

The Future of FinTech

Prepared by Dr. Mohamed Sleem

FNT611
Foundations of FinTech

Lecture 10



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Discussion

What are the key features and benefits of the Nasdaq SMARTS Market Surveillance Technologies?

Answer: Nasdaq SMARTS Market Surveillance Technologies represent a comprehensive suite of tools designed to monitor and analyze trading activities across various markets to detect and prevent market manipulation and other forms of market abuse. The key features and benefits of Nasdaq SMARTS include:

1. Real-Time Surveillance, 2. Advanced Analytics, 3. Cross-Market Surveillance, 4. Customizable Alert System, 5. Regulatory Compliance, 6. Global Application, 7. Data Integration.

Discussion

What does navigating regulatory services in finance involve and what are the key considerations for financial institutions?

Answer: Navigating regulatory services in finance involves understanding and adhering to a complex set of laws and regulations that govern the operations of financial institutions. The key considerations include:

- Understanding Regulatory Bodies
- Compliance with Laws and Regulations
- Implementing Compliance Programs
- Keeping Up with Changes.

Discussion

What is Risk Management Software and what are its key features and benefits in the financial sector?

Answer: Risk Management Software is a type of application or suite of tools designed to help organizations identify, assess, manage, and mitigate various types of risks they face, particularly in the financial sector. Key features and benefits of such software include:

- Risk Identification and Assessment.
- Risk Monitoring and Reporting.
- Compliance Management.

Objectives:

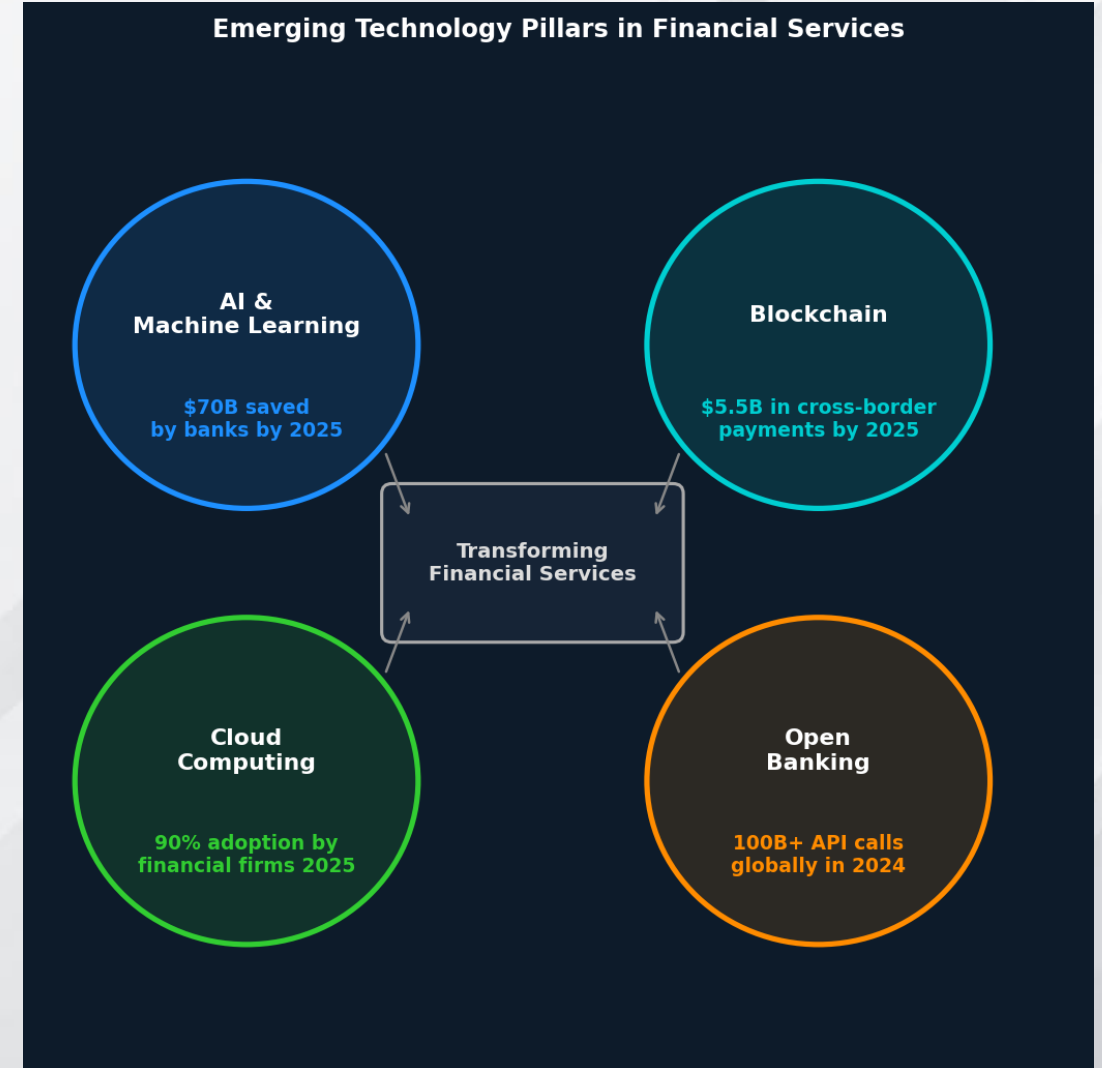
- To evaluate the transformative impact of **Agentic AI** on wealth management, credit evaluation, and banking operations, with reference to real-world institutional deployments.
- To examine the mechanics and strategic implications of Real-World Asset (**RWA**) **Tokenization**, including its role in redefining ownership, settlement, and capital market infrastructure.
- To analyze how the **Tripartite Innovation Ecosystem** — comprising banks, FinTech firms, and data science — drives personalized financial solutions and competitive differentiation.

Objectives:

- To critically assess the **five game-changing** factors shaping the future of FinTech: Customer Experience, Fin & Tech Convergence, Data Monetization, Crypto-technologies, and Regulatory Adaptation.
- To investigate how **emerging technologies** — including AI, blockchain, cloud computing, and open banking APIs — are restructuring the delivery and economics of financial services.
- To explore the **strategic transition** of financial institutions from product-centric vendors to integrated solution providers leveraging behavioral and transactional data.
- To assess the **future landscape** of money, payments, and saving, including the rise of Central Bank Digital Currencies (CBDCs), stablecoins, and Digital Financial Assistants (DFAs).

How Emerging Technologies Will Change Financial Services?

- **AI-Driven Automation:** AI is projected to save banks \$70 billion annually by 2025 through back-office automation, while AI-powered fraud detection systems are expected to reduce losses by up to 40% (Coinlaw.io, 2025).
- **Blockchain in Payments:** Blockchain is set to enable \$5.5 billion in cross-border payments by end of 2025, reducing settlement times from days to seconds and cutting intermediary costs (Coinlaw.io, 2025).
- **Cloud Computing Dominance:** Cloud adoption in financial services is expected to reach 90% of institutions by 2025, enabling scalable infrastructure, real-time data processing, and cost-efficient compliance (Coinlaw.io, 2025).
- **Open Banking Explosion:** Over 100 billion API calls were made globally through open banking platforms in 2024, fuelling third-party innovation and embedded finance ecosystems (Acropolium, 2024).



How Emerging Technologies Will Change Financial Services?

- **Agentic AI Takes Centre Stage:** 2025 marked a decisive shift from generative AI to agentic AI in financial services. Wells Fargo, Metro Bank, and Eurobank deployed bank-wide agentic AI for commercial lending, product design, and mainframe operations (FinTech Futures, 2025).
- **Instant Payments Surge:** The total value of instant payment transactions reached \$60 trillion in 2025 and is projected to grow to \$58 trillion by 2028. Digital payment users are set to surpass 4.4 billion by 2029 (M2P Fintech, 2026; FinTech Magazine, 2025).
- **Tokenisation Goes Institutional:** 2025 saw large-scale institutional adoption of RWA tokenisation. DBS partnered with JP Morgan's Kinexys blockchain division; Fidelity raised \$136M co-led by Bank of America and Citi to build a tokenised settlement layer (FinTech Futures, 2025).
- **Stablecoins & CBDCs as New Rails:** Stablecoins are emerging as the settlement layer for both B2B cross-border payments and tokenised RWAs, with JP Morgan estimating the stablecoin market could reach \$500–750 billion. Over 130 countries are actively exploring CBDCs (FinTech Magazine, 2025).



Five Game-Changers Shaping the Future of FinTech: An Academic Analysis

Customer Experience (CX): FinTech and AI shift power to firms offering simple, mobile-first journeys with instant onboarding, transparent pricing, and personalized dashboards.

Fin & Tech Connection: Banks and tech firms co-build services via APIs, cloud, and platform models, combining regulatory licenses and trust with speed, UX, and innovation.

Data Monetization: Financial institutions turn transaction and behavioral data into value through personalized pricing, alternative-data credit scoring, and real-time fraud analytics.

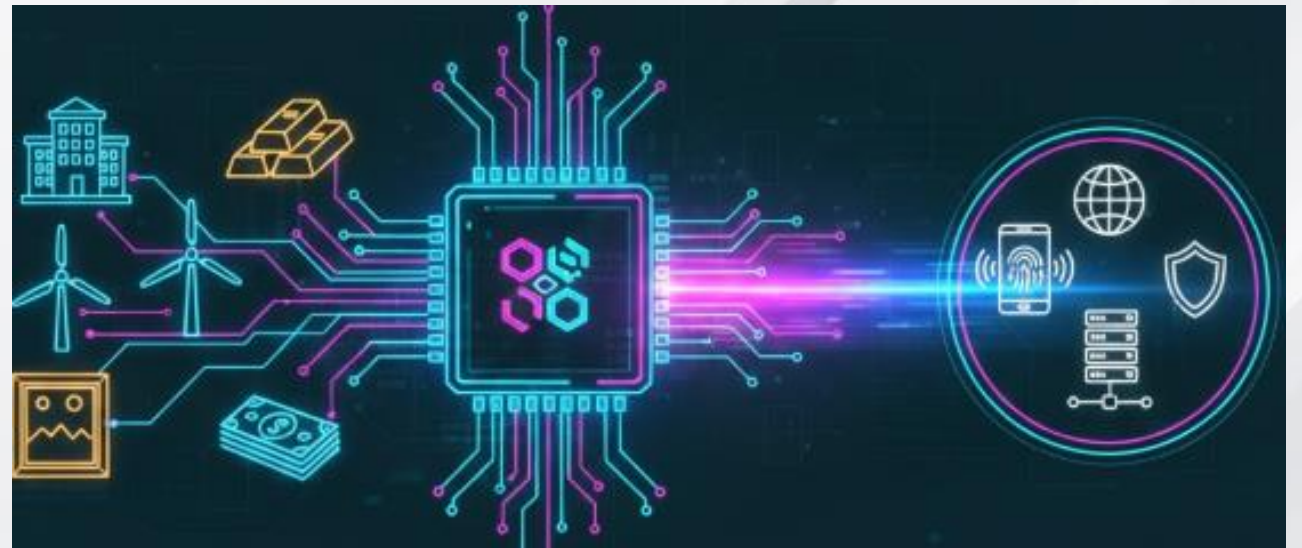
Crypto-technologies: Blockchain and tokenization create new rails for moving and storing value, including faster settlement, tokenized real-world assets, and programmable money via smart contracts.

Regulation Adaptation: Open-banking rules, regulatory sandboxes, digital-only licenses, and updated crypto/AI guidance enable FinTech to scale while managing consumer and systemic risk.



Game-Changer: Tokenization of Real-World Assets (RWA) and Digital Infrastructure

- **RWA Tokenization Dominates:** turning a **real-world asset** (like T-bills, real estate, or gold) into **digital tokens on a blockchain** so it can be traded, split into small fractions, and moved 24/7 more easily. (Agur et al., 2025)
- In 2025, tokenization—converting assets like real estate, bonds, and private credit into blockchain-based digital tokens—has moved from concept to large-scale institutional adoption.
- **Rethinking Capital Markets:** RWA tokenization is set to restructure the financial system by redefining how ownership, settlement, and compliance work, reducing reliance on multiple intermediaries.



From Robo-Advisors to Agentic AI: The Revolution in Wealth Management

- **Foundation of Modern Automation (2024)**

In 2024, platforms such as **Betterment** and **Wealthfront** strengthened digital investing through **automatic rebalancing** and **tax-loss harvesting**, setting the baseline for the next era of AI-driven wealth management.

- **Shift to Agentic AI**

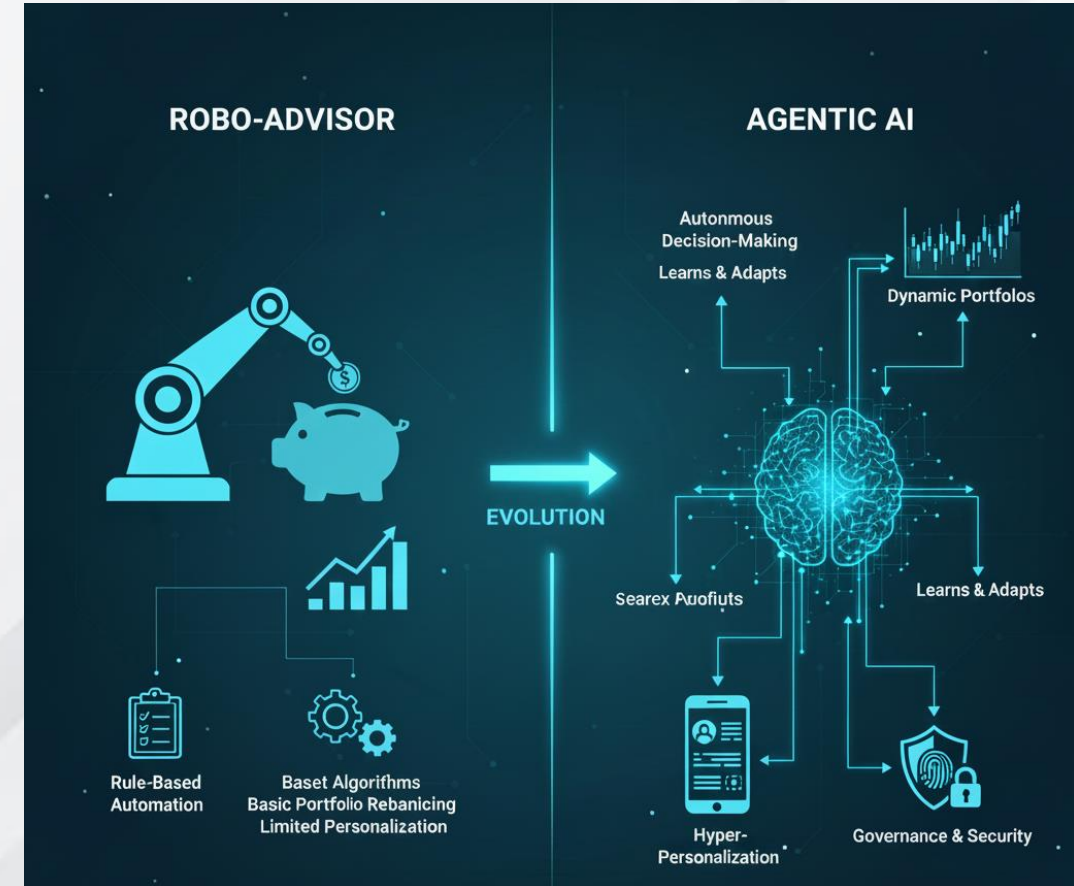
Wealth management is moving beyond passive robo-advice toward **autonomous agentic AI** that can **plan, execute, and manage** complex financial decisions—including dynamic portfolios and automated credit evaluations.

- **Hyper-Personalized Financial Services**

Generative AI enables **real-time personalization at scale**, offering smart savings alerts, customized credit offers, and adaptive financial plans tailored to each client's behavior and financial footprint.

- **Governance, Risk & Digital Trust**

The rise of agentic AI demands strong **AI oversight, human-override mechanisms**, and secure **digital-custody frameworks**, especially when asset values depend on enforceable legal claims.



The Future of Financial Services

The Future of Financing:

- **Streamlined Home Financing:** Home purchases will become faster as mortgages are shared with multiple lenders in real estate markets.
- **Digital Financial Assistants (DFAs):** DFAs will match borrowers with lending offers based on their financial profiles.
- **Growth of Crowdlending:** Crowdlending will expand as platforms pool individual investments, safeguarded by credit default swaps.
- **Competitive Crowdlending:** Low tech costs in matching and credit analysis will keep crowdlending competitive despite insurance expenses

The Future of Identity & Money: RWA Tokenization, CBBCS, and Digital Ownnship

Digital Infrastructure



Agentic AI



RWA Tokenization

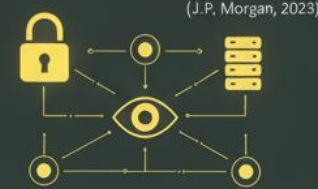
Global CBDC Momentum



CBDCs (Central Bank Digital Currency)



Fractional Ownership



Compliance & Identity

Data Oracles



Real-Time Settlement

- **Global CBDC Momentum:** Over 130 countries ($\approx 98\%$ of global GDP) are exploring CBDCs as a stable anchor for digital money (**IMF, 2024**).
- **Programmable Money:** CBDCs and DLT enable automated, conditional payments through smart-contract functionality (**BIS, 2023**).
- **Tokenized Collateral:** Institutions like **J.P. Morgan's Tokenized Collateral Network (TCN)** allow near-instant transfer of tokenized MMF shares as collateral (**J.P. Morgan, 2023**).
- **Compliance & Identity:** RWA tokenization requires strong AML/KYC alignment and new governance frameworks to balance transparency and privacy (**WEF, 2023**).
- **Data Oracles:** Tokenized assets depend on secure off-chain data feeds (e.g., Chainlink) for valuation and proof-of-reserve (**WEF, 2023**).

The Future of Financial Services

The Future of Money:

- **Electronic Currency Evolution:** National banks are leveraging blockchain to issue electronic currencies.
- **Transparent Global Asset Databases:** Governments will push for real-time tracking of financial flows via transparent databases.
- **Standardized Electronic Currencies:** Central bank-controlled e-currencies like "ePounds" will become monetary management norms.
- **Balancing Transparency and Freedom:** New governance will address the trade-off between financial transparency and privacy in a highly monitored world.

The Future of Financial Services

The Future of Saving and Consumption

- DFAs will increasingly guide individuals in deciding whether to use available cash for saving or consumption based on user preferences and financial goals, leveraging online product information.
- A diverse ecosystem of independent and dependent DFAs will emerge, driven by different charging models, including usage fees and referral/advertising revenues.
- Users with long-term financial goals will rely on DFAs to make informed decisions, potentially delaying immediate spending in favor of saving, leading to a more sophisticated approach to the saving vs. consumption dilemma.

The Future Technologies & Applications in Fintech:

Artificial Intelligence (AI):

- **Personalized Experiences:** AI will customize financial services to enhance user interactions.
- **Risk and Fraud Management:** AI will detect and prevent fraud while improving risk assessment.
- **Task Automation:** AI will streamline financial operations, cutting costs and errors.
- **AI in Investments:** Robo-advisors and AI trading systems will revolutionize investment strategies.

The Future Technologies & Applications in Fintech:

Blockchain Technology

- **Enhanced Security:** By using a decentralized ledger, blockchain greatly reduces the risk of fraud and data breaches.
- **Increased Transparency:** Transactions recorded on blockchain are transparent and easily verifiable, building greater trust in financial processes.
- **Cost and Time Efficiency:** Blockchain cuts out intermediaries, leading to lower costs and faster transactions, especially in international dealings.
- **Innovation in Services:** It enables new financial services like smart contracts and decentralized finance, expanding the scope of fintech offerings.

The Future Technologies & Applications in Fintech:

Cloud Computing

- **Efficient Data Management:** Cloud computing supports large-scale data processing for trading, risk, and compliance.
- **Cost-Effective Resources:** Subscription-based cloud models reduce costs and optimize global infrastructure usage.
- **Scalability and Security:** Cloud solutions offer flexible storage, secure access, and automated backups for business continuity.

The Future Technologies & Applications in Fintech:

Internet of Things (IoT):

- Real-Time Payments: IoT enabling instant transactions.
- Personalized Insurance: IoT devices providing data for tailored policies.
- Automated Trading: IoT sensors triggering stock market trades.
- Risk Management: IoT data enhancing fraud detection and prevention.
- Blockchain Integration: IoT devices leveraging blockchain for secure transactions.
- Smart Contracts: IoT triggering automated agreements in fintech.
- Data-Driven Lending: IoT providing insights for credit decisions.
- RegTech Solutions: IoT aiding in regulatory compliance.
- Biometric Security: IoT devices enhancing identity verification.
- Sustainable Finance: IoT data driving green investments.

The Future Technologies & Applications in Fintech:

No-Code and Low-Code Platforms:

- **Traditional Coding Challenges:** Developing financial services traditionally required extensive coding and API integration, leading to high costs, long delays, and inflexibility in updates.
- **Low-Code vs No-Code:** Both approaches simplify development by removing complex coding requirements. Low-code needs some coding knowledge, while no-code doesn't require any, making it more accessible for businesses.
- **Choosing the Right Platform:** The choice between low-code and no-code depends on the project's complexity and the business's coding capability. Low-code suits simpler projects, while no-code is better for more complex, custom applications.

From Financial Product Vendors to Solution Providers:

- **Banks as Solution Providers:** Banks are shifting from selling products to offering comprehensive financial solutions using transactional data.
- **Tailored Financial Plans:** Personalized plans replace broad product catalogues, addressing specific customer needs.
- **Innovation Potential:** Banks leverage decades of data to create precisely timed, customized solutions.
- **Data-Driven Insights:** Actionable insights from customer data enable effective, personalized financial offerings.

How Can Banks Best Leverage Their Data Advantage?

- Embracing Open Banking:** Banks can adopt secure APIs to enable third-party innovations, inspired by tech giants like Apple and Google.
- Middleware for Simplification:** Middleware applications streamline core banking systems, facilitating developer access and fostering innovation.
- Collaborating with FinTech:** Partnering with FinTech platforms allows banks to leverage creativity, foster ecosystems, and create new revenue streams.

The Future of FinTech: A Tripartite Innovation Ecosystem

- **Data Science Driving Innovation:** Extracting insights from data helps create solutions based on customer needs.
- **Personalized Solutions with Machine Learning:** Machine learning tailors financial products to customer goals and behaviors.
- **Collaborative Ecosystem:** Banks, tech companies, and customers work together, with banks supplying essential data and services.

Why FinTech Banks Will Rule the World

- **Resistance to Change:** Traditional banks lag in adapting to the digital revolution, relying on regulatory protections.
- **Declining Trust:** Post-2008, customers increasingly prefer alternative finance, viewing banks as self-interested.
- **Selective FinTech Investments:** Banks focus on startups that complement their products, avoiding direct competition.

Why FinTech Banks Will Rule the World

- **Shifting FinTech Models:** FinTechs are evolving from peer-to-peer to marketplace models, leveraging institutional liquidity.
- **Marketplace Banking Growth:** FinTechs now offer core banking via third-party products and APIs, bypassing traditional banks.
- **Challenges for FinTech Banks:** Key hurdles include tech development, licensing, and customer acquisition.
- **Disruptive Potential:** Agile and innovative, FinTech banks can challenge traditional banks with modern systems and strong reputations.

Banks Partnering with FinTech Start-ups to Create an Integrated Customer Experience

- **Evolving Entrepreneur Stereotype:** Entrepreneurs now come from diverse backgrounds, including women in Africa and banking professionals.
- **New Innovation Models:** Banks are partnering with start-ups, moving beyond traditional vendor-client relationships.
- **Need for Adaptation:** Growing FinTech investments signal a rising impact, pushing banks to evolve.
- **FinTech's Disruptive Potential:** Venture capitalists see FinTech as poised to transform finance, akin to changes in media, travel, and retail.

Banks Partnering with FinTech Start-ups

- **Data Beyond Firewalls:** Banks need to leverage valuable data available on the open internet.
- **Understanding APIs:** APIs enable access to external data, resources, and algorithms, often from FinTech start-ups.
- **Collaborative Partnerships:** Working with FinTech start-ups can be mutually beneficial, despite potential competition.
- **Marketplace Strategies:** Platforms like Lending Club use network effects to attract data-sharing partners, benefiting banks and firms.

Banks Partnering with FinTech Start-ups

- **Creating Value with Algorithms:** Banks can enhance customer satisfaction by developing smart algorithms and intuitive user experiences.
- **Collaboration with Marketplaces:** Partnering with networked marketplaces enables banks to leverage data and network effects.
- **Focus on Services:** Banks should prioritize service-based models, following examples like NYSE and NASDAQ, which add value through services atop marketplace APIs.

Banks Partnering with FinTech Start-ups

- **Brand and Agility Combo:** Combining a strong brand with startup agility gives banks a competitive edge.
- **Listening to Customers:** Addressing marketplace users' pain points improves the customer experience.
- **The Great Rebundling:** Banks can succeed by integrating fragmented services into seamless experiences, anticipating customer needs with new technologies.

Banks Partnering with FinTech Start-ups

- Price Competition in Asset Allocation: Robo-advisors are driving down the cost of asset allocation services, making it a commodity. Competing at this level with a high-cost structure is not advisable.
- Innovation in Data Science and Personalization: Wealth management firms have an opportunity to innovate in data science, personalization, and reporting services, moving away from commodity offerings.

Banks Partnering with FinTech Start-ups

- Race to Provide Complementary Services: Some robo-advisors aim to avoid consolidation by moving up the value stack and rebundling complementary wealth management services. This is a competitive race.
- Emergence of Micro Asset Managers: Micro asset managers, often focused on a specific asset class, are emerging as early adopters of marketplaces like Lending Club and Angel List. They offer low-cost and agile investment strategies, challenging traditional asset managers.

FinTech Impact on Retail Banking

- **Regulatory Overload:** Banks are heavily focused on compliance, with 70% of budgets spent on regulation, according to Accenture.
- **Changing Consumer Habits:** The digital economy's growth has shifted consumer expectations and behaviors.
- **Rising Costs:** Banks face increasing IT expenses and the challenge of maintaining large branch networks.

FinTech Impact on Retail Banking

- **Revenue Pressure:** Regulatory demands and digital shifts have reduced retail banking revenues, despite cost-cutting efforts.
- **Legacy IT Hurdles:** Outdated IT systems, consuming 14% of costs, limit digital transformation.
- **Reluctance to Change:** Fear of disruption and complexity keeps banks focused on incremental innovation rather than radical transformation.

FinTech Impact on Retail Banking

- **Outdated Full-Service Models:** Traditional banking models fail to meet modern market demands, requiring bold innovation.
- **Misaligned Financial Focus:** Banks prioritize branch networks over transformative R&D, hindering progress.
- **High Customer Expectations:** Digital advances, driven by tech giants, have raised customer standards, increasing IT costs.
- **Costly Complexity:** Outdated IT systems and complex offerings consume 14% of banking expenses, mostly for maintenance.

Summary

- Understanding the Impact of Emerging Technologies on Financial Services
- Academic Analysis of Key Factors Shaping FinTech's Future
- Exploring the Future Landscape of Financial Services
- Transitioning from Product Vendors to Solution Providers
- Maximizing Data Advantage for Banks

Summary

- Analyzing the Tripartite Innovation Ecosystem in FinTech
- Enhancing Customer Experience through Banks' Collaboration with FinTech Start-ups
- Strategic Collaborations between Banks and FinTech Start-ups
- Impact of FinTech on Retail Banking
- NEW Focus: Examining the disruptive potential of Agentic AI and Real-World Asset (RWA) Tokenization across banking operations and market infrastructure.

Discussion

- How are digital and mobile payments, along with cryptocurrencies, changing the global payment landscape?
- What are the key developments in FinTech business models, particularly the evolution towards marketplace banking, and what challenges and potential disruptive impacts do these changes pose for traditional banking systems?
- How will Digital Financial Assistants (DFAs) shape the future of saving and consumption?

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Thank You

