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Basics of Fintech: Introduction to Financial Technology

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Goals of Today's Session

- **Define financial technology (fintech) and explain why this wave of innovation differs from what we have seen in the past**
- **Provide a case study: Data aggregation**
- **Take your questions**

What Is Fintech?

What Is Fintech? (continued)

- **There actually isn't a settled definition.**
- **According to the Financial Stability Board, fintech is:**
  - "Technologically-enabled financial innovation with an associated material effect on financial markets and institutions and the provision of financial services."
- **This means a lot of fintech isn't actually new.**
  - ATMs
  - Mobile banking

Why This Wave of Innovation Differs from What We Have Seen Before

- In 2016, McKinsey & Co. noted that from 1995–2002, more than 450 companies attempted to enter the financial services space.
- Fewer than five survive today.
- What has changed?

Why This Wave of Innovation Differs from What We Have Seen Before (continued)

- **Smartphone prevalence:**
  - As of 2015, 87 percent of Americans had mobile phones, 71 percent of which were smartphones.*
  - Two iPhone 6s have more memory than the International Space Station.**
  - The average American spends five hours per day on his or her phone.***
  - The average iPhone user unlocks his or her phone 80 times per day.***

*Federal Reserve Board, Consumers and Mobile Financial Services 2015 (March 2015), https://www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201503.pdf
** McKinsey & Company, Cutting Through the Fintech Noise: Markers of Success, Imperatives For Banks (Dec. 2015), https://www.mckinsey.com/~/media/mckinsey/industries/financial%20services/our%20insights/cutting%20through%20the%20noise%20around%20financial%20technology/cutting-through-the-fintech-noise-full-report.ashx
*** See Lael Brainard, Where Do Banks Fit in the Fintech Stack (April 28, 2017), https://www.federalreserve.gov/newsevents/speech/files/brainard20170428a.pdf

Why This Wave of Innovation Differs from What We Have Seen Before (continued)

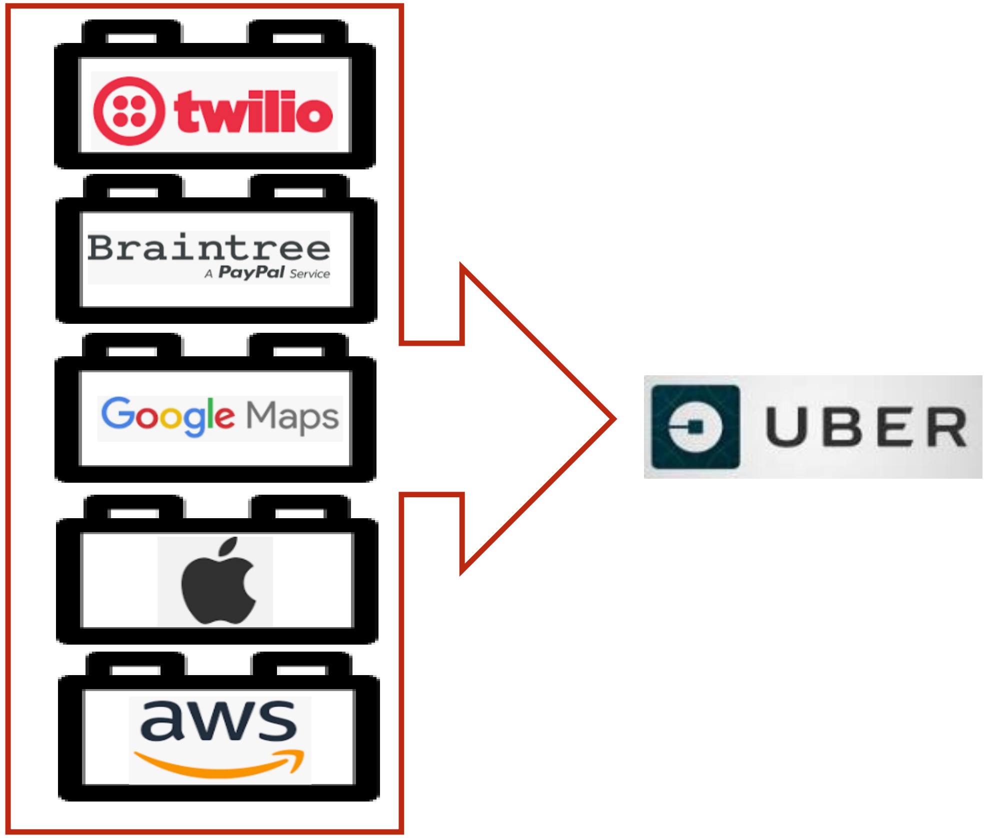
- **Consumers are now comfortable using one company to get to another company's products and services.**
  - Airbnb has no hotel rooms of its own.
  - Uber and Lyft do not actually own the cars in their fleets.
  - Outside sellers account for more than half of the items sold on Amazon.com.

Why This Wave of Innovation Differs from What We Have Seen Before (continued)

- **Today's digital companies are built around application programming interfaces (APIs).**
  - APIs are programming tools that allow outside developers to use different companies' internal tools in real time, without having to understand what's "inside."
  - APIs allow developers to quickly build businesses, come to market, and scale.

Why This Wave of Innovation Differs from What We Have Seen Before (continued)

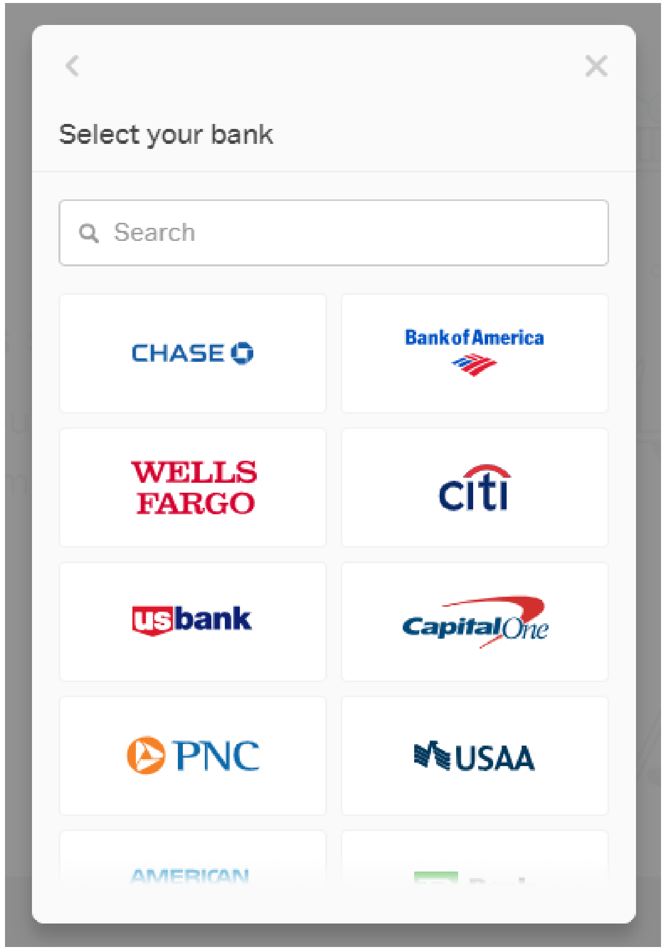
- **Uber, for instance, provides a seamless experience.**
  - But the ride-sharing service consists of multiple companies working together in real time.

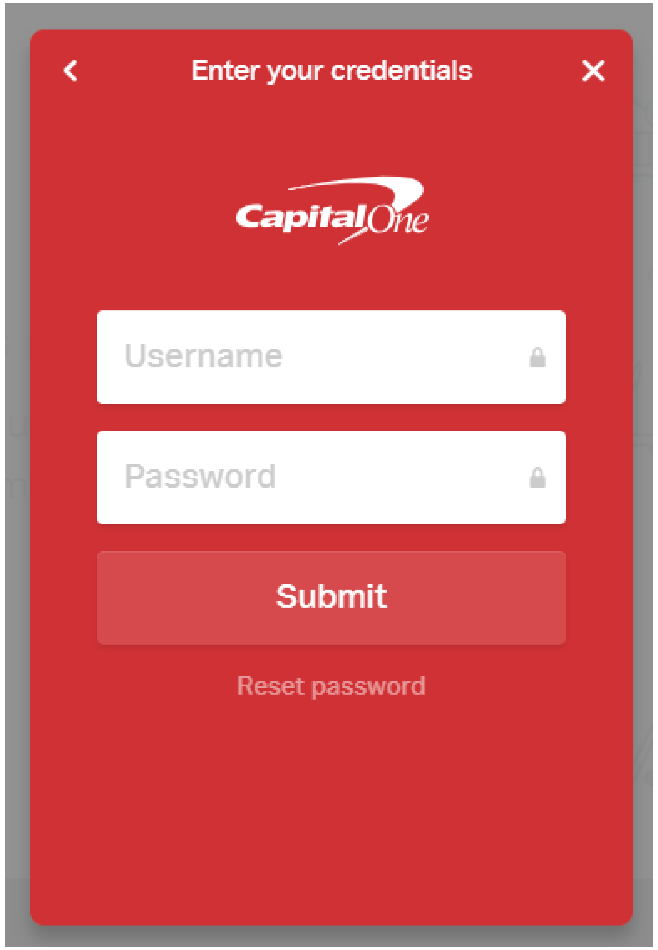


Why This Wave of Innovation Differs from What We Have Seen Before (continued)

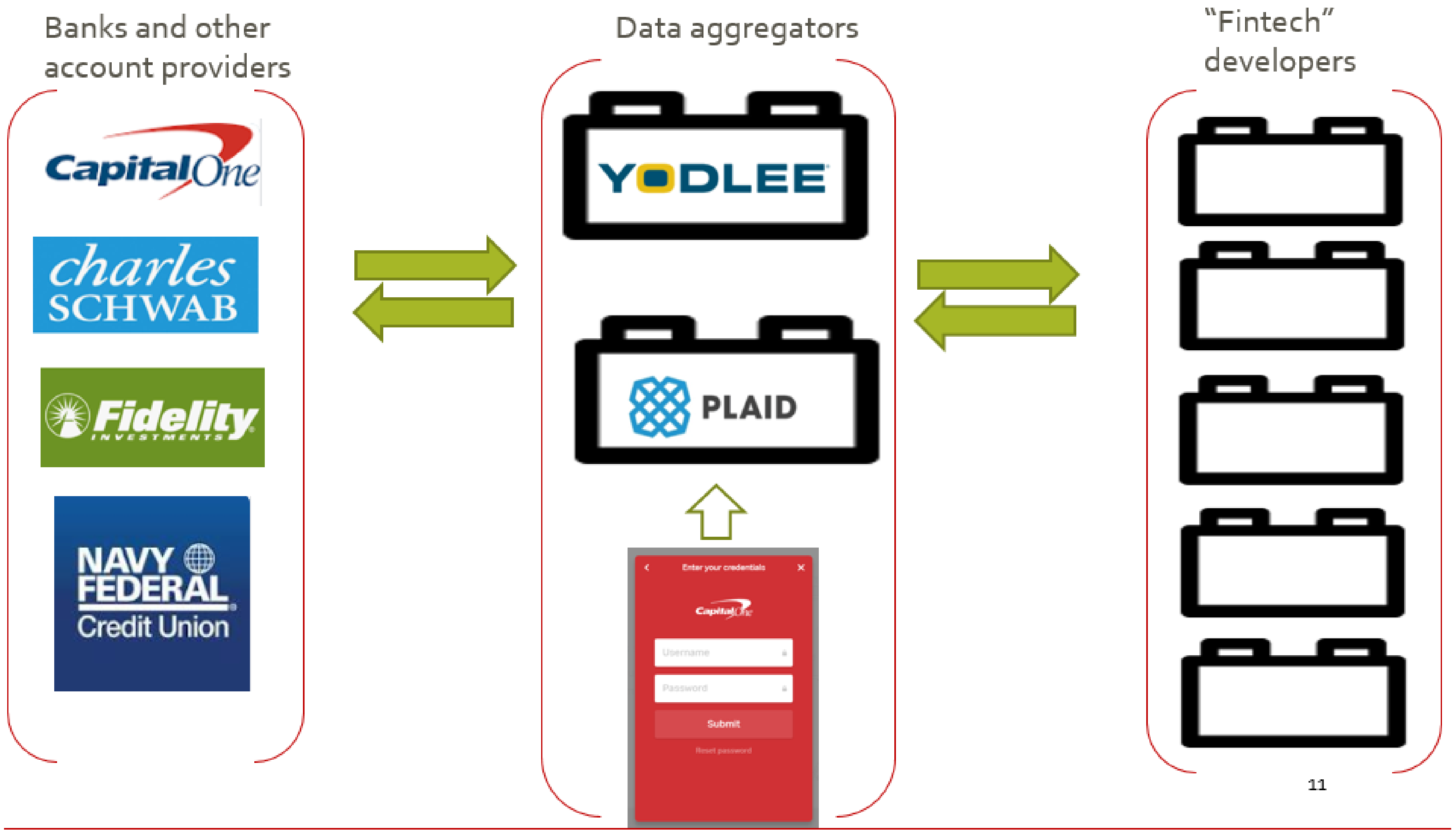
- **Fintech represents the API economy applied to the banking sector.**
- **Almost all fintech firms are API-driven technology stacks that connect, in some form or fashion, to an underlying bank.**
- **Fintech firms rely on banks for:**
  - Access to consumer deposits or related account data
  - Access to payment systems (e.g., automated clearing house and credit/debit rails)
  - Loan origination at the national level

Nonbank Connectivity to Banks Can Look Seamless to Consumers





But Technology and Regulatory Gaps Raise Inherent Risks



Risks and Benefits of Data Aggregation

- **Risks to banks:**
  - Bank account logins and passwords are held outside the banking system.
  - Banks have little to no control over how aggregators share consumer bank information with third parties.

(Both of these risks decrease as banks and aggregators move toward API agreements, but it's not clear if small banks will be able to do so.)

- **Risks to consumers:**
  - Data aggregators may keep (and use) consumers' logins and passwords long after consumers have stopped using the app.
  - Fintech developers may retain consumer transaction data, even after they cease to be viable businesses.

Risks and Benefits of Data Aggregation (continued)

- **Benefits to fintech developers:**
  - Developers can build to 2 data sources, rather than 15,000.

- **Benefits to banks and consumers:**
  - “Screen scraping” (data aggregator collection of bank logins and passwords) may be the only way that community banks’ customers can use fintech apps in the near term.

Here at the Federal Reserve Board

- **Vendor Risk Management Guidance (SR Letter 13-19/CA Letter 13-21):**
  - "[T]here may be value to examining the vendor risk management guidance so that it facilitates banks connecting more securely and efficiently with the fintech apps that consumers prefer," Lael Brainard, speaking in her personal capacity in 2017.
- **Engaging the industry and working closely with other regulators to monitor developments regarding fintech.**
- **Creating greater coordination and consistency within the Federal Reserve System:**
  - Enhancing examiner education materials
- **Engaging with the industry outside of the typical examination process.**
- **If you have questions, concerns, or other feedback, please contact us.**

To Learn More

- “Where Do Banks Fit in the Fintech Stack?” Lael Brainard, April 2017
- “Where Do Consumers Fit in the Fintech Stack?” Lael Brainard, November 2017

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