FinTech:
Shaping the Financial World

April 29, 2020
Class 9: Overview

• Online Brokerage
• Robinhood & Zero Commission Trading
• Robo Advisors
• Capital Markets FinTech Startups
• Crypto Exchanges, Lending & Decentralized Finance
Class 9: Readings

• 'How Robinhood Changed an Industry' John Divine, US News

• 'Charles Schwab and the New Broker Wars' Daren Fonda, Bloomberg

• 'Robo-Advisors: Product vs. Platform' Henry O’Brien, The Startup
Class 9: Study Questions

• How did online brokers emerge during an earlier stage of FinTech development? How were Robinhood and this era’s FinTech startups able to further disrupt the brokerage world?

• How are Robo Advisors transforming the provision of retail asset management services? How has Big Finance - incumbent asset managers and banks - reacted?

• What are FinTech trends and applications affecting trading, asset management & capital market infrastructure?
Online Brokerage Company Landscape


• Asset Managers: Fidelity (1946), Vanguard (1975)

• Banks: JP Morgan You Invest (1871 / 2018), Merrill Edge (1914 / 2010), Ally Invest (1919 / 2016) 4M

# Mobile Trading – App Comparison

<table>
<thead>
<tr>
<th>Feature</th>
<th>E*TRADE</th>
<th>TD Ameritrade</th>
<th>Fidelity</th>
<th>Interactive Brokers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Open Account</td>
<td>Open Account</td>
<td>Open Account</td>
<td>Open Account</td>
</tr>
<tr>
<td>iPhone App</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Android App</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Apple Watch App</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Trading - Stocks</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Trading - After-Hours</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Trading - Conditional Orders</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Trading - Mutual Funds</td>
<td>✔️</td>
<td>❌</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Trading - Simple Options</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Trading - Complex Options</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Trading - Option Rolling</td>
<td>❌</td>
<td>✔️</td>
<td>✔️</td>
<td>❌</td>
</tr>
<tr>
<td>Touch / Face ID</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

Online Brokerage Recent Developments

Commission Free Brokerage Rates – October 2019:
• IBKR Lite, Charles Schwab, E*Trade, TD Ameritrade, Ally, Fidelity

Incumbent 2019 / 2020 Megadeals:
• Charles Schwab - TD Ameritrade: $26B
• Morgan Stanley – E*Trade: $13B

Sources: Individual public announcements by Acquiring Companies
Commission Rates Long Decline


Source: ‘Back In The Day, Brokers Got Away With Murder In Trading Commissions’, Rob Wile, Business Insider (March 31, 2014)

© CFA Institute. All rights reserved. This content is excluded from our Creative Commons license. For more information, see https://ocw.mit.edu/help/faq-fair-use/
Zero Commission Revenue Models

The cost of financial advice

Commissions

Everything else

Fund expenses
Kickbacks
Payment for order flow
Margin Interest
Maintenance fees
Transaction fees
Account closure fees
Credit spread
Advisor fees
Planning software
Trading software
Reporting software
Operational expenses

What this means for you

The little it actually helps

How much more you could be saving

Courtesy of Altruist. Used with permission.

Robo Advisors Company Landscape


• Banks: JP Morgan You Invest (1871 / 2018), Merrill Edge (1914 / 2010), Ally Invest (1919 / 2016)

Number of users in the robo-advisors segment, in millions

Source: ‘Robo-advisor Industry to hit $1.4trn This Year’ Jastra Ilic, LearnBonds (April 15, 2020)
Assets under management in the robo-advisors segment, in billion U.S. dollars

Source: ‘Robo-advisor Industry to hit $1.4trn This Year’ Jastra Ilic, LearnBonds (April 15, 2020)
Robo Advisory Possible Evolution

# Capital Markets Fintech

## Access to capital
- Crowdfunding platforms
- Start-up exchange venues
- Bond issuance platforms for start-ups and SMEs
- Private listing platforms for SMEs
- Initial coin offering platforms

## Trade execution
- Decentralized trading marketplaces
- Online auction-based marketplaces
- Cryptocurrency exchanges

## Post-trade services
- Distributed ledger technology-based clearing and settlement
- Surveillance and analytics software
- Automated trade reconstruction
- Regulatory compliance solutions (e.g., AML, KYC, compliance risk)

## Data, analytics, and information services
- Algorithmic and quant trading solutions
- Artificial intelligence-powered financial predictions
- Real-time market data platforms
- Nontraditional data aggregation and analytics platforms

## Operations and technology
- Open source technology for digital assets issuance
- End-to-end trading technology
- End-to-end OTC trade confirmations solutions through full process automation
- Robotics and natural-language processing technologies driving operations efficiency
- Cloud computing

Source: McKinsey Panorama Fintech database

© McKinsey & Company. All rights reserved. This content is excluded from our Creative Commons license. For more information, see [https://ocw.mit.edu/help/faq-fair-use/](https://ocw.mit.edu/help/faq-fair-use/)
Capital Markets FinTech Startups

• Capitolis (2017) – Equities & FX Infrastructure
• Carta (2012) – Ownership Management Platform
• Cloud9 (2013) – Digitizing Voice Trading
• CloudMargin (2014) – Collateral Management
• Elefant (2018) – Digital Fixed Income Broker
• iCapital Network (2013) – Alternative Investment Platform for Financial Advisors
Capital Markets FinTech Startups

• IEX (2012) – Stock Exchange
• Kantox (2011) – Institutional FX Trading
• Q4 (2006) – Investment Research
• Trumid (2014) – Bond Trading & Data Platform
• TruValue Labs (2013) – Analytics on ESG Investing
Crypto Exchanges

• Act as agents (matching buyers & sellers) -- Traditional exchanges do as well
• Act as market makers (buying & selling from customers) -- Traditional exchanges don’t
• Hold customer funds in Custody -- Traditional exchanges don’t
• Public has direct access -- Traditional exchanges must go through a broker
• Lend money to customers for margin trading -- Securities markets use brokers or banks
• Crypto fees wide vs. Traditional markets
• Crypto Market Largely traded on Crypto only platforms – lacking direct fiat capabilities
• Not regulated for market integrity rules, rife with fake volumes and manipulation
• List tokens for fees similar to equity markets but different than currency markets
Crypto Exchanges
‘Top Tier’ Trading Volumes

Historical Monthly Top Tier Exchange Volume

Image by CryptoCompare. Used with permission.

Crypto Lending and Borrow

• Lending Crypto or Fiat collateralized by Crypto
  • BlockFi, Celsius, CoinLoan, Crypto.com, ETHLend, Genesis Capital, Nexo, Salt
Traditional Finance vs. Decentralized Finance

- Proprietary software
- Central clearing
- Intermediaries
- Trust in institutions
- Censoreable
- Permissioned
- “Separate castles”
- Limited transparency
- Registered instruments
- Credit-based assets

- Open source
- Blockchain
- Peer-to-peer / web
- Trust in technology
- Censorship resistant
- Permissionless
- Composable, modular
- Transparent
- Bearer instruments
- Commodity-based assets
Crypto ‘DeFi’ Platforms

• Exchanges
  • Binance, IDEX, Uniswap

• Crypto Lending & Borrow
  • Compound, Dharma, InstaDapp, Maker, Nuo, REX, Synthetix

• Prediction Markets
  • Augur, Hedge Trade