
Current State of FinTech Evolution in India and Beyond

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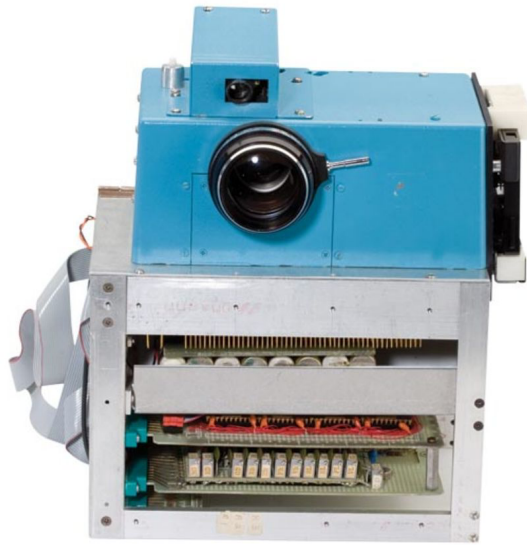
Incumbents, Disruptors, and Competition

- Incumbents face competition from within and outside their industry (new and existing firms)
- Incumbents can react in different ways:
 - ▶ Do not recalibrate (Kodak problem)
 - ▶ Compete head on (transformation)
 - ▶ Partner or acquire (within and across industries)
- Generally, competitive forces are great for consumers but there are growing pains (transition costs)

Case of Kodak



Started selling film in 1880s



First Digital Camera: Circa 1975



Digital camera: Circa 2004

The Amazon Effect

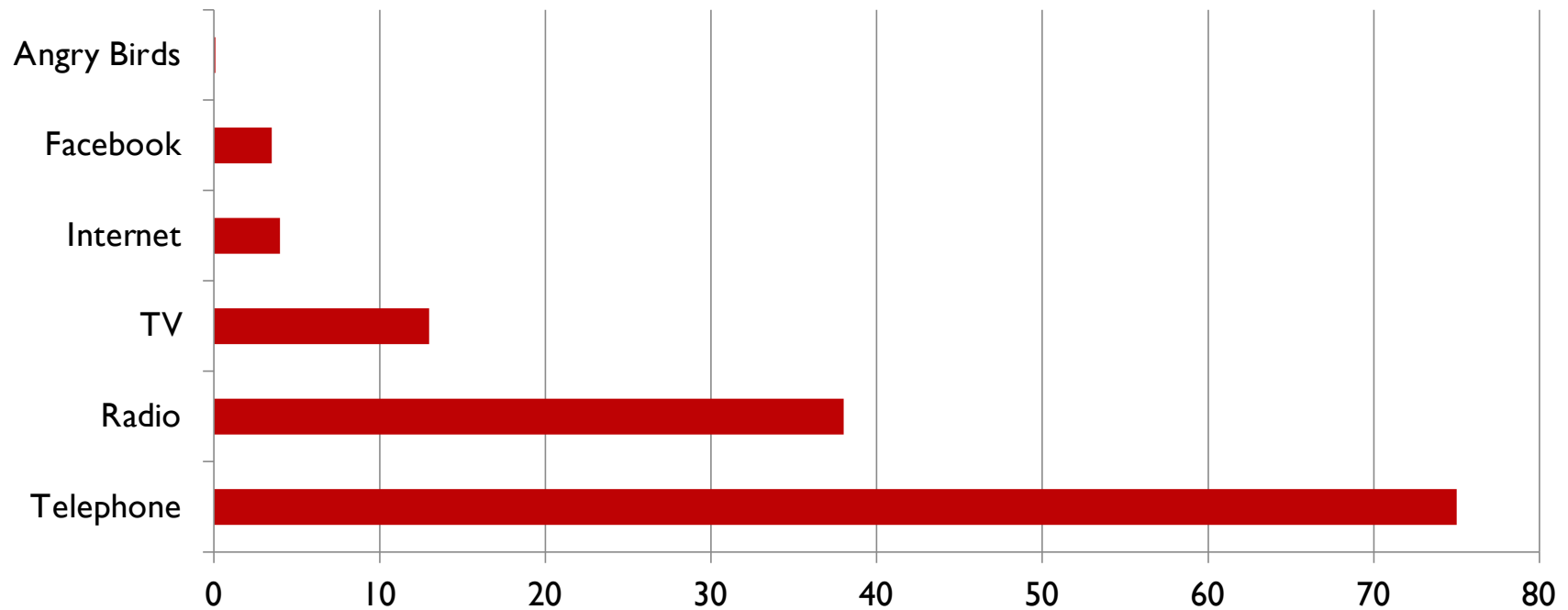
Retailer	Highest Market Value (2006)	Market Value (9/16/2019)	Percent Change
Best Buy	\$28.4B	\$18.2B	(36%)
JCPenney	\$18.1B	\$299.8M	(98%)
Kohl's	\$24.2B	\$8.5B	(65%)
Macy's	\$24.2B	\$5.4B	(78%)
Nordstrom	\$12.4B	\$5.5B	(56%)
Sears	\$27.8B	\$31.7M	(~100%)
Target	\$51.3B	\$54.7B	7%
Walmart	\$214.0B	\$328.7B	54%
Amazon	\$17.5B	\$894.3B	5010%

What are FinTech and Big Tech?

- Working definition:
 - Any technological innovation that improves the delivery, access, and/or efficiency of the financial system
- What is different now?
 - ▶ Direct access to customer (greater convenience)
 - ▶ Mobile delivery of financial services (24/7/365 from anywhere)
 - ▶ Access to customer data in real time (open banking, API)
 - ▶ Low barriers to entry
 - ▶ Unbundling and rebundling
- Big Tech

Rate of Technology Adoption

Time to Reach 50 Million Users (Years)



Source: Timothy Aepfel, "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).

Why Customers Like FinTech Products

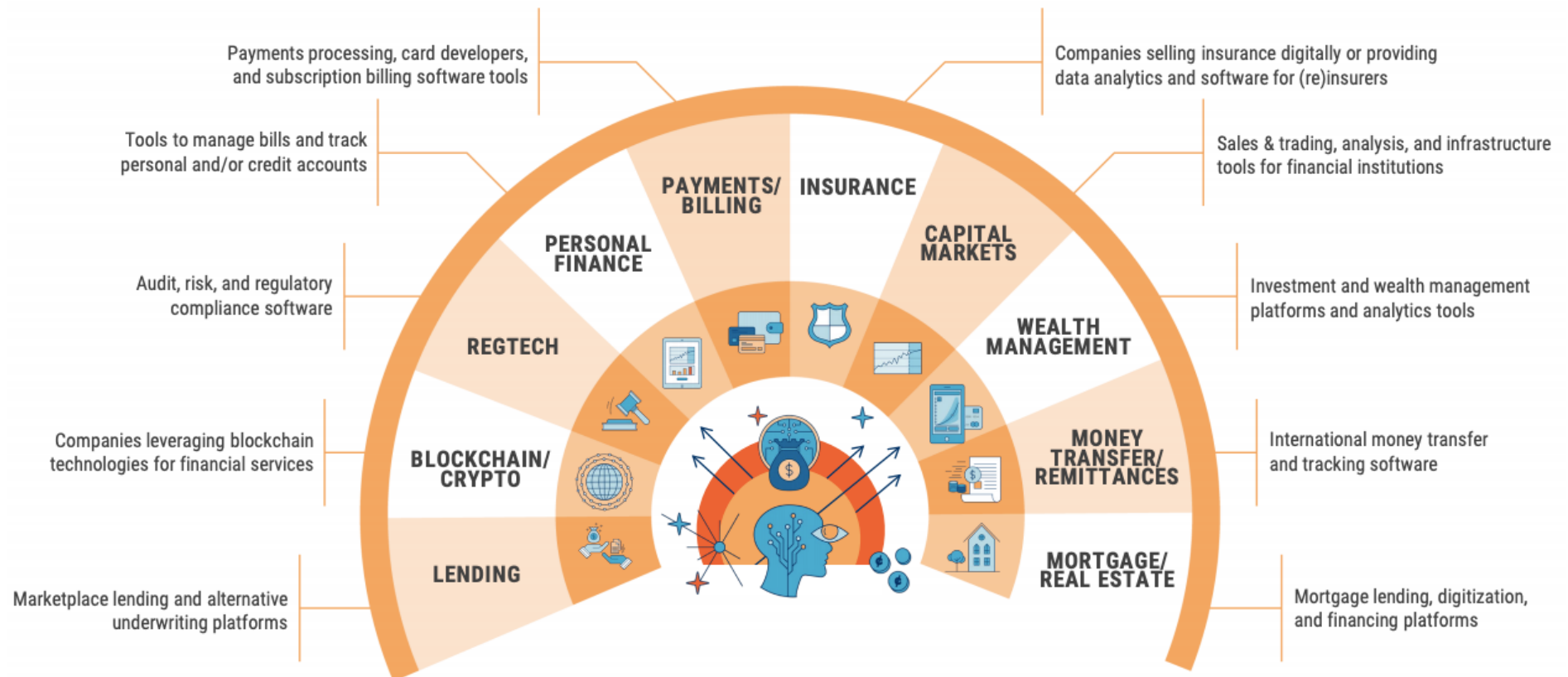
Easy to set up account	43.4%
More attractive rates/fees	15.4%
Access to different products and services	12.4%
Better online experience and functionality	11.2%
Better quality of service	10.3%
More innovative products than traditional bank	5.5%
Greater level of trust than traditional bank	1.8%

Source: The Fintech Blog, June 9, 2016.

Relatively New Technology (not exhaustive)

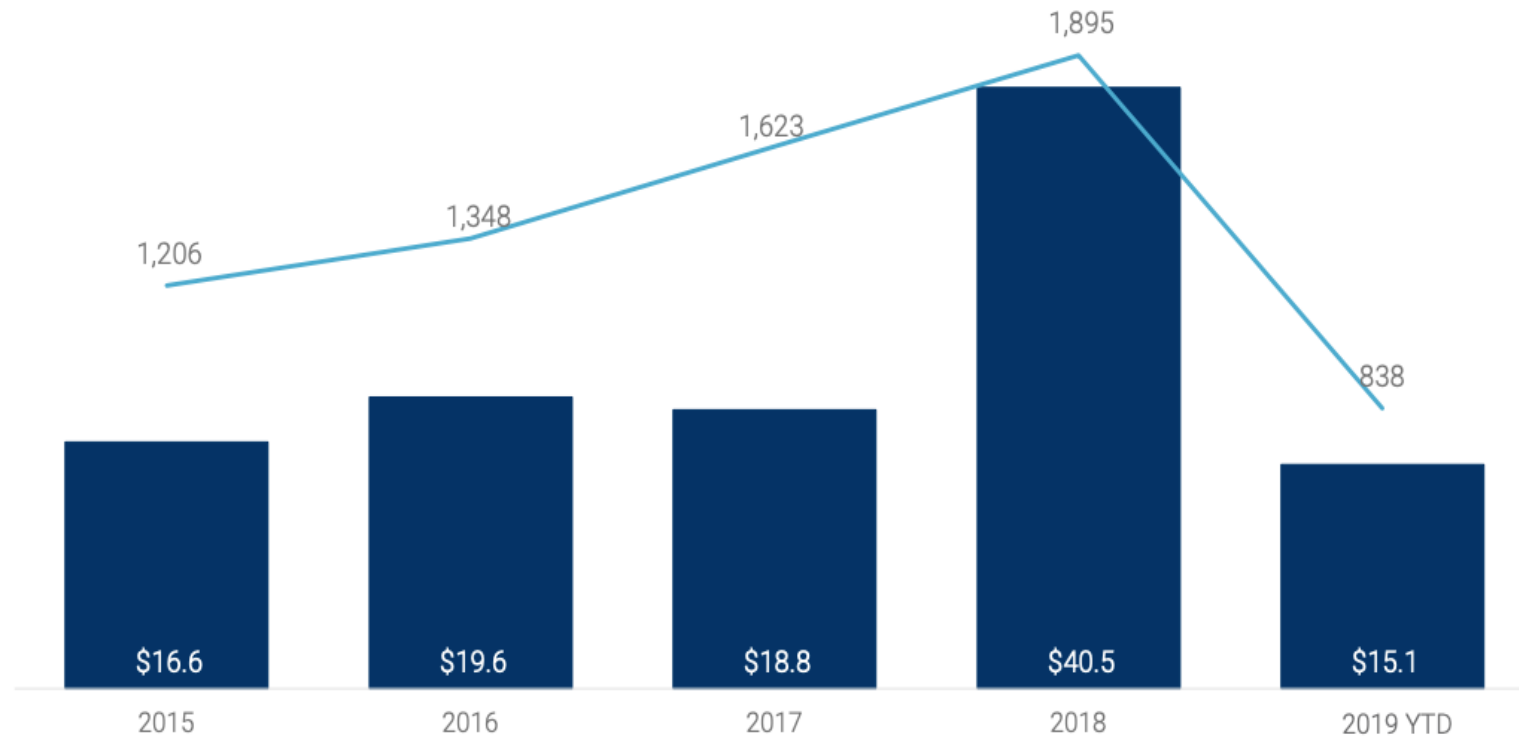
- Mobile Technology
- Application Protocol Interface (API) (better than screen scraping)
- Artificial Intelligence/Machine Learning
- Cryptocurrencies
- Blockchain
- Messaging and payments (e.g. M-Pesa, WhatsApp, WeChat)

FinTech Segments



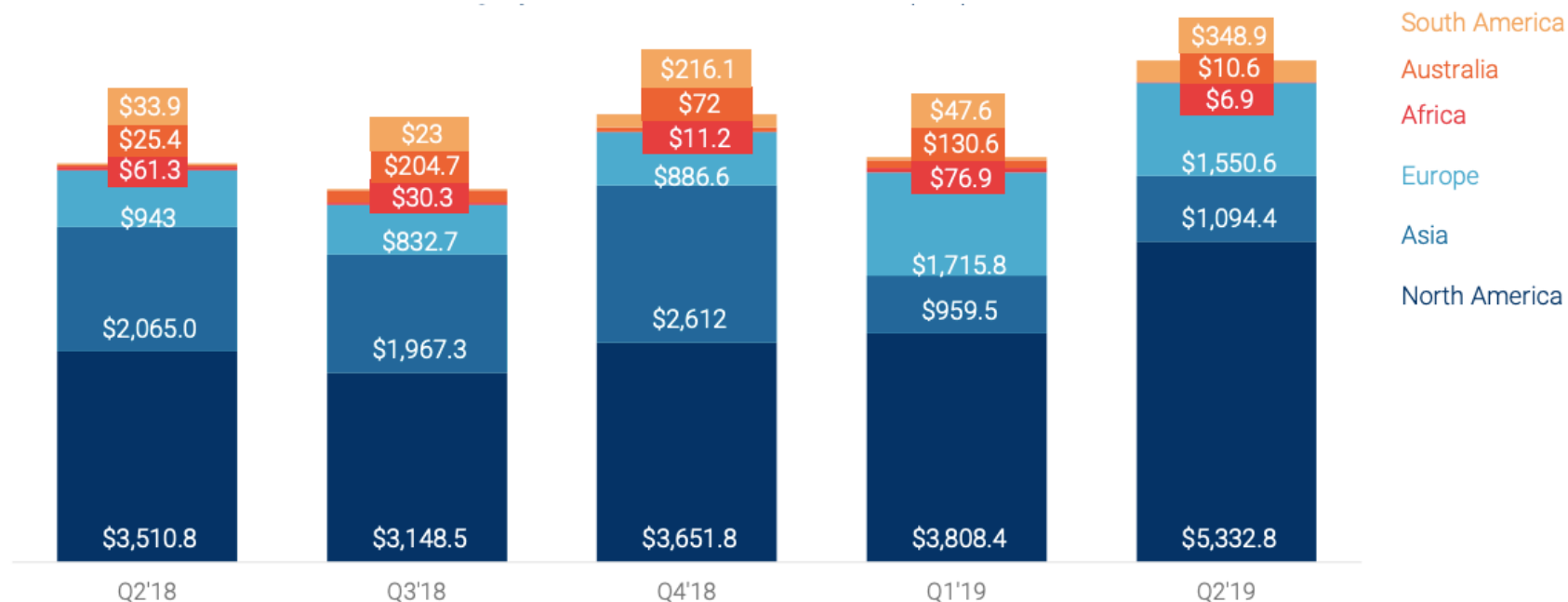
Source: CB Insights, *Global FinTech Report Q2, 2019*, accessed 8/21/19, (<https://www.cbinsights.com/reports/CB-Insights-Fintech-Report-Q2-2019.pdf>).

Global VC Funds Raised (\$B) and Number of Deals



Source: CB Insights, *Global FinTech Report Q2, 2019*, accessed 8/21/19, (<https://www.cbinsights.com/reports/CB-Insights-Fintech-Report-Q2-2019.pdf>).

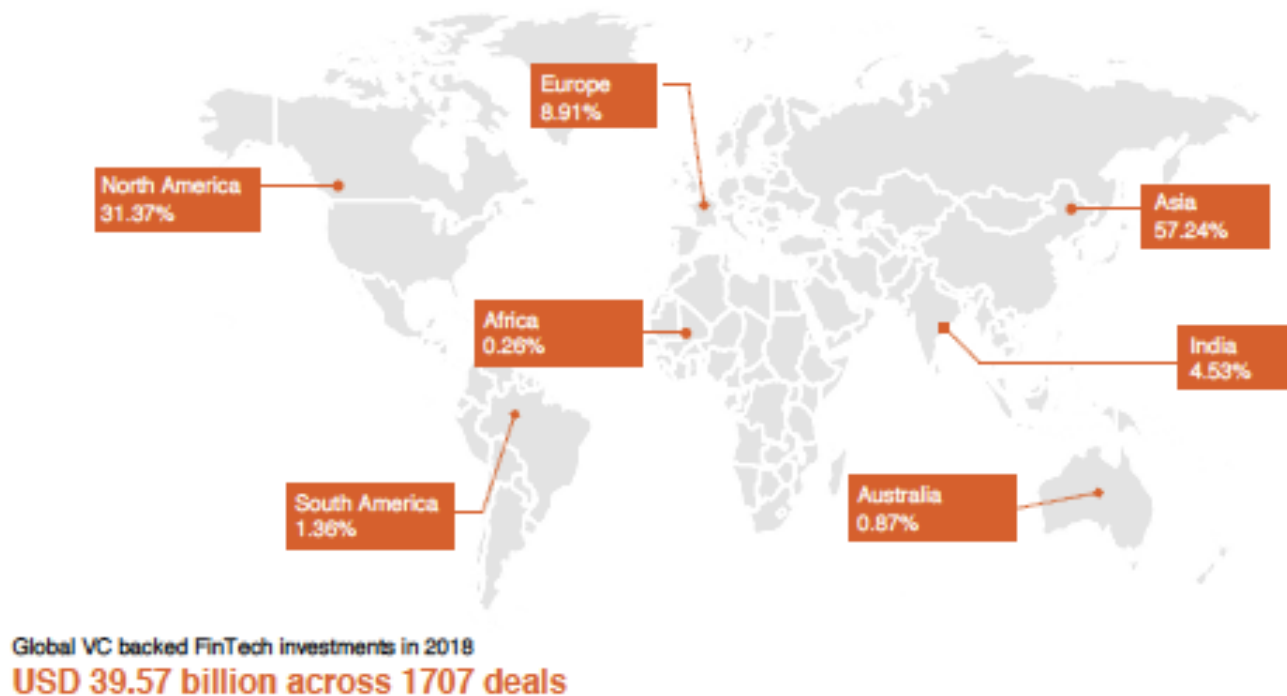
FinTech Global VC Investments by Region (\$M)



Excludes Ant Financial's \$14 Billion in Q2 '18.

Source: CB Insights, *Global FinTech Report Q2, 2019*, accessed 8/21/19, (<https://www.cbinsights.com/reports/CB-Insights-Fintech-Report-Q2-2019.pdf>).

Global VC-Backed Investments

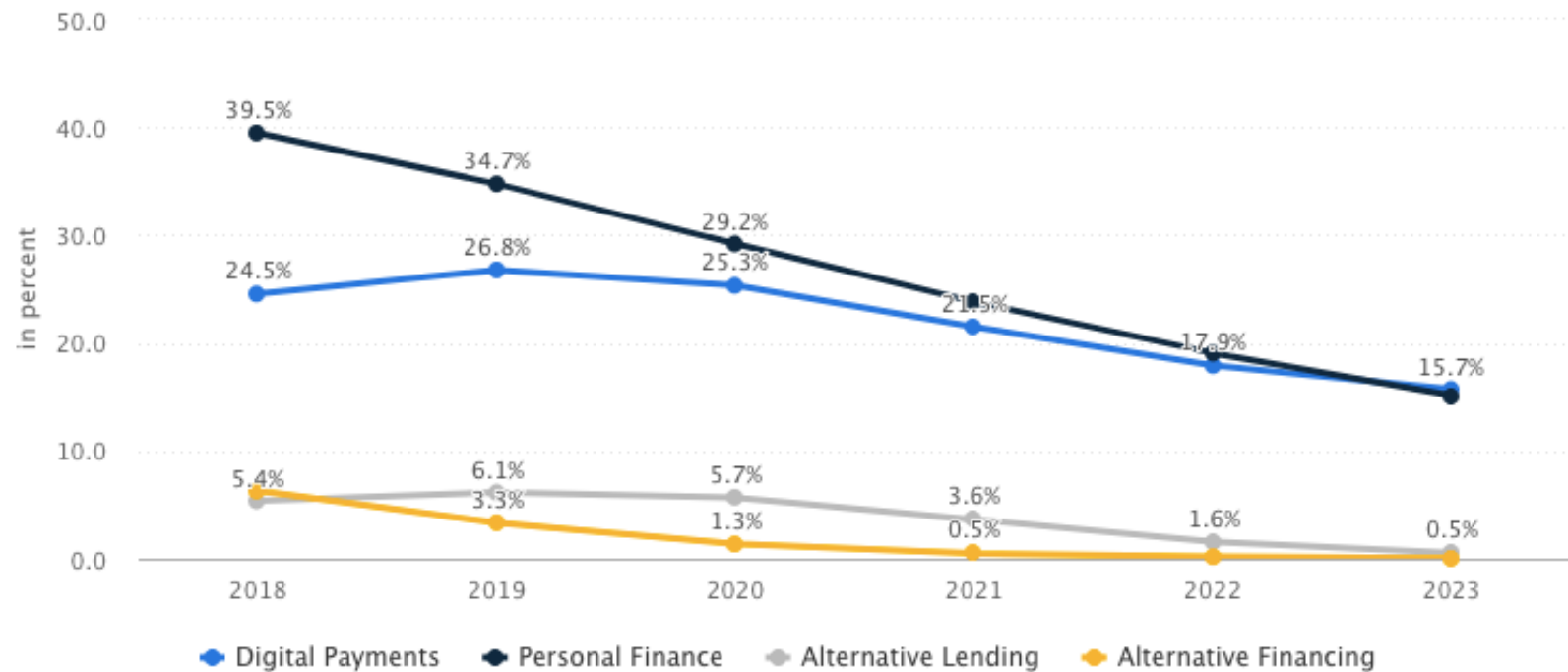


Source: CB Insights, 2019.

Firms with the Most VC Funding (2019)

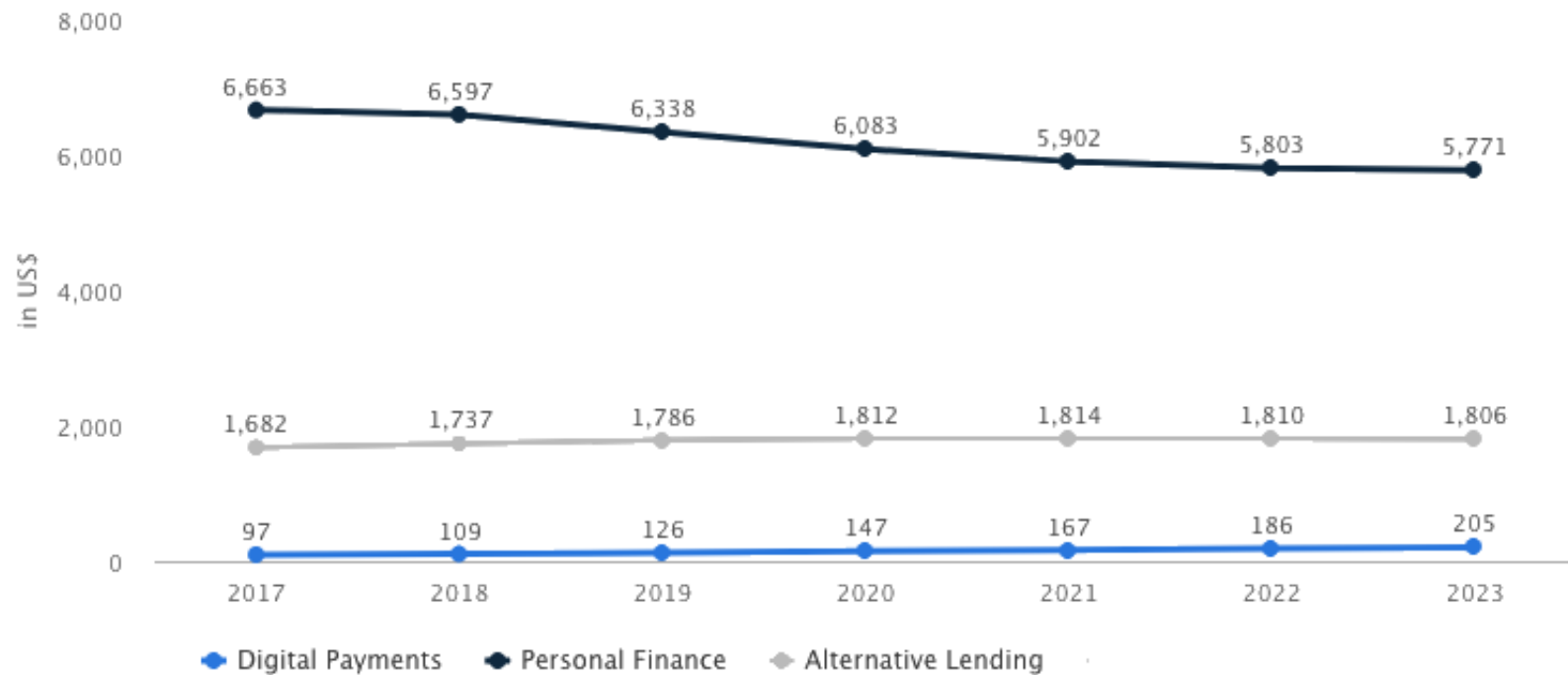
Source: Tech Startups as cited in Chris Skinner's Blog, <https://thefinanser.com/2019/02/39-fintech-unicorns-valued-147-37-billion.html/>.

Indian FinTech Sector Forecast



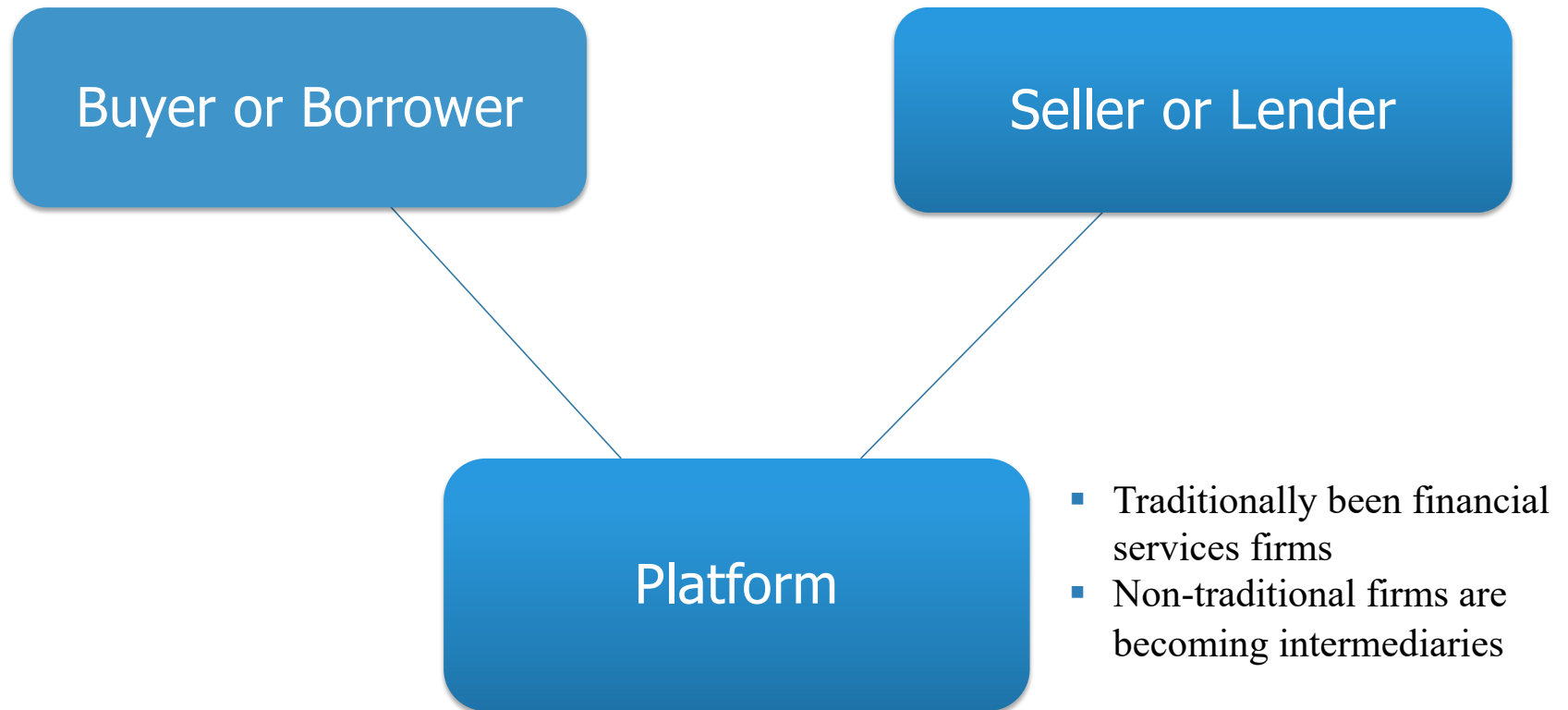
Source: Statista, September 2019.

Average Transaction Size in Indian Market



Source: Statista, September 2019.

Match/Search Process



FinTech in India

- World leader in digital payment growth
- Encourage financial inclusion with technology
- Establishing sandboxes to get regulatory cover (in the process of reviewing submissions)

Impact of FinTech Not Just Value of Firms

- Even if disruptive firms disappear, their technology may continue to make the economy efficient
- Transformation of incumbents because of new entrants (even if short-lived) may lead to greater economic efficiency
- Greater access to financial products increases are likely to have positive economic effects

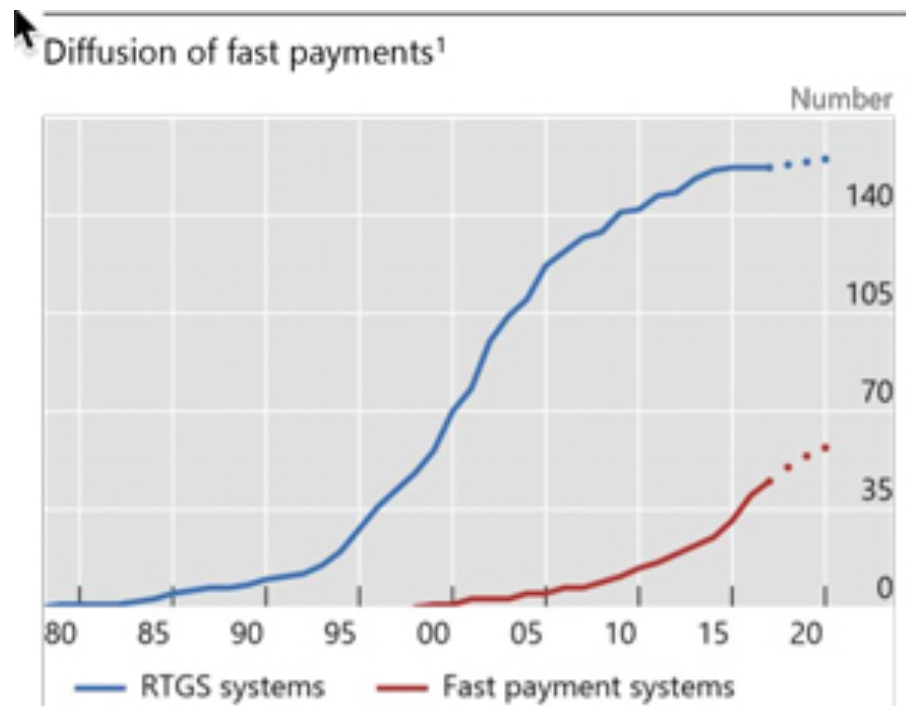
Payment Frictions

- Access (especially financial inclusion)
- Cost
- Convenience
- Security/Fraud Detection
- Compliance (AML, anti-terrorist financing, KYC)
- Data security (safeguarding personal data and payment credentials)

Public Authorities and Payment Infrastructure

- Migration to RTGS for Large-Value Payments
- Movement away from cash (there are financial inclusion issues)
- Fee regulation of payment cards
- Improvements to securities transactions (CCP, DLT)
- Fast payments
- Central Bank Digital Currencies

RTGS and Fast Payments



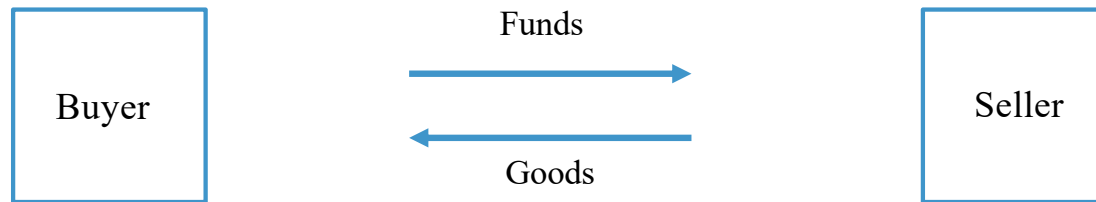
Source: Bech, Shimizu, and Wong (2017), “The Quest for Speed in Payments,” *BIS Quarterly Review*, March, 57-68.

FinTech Payment Plays

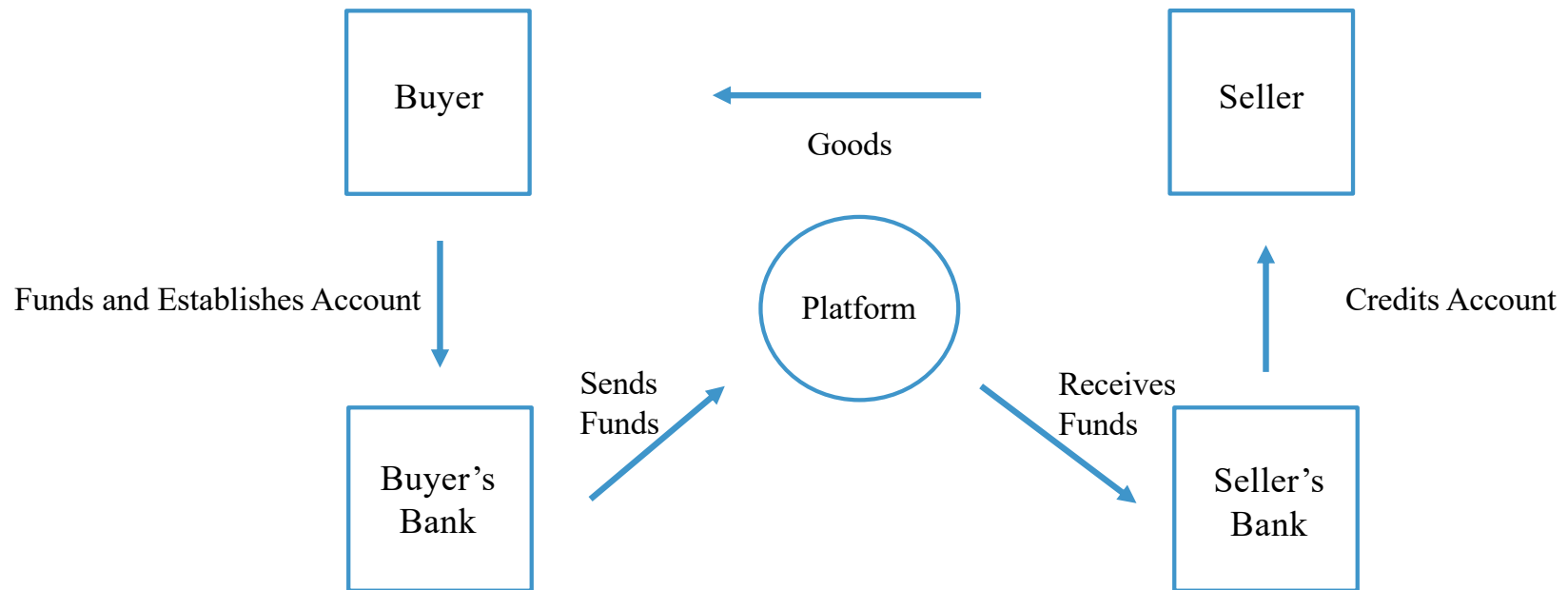
- Value-added services that generally sit on top of existing fund transfer systems, e.g. Square
- FX and securities settlement and liquidity management, e.g. Baton
- Peer-to-peer payments, e.g. Venmo and WeChat Pay
- Reduction of cross border payment fees, e.g. TransferWise
- Remittance payments over \$500 billion/year (Forbes 2019) still largely untapped (@ average cost of 7.1%, WBG and KNOMAD) e.g. InstaReM
- Compliance, authentication, fraud prevention, and privacy

Unintermediated Funds Transfer: Cash

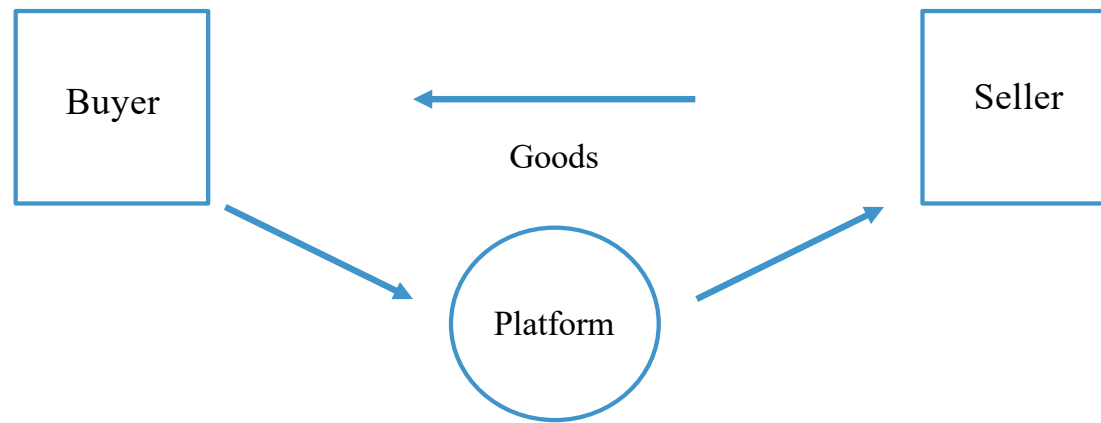
Cash Transactions



Intermediated Funds Transfer: Payment Card



Turnpike: Venmo



- Entry and exit do not occur in real time
- Use financial institutions to fund accounts
- To use funds outside of platform must exit turnpike
- Incentives to create faster interbank systems

Incumbent Responses

- Zelle is a bank joint venture peer-to-peer platform to make payments between bank accounts competing with Venmo
- JPMorgan Chase and Amazon—checking accounts
- Goldman Sachs and Apple—Apple credit card
- Real Time Payments—The Clearing House (consortium of the largest 25 banks in the U.S.) backbone for faster payments
- FedNow—Fed fast payments solution

Lending

- Credit has existed since 3500 BC (agricultural) and not always extended by financial institutions
- Platforms match lenders (investors) with borrowers, e.g. LendingClub, Kabbage, Prosper, and Swift Capital (acquired by PayPal)
- BIS economists find that higher income countries with less competitive banking systems have greater FinTech lending
- They also find that greater FinTech lending occurs in countries where regulations are less stringent

Payments and Lending

- FinTech and Big Tech firms increase access to those that have limited or no credit history by using payments and other types of data
- Amazon, Square, and PayPal extend credit to small businesses that may not be extended credit from traditional lenders
- Non-bank lending would be an ideal product in an ecosystem such as FB's Libra or in ecosystems that are prevented from traditional banking channels

U.S. Fintech Lenders

Breadth of services offered by digital lenders

Breadth of services offered by digital lenders						Nonlending services			
Company name	Lending verticals					Payments			Asset management
	Personal/ consumer	Mortgage	Business	Student	Patient	Card	Mobile	Processing	
Prosper	●								
LendingClub	●		●		●				●
SoFi	●	●		●		●	●		●
Avant	●					●			
Upstart	●								
Square	●		●			●	●	●	
OnDeck			●						
Kabbage			●			●		●*	
CommonBond				●					
PayPal	●		●			●	●	●	
Earnest	●			●					
LendingPoint	●				●				
GreenSky	●				●	●			
Credibly			●						
College Ave				●					
Best Egg	●								

Data compiled Oct. 1, 2018

* Kabbage has announced intention to offer point of sale system

Source: S&P Global Market Intelligence, 2018 US Fintech Market Report, <https://www.spglobal.com/marketintelligence/en/documents/2018-us-fintech-market-report.pdf>.

Lending Challenges

- After financial crisis, traditional credit providers reduced lending
- Over 50 percent of U.S. consumers have thin or negative credit files
- Difficult for new businesses to access credit
- Use different sources of information (payments companies and retailers getting into lending, e.g. PayPal, Square, and Amazon)

Credit Screening

- Origins of credit bureau started in early 1800s in England for bad tailor debts
- FinTech lenders 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

Convergence of Traditional and FinTech Lenders

- Some FinTech lenders are becoming more like traditional banks, e.g. SoFi expanding from student loans to unsecured consumer credit and mortgages
- Banks are also providing lending platforms, e.g. Goldman Sachs's Marcus platform

Investment and Wealth Management

- Previously, retail investors relied on brokers for information on stocks, bonds, and other types of investment
- The Internet 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, and Personal Capital
- Reducing human interaction and processing reduces costs and enables lower fees to customers (Robinhood has no commission equity trading)

FinTech Wealth Management Challenges

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

Role of Regulation (Broadly)

- Provides transparency to market participants by mandating adequate disclosures
- Provides consumer protections and necessary security standards
- Remains vigilant against fraud and punish fraudulent actors
- Ensures system resiliency and manage systemic risks

Role of Public Authorities (not exhaustive)

- Encourage innovation and competition
- Be aware of incumbents using regulation to prevent entry
- Regulate products and services and not institution providing it
- Maintain stability and resilience of payment networks
- Encourage financial inclusion
- Provide necessary liquidity backstops
- Anti-Money Laundering and Counter Terrorist Financing

Regulation and FinTech

- Some FinTech firms are overwhelmed with the maze of regulations and some considering a banking charter
 - ▶ OCC FinTech bank charter
 - ▶ Industrial Loan Companies
- Focus on activity-based regulation regardless of type of institution providing the service
- Other activities by public authorities—sandbox, operator of payment and settlement systems, and central bank digital currencies
- Should not be used solely to prevent entry and impede innovation

Policy Recommendations

- Increase access to payments infrastructure for nonbanks with some constraints (bank charters, access to reserve accounts and payment systems)
- Office hours and sandboxes to allow information sharing across FinTechs and regulators
- Encourage updating legal framework to match today's technology
- Implement data privacy regulation to provide greater incentives to safeguard data (FinTech solutions LionX and Almost AI)
- State may have to provide digital identification necessary for individual authentication

Conclusion

- Unlike other industries, financial institutions are not generally disappearing because of disruptors like FinTech and Big Tech
- Financial institutions may end up providing commoditized products and face greater margin compression
- Incumbents should partner with FinTech firms to provide seamless delivery of financial services
- Incumbents are more actively investing and acquiring FinTech firms
- Central banks will also be transformed because of the influence of FinTech firms