customized savings plans.

Insurance companies could leverage this technology to streamline the claims process, making it as frictionless as the payment systems themselves. Automated claims processing could significantly reduce processing times, improve accuracy, and enhance customer satisfaction.

Banks will face a growing demand from businesses for digital payment solutions that can integrate seamlessly with their retail operations. This demand includes the capability to process transactions smoothly and provide data insights, fraud prevention, and compliance with security standards.

The shift towards frictionless payments may alter traditional revenue streams for banks, particularly in transaction fees, as the competitive landscape could pressure fees downwards. But there is also potential for new revenue streams through value-added services. Banks need to rethink their revenue models to adapt to the changing dynamics.

3RD YEAR ON THE LIST

INSTANT PAYMENTS

WHAT IT IS

Instant reconciliation enables card issuers and merchants to swiftly balance accounts while cardholders enjoy the immediate reflection of transactions in their bank accounts. Similarly, insurance policyholders are coming to expect rapid claim payments, mirroring the accelerated pace of virtually every other aspect of modern life.

HOW IT WORKS

The Federal Reserve launched FedNow in July 2023, a real-time payment service that enables instant bank-to-bank transactions. This service aims to support faster and more efficient payments across the financial landscape, offering continuous availability for immediate settlement.

In competition with FedNow, Mastercard has expanded its partnership with The Clearing House to further the adoption of instant payments. New aspects of the partnership aim to identify additional instant payment use cases for consumers, businesses, and governments. The RTP® network, which currently includes 487 banks and credit unions, faces increased competition from the Federal Reserve's FedNow.

Launched in 2021 with seven initial banks, SWIFT Go has rapidly expanded its reach, now encompassing over 600 banks across 120 countries. Impressively, 85% of transactions processed through SWIFT Go are completed in less than three minutes. SWIFT Go enhances the speed of international payment processing, enabling banks to provide competitive alternatives to fintech solutions.

Currently, payments initiated on one rail must travel and settle across the same rail, creating walled gardens. For real-time payments to expand, the industry will need interoperability between rails.

WHY IT MATTERS

Real-time reconciliation could improve risk management by immediately detecting discrepancies and fraud. In traditional systems, the lag between transaction initiation and reconciliation can create windows of opportunity for fraudsters. Instant reconciliation closes these gaps, enhancing the security of financial transactions and protecting against financial losses.

Reducing overage fees through instant reconciliation may present a shift in revenue streams for banks, necessitating banks to re-evaluate their revenue models. Institutions may need to explore alternative sources of income, such as offering premium account services, investing in customer loyalty programs that encourage more extensive use of banking services, or introducing innovative financial products.

Leveraging instant reconciliation can differentiate a bank or insurance company in a crowded market: more than half of customers today say they'd switch insurers to access instant digital claims payments. This strategic advantage can attract new customers looking for transparent, customer-centric experiences.

Instant reconciliation improves operational efficiency, leading to faster settlement times and improved cash flow management, and allows banks and financial service companies to allocate resources more effectively. In Property and Casualty insurance companies, payment processing accounts for over a quarter of operating costs, with paper checks costing orders of magnitude more than a digital payment.

2ND YEAR ON THE LIST

BETTER DIGITAL WALLETS

WHAT IT IS

Digital wallets are virtual platforms that store payment information and other identifying credentials, offering seamless, secure, and fast payment options. They continue to evolve, incorporating advanced security features and expanding usability across global marketplaces, enhancing user convenience and financial accessibility.

HOW IT WORKS

Several companies, including Visa and Capital One, are working on developing solutions that improve the security of digital wallet provisioning. These solutions often include secure methods for adding or linking financial instruments to third-party digital wallets via one-tap contactless card authentication and utilize cryptograms to verify user identity and authenticate transactions.

Visa is also developing a novel approach to addressing the limitations of conventional payment systems, where a payment token is bound to a single card. The company is proposing the connection of a single token to multiple user accounts, which would enable the aggregation of credit limits from multiple cards for a single transaction. Their approach includes the generation of a virtual card which is associated with multiple accounts.

Finally, in early 2024, Visa launched Visa Commercial Pay, a new B2B payment solution aimed at businesses, incorporating features like corporate virtual cards for employees' digital wallets (e.g., Apple Pay, Google Pay) to allow detailed management of expenses with set limits and merchant specifications.

Major wallets like Apple and Google provide support for non-payment information, like ID and insurance cards. In mid-2023, Google Wallet announced new features to support passes with barcodes or QR codes, health insurance cards, driver's licenses, transit passes, and company IDs.

WHY IT MATTERS

Digital wallets make transactions faster and easier, encouraging impulse buying and attracting a broader customer base comfortable with digital payments. A study revealed that digital wallet users spend 31% more on average than non-users across all purchase types. This significant increase in spending among digital wallet users, especially Millennials and Gen Z, highlights the growing influence of digital wallets on consumer purchasing behavior, suggesting that these platforms facilitate transactions and encourage higher expenditure.

Businesses benefit in other ways from digital wallets; compared to traditional payment methods like credit cards, digital wallets often have lower processing fees, reducing business costs. Digital wallets also provide businesses with valuable data on customer purchasing habits, enabling targeted marketing and personalized offers. Companies can also integrate their loyalty programs with digital wallets, making it easier for customers to collect and redeem rewards, enhancing customer engagement.

Consumers now expect to be able to pay with a digital wallet. These tools offer convenience and ease to consumers and often have features that allow users to track their spending and manage their finances more effectively. As they become even more ubiquitous, younger generations are becoming used to carrying only their phone, reducing the use of physical wallets.

1ST YEAR ON THE LIST

TRANSACTIONS FROM ANYWHERE

WHAT IT IS

Technology is revolutionizing commerce by leveraging algorithmic purchasers and other features that extract data directly from vehicles or other sources and process transactions without traditional secure elements. These innovations enable consumers to engage in seamless and secure transactions from anywhere.

HOW IT WORKS

Mastercard is developing a solution to simplify in-vehicle purchases, connecting a vehicle's computing system with merchant payment systems. It introduces a token that contains details about the user's payment account, the car, and a biometric identifier. This token allows the vehicle to initiate transactions, verifying payments by matching token details with the user's biometric data. It streamlines the payment process, especially for purchases made without leaving the car.

Mastercard has also filed a patent for digital payments using natural language inputs. It enhances user verification by employing authentication factors, including biometrics, device location, and transaction history, to confirm user identity. The system leverages server technology to interpret user commands for scheduling payments, authenticate the user through these multifaceted checks, and efficiently carry out transactions.

Zero-knowledge proof (ZKP) is a way of sharing that something is true between two parties without revealing any extra details about why it's true. Companies use a feature of ZKP, called succinctness, to create more efficient blockchain systems known as ZK Rollups which enable blockchains to handle a vast number of transactions. ImmutableX, a ZK Rollup built on the Ethereum blockchain, supports the economies of video games. Before ZK Rollups, creating real-time, blockchain-based economies and gameplay experiences was impractical because of slow transaction times and high costs.

WHY IT MATTERS

For banks and paytech companies, seamless in-vehicle transactions and enhanced digital payments using natural language inputs and blockchain scalability open up innovative avenues for service delivery and revenue generation. Banks can tap into new markets by integrating their services with vehicles, offering customers the convenience of conducting transactions on the go.

This technology will also require robust security measures to protect sensitive biometric data and comply with stringent data privacy regulations. Adopting zero-knowledge proof and blockchain technologies like ZK Rollups could further streamline transaction processes, making them more secure and efficient, thus bolstering trust in digital banking services.

On the insurance front, blockchain's transparency and security features could revolutionize claims processing and fraud prevention, offering a more efficient and trustworthy system. While the example here discusses data in vehicle settings, this technology will undoubtedly be applied to other settings too, expanding the availability of high-fidelity real-time data for insurers.

The evolution of vehicle-based commerce could lead to new cyber products for original equipment manufacturers (OEMs), especially if the OEMs are housing or storing the data. These companies may require additional coverage associated with digital transactions, data breaches, and even identity theft related to biometric data.

SCENARIOS

SCENARIO YEAR 2035

What If Invisible Finance Enables Undetectable Fraud?

By 2035, the financial ecosystem, once praised for its innovation and security, faces a significant challenge. The “Invisible Finance Revolution,” with its digital IDs, biometric checks, and automated transactions, is now vulnerable to data poisoning. This shift from conventional financial oversight has allowed cyberattacks to corrupt our AI systems, leading to distorted financial services. Fraudulent transactions and false insurance claims are rising, exploiting the once-secure blockchain technology.

The problem is exacerbated by our over-reliance on the system’s reliability. The absence of friction in transactions led to an absence of vigilance: the convenience of not having to manually verify transactions has become a significant weakness, with financial irregularities often going unnoticed. Financial institutions, previously considered protectors of this digital space, are now struggling to fix these security breaches. Even with advanced encryption and fraud detection, they find themselves outpaced by these threats, shaking public trust in the financial system.

The current crisis highlights the downside of a frictionless financial world. The lack of transaction scrutiny has opened up significant security gaps. This situation serves as a reminder of the importance of balancing the embrace of new technologies with robust oversight and flexible security strategies. The idea of an invisible, effortless finance system has shown the importance of reevaluating our dependency on such technologies.

GOVERNANCE

4TH YEAR ON THE LIST

RISING CYBER RISK

WHAT IT IS

Amid digital transformation, banks and insurance companies face escalating cyber risks. Cyberattacks, from data breaches to ransomware, threaten financial stability and customer trust. Enhanced cybersecurity and regulatory compliance are essential to protect sensitive data and maintain sector integrity.

HOW IT WORKS

In July 2023, a JPMorgan Chase Zelle outage affected over \$2 billion in daily transactions and raised concerns about the resilience of banking systems. The incident, marking the second major Zelle glitch in six months, underscores the challenges of real-time payments and the urgent need to modernize core banking infrastructures to ensure reliability and trust in digital financial services.

In early 2024, stock-lending platform EquiLend was hit by a ransomware attack by LockBit, disrupting its operations that handle trillions of securities transactions each month. LockBit, a ransomware group, sought to negotiate a ransom for unlocking the systems.

In a recent patent application, JPMorgan Chase introduced a sophisticated method that leverages secondary identification information and electronic device identification to authenticate transactions, significantly enhancing identity theft protection. The importance of identification technology has only increased over the past year, as numerous financial institutions were hit by a wave of AI-powered deepfake technology in financial fraud, where voice deepfakes were increasingly used in bank scams and imposter schemes, tricking individuals and financial institutions.

WHY IT MATTERS

As cyberattacks grow more sophisticated, with AI-powered deep fakes and ransomware, financial institutions must invest in real-time threat detection and response systems. The introduction of advanced authentication methods, like those by JPMorgan Chase, marks a significant move towards fighting identity theft and financial fraud. Multi-factor authentication, biometrics, and device identification enhance transaction security and protect against fraud.

Recent cybersecurity incidents, including the JPMorgan Chase Zelle outage and the EquiLend ransomware attack, underscore the vulnerability of financial systems. Modernizing banking infrastructure to be resilient is crucial for minimizing operational disruptions and boosting customer confidence in digital finance.

The evolving nature of cyber risks has also prompted changes in regulatory frameworks. Financial institutions and insurance companies must review their policies regularly to ensure ongoing compliance with current and future regulations. Educating customers on cybersecurity and the risks of deepfakes will also play a key role in building a secure financial ecosystem.

The evolving nature of cyber threats could make it difficult for insurers to assess risks and price their products accurately. This uncertainty in underwriting can lead to mispriced policies, affecting the profitability of insurance companies.

1ST YEAR ON THE LIST

GLOBAL CRYPTO REGULATION

WHAT IT IS

Cryptocurrency regulation varies globally, but many nations are working to pass regulation, striving to balance investor protection, financial stability, and innovation. Efforts aim to address risks like fraud while embracing digital currency opportunities, but the borderless nature of crypto creates a complex regulatory patchwork.

HOW IT WORKS

The UK government plans to enact cryptocurrency regulations within six months, to enhance consumer protection and foster ethical innovation, fulfilling promises made by Prime Minister Sunak during his 2022 campaign. The regulations are expected to include guidelines for crypto exchanges, trading platforms, and custodians under traditional financial services rules.

US regulation over crypto came in the form of SEC enforcement in 2023, when the commission filed five high-profile lawsuits against major crypto companies. The Clarity for Payment Stablecoins Act of 2023 was passed by the House Financial Services Committee in July of 2023, leaving many hopeful that the official legislation will pass sometime in 2024. Broad-sweeping crypto regulation is unlikely in the US due to polarization in Congress and election year dynamics, but the industry is still working to prepare for potential incoming laws.

The Monetary Authority of Singapore (MAS) announced a new regulatory framework for stablecoins and their issuers, focusing on single-currency stablecoins pegged to the Singapore dollar or any G10 currency. Essential requirements include ensuring value stability through asset reserves, maintaining minimum capital, allowing redemption at par within five business days, and making necessary disclosures to users. This framework aims to safeguard financial stability and investor protection, distinguishing MAS-regulated stablecoins for easier identification by users.

WHY IT MATTERS

Financial institutions and insurance companies will have to navigate this complex regulatory environment for at least the next several years until things begin to align. The best practice is to develop operations around the strictest environment to ensure global operations remain compliant and prepare for forthcoming regulations. For example, financial institutions serving multinational companies must ensure their clients are compliant across their jurisdictions.

The ability to transact across borders using cryptocurrencies presents opportunities and challenges for banks and insurance companies. Cryptocurrencies can facilitate faster and cheaper international transactions by bypassing traditional banking networks and exchange rate complications. However, this also introduces regulatory complexities regarding jurisdiction and compliance with disparate international laws.

As regulatory clarity improves and institutions increasingly adopt cryptocurrencies, their usage will likely rise, bringing new or escalating risks. These include market volatility, cybersecurity threats, and operational risks, such as the safe custody of digital assets. Insurance companies, in particular, need help with underwriting policies for crypto-related risks due to the technology's lack of historical data and rapidly evolving nature.

11TH YEAR ON THE LIST

ALTERNATIVE CREDIT SCORING

WHAT IT IS

Alternative credit scoring represents an approach to evaluating an individual's creditworthiness that diverges from traditional methods. It incorporates a broader spectrum of data, including utility bill payments, rent, bank account information, and even patterns of digital interactions, providing a more holistic view of a person's financial behavior.

HOW IT WORKS

Credolab employs a novel approach to credit scoring and financial inclusion by leveraging privacy-consented, permissioned smartphone and web data. Their technology, which avoids AI, focuses on user behavior and anonymized metadata to predict creditworthiness, aiming to reduce onboarding friction and expand financial services to underserved populations. Credolab partners with companies like Provenir and TransUnion to enhance financial inclusivity through alternative data and behavioral analysis.

A new credit scoring model has identified 2.7 million new potential home buyers, unlocking a \$1 trillion opportunity for lenders. VantageScore's latest model, required by regulators by 2025, expands access to credit by including underserved markets. The model, which has been used since 2017 by over 3,000 financial institutions, improves predictive accuracy using non-traditional data, benefiting consumers with limited credit histories or who are new to credit.

Pagaya leverages AI and alternative data to enhance credit decision-making, promoting financial inclusion. Through analysis of extensive data points, Pagaya provides recommendations for borrowers who may not meet traditional FICO scores, benefiting those with limited credit histories. Working with partners like TransUnion, Pagaya offers a more holistic view of creditworthiness, significantly impacting underserved communities and facilitating access to financial products for millions.

WHY IT MATTERS

Alternative credit scores enable financial institutions and insurance companies to tap into previously inaccessible segments. By considering factors beyond traditional credit histories, such as utility payments or rent, companies can identify creditworthy individuals among the unbanked or underbanked populations. This approach diversifies their customer base and opens up new revenue streams by offering financial products to a larger, yet previously deemed risky, demographic.

Integrating alternative data into credit scoring models provides a more nuanced understanding of an applicant's financial behavior, leading to more accurate risk assessments. For instance, analyzing transaction histories, savings patterns, and even social media behavior could unveil insights into a person's financial stability and reliability. This enriched data pool allows for finer differentiation between high and low-risk clients, potentially reducing default rates and enhancing the overall quality of loan and insurance portfolios.

Implementing AI-driven credit scoring models streamlines the credit assessment process, making it faster and more cost-effective. Traditional methods involve manual checks and lengthy paperwork, but AI can quickly analyze vast amounts of alternative data, delivering instant credit decisions. These alternative scoring approaches reduce operational costs by minimizing the need for extensive human intervention and accelerating time to market for financial products.

SCENARIOS

SCENARIO YEAR 2030

What if AI Redefined Financial Compliance?

In 2030, AI and machine learning have transformed regulatory compliance in the financial sector. This shift began as financial institutions and regulators recognized the potential of AI to enhance the efficiency and accuracy of compliance processes. Large banks quickly adopted AI to monitor transactions and identify regulatory issues in real-time, significantly reducing compliance costs and improving risk management.

However, this rapid adoption highlighted a growing divide. Smaller financial institutions struggled with the high costs of integrating sophisticated AI systems, placing them at a competitive disadvantage and raising concerns about a two-tiered financial system. By 2030, efforts to address this divide were underway but remained in the early stages. Initiatives included providing subsidies and developing open-source AI tools to help smaller firms afford and implement AI compliance technologies.

Regulators also began adapting their expectations, recognizing the resource gap between large and small institutions. These measures aimed to level the playing field, ensuring that all financial institutions, regardless of size, could benefit from AI in compliance.

Despite these efforts, the digital divide in financial compliance is only starting to be bridged. The industry and regulators continue to seek solutions that ensure equitable access to AI technologies, underscoring the need for ongoing innovation and policy adjustments. The journey towards a fully inclusive digital compliance ecosystem is just beginning, with the hope that further advancements and collaborative efforts will eventually resolve the disparities.

DEFI MODELS

1ST YEAR ON THE LIST

ROUTES TO WEB3

WHAT IT IS

Over the past year, despite down crypto markets, developers & institutions have made strides in integrating traditional finance & Web3. Headline-grabbing Bitcoin & Ether ETF filings have overshadowed equally impactful technical work enabling connectivity between TradFi & crypto

HOW IT WORKS

Visa is expanding stablecoin settlement by incorporating the Solana blockchain alongside Ethereum and collaborating with Worldpay and Nuvei. This move enhances the speed and efficiency of cross-border settlements, facilitating faster transactions using stablecoins like USDC. Previously, settling cross-border purchases on Crypto.com Visa cards involved lengthy currency conversion processes and expensive wire transfers.

Microsoft is partnering with Aptos Labs to bring AI and Web3 together, allowing Microsoft's AI models to train on Aptos' verified blockchain data. This collaboration aims to increase trust and transparency in AI through blockchain's immutability and verification capabilities.

For the first time, TransUnion partnered with Spring Labs and Quadrata to deliver off-chain credit scoring to DeFi and Web3 applications. This partnership will enable decentralized lending platforms to assess risk better when lending to consumers, allowing more consumers to access these platforms.

JPMorgan executed its first DeFi trade on a public blockchain, facilitated by the Monetary Authority of Singapore's Project Guardian, exploring DeFi applications in wholesale markets. Meanwhile, the London Stock Exchange Group is building the first major blockchain-powered marketplace for traditional financial assets. The platform will streamline global trading and improve speed, cost-efficiency, transparency, and security by using tokenization to represent assets like stocks and bonds as digital tokens.

WHY IT MATTERS

Traditional financial service providers risk being sidelined as Web3 technologies enable direct peer-to-peer transactions without the need for intermediaries like banks or payment processors. Web3 could erode their revenue streams and necessitate a shift in business models towards value-added services that leverage blockchain technology.

The decentralized nature of Web3 platforms complicates regulatory compliance for traditional financial service providers and insurance companies. Ensuring adherence to existing regulations while navigating new and evolving regulatory frameworks presents a significant challenge. Firms must invest in robust compliance mechanisms and engage proactively with regulators to mitigate regulatory risks.

Similarly, adopting smart contracts and decentralized protocols in Web3 presents an opportunity for traditional financial institutions to streamline operations and reduce costs. These firms can enhance efficiency and remain competitive in a rapidly evolving landscape by automating insurance claims, underwriting, and settlement processes.

Ultimately, to stay relevant in the era of Web3, traditional financial institutions must embrace innovation and invest in research and development of blockchain-based solutions. Investment may involve partnering with or acquiring fintech startups specializing in decentralized finance (DeFi) or developing in-house expertise to build and integrate Web3 technologies into their offerings.

5TH YEAR ON THE LIST

PROGRAMMABLE MONEY

WHAT IT IS

Programmable money, or “Purpose Bound Money” (PBM), refers to digital currencies or assets that can be controlled and manipulated through code or programmable logic. Unlike traditional forms of money, programmable money enables developers to embed rules and conditions into transactions, allowing for automation and customization of financial processes.

HOW IT WORKS

In late 2023, the Singapore Fintech Festival partnered with Amazon to experiment with programmable money. They provided attendees with a voucher that was placed in their digital wallet and could be spent with specific vendors; the funds were only released once the participant received the items.

JPMorgan introduced a programmable payment feature targeting institutional clients on its JPM Coin blockchain platform. This feature facilitates real-time, programmable treasury and digital business models. In November 2023, the feature went live with Siemens AG being the first to use it; FedEx and Cargill are expected to follow. The feature allows for dynamic funding and event-based payouts. JPMorgan is also said to be developing another blockchain-based solution for cross-border transactions, awaiting regulatory approval.

Pave Bank has launched with a digital banking license from the country of Georgia and \$5.2 million in seed funding, led by 468 Capital and others. Pioneering as the world’s first “programmable bank,” it aims to transform banking by offering robust services like multi-currency accounts, global payments, and an institutional asset network, promising the safety of client funds. Highlighting the ability to bridge digital and real-world assets, it champions a significant shift in approach to combined banking services.

WHY IT MATTERS

Programmable money could streamline the operations of financial institutions and insurance companies. Currently, many aspects of companies’ accounting, payables, and other financial processes are conditional and dependent upon meeting specific requirements. If programmable money does scale, it could enable firms, especially those in the finance industry, to automate a meaningful portion of their back-office operations and reduce human interaction in those tasks to oversight and validation.

While today’s banking systems are still somewhat beholden to data entry, which can fall victim to human error, programmable money depends on an immutable set of criteria that can be measured and validated. As a result, the scaling of programmable money could significantly reduce errors that result from misentry or incomplete information. For the same reason, programmable money could improve transparency in financial reporting for both businesses and financial institutions.

The principles of programmable money could extend to other digitized assets, such as paperwork, contracts, or ownership certificates. In this example, the transfer of contracts or ownership could be programmed as dependent upon another factor. For example, the transfer of a digitized home deed would not be sent until the lender had received the loan proceeds. In addition to speeding up administrative processes, this new feature could help augment existing legal procedures and create a digital trail for complex transactions.

1ST YEAR ON THE LIST

ASSET
TOKENIZATION

WHAT IT IS

Digitization of assets refers to converting physical or non-digital assets into digital form. This transformation allows assets, such as art, real estate, or intellectual property, to be tokenized on blockchain platforms, creating digital tokens representing ownership or a share of the asset and allowing it to be monetized in new ways.

HOW IT WORKS

One patent recently filed outlines a technology platform that leverages blockchain and AI to tokenize large-scale and traditionally illiquid assets through a novel two-tier process. It introduces General Asset Tokens (GATs) and Specific Asset Tokens (SATs), where GATs represent shared ownership in a diversified asset pool, and SATs offer individual ownership in specific assets chosen from this pool. The process is underpinned by smart contracts, ensuring secure, efficient transactions and immutable records on a blockchain network.

Salesforce recently filed a patent application that describes a system for managing assets on the blockchain through a process called Multiple Decentralized Tokenization with Personal Control (MDTPC). These tokens can be treated similarly to securities, so their trade may be subject to securities laws. Traditional blockchain asset management suffers from a lack of cross-ledger recognition and individual control over asset management. Salesforce's proposed solution overcomes these issues by allowing users to choose how and when assets are evaluated and which blockchains to use for managing their asset data.

Another invention from Data Vault Holdings describes tokenizing precious assets like real estate or art to represent ownership and facilitate transactions. A data platform receives the corporate data, which is then segmented and tokenized. The corporate data is valued, and potential monetization strategies are determined. This approach creates a way to value and exchange real-world assets on digital platforms more easily.

WHY IT MATTERS

Tokenization divides traditional assets into smaller shares, making it easier for investors to buy and sell parts of assets. This increased divisibility improves the liquidity of assets like real estate or art, broadening access to investment opportunities and allowing a wider range of investors to participate in markets previously accessible only to wealthy or institutional investors.

To achieve interoperability, institutions will need access to a comprehensive registry service that details tokenized assets in a standardized way across multiple blockchains. This visibility is crucial in establishing trust in digital transactions and verifying ownership without the need for centralized authorities.

Tokenization can reduce costs and complexity. By digitizing assets, traditional intermediaries such as brokers, banks, and lawyers may become less necessary, lowering transaction fees and disrupting the industry. Blockchain's built-in efficiency can streamline operations, reduce paperwork, and make the entire investment process more efficient.

The transparency of blockchain ensures that every transaction and ownership change is recorded on a ledger that is immutable and accessible to all participants. This level of openness enhances trust among stakeholders and facilitates compliance with regulatory requirements through programmable tokens that automatically enforce rules and restrictions related to investor qualification, geographic limitations, and trading volumes.

SCENARIOS

SCENARIO YEAR 2035

What if DeFi Reinvented Protection for High-Value Assets?

Historically, insuring high-value assets involved complex layered coverage with multiple carriers providing primary, secondary, and excess policies. This patchwork approach was necessary to cover the full extent of risk but created gaps, overlaps, and administrative headaches.

The advent of blockchain-based fractional asset ownership and programmable money has turbocharged the reinvention of layered coverage models. In 2035, when securing protection for a \$50 million Cézanne painting, for example, the owner can now tokenize and sell off 15% shares to help fund a personalized smart policy administered by a single decentralized platform.

This primary parametric coverage is directly priced and programmed according to the asset's attributes. Orchestration smart contracts then dynamically spread secondary risk protection across a fluid syndicate of global capacity providers. Coverage limits, exclusions, and collateral requirements are automatically optimized, with premiums held in escrow via programmable stablecoins.

If a loss occurs, validated payouts are instantly triggered to the token holder's wallet up to policy limits. Parametric triggers and predetermined payout schedules eliminate adjusters. Excess coverage above primary policy limits is also pre-bound using prediction markets for capacity bidding.

Fractional tokenization creates the fractionalization of risk - and the ability to program predefined coverage conditional on tokenized collateral unlocks exponential configuration possibilities. Owners now bypass the friction of layered policies to achieve customized, end-to-end intelligent protection for their prized possessions.

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Melanie Subin is Managing Director of Future Today Institute, where she serves on our management committee and leads our consulting division.

Renowned for her pragmatic, forward-thinking approach, Melanie has successfully steered numerous clients towards future-ready strategies, harnessing emerging trends and technologies to identify risk and opportunity early enough for action. Her leadership has significantly impacted how industries envision and execute their long-term strategies.

Melanie specializes in strategic transformation, quantitative and qualitative research, and scenario development. With deep expertise in the development and establishment of foresight capabilities within large organizations, Melanie regularly counsels C-staff on strategy and execution. She has spent years assessing the impact of major external forces such as increasing technological sophis-

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Melanie is a recognized expert in fostering psychological safety within teams, a crucial element for operationalizing strategic foresight effectively. Her work emphasizes creating an environment where open dialogue and innovative thinking are encouraged, enabling organizations to embrace change and navigate future uncertainties with confidence.

Melanie serves in the World Economic Forum's Metaverse Working Group and is a founding member of the Dubai Future Forum's advisory group. She serves as a coach in the strategic foresight MBA course at the NYU Stern School of Business. Melanie holds a BS in Finance from Central Connecticut State University and a Fintech Certification from the Massachusetts Institute of Technology.

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Founded in 2006, Future Today Institute is an advisory firm specializing in strategic foresight, driving corporate strategies that lead to long-term success and resilience.

Future Today Institute partners with global business leaders to navigate disruptive change and uncertain futures with confidence. We fuel actionable strategic decisions that prepare you to take on global challenges, create sustainable value and ensure long-term growth.

As the global leaders in strategic foresight, our rigorous data- and research-driven methodology positions us to anticipate the unexpected and develop strategically driven roadmaps to manage risks and take advantage of opportunities today, tomorrow and into the future.

We empower leaders to make better decisions about the future, today.

Contact Us

For an introductory conversation to learn how Future Today Institute can assist your organization with its strategic planning and foresight needs, please contact:

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Future Today Institute conducts in-depth qualitative and quantitative research throughout the year to identify emerging trends. We review patent and trademark filings, pre-print and published scientific papers, investment rounds, online search trends, macroeconomic data, publications from governments worldwide, news mentions, influencer posts and other sources, and we use a proprietary system to identify patterns, which are then grouped into nodes and evaluated using a set of standardized indicators. Qualified trends are further scored for their trajectory, momentum and timing. Additionally, we harness the deep subject matter expertise of our Future Today Institute network, leading to valuable insights about the topics we cover.

In continuous publication since 2007, Future Today Institute's annual report includes maturing and emerging trends grouped into two categories: industry and technology. Industry trends reflect the ways in which technology is shaping the future of an entire industry. Technology trends are specific developments within one arena, such as artificial intelligence. Covering a wide range of technologies across industry sectors creates a holistic view of change and provides leaders with a clear understanding of their potential impact. Trends are published as individual Industry and Technology reports, as well as in one combined report with all of our research.

Monitored regularly, trends help executives recognize emerging threats and opportunities in the near-term and enable them to develop perspectives, strategies and plans for the future.

Future Today Institute's Strategic Foresight Methodology



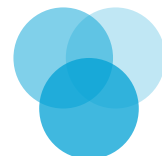
SIGNALS & LONG-TERM TRENDS

What is INFLUENCING the future?



GLOBAL MACRO SCENARIOS

What is THE future?



STRATEGIC

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