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October 1, 2021

Ms. Vanessa A. Countryman  
Secretary  
U.S. Securities and Exchange Commission  
100 F Street NE  
Washington, DC 20549-1090

Re: *File No. S7-10-21*  
*Request for Information and Comments on Broker-Dealer and Investment Adviser Digital Engagement Practices, Related Tools and Methods, and Regulatory Considerations and Potential Approaches; Information and Comments on Investment Adviser Use of Technology to Develop and Provide Investment Advice*

Dear Ms. Countryman:

My name is Jennifer Schulp, and I am the director of financial regulation studies at the Cato Institute's Center for Monetary and Financial Alternatives. I appreciate the opportunity to comment in response to the request for information and comments by the Securities and Exchange Commission regarding digital engagement practices (DEPs) by broker-dealers and investment advisers. The Cato Institute is a public policy research organization dedicated to the principles of individual liberty, limited government, free markets, and peace, and the Center for Monetary and Financial Alternatives focuses on identifying, studying, and promoting alternatives to centralized, bureaucratic, and discretionary financial regulatory systems. The opinions I express here are my own.

As the Commission notes, technological innovations have “multiplied the opportunities for retail investors to invest and trade in securities.”<sup>1</sup> The Commission's interest in understanding more about how broker-dealers and investment advisers interact with investors through digital platforms, features, and services is a worthy endeavor, although this request defines DEPs so broadly as to seek information about almost any interaction with an investor that does not take place face-to-face or over a telephone and any use of technology by an investment adviser to support their own investment recommendations. With such a broad sweep, the Commission may not receive as much useful information to inform its understanding as the Commission may have received from more narrowly targeted requests.

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<sup>1</sup> See page 3 of “the Request” at SEC, “Request for Information and Comments on Broker-Dealer and Investment Adviser Digital Engagement Practices, Related Tools and Methods, and Regulatory Considerations and Potential Approaches; Information and Comments on Investment Adviser Use of Technology to Develop and Provide Investment Advice” *Request for Information and Comment* (2021). Available at <https://www.sec.gov/rules/other/2021/34-92766.pdf>.

With the breadth of the request in mind, my comments will focus on digital engagement by broker-dealers, but many of the principles that underlie my comments are equally applicable to investment advisers. Advances in technology have made investing more accessible to a broader group of people than ever before. While many of the recent advances may feel new, they are, in fact, incremental changes to and improvements on the way brokers have been communicating with their customers for years. When viewed through that lens, the existing regulatory framework does not need revision to address issues relating to DEPs.

### **Digital Accessibility Has Expanded Access to New Investing Audiences**

Any discussion about digital investor engagement should be framed by the overarching benefits that these technological innovations have brought: digital accessibility has opened our markets to more investors—and a wider range of investors—than traditional means of investing. While it is always important to understand whether there are any costs associated with innovation, it is equally important to understand the magnitude of the benefits conferred as well.

To put a finer point on it: investing in the stock market is an important path to wealth for individual investors, and digital accessibility has played an important role in putting a less wealthy, more diverse, and younger group of people on that path.<sup>2</sup>

Retail investors have flowed into the market whenever barriers to access have decreased. While barriers are often thought of in terms of economic costs—like the cost of commissions—these barriers are also non-economic, including the time and energy (both physical and psychic) that an investor must expend to engage with their investments. Recent innovations in trading, including “zero-commission” trading and app-based platforms, have decreased both economic and non-economic costs to investors. These innovations build on a long line of improvements in features made possible by the digital age, including self-directed web-based trading, automated account notifications, and online account access.

The trend toward increased retail participation accelerated last year and has continued throughout 2021. Ten million new brokerage accounts were opened in 2020, and more than 10 million have been opened this year.<sup>3</sup> It is difficult to assess the impact of individual innovations on an investor’s decision to open an account, especially given the confluence of factors in the recent past, but it appears clear that the ease of use of digital platforms, including digital-native features, is playing a role in increased retail investor participation in equities markets.<sup>4</sup>

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<sup>2</sup> Jennifer Schulp, “Game Stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide.” Testimony before the U.S. House of Representatives Committee on Financial Services. Available at <https://www.cato.org/testimony/game-stopped-who-wins-loses-when-short-sellers-social-media-retail-investors-collide>.

<sup>3</sup> Caitlin McCabe, “New Army of Individual Investors Flexes Its Muscle.” *Wall Street Journal* (December 30, 2020). Available at <https://www.wsj.com/articles/new-army-of-individual-investors-flexes-its-muscle-11609329600>; Caitlin McCabe, “Retail Investors Power the Trading Wave With Record Cash Inflows.” *Wall Street Journal* (July 5, 2021). Available at <https://www.wsj.com/articles/retail-investors-power-the-trading-wave-with-record-cash-inflows-11625477401>.

<sup>4</sup> Several factors likely contributed to increased retail participation in equity markets in 2020. Zero-commission trading became an industry norm in late 2019, and fractional-share trading became increasingly available throughout

Despite a strong retail presence in U.S. equity markets, a substantial portion of Americans—especially those who are less wealthy, younger, and more racially diverse—have traditionally been left out of the opportunities to grow wealth afforded by the stock market.<sup>5</sup> But retail investors who recently have opened accounts are different than those who previously held brokerage accounts.

Multiple studies have confirmed that new retail investors represent a broader swath of the U.S. population than prior investors. For example, a study by the FINRA Investor Education Foundation and NORC at the University of Chicago found that investors who opened a taxable investment account for the first time in 2020 were younger, had lower incomes, and were more racially diverse than those who had previously opened such accounts.<sup>6</sup> The 2020 Ariel-Schwab Black Investor Survey confirms increasing investor diversity, finding that Black investors under the age of 40 are now participating in the stock market at a rate equal to their white counterparts.<sup>7</sup> Indeed, three times as many young Black investors entered the market for the first time in 2020 as compared to young white investors. And a study by Broadridge found that millennials were the fastest-growing share of the investor market in 2020, making up 14 percent of the market in the first half of 2020, up from 12 percent in 2019.<sup>8</sup>

While individual investor motivations for opening an account can vary significantly, it appears that new investors were enticed by, or took advantage of, many recent innovations in the brokerage space that made trading easier for them. For example, nearly half of new investors surveyed indicated that they accessed their account primarily through a mobile app, but all investors—whether new to investing in 2020 or who had previously held accounts—primarily accessed their account digitally either through an app or on a website.<sup>9</sup> Another survey found that

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2020. App-based trading platforms with easy-to-use interfaces have begun to proliferate, including apps launched by legacy brokerages. Many brokers began allowing investors to open accounts with minimal, or no, account balances. The pandemic also played a role in increasing retail trading throughout the year. These factors together led to tremendous growth not just for new trading platforms, but also for legacy brokerages. See Justin Baer, “Fidelity’s Retail Investor Accounts Rise 17% to 26 Million.” *Wall Street Journal* (March 2, 2021). Available at <https://www.wsj.com/articles/fidelitys-assets-under-management-rise-to-3-8-trillion-11614700831>; SIFMA,

“Gauging the New Normal for Volatility, Volumes, Market Levels & Retail Investor Participation.” *SIFMA Insights* (May 12, 2021). Available at <https://www.sifma.org/resources/research/insights-market-structure-survey/>.

<sup>5</sup> Lydia Saad and Jeffrey Jones, “What Percentage of Americans Own Stock?” *Gallup* (September 13, 2020). Available at <https://news.gallup.com/poll/266807/percentage-americans-owns-stock.aspx>; For data distributed by income percentile, race or ethnicity, or education, see Federal Reserve Board of Governors, “Survey of Consumer Finances.” *Survey of Consumer Finances* (2020). Available at <https://www.federalreserve.gov/econres/scf/dataviz/scf/chart/index.html>.

<sup>6</sup> See the “FINRA/NORC study” at FINRA, “Investing 2020: New Accounts and the People Who Opened Them.” *Consumer Insights: Money and Investing* (February 2021). Available at [https://www.finrafoundation.org/sites/finrafoundation/files/investing-2020-new-accounts-and-the-people-who-opened-them\\_1\\_0.pdf](https://www.finrafoundation.org/sites/finrafoundation/files/investing-2020-new-accounts-and-the-people-who-opened-them_1_0.pdf).

<sup>7</sup> Charles Schwab “New Ariel-Schwab Black Investor Survey Shows Black Americans Continue to Trail Their White Counterparts in Building Wealth.” *Charles Schwab*. Available at <https://www.aboutschwab.com/ariel-schwab-black-investor-survey-2021>.

<sup>8</sup> Broadridge, “Insights on the U.S. Investor.” *Broadridge Investor Data Study* (2020). Available at <https://www.broadridge.com/assets/pdf/broadridge-insights-on-us-investor-data-study.pdf>.

<sup>9</sup> FINRA/NORC study, *supra* note 6.

63 percent of new investors and 57 percent of young investors use an app to trade.<sup>10</sup> Not surprisingly, although most people are aware of trading apps, younger people are more likely than older people to be familiar with app-based trading.<sup>11</sup>

Many new investors seem to be exhibiting a preference for self-directed trading, often through an app, choosing to access the market without the involvement of a traditional registered representative or financial advisor. Many of those who have been traditionally excluded from investing—like women, minorities, and the young—may be making investments because easy-to-use apps are more welcoming to non-traditional investors.<sup>12</sup>

Discomfort with traditional investment advice also leads minority and younger investors to turn to social media or other outlets to learn about investing. About 10 percent of young investors say that they learned to invest from social media, and almost 40 percent research their investment ideas on social media.<sup>13</sup> Black and Hispanic investors also rely more heavily on social media (29 percent and 34 percent, respectively) to research investment ideas than white investors.<sup>14</sup> Social media, or social media-like, features in trading apps may be attractive for such investors.<sup>15</sup>

Determining which feature, or combination of features, motivated new investors to open accounts recently is difficult, but it appears that digital accessibility has played a notable role in attracting new audiences to investing.

### **Digital Engagement Does Not Require a New Policy Response**

The Commission has defined a wide variety of features and design elements to be DEPs, including social networking tools, games, streaks and other contests with prizes, points, badges and leaderboards, notifications, celebrations for trading, visual cues, ideas presented at order placement and other curated lists or features, subscriptions and membership tiers, and chatbots.<sup>16</sup> The request seeks information not just about these practices, but about many other aspects of providing digital access to investors, including artificial intelligence and machine learning.

While the request presents many DEPs as novel or unique, such practices are commonplace and the result of the continued evolution of customer interaction. The regulatory framework already

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<sup>10</sup> Victoria Rodriguez, “CNBC Momentive Poll: ‘Invest in You’ August 2021.” *Survey Monkey* (August 11, 2021). Available at <https://www.surveymonkey.com/curiosity/cnbc-invest-in-you-august-2021/>.

<sup>11</sup> Robert Farrington, “75% of Americans are Familiar with Investing Apps, And Most Prefer the Monthly Fee Service Model.” *The College Investor* (September 18, 2021). Available at <https://thecollegeinvestor.com/34886/investing-app-survey-2020/>.

<sup>12</sup> Veronica Dagher, “Many Women of Color Use Social Media, Peers for Investment Advice.” *Wall Street Journal* (May 8, 2021). Available at <https://www.wsj.com/articles/many-women-of-color-use-social-media-peers-for-investment-advice-11620471600>; Greg Iacurci, “Young Investors are Going Digital. Financial Advisors Need to Adapt with Them.” *CNBC* (October 14, 2020). Available at <https://www.cnb.com/2020/10/14/millennials-gen-z-want-robo-advisors-and-digital-financial-advice.html>.

<sup>13</sup> Victoria Rodriguez, *supra* note 10.

<sup>14</sup> *Ibid.*

<sup>15</sup> Eleven percent of people surveyed identified “social networking” as the most important feature for a trading app to have, as compared to other features. See Robert Farrington, “75% of Americans are Familiar with Investing Apps, And Most Prefer the Monthly Fee Service Model.” *The College Investor* (September 18, 2021). Available at <https://thecollegeinvestor.com/34886/investing-app-survey-2020/>. While other features, like availability of investment options, pricing plans, and customer support, were more popular, it is notable that approximately 1 in 10 people identified social networking as the most important feature.

<sup>16</sup> See pages 6-8 of the Request at <https://www.sec.gov/rules/other/2021/34-92766.pdf>.

in place, through both the Commission and FINRA, is well-equipped to address the ways in which broker-dealers communicate with their clients in a digital world.

### *Digital Engagement Is Commonplace and Is Not Inherently Nefarious*

Although the Commission uses the term “digital engagement practice,” many of the features and design elements it highlights are commonly referred to under the umbrella of “gamification.” While gamification, like DEP, is usually broadly defined, at its most basic, gamification means using game-like elements in non-game activities. This strategy is nothing new. Many industries have used gamification for decades to build brand loyalty and encourage consumption. Frequent flyer programs, which predate the digital age, are one example, but so-called gamified elements can be found in all sorts of different industries and platforms. Gamification strategies are also widely used successfully in education to motivate learning and improve the retention of materials.<sup>17</sup>

While the concept of gamification may be more recently applied to securities trading platforms, investors have plenty of experience with DEPs in other areas of their lives, particularly younger investors. And if DEPs have attracted new investors to explore financial markets by making investing easy or fun, then their benefits should not be understated.

Building on research that finds that gamification has benefits in education, several studies have found that gamification has promise in helping improve financial decision-making.<sup>18</sup> But research into the impact of DEPs on investor behavior is thin, and it is important to keep in mind, particularly in the face of little empirical evidence to the contrary, that gamification is unlikely to have uniform effects on investor behavior. What motivates some investors, may demotivate others or have no effect at all.<sup>19</sup>

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<sup>17</sup> Jonna Koivisto and Juho Hamari, “The Rise of Motivational Systems: A Review of Gamification Research.” *International Journal of Information Management* (April 2019). Available at

<https://www.sciencedirect.com/science/article/pii/S0268401217305169>; Tracey Welson-Rossman, “Can Cats Teach Girls to Code?” *Forbes* (June 21, 2021). Available at

<https://www.forbes.com/sites/traceywelsonrossman/2021/06/21/can-cats-teach-girls-to-code>.

<sup>18</sup> Julia Bayuk and Suzanna Altobello, “Can Gamification Improve Financial Behavior? The Moderating Role of App Expertise.” *International Journal of Bank Marketing* (February 28, 2019). Available at

<https://www.emerald.com/insight/content/doi/10.1108/IJBM-04-2018-0086>; Luis Rodrigues, Abilio Oliveira, Carlos Costa, and Helena Rodrigues, “Gamification to Teach and Assess Financial Education: A Case Study of Self-Directed Bank Investors.” *Hawaii International Conference on Education Paper* (January 2018). Available at

<https://www.researchgate.net/publication/323127453>; Yi Zhang, Femke Horen, and Marcel Zeelenberg, “Increasing Saving Intentions Through Leaderboards: A Gamification Approach.” *PLoS ONE* (April 14, 2021). Available at

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0249283>; Aldrich Rasco, Johnny Chan, Gabrielle Peko, and David Sundaram, “FinCraft: Immersive Personalized Persuasive Serious Games for Financial Literacy Among Young Decision-Makers.” *University of Auckland Business School Research Paper* (September 3, 2020). Available at

[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3675270](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3675270); Lewis Teo Piaw Liew, “The Effectiveness of Gamification in Finance Education.” *Asian Conference on Education Paper* (June 2020). Available at

<http://www.researchgate.net/publication/342287876>.

<sup>19</sup> Stephen Johnson, “Gamification: Can Video Games Change Our Money Habits?” *Big Think* (August 3, 2021).

Available at <https://bigthink.com/neuropsych/gamification/>; Goncalo Baptista and Tiago Oliveira, “Why So Serious? Gamification Impact in the Acceptance of Mobile Banking Services.” *Internet Research* (February 2017). Available at <https://www.researchgate.net/publication/313362066>.



## *Artificial Intelligence and Machine Learning Does Not Meaningfully Change the Character of Interactions with Investors*

In a statement accompanying the release of the Commission’s request, Chair Gensler highlighted potential concerns with the predictive data analytics that underlie DEPs, and in his testimony to the Senate Committee on Banking, Housing, and Urban Affairs, he again highlighted concerns that predictive analytics allow trading platforms to tailor marketing and products to individual investors.<sup>20</sup>

But this focus on data analytics obscures the fact that personalization of marketing has been a part of the securities business for far longer than people have been trading on their phones. Brokers learn about their clients’ interests to solidify their business relationship, just as computer algorithms can synthesize known information to enhance a client’s user experience. Whether one views data analytics as an improvement on customer interaction, or simply part and parcel of digital interaction, the fact that a broker—human or an algorithmic substitute—knows its customer’s preferences should not, itself, be cause for concern.<sup>21</sup> Importantly, personalization, by itself, is not sufficient to subject a communication to regulation as a “recommendation.”

### *The Existing Regulatory Framework Is Sufficient to Address Digital Engagement*

DEPs themselves, then, should not be the focus of any new regulation. Instead, the focus of any regulation should be on the communication or interaction with the customer that the DEP facilitates. The framework already in place by the Commission and FINRA is sufficient to address any issues that are presented by digital engagement.

First, DEPs or other digital engagement should not alter the concept of a “recommendation.” Determining what qualifies as a recommendation rightly depends on the facts and circumstances of a particular situation, but the shorthand understanding that a recommendation is a “call to action” is a good one.<sup>22</sup> The more tailored the communication is to a particular customer about a particular security, the more likely it is to be a recommendation (and thus subject to the heightened standards of care that apply to such recommendations). As the Commission recognizes, this facts-and-circumstances analysis is flexible enough to accommodate communications with customers through DEPs.<sup>23</sup>

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<sup>20</sup> Gary Gensler, “Statement on Request for Information and Comments on Broker-Dealer and Investment Adviser Digital Engagement Practices, Related Tools and Methods, and Regulatory Considerations and Potential Approaches.” *SEC Public Statement* (August 27, 2021). Available at <https://www.sec.gov/news/public-statement/gensler-dep-request-comment>; United States Senate Committee on Banking, Housing, and Urban Affairs, “Oversight of the U.S. Securities and Exchange Commission.” *Full Committee Hearing* (September 14, 2021). Available at <https://www.banking.senate.gov/hearings/09/10/2021/oversight-of-the-us-securities-and-exchange-commission>.

<sup>21</sup> See, generally, FINRA, “Artificial Intelligence (AI) in the Securities Industry.” *FINRA* (June 10, 2020). Available at <https://www.finra.org/rules-guidance/key-topics/fintech/report/artificial-intelligence-in-the-securities-industry>; Alireza Khakpour and Ricardo Colomo-Palacios, “Convergence of Gamification and Machine Learning: A Systemic Literature Review.” *Technology, Knowledge, and Learning* (July 12, 2020). Available at <https://link.springer.com/article/10.1007/s10758-020-09456-4>.

<sup>22</sup> Regulation Best Interest: The Broker-Dealer Standard of Conduct, Exchange Act Release No. 34-86031 [84 FR 33318 (July 12, 2019)]. Available at <https://www.sec.gov/rules/final/2019/34-86031.pdf>.

<sup>23</sup> See page 31 of the Request at <https://www.sec.gov/rules/other/2021/34-92766.pdf>.

What should be a relatively straight-forward application of existing law, however, has been complicated by the rise in retail trading volume that has accompanied the rise in retail investor account openings.<sup>24</sup> The Commission notes that some are concerned that DEPs may be artificially stimulating trading volume; some have posited that DEPs, in essence, “recommend” a trading strategy of frequent trading.<sup>25</sup> Setting aside the difficult question of whether the communications by any particular DEP (or the effect of multiple DEPs) are specific enough to qualify as recommendations under a facts-and-circumstances inquiry, there are many other reasons to be cautious about finding such communications to be a strategy recommendation.

One reason is strictly empirical: at this point, there is little solid evidence that trading volume is being driven by DEPs. To the extent that research provides evidence of causation in the future, it is worth incorporating it into the facts-and-circumstances analysis, but any conclusions at this point are premature.

Another reason is more policy-oriented: trading frequency is not one-size-fits-all, even for investors who may be similarly situated. Decisions about how often to trade may be influenced by the accessibility of trading platforms and wholly independent of any DEPs. For example, new investors may trade more frequently as they begin to learn about the market, and investors who have small amounts of money to invest (or who look to take advantage of low transaction costs) also may trade more frequently.<sup>26</sup> More frequent trading should not be confused with risky day-trading strategies, and, in some circumstances, may be preferable to a standard buy-and-hold mentality.<sup>27</sup>

And a final reason for caution is structural: the very nature of a broker’s business is to induce trading. Drawing the right line between good marketing and abusive practices is difficult, if not impossible, especially where investors face low transaction costs to trade.

Second, rules that apply to communications with the public, including FINRA Rule 2210 and the Commission’s anti-fraud rules, apply equally to digital communications as they do to other types of communications with investors and potential investors. FINRA’s rules generally encompass a wide variety of communications and are aimed at prohibiting brokers from providing false,

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<sup>24</sup> Approximately one-fifth of market trading volume was attributable to retail orders throughout 2020 and early 2021, a substantial increase over 2019. Alexander Osipovich, “Individual-Investor Boom Reshapes U.S. Stock Market.” *Wall Street Journal* (August 31, 2020). Available at <https://www.wsj.com/articles/individual-investor-boom-reshapes-u-s-stock-market-11598866200>; SIFMA, “Gauging the New Normal for Volatility, Volumes, Market Levels & Retail Investor Participation.” *SIFMA Insights* (May 12, 2021). Available at <https://www.sifma.org/resources/research/insights-market-structure-survey/>.

<sup>25</sup> See page 9 of the Request at <https://www.sec.gov/rules/other/2021/34-92766.pdf>.

<sup>26</sup> In fact, the FINRA/NORC study calls into question the view that those entering the markets are seeking to engage in speculative behavior. New investors most often identified saving for retirement and learning about investing as goals. FINRA/NORC study, *supra* note 6. While about a third of new investors did cite speculation as a goal and new investors did trade more frequently than existing account holders, their self-reported trading behavior is not consistent with day trading or similar speculative strategies. Indeed, approximately 40 percent of new investors reported making no trades per month, and almost 90 percent made three or fewer trades a month.

<sup>27</sup> Robert Laura, “Wake Up! Buy and Hold Doesn’t Work.” *Forbes* (May 31, 2012). Available at <https://www.forbes.com/sites/robertlaura/2012/05/31/wake-up-buy-and-hold-doesnt-work>; David Saito-Chung, “Still the No. 1 Rule for Stock Market Investors: Always Cut Your Losses Short.” *Investor’s Business Daily* (February 1, 2021). Available at <https://www.investors.com/how-to-invest/investors-corner/still-the-no-1-rule-for-stock-investors-always-cut-your-losses-short/>; Kate Stalter, “Why Investors Should Never Simply ‘Buy and Hold.’” *Entrepreneur* (June 11, 2021). Available at <https://www.entrepreneur.com/article/374323>.

misleading, or otherwise unfairly presented information. The anti-fraud provisions of the federal securities laws, of course, are aimed at preventing fraudulent misconduct. Where a particular DEP results in deceptive or manipulative interactions with customers, these rules can be applied to prohibit or limit its use. The same high bar that regulators apply in evaluating traditional communications should apply to digital communications to ensure that modern app design is not inhibited by speculative applications of these rules to DEPs.

Finally, the supervision of software developers or others involved in developing or maintaining DEPs fits within the well-understood framework for supervision that applies to other technology services, both in-house and subcontracted. While DEPs and the technology that support them, may be rapidly evolving, financial firms are no strangers to the use of technology. Both the Commission and FINRA have provided substantial guidance to broker-dealers regarding the supervision of technology service providers that should be equally applicable to DEPs.

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In summary, digital accessibility has assisted in bringing a host of new investors into the markets, helping to close gaps in investment access that had previously concentrated investment opportunities in the hands of the few. DEPs are integral to investments through digital means, and merely represent the continued evolution of modern app design. Rather than inhibiting modern design that certain investors expect, and on which brokerages compete,<sup>28</sup> the Commission should focus on the content of the communications with customers, which is already subject to a framework that need not be altered for digital communications. Some design elements may run afoul of the rules in this framework, particularly if they provide investors with false or misleading information, but the Commission and other regulators must not import holdover views about how trading should look or feel to the investor—particularly as younger investors begin to make their own investment decisions.<sup>29</sup>

Thank you for the opportunity to comment on this request, and I am happy to answer any questions or further engage on this topic.

Sincerely,



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<sup>28</sup> Cyrus Farivar, “Gambling Addiction Experts See Familiar Aspects in Robinhood App.” *NBC* (January 30, 2021). Available at <https://www.nbcnews.com/business/business-news/gambling-addiction-experts-see-familiar-aspects-robinhood-app-n1256213>.

<sup>29</sup> Erik Gordon, “Why Gamified Trading is Good for the Stock Market.” *Fortune* (July 28, 2021). Available at <https://fortune.com/2021/07/28/robinhood-ipo-meme-stocks-gamification/>.