Financial Services Technology Revolution
NASAA Annual Conference
Conference Opening Keynote

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Background

- 20-year veteran with consulting, industry, and central bank experience
- Founded Chakra Advisors, a financial services and technology strategy firm
- Advise FinTech, technology, and financial firms on the impact of technology in the financial services industry along with policymakers
- Created Incumbents and Disruptors Blog to promote discussion of the evolving financial services industry especially from new entrants (https://chakradvisors.com/blog)

What is FinTech?

- Working definition:

  Any technological innovation that improves the delivery, access, and/or efficiency of the financial system

- What is different now?

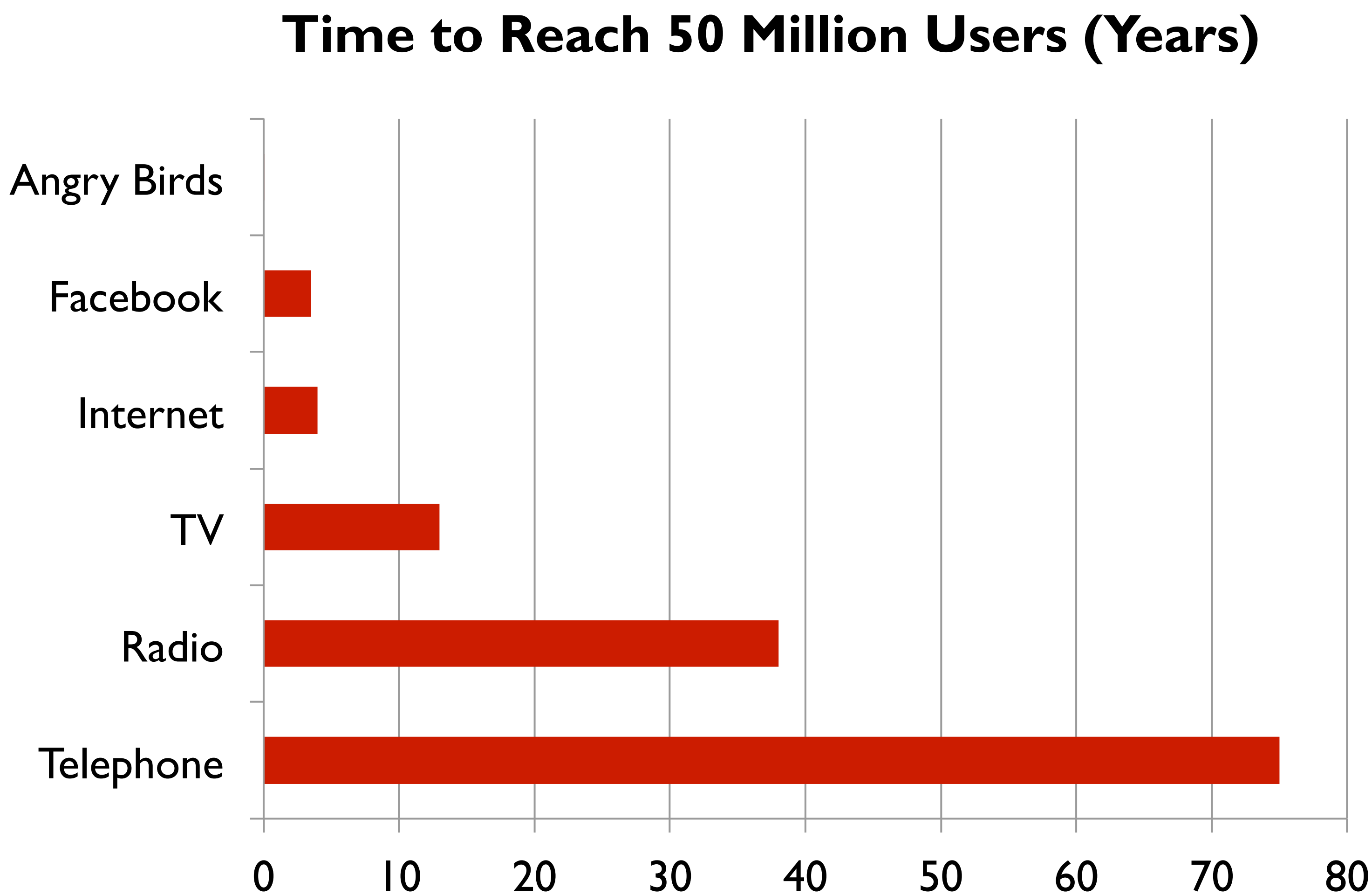
  - Unlike in the past, many FinTechs are customer facing and focus on reducing frictions such as cost, setup time, and transaction speed

  - Greater regulation and oversight of incumbent financial service providers

  - Increased integration of third-party providers into systems run by traditional financial service providers

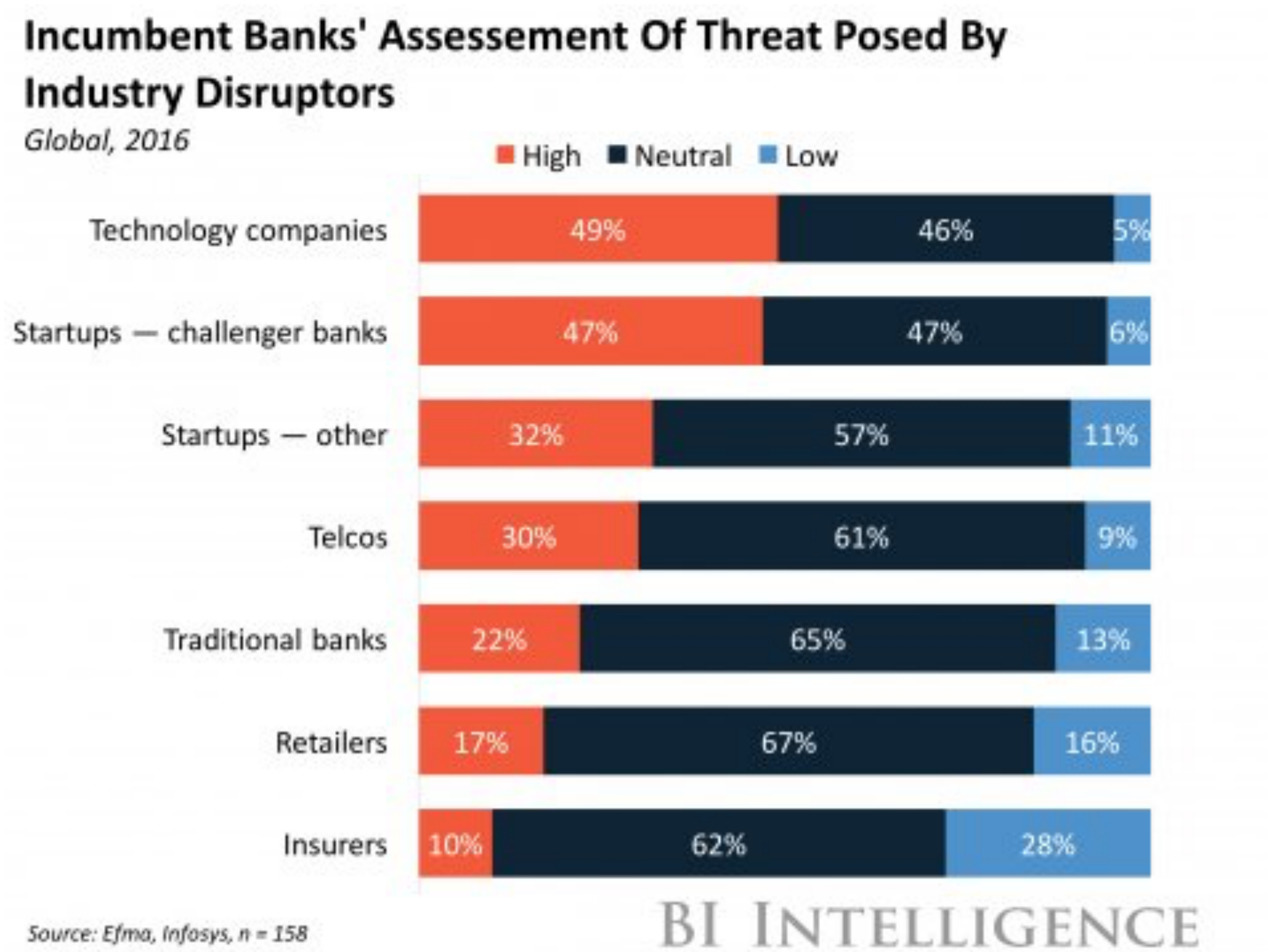
  - Faster adoption rates

Pace of Technology Adoption

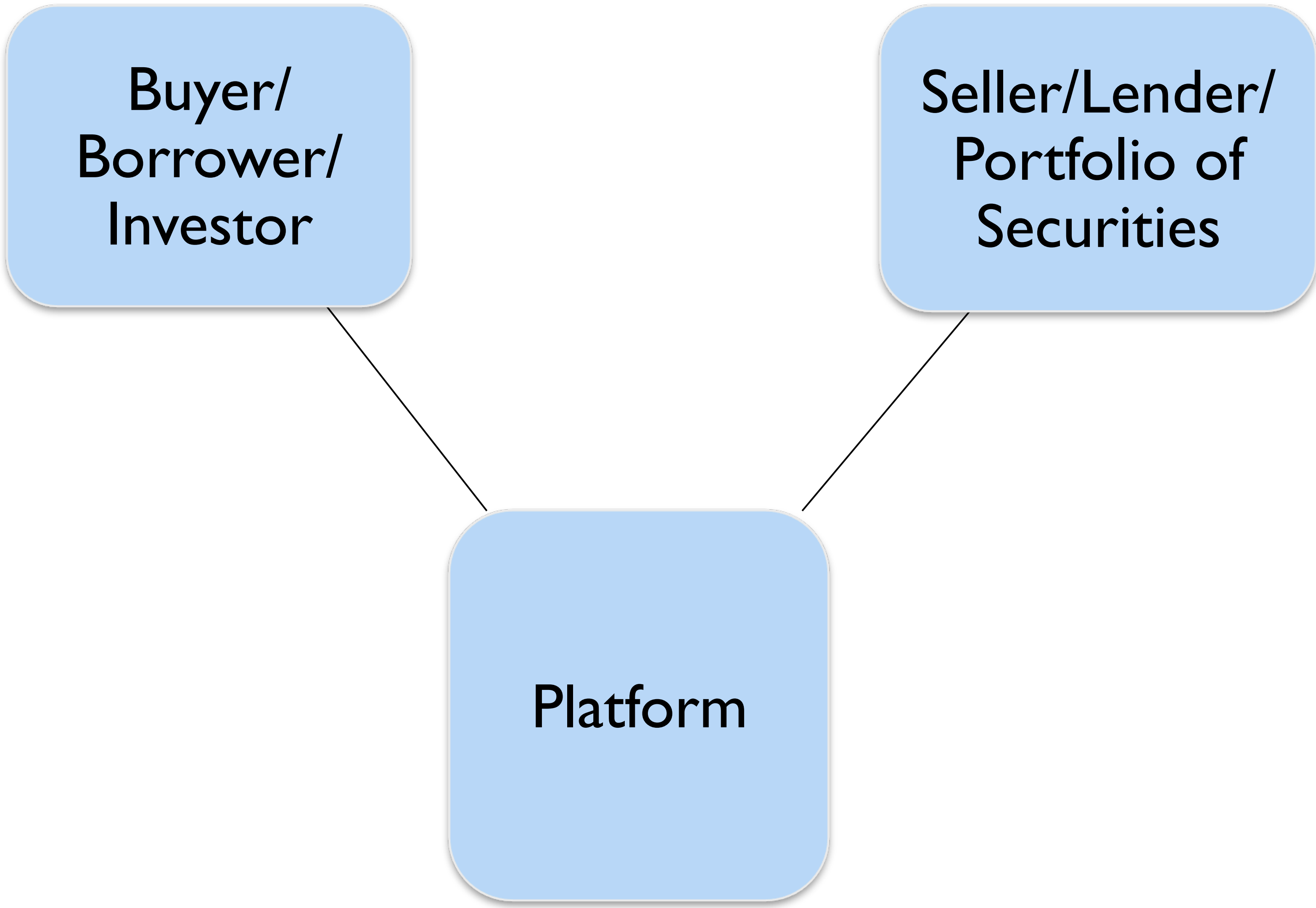


Source: Timothy Aeppel, "It Took the Telephone 75 Years To Do What Angry Birds Did in 35 Days. But What Does That Mean?" *WSJ*, March 13, 2015 (Citi Digital Team)

Banks' View of Who Will Disrupt



Match/Search Process



Why End-Users Like FinTech Products

Easy to set up account	43.4%
More attractive rates/fees	15.4%
Access to different products and services	12.4%
Better online experience and functionality	11.2%
Better quality of service	10.3%
More innovative products than traditional bank	5.5%
Greater level of trust than traditional bank	1.8%

Source: The Fintech Blog, June 9, 2016.

FinTech Product Focus (not exhaustive)

- **Payments** among consumers, businesses, and individuals (domestic and international)
- **Lending** to consumers and (small) businesses (untapped markets)
- **Wealth and Asset Management** (robo advising and financial management)
- **Cryptocurrencies** (cross border and digital payment alternative)

FinTech Technology Focus (not exhaustive)

- **Mobile Technology** enables on-the-go connectivity through APIs to financial service providers and networks

- **Data Analytics** enables ability to store/retrieve/analyze datasets with increasing use of cloud technologies

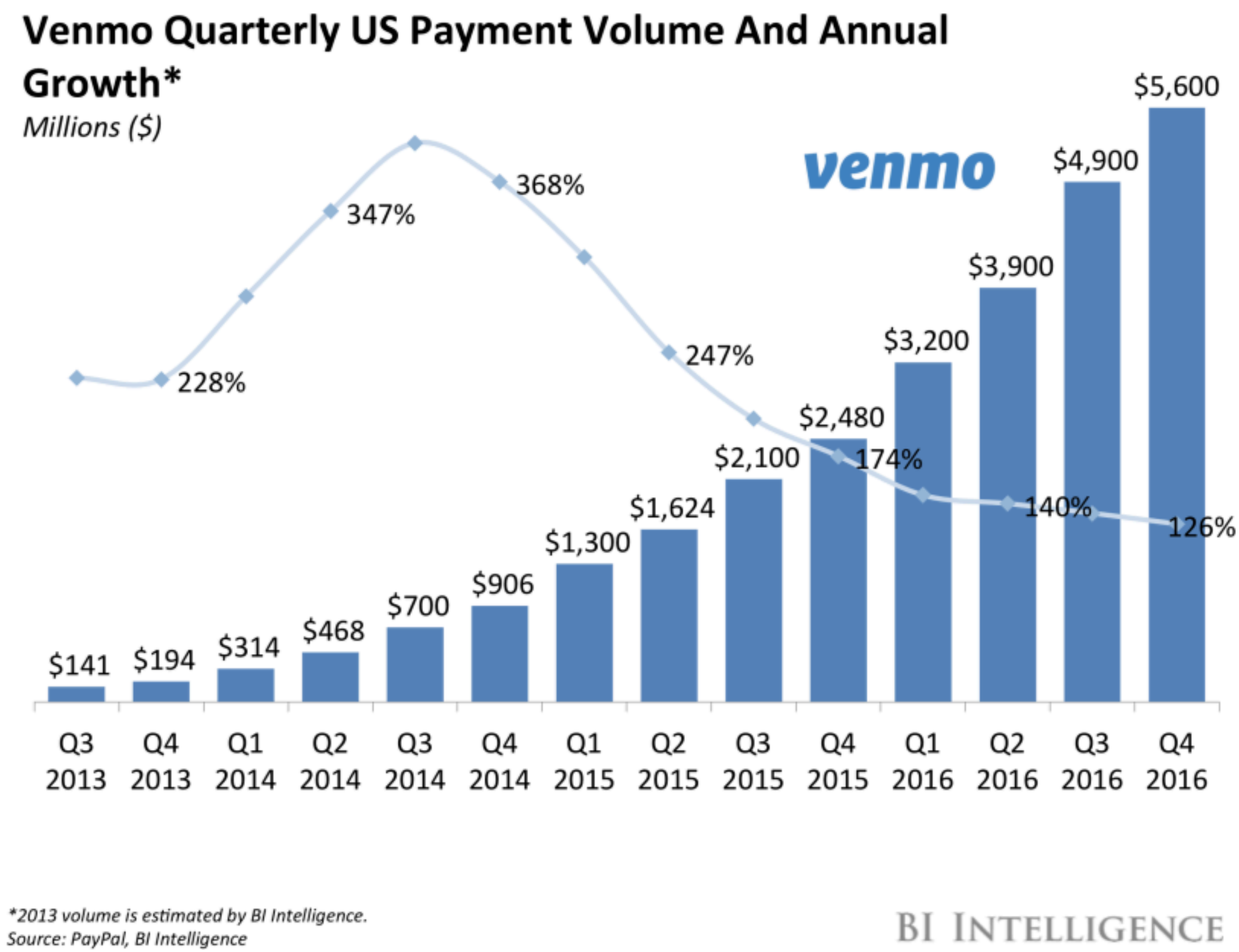
- **Artificial Intelligence** enables faster and more efficient transactions (however, role for humans is not likely to be eliminated)

- **Distributed Ledger Technology** (Blockchain) enables authentication and verification of transactions including smart contract execution

Payment Platforms

- Existing frictions for certain payment segments include: access, high cost, low convenience, slow transaction speed
- Payors/Payees want to pay/get paid by anyone, anytime, anywhere
- Peer-to-Peer platforms gaining market share on existing bank platforms and cash e.g., Venmo
- How do we provide the ubiquity of cash in the electronic world that is convenient, secure, accessible, and at low cost?

Example of P2P Payment Provider



FinTech and Lending

- Credit has existed since 3500 BC (agricultural) and not always extended by financial institutions
- After financial crisis, traditional credit providers generally limited lending to the most creditworthy borrowers
- Platform lending matches lenders with borrowers, e.g. LendingClub, Kabbage, Prosper, and Swift Capital (acquired by PayPal)
- Some FinTech lenders are becoming more like traditional banks such as SoFi expanding from student loans to unsecured consumer credit and mortgages
- Banks are also providing lending platforms, e.g. Goldman Sach's Marcus and Select lending platforms

Credit Screening

- Origins of credit bureau started in early 1800s in England for bad tailor debts
- FinTechs increase access to those that have limited or no credit history
- Alternative metrics for credit screening are being developed, e.g. consumer mobile phone usage in Kenya (Tala)
- Amazon, Square, and PayPal extend credit to small businesses that may not be extended credit from traditional lenders

Investment Platforms

- Over two decades ago, investors relied on brokers for information on stocks, bonds, and other types of investment
- The Internet now allows easy access to information on various types of securities/investments
- Algorithms based on customer risk-reward preferences, liquidity needs, and other characteristics determine the optimal portfolio, e.g. Betterment, Wealthfront, Personal Capital, and 8 Securities (based in HK)
- Reducing human interaction and processing reduces costs and enables lower fees to customers

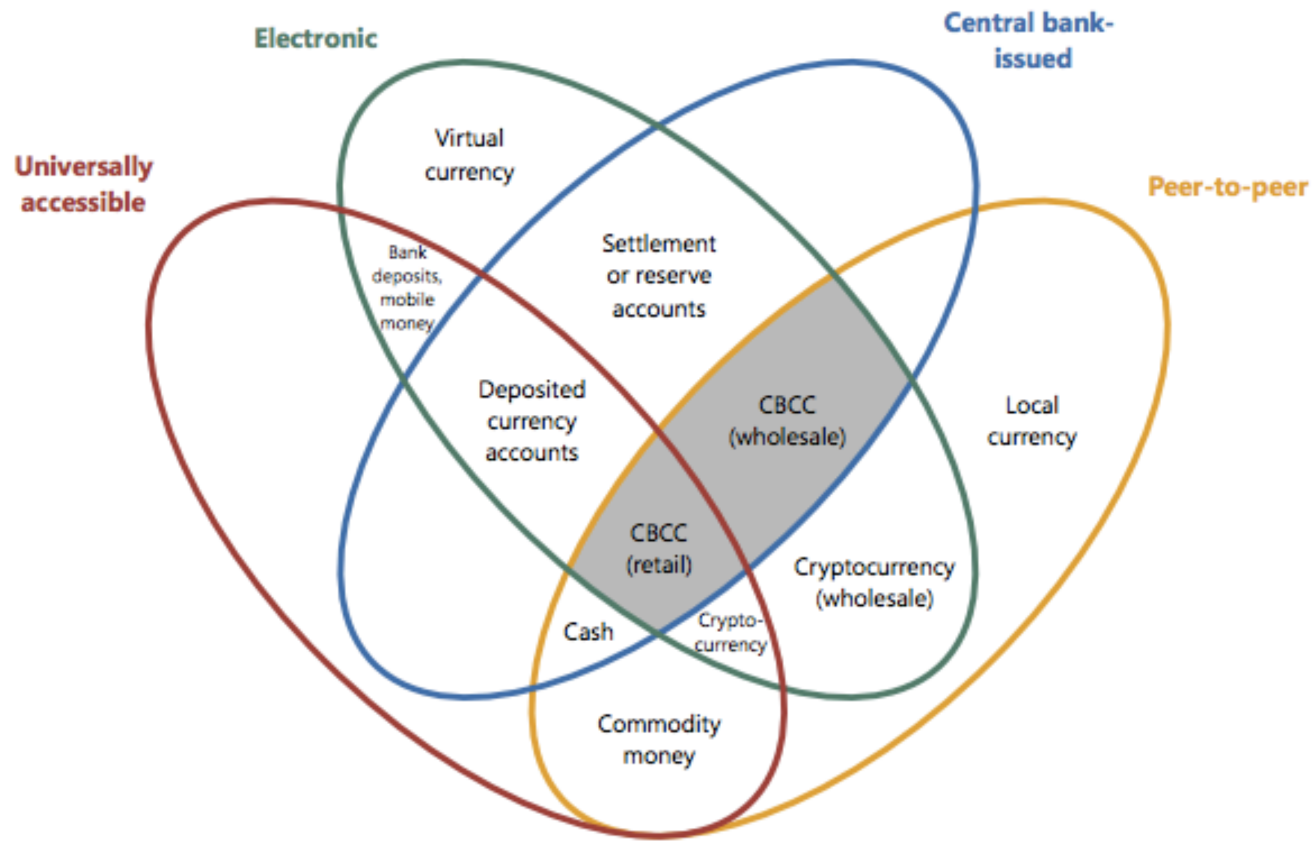
FinTech Investment Platform Challenges

- Need significant scale to make profit
- Tougher to convince non-Millennials to participate
- Traditional players such as Vanguard, Charles Schwab, and Blackrock have started or acquired digital advisory platforms

Cryptocurrencies

- Hundreds of cryptocurrencies exist today
- Bitcoin, the most well-known, started at an exchange rate of less than $.01 (May 2010) to over $3700 (as of 9/21/17)
- Although volatile, cryptocurrencies also provide payments and store of value functions
- Useful when governments take extreme measures on their currency such as demonitization in India

The Money Flower: A Taxonomy of Money



Source: Morten Bech and Rodney Garret (2017), "Central Bank Cryptocurrencies," *BIS Quarterly Review*, September, 55-70.

Explosion of Cryptocurrencies

Year	Number Coins	Market Cap of All Coins (Billions)	Percentage of Bitcoin
2013	8	$1.5	92.5%
2014	29	$7.1	92.3%
2015	33	$4.0	83.3%
2016	69	$11.3	79.5%
2017	392	$177	45.2%

Source: coinmarketcap.com as reported in visualcapitalist.com

Responses by Incumbents

- Financial analysts estimate that incumbent financial institutions are likely to lose more than 20 percent of their market share and profit to FinTechs

- Traditional financial institutions should have a holistic approach to digitalization of financial services

- Incumbents should partner with FinTech firms to provide seamless delivery and processing of financial products when appropriate

- Incumbents are more actively investing and acquiring FinTech firms

Role of Regulation

- Provide transparency to transactors by mandating adequate disclosures
- Provide consumer protections and necessary security standards
- Remain vigilant against fraud and punish fraudulent actors
- Ensure system resiliency and manage systemic risks
- Will not eliminate all risks

Regulation and FinTechs

- Many FinTech firms are overwhelmed with the maze of regulations and some would like a banking charter for clarity
  - OCC FinTech bank charter (stalled) vs. Vision 2020 by state regulators (promotes coordination across states)
  - Industrial Loan Companies—Square's recent application
- Focus on activity based regulation regardless of type of institution providing the service
- Should not be used solely to prevent entry potentially impeding innovation

Conclusion

- The financial services sector continues to evolve rapidly with advances in technology
- New entrants will continue to challenge incumbents
- The future looks bright for end-users of financial services
- Enhancements to regulatory structure may be necessary as lines between financial firms and other firms continue to blur