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*Research Paper*

# The Disruptive Power of Digitalization upon Financial Services

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## ABSTRACT

Financial services are experiencing unprecedented disruption from digitalization. This article provides a five-year longitudinal update to a 2020 baseline study, examining how Cloud Computing, Artificial Intelligence (AI), and Digital Assets have evolved from theoretical concepts to operational imperatives. The research employs a qualitative case study methodology, drawing on semi-structured interviews with industry experts (including CEOs of FINTECH Circle and Wiserfunding) and secondary analysis of financial reports from leading institutions such as DBS Bank, Goldman Sachs, and TD Bank. This study addresses two research questions: (1) How do fintech and incumbent financial institutions differ in adopting disruptive technologies to enhance shareholder value? (2) What role do AI, Cloud Computing, and Digital Assets play in transforming risk management and customer engagement? The analysis confirmed that digitalization has reached a critical inflection point. Players are bundling Cloud Computing, APIs, and AI to achieve superior customer experience, operational efficiency, and dynamic risk repricing. Successful implementation requires C-suite support, clear data governance strategies, and the integration of Agentic AI and DevOps as core - not supplementary - organizational capabilities. The research contributes theoretically by proposing a "modular finance" model in which value creation arises from technological agility rather than capital scale. The study focuses on large, successful institutions rather than the entire player market.

**Keywords:** Digitalization, Financial Services, Cloud Computing, Artificial Intelligence, Digital Assets

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## 1. INTRODUCTION

From a theoretical perspective, the primary roles of financial markets include the efficient allocation of capital, the extension of credit, and the provision of risk management products to hedge risks (Gontarek, 2021). However, as noted by Saunders & Cornett (2018), financial institutions also provide important payment and transaction banking services, deliver wealth management and financial advice, and serve as a key link to the economy, central banks, and bank supervisors, given their regulated status.

Financial markets are subject to periodic endogenous shocks that affect their activities, including banking crises, regulatory interventions, global pandemics, trade wars, and rapid technological developments. These shocks confound market participants but also create new opportunities for those who can seize them.

Recently, businesses and financial markets have been contemplating a new environment with a new administration in Washington, D.C., underscoring the importance of mastering all available technological tools to succeed (US Government, 2025).  Digitalization is a part of that toolkit.

Given the rapid development of artificial intelligence (AI), cloud computing, and digital assets, we want to examine how these technologies enhance financial services and increase shareholder value.

This study seeks to answer two primary questions: First, how do fintech and incumbent financial institutions differ in their adoption and application of disruptive technologies to enhance shareholder value? Second, what role do AI, Cloud Computing, and Digital Assets play in transforming risk management and customer engagement? We will develop an analysis of digital transformation in recent years to address these questions.

The remainder of this article is organized as follows: Section 2 summarizes the methodology, Section 3 presents the analysis, and Section 4 concludes.

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## 2. METHODOLOGY

This study employs a qualitative, longitudinal research design to investigate the evolution of digital disruption within the financial services sector. It serves as a five-year update to a 2020 baseline study, enabling a comparative analysis of how technological trends have transitioned from theoretical potential to operational reality.

The research draws on primary insights from semi-structured interviews with industry leaders, including Omar Mansur (Managing Director of Codebase Technologies), Susanne Chishti (CEO of FINTECH Circle), and Dr. Gabriele Sabato (CEO of Wiserfunding). Data collection spanned from January to December 2024, with primary interviews conducted during 2024. Interview insights were triangulated with secondary sources, including corporate financial reports, industry analyst publications (McKinsey, Gartner), and regulatory filings.

Furthermore, secondary data analysis of recent financial reports from institutions such as DBS Bank, Goldman Sachs, and TD Bank was conducted to identify real-world applications of AI and digital transformation. Case study institutions were selected based on: (1) demonstrated leadership in digital transformation, (2) public disclosure of AI/cloud implementations, and (3) geographic and sectoral diversity.

Thematic analysis focused on identifying implementation patterns across three technological domains: Cloud Computing, AI, and Digital Assets. These trends were selected for their disruptive potential, as identified in leading industry frameworks.

## 3. ANALYSIS OF DIGITAL TRANSFORMATION

### 3.1. The incumbent financial services players versus fintech

Incumbent financial institutions are challenged on many fronts by shareholders, analysts, customers, and other stakeholders to become more efficient, subject to regulatory constraints. More broadly, McKinsey (2019) presents four levers to maximize productivity: managing revenue growth, leveraging digitalization and automation, employing advanced analytics (including AI/machine learning), and strengthening management of human capital and conduct. Financial institutions recognize that efficiency gains can be achieved by leveraging data, automation, and AI within an overall digitalization strategy.

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Financial institutions face this challenge with varying levels of commitment, investment, and engagement. However, the very existence of fintech and their growing role in payments, lending, and investments validate the disruptive power of digitalization in financial services, and many banks, both large and small, are embracing digitalization to build shareholder value; thus, some banks are up to the challenge.

Fintech, more than incumbent firms, appears to adopt innovative and disruptive technologies more quickly (Gontarek, 2021). Fintech companies are companies that rely on technology and cloud services (rather than physical branch locations) to provide financial services to customers (McKinsey, 2024). Many believe that Fintech became prominent during the Global Financial Crisis, in response to diminished trust in incumbent financial services and the introduction of new distribution channels via cloud-based platforms. Firms such as Square, Checkout.com, and Quint all emerged in this context. Recent regulatory proposals address these new players (Restoy, 2021) to encourage fair competition between traditional banks and fintech firms.

However, the roots of integrating technology and financial services extend much further, with market visionaries such as Nick Ogden, Dee Hock, and Nigel Morris contributing revolutionary ideas to this domain. Nigel Morris and Richard Fairbank developed the idea of using financial technology to disrupt the credit card industry in 1987, consulting with Oracle Corporation to identify customer segments and introduce risk-adjusted pricing, a revolutionary concept at the time (BankDirector, 2022).

Fintech facilitates the customer's journey and client prospecting, often powered by alternative data to deliver assurance on risk decisioning. Drawing on the baseline study, Susanne Chishti, CEO of FINTECH Circle and Co-Editor of the FINTECH, explains: "AI and Big Data can drive improved customer experience and greater revenues. Predictive tools can inform risk managers in improving compliance, conduct, and risk profiles, thereby protecting franchise and brand value. Adopting the right technology facilitates business scale objectives and gives firms an edge over the competition" (Chisti, 2021). Dubai-based Codebase Technologies is an enabler of fintech for nearly 100 financial firms across the MENA region. For example, it orchestrates its Digibanc platform for Buy-Now-Pay-Later (BNPL) solutions. Omar Mansur, Managing Director explains "Digibanc delivers payment solutions to our banking and merchant partners, drawing on alternative data and algorithms to deliver assurance in every financial transaction" (Mansur, 2024).

Cloud computing, AI, and Digital Assets are among the most significant developments in financial services today (McKinsey, 2024). These are the three drivers of disruption in the financial services sector, as shown in Figure 1.
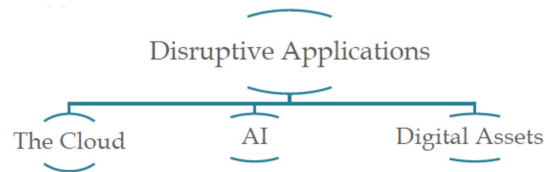


**Figure 1.** Disruptive Applications in Fintech
Source: Authors (2025)

## 3.2. Cloud computing and the rise of DevOps

Cloud-based technologies enable faster and more efficient development of programming solutions, providing flexibility and cost savings (Gontarek, 2021). Hon & Millard (2018) define cloud computing as "the use of computing resources accessed via a web browser but actually installed and running on remote cloud servers". Cloud computing can reduce development time, facilitate scale-up of technology processes, and cut overall technology costs. Additionally, financial services firms can quickly innovate by acquiring specialized external services and leveraging industry-specific solutions.

Related to cloud computing is the concept of "DevOps" (Gontarek, 2021). DevOps can optimize and manage end-to-end service delivery and operations by applying principles that transform the software delivery lifecycle, including continuous integration, testing, deployment, and support (Deloitte, 2020). The DevOps operating model framework, combined with cloud-based technologies, facilitates both planned projects and unplanned user requirements (McKinsey, 2018). DevOps not only facilitates digitalization strategies such as AI and digital assets but also has a symbiotic relationship with them. DevOps itself can leverage AI, for example, to streamline software development activities.

Cloud computing facilitates AI-based solutions. Modernizing core technology is a key requirement supporting automated cloud provisioning and secure exchange of data and capital across any financial institution's capability stack. Figure 2 presents a simplified process

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diagram of DevOps, a key enabler of financial institutions' journey to digitalization and automation.
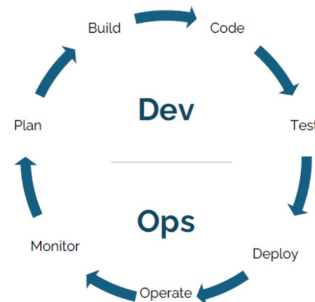


**Figure 2.** DevOps
Source: Authors (2025)

## 3.3. Artificial intelligence

Artificial Intelligence (AI) is defined as the ability to perform cognitive functions typically associated with the human mind, including learning and problem-solving (Gontarek, 2021). This is the decade for AI, machine learning, and data analytics across many fields of endeavor.

Early AI adopters follow a notable playbook, as noted below:

1. An AI strategy underpinned by a clear data strategy, with an emphasis on data quality and cleaning before the benefits from AI can be realized, with a well-positioned chief data officer at the center of data governance.

2. Robust support from C-Suite, including the Board of Directors, with prompt funding approvals for key investments,

3. A strong IT foundation includes core modernization, established cloud capabilities, and IT governance processes, and

4. Consideration of multiple use cases and exploration of customer experience, cost reductions, and risk management with articulated links to shareholder valuation gain.

The broader AI landscape includes robotics, virtual agents (providing basic triage of customer requests with preset replies to specific keywords or prompts), and machine learning (ML). ML algorithms detect patterns in large datasets to generate predictions and recommendations, rather than issuing explicit commands. These models are beneficial for financial services. Figure 3 illustrates key use cases of AI in these institutions.

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**Figure 3.** Use Cases of AI
Source: Authors (2025)

Customer engagement is a central concern, with AI-powered solutions that support and drive call center services and sales and marketing activities. DBS Bank, for example, uses AI to send out nudges to its retail and wealth management customers, regarding risk management of investment portfolios, including investment timing and foreign exchange transactions (DBS, 2025). Going forward, it is considering using AI to produce more personalized nudges, based on behavioral or alternative data, as well as customer location.

Banks are also relying on AI to generate documentation for capital-raising activities, such as IPO filings. Goldman Sachs, for example, uses AI to prepare IPO documentation in minutes rather than weeks, a great example of seeking efficiency gains. Its CEO explains that nearly 95% of IPO documentation can be completed by AI (Fortune, 2025).

Artificial intelligence can be deployed for improved risk management analytics. Edward Altman, Professor Emeritus at NYU Stern, known for developing the Altman Z-score (1968), collaborated with Dr. Gabriele Sabato, a risk management expert and bank executive, to launch Wiserfunding in London, which provides credit risk assessment for SMEs worldwide. AI supports credit risk analysis at Wiserfunding by automating outdated processes, enabling clients to receive precise credit risk assessments within seconds for global SMEs. AI also enhances security and compliance by rapidly querying large databases to detect malicious actors and fraudulent activity.

Using APIs, AI transforms unstructured data into structured variables for model inputs, including qualitative information, social media, and press data. This further improves the prediction accuracy of its models. "Wiserfunding generates a comprehensive risk assessment report including multi-year trends such as the SME Z-score, probability of default, loss given default,

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and bond rating equivalents, including peer benchmarking to inform better credit decisions for our clients.", Sabato (2024) explains.

Money laundering activities by bad actors continue, and the use of technology, including AI, can even support their illegitimate activities. In 2024, TD Bank was fined a record $3 billion by U.S. authorities for anti-money laundering (AML) failures and related violations. Accurate reporting of suspicious activity reports (SARs) is a key requirement for regulated financial institutions and is often linked to poor risk compliance cultures. In the case of TD Bank, outdated systems failed to keep pace with evolving regulatory standards set by U.S. authorities, resulting in billions of dollars in transactions failing to meet monitoring requirements (KYC 360, 2024).

Historically, manual processes for Sanctions Evaluation and Testing, Know Your Customer (KYC), and Monitoring have required the collection, organization, and evaluation of large volumes of data, which are prone to bias and error and costly to implement. AI can be employed to enhance these manual processes by enabling rapid interrogation of large datasets 24 hours a day.

Agentic AI is an emerging theme. Agentic AI can be harnessed to update in response to new fraud scenarios continually. Agentic AI employs autonomous agents (processes that can undertake tasks independently, such as decision-making and action) via natural-language-based inputs (Gartner, 2025). For example, neural systems identify criminal patterns, and Agentic AI can generate real-time alerts (TX, 2024). Suspicious transactions can be detected promptly and reported cost-effectively, thereby mitigating process breakdowns. Figure 4 presents key Agentic AI features.
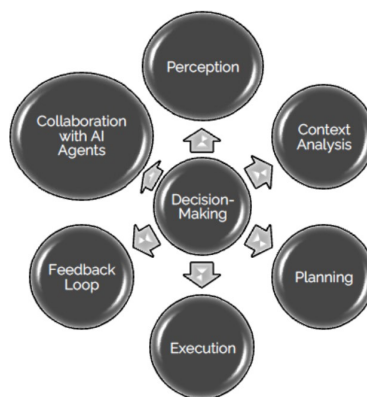


**Figure 4.** Agentic AI Features
Source: Authors (2025)

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AI has also emerged as a transformative tool in the insurance industry, including customer engagement, underwriting, and claims. In competitive consumer markets, insurers need to differentiate their products and services through pricing and customer experience, both at the point of sale and at the claims stage.

AI can facilitate rapid settlement for claimants by enabling AI-powered claims processing, thereby improving customer experience and satisfaction. The use of chatbots, guided scripting, and AI agents can be brought to the forefront to transform customer experience, reduce operating costs, and mitigate delayed claim payouts. AI is increasingly playing a role in insurance underwriting. Significant efficiency gains are now occurring in terms of data management, cleaning redundant data, reducing errors, and improving insights that refine underwriting and pricing practices.

Agentic AI can further enhance the use of AI in the insurance industry (TX, 2024). For example, while manual data interpretation often depends on human biases and experience, Agentic AI can continuously improve insurance risk and pricing in real time by updating relevant parameters, free of human bias and limitations, using vast amounts of portfolio data, and detecting both fraud and unintended errors. Figure 5 presents the spectrum of AI – Insurance value drivers.



**Figure 5.** The AI – Insurance Spectrum
Source: Authors (2025)

In insurance markets, many new cyber threats can be identified in real time and used to update underwriting frameworks, reprice risk and coverage levels, and standardize customer communications for claims management and renewals across the insurance spectrum.

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## 3.4. Digital assets

As of the end of 2024, the market capitalization of digital assets globally totaled $2.5 trillion, up nearly 50% year-on-year (Houlihan Lokey, 2025). In early 2025, actions by US authorities suggest a potential sea-change in attitude towards digital assets and related concepts, including crypto, blockchain, and decentralized finance (DeFi). This financial ecosystem is enabled by blockchain and smart contracts. This shift includes consideration of a national regulatory framework and a national stockpile for digital assets (US Government, 2025).

This may herald a new era of American leadership in digital assets, with important roles for Congress and various regulatory agencies in publishing and enforcing new standards. Regulatory uncertainty is not the only challenge facing digital assets; other challenges include legacy systems/infrastructure, privacy and security, talent, and broader acceptance.

Digital assets are legal in the USA and many other countries, but, as securities, they are subject to a regulatory framework that is lagging behind this fast-growing sector. A simple guideline in the USA is that if the digital asset is a security, then the Securities and Exchange Commission may regulate it. In contrast, the Commodity Futures Trading Commission would regulate digital assets deemed commodities. One of the key themes in emerging regulation and law is to promote the development of digital assets while ensuring consumer protection and financial system stability.

However, should these regulatory changes be implemented, digital assets may become the next frontier of finance, continuing to drive dynamic change and limitless opportunity in the lending, investing, payments, and trading arenas. Fundamentally, digital assets are representations of value created and stored digitally. Digital assets may include cryptocurrencies, digital tokens, stablecoins, or non-fungible tokens (NFTs).

The benefit of digital assets is that they are more liquid and tradable than in non-digital formats. Increasingly, clients, suppliers, stakeholders, and staff may wish to be paid in digital asset form, with significant implications for corporations, financial institutions, and governments. Figure 6 illustrates the storage of digital assets and is explained in greater detail below.
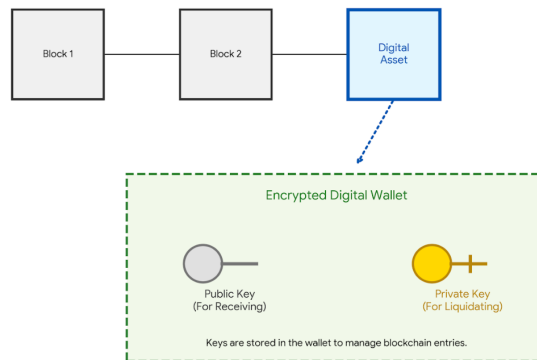
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**Figure 6.** Storage of Digital Assets
Source: Authors (2025)

New entries on the blockchain allow users to create new digital assets. The private key enables the user to sell or liquidate digital assets, whereas the public key may be used to send digital assets to counterparties. Keys are stored in cryptocurrency wallets, and digital assets can be transferred by trading or spending cryptocurrency tokens.

One player in the digital assets space is Obligate, a company providing on-chain capital markets solutions to global investors. It seeks to harness the full potential of the blockchain and to open new funding options for smaller capital raises that are excluded due to issuance costs. It does this through a decentralized offering lifecycle supported by a regulated platform and a robust custody solution. In today's private credit landscape, Obligate is one of several options for investors to access the private credit markets in the digital assets space, offering exposure to an emerging asset class in a more liquid format.

## 4. CONCLUSIONS

A revolution is underway in global financial services markets today. The traditional supermarket model of acquiring and cross-selling services, once followed by some incumbents, usually banks and insurance companies, is now increasingly challenged by digitally enabled entrants who operate in a decentralized, tech-driven ecosystem.

These new players attract digitally savvy clients, who are attracted by improved customer experience, greater efficiency, high levels of assurance, and lower cost structures. We have also seen that in many cases, players are bundling several technologies at once, such as cloud

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computing, APIs, and AI, to provide better customer experience, reduce client prospecting costs, and gain greater risk insights.

This update confirms that the digitalization of financial services has reached a critical inflection point where Cloud Computing, AI, and Digital Assets are no longer peripheral innovations but central tools that players in the financial services ecosystem are using to enhance shareholder value by improving customer experience, enhancing efficiency, and dynamically identifying and repricing risks.

Theoretically, this research suggests a shift in the traditional banking firm's boundaries toward a "modular finance" model, in which value is created through technological agility rather than capital scale. In practice, the study highlights that for financial institutions to achieve outperformance, they must integrate "Agentic AI" and DevOps not merely as IT upgrades but as core components of their risk management and customer engagement strategies. Financial institutions require C-suite support and clear data strategies for AI adoption, as well as the ability to adapt to new U.S. regulatory frameworks for digital assets.

While this article provides a timely update, it is limited by the high volatility of the digital asset market and the nascent stage of AI regulation. Furthermore, the case studies focus primarily on large-scale incumbents and successful fintech, which may not reflect the challenges faced by smaller regional players.

Future research should investigate the ethical implications of autonomous AI agents in credit decisioning and the long-term impact of Central Bank Digital Currencies (CBDCs) on the liquidity of the traditional commercial banking system.

**Declarations**

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