

# SYSTEMICALLY IMPORTANT PLATFORMS

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*Regulating Big Tech is now a matter of intense public debate. We ask how well Big Tech companies fulfill their role as gatekeepers of the public square. We ponder whether their dominant market positions merit an antitrust response. We assess their culpability and complicity in spreading online misinformation and hate. However, in the many normative debates over how Big Tech should use its power, the source of that power remains largely unexamined.*

*Big Tech, like Big Tobacco before it, is an industry founded on addiction. Although typically “free” to use, the world’s largest digital platforms exploit users’ dopamine pathways to consume as much of their time and conscious attention as possible. Many of the problems currently gripping the public consciousness would be fundamentally less important if these platforms were not powerfully addictive. They would be private problems—issues to be resolved between the company and its users. A key reason they are significant, public problems that society can no longer ignore is that Big Tech has intentionally addicted billions of people.*

*The business model of many large technology companies, or significant subsidiaries thereof, is built on maximizing the frequency and duration of use, what the industry refers to as “time on device.” In this, they have been remarkably successful. The average American spends just over 40% of their waking hours online, with that number approaching 60% for American teens. A growing body of research problematizes the “choice” to spend this much time online. Today’s dominant digital platforms are intentionally designed to produce structural and functional changes in various regions of the brain and to trigger the same brain reward pathways as nicotine and other addictive drugs. Thus far, such platforms have managed to almost entirely avoid liability for harms associated with their use.*

*This Article surveys existing tools that may help to combat Big Tech’s addictive design practices. It finds that existing laws and legal duties fail to protect users from exploitation. Accordingly, this Article proposes designating the largest manipulative technology platforms as “systemically important*

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*platforms.” Platforms so designated would be legally required to open their platforms to middleware, a type of software that can modify how data is presented. Such middleware would feature a control panel of tools that would enable users to curate their digital experience. In addition, these platforms would be subject to increased tax burdens and enhanced regulatory scrutiny with the goal of curbing manipulative design practices and providing billions of users with greater agency.*

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## INTRODUCTION

Calls to regulate the world’s largest technology companies have recently reached a fever pitch. The word “techlash” (referring to the threat of a consumer and/or regulatory revolt against Big Tech companies) has entered the modern lexicon.<sup>1</sup> NPR refers to Washington’s “growing appetite to rein [Big Tech] in through regulation.”<sup>2</sup> “[W]e are in the midst of the most

<sup>1</sup> See Emma Goldberg, ‘Techlash’ Hits College Campuses, N.Y. TIMES (Jan 11, 2020), <https://www.nytimes.com/2020/01/11/style/college-tech-recruiting.html> [<https://perma.cc/F7V6-3JGY>] (last updated Jan. 15, 2020) (using the word “techlash” to describe the “growing skepticism of Silicon Valley” amongst college students).

<sup>2</sup> Shannon Bond, *Google Lawsuit Marks End of Washington’s Love Affair with Big Tech*, NAT’L PUB. R (Oct. 21, 2020), <https://www.npr.org/2020/10/21/>

consequential days ever for tech,” opines a recent *New York Times* article with the headline *Big Tech Has Helped Trash America*.<sup>3</sup> The consensus is clear: reformers are coming for the world’s leading technology companies. But what exactly ails Big Tech?

Some claim it is abysmal privacy practices and the misuse of personal data.<sup>4</sup> Others, including the U.S. Department of Justice and numerous state attorneys general, claim it is the specter of monopoly power.<sup>5</sup> Some bemoan Big Tech’s suppression of lawful speech, while others warn that Big Tech’s failure to curb the spread of misinformation and hate on digital platforms has threatened the very foundations of democracy.<sup>6</sup>

While there is truth to many of these fears, each belies the underlying problem: a few Big Tech platforms have come to dominate the bulk of Americans’ conscious attention. This is by design. Sean Parker, founding president of Facebook, explains how we have become addicted to Big Tech:

The thought process that went into building these applications, Facebook being the first of them, . . . was all about: ‘How do we consume as much of your time and conscious attention as possible?’ And that means that we need to sort of give you a little dopamine hit every once in a while, because someone liked or commented on a photo or a post or whatever. And that’s going to get you to contribute more content, and that’s going to get you . . . more likes and comments. It’s a social-validation feedback loop . . . exactly the kind of thing that a hacker like myself would come up with, because you’re exploiting a vulnerability in human psychology. The inventors, creators—it’s me, it’s Mark [Zuckerberg],

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926244831/google-lawsuit-marks-end-of-washingtons-love-affair-with-big-tech [https://perma.cc/8RWT-2ANQ].

<sup>3</sup> Kara Swisher, Opinion, *Big Tech Has Helped Trash America*, N.Y. TIMES (Jan. 15, 2021), <https://www.nytimes.com/2021/01/15/opinion/tech-hope-america.html> [https://perma.cc/4U5G-HRF2].

<sup>4</sup> Jonathan Shieber, *What To Expect from Tomorrow’s Antitrust Hearing Featuring Big Tech*, TECHCRUNCH (July 15, 2019), <https://techcrunch.com/2019/07/15/what-to-expect-from-tomorrows-antitrust-hearing-featuring-big-tech/> [https://perma.cc/QYX2-87AW].

<sup>5</sup> Press Release, *Three Additional States Ask Court to Join Justice Department Antitrust Suit Against Google*, U.S. DEPT OF JUST. (Dec. 17, 2020), <https://www.justice.gov/opa/pr/three-additional-states-ask-court-join-justice-department-antitrust-suit-against-google> [https://perma.cc/X7PG-69ZC].

<sup>6</sup> Billy Perrigo, *Big Tech’s Business Model Is a Threat to Democracy. Here’s How to Build a Fairer Digital Future*, TIME (Jan. 22, 2021), <https://time.com/5931597/internet-reform-democracy/> [https://perma.cc/SS77-7WYH].

it's Kevin Systrom on Instagram, it's all of these people—understood this consciously. And we did it anyway.<sup>7</sup>

Nir Eyal, the noted Big Tech consultant who literally wrote the book on getting users hooked to digital platforms, echoes these themes: “The technologies we use have turned into compulsions, if not full-fledged addictions . . . . It's the impulse to check a message notification. It's the pull to visit YouTube, Facebook, or Twitter for just a few minutes, only to find yourself still tapping and scrolling an hour later.”<sup>8</sup> This process is not an accident—it is “just as their designers intended.”<sup>9</sup>

Understanding—and regulating—the addictive design at the core of so many Big Tech platforms is a necessary complement to work on Big Tech's antitrust, privacy, and speech issues. It represents an emerging regulatory front without which Big Tech cannot be properly understood or regulated. For instance, when analyzing why certain Big Tech companies have no serious competitors, the fact that they have exploited psychological vulnerabilities to make billions of users dependent on their platforms may be an informative complement to standard antitrust analysis. With respect to privacy, Big Tech's intentionally exploitative business model may inform the perceived validity of users' consent to sacrifice privacy in exchange for the privilege of access to Big Tech platforms. Similarly, the reason that Big Tech's treatment of speech has become such a pivotal issue is because so much of modern speech is happening on just a few digital venues—perhaps not coincidentally, the ones which are the most powerfully addictive. Big Tech's core business model—intentionally designing its products to be as addictive as possible—necessarily informs our study of its other social and economic effects.

This Article focuses on Big Tech companies that employ “manipulative technologies.” Such platforms have two defining features: (1) they generate revenue by maximizing user attention at the greatest frequency and for the longest duration possible, and (2) they are explicitly designed to exploit human

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<sup>7</sup> Mike Allen, *Sean Parker Unloads on Facebook: “God Only Knows What It's Doing to Our Children's Brains,”* AXIOS (Nov. 9, 2017), <https://www.axios.com/sean-parker-unloads-on-facebook-god-only-knows-what-its-doing-to-our-childrens-brains-1513306792-f855e7b4-4e99-4d60-8d51-2775559c2671.html> [<https://perma.cc/3HLY-T5DN>].

<sup>8</sup> Paul Lewis, *‘Our Minds Can Be Hijacked’: The Tech Insiders Who Fear a Smartphone Dystopia*, GUARDIAN, (Oct. 6, 2017), <https://www.theguardian.com/technology/2017/oct/05/smartphone-addiction-silicon-valley-dystopia> [<https://perma.cc/NDV7-P3GX>].

<sup>9</sup> *Id.*

psychology in order to manipulate users into unconsciously overusing their technologies.

Technologies can be usefully understood through positive (manipulative) and negative (non-manipulative) examples. Some positive examples include various social media sites such as Facebook, Instagram, LinkedIn, and Snapchat.<sup>10</sup> These platforms depend on revenue from advertisers and/or in-application purchases, and they employ many manipulations to increase the frequency and duration of use.<sup>11</sup> Conversely, there are many analogous technologies where revenue does not depend on frequency and duration of use or where providers do not employ manipulative tactics to boost user engagement. Examples include mapping services, digital calculators, mobile phone flashlights, word processing programs, digital tax filing systems, and digital bookkeeping services. These non-manipulative digital platforms enable users to more easily perform a necessary task without attempting to monopolize their users' time. Once the need to complete that task has been fulfilled—the destination has been found, the equation has been solved, the taxes have been filed—users can quite easily close the technologies and move on to other tasks or activities. Typically, there is no financial incentive for such companies to compel users to further use, and so manipulative tactics are unnecessary from a revenue-generation perspective.

This Article examines the impact of manipulative technology as utilized by the world's largest technology companies and considers whether existing regulations offer sufficient protection for users of such technologies. It finds that under the status quo, users of manipulative technologies are insufficiently protected from harm. To address the problems associated with manipulative technologies, this Article proposes the establishment of a special designation for the largest manipulative platforms, to be known as "systemically important platforms" or "SIPs." It further argues that this subset of platforms should be subject to special regulations and restrictions designed to combat manipulative practices. In particular, it pro-

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<sup>10</sup> See Tristan Harris, *How Technology Is Hijacking Your Mind—from a Magician and Google Design Ethicist*, THRIVE GLOBAL (May 18, 2016), <https://medium.com/thrive-global/how-technology-hijacks-peoples-minds-from-a-magician-and-google-s-design-ethicist-56d62ef5edf3> [https://perma.cc/GF7A-LWL6] (Describing how certain social media platforms use psychology to manipulate users to interact with the platforms).

<sup>11</sup> See generally *id.* (providing a list of how certain social media platforms manipulate their users). For a detailed discussion of the manipulative aspects of such platforms, see *infra* Part I.

poses that “middleware” (a type of intermediary software that controls how a website is displayed) should be employed to give users direct control over their digital experience by permitting them to disaggregate features and opt out of those they find undesirable. In addition, it proposes using the SIP designation as a tool for reform in other spheres, such as privacy and speech. Demarcating those platforms with the greatest impact on society at large as “SIPs” would give policymakers a streamlined and targeted way to regulate the small subset of platforms that pose outsized threats.

Part I defines manipulative technologies in greater detail and examines how such technologies exploit human psychology. Part II considers the positive and negative impacts of manipulative design practices on society. Part III examines manipulative technologies through the lens of corporate law and considers whether existing corporate law duties offer users of manipulative platforms sufficient protection from exploitative practices. Part IV details preliminary efforts to regulate Big Tech’s manipulative design practices, both in the United States and abroad. Part V considers the features of effective regulation in this context, and it outlines policy proposals to better protect consumers from manipulative technologies.

## I

### DEFINING MANIPULATIVE TECHNOLOGIES

#### A. Defining Features of Manipulative Technologies

Manipulative technologies have two defining features. First, the revenue source of such technologies is either wholly or primarily dependent upon the frequency and duration of users’ engagement with such technologies. For instance, many Big Tech companies generate revenue by selling advertising “space.”<sup>12</sup> The more frequently a user engages with and the longer the user spends on the platform, the more advertisements he or she will view and the greater the company’s revenue will be. Relatedly, Big Tech companies may collect personal data about their users, either to sell to other busi-

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<sup>12</sup> For example, ninety-eight percent of Facebook’s revenue comes from advertisements, which brought in \$17.4 billion in the first quarter of 2020. Tiffany Hsu & Cecilia Kang, *‘Morally Impossible’: Some Advertisers Take a Timeout from Facebook*, N.Y. TIMES (June 9, 2020), <https://www.nytimes.com/2020/06/09/business/media/facebook-advertisers-trump-zuckerberg.html> [<https://perma.cc/8LHE-JW7G>] (last updated Oct. 5, 2021).

nesses or to facilitate targeted advertisements.<sup>13</sup> Such companies can accumulate more information about users who spend more time on their platforms, and, therefore, they are also incentivized to maximize a user's "time on device." Platforms may also use a microtransactions model, wherein users pay a small amount for additional content or features in video games or applications.<sup>14</sup> The more time a user spends on a given application, the more opportunities he or she has to complete a microtransaction and the more likely he or she is to do so.<sup>15</sup> Whatever the exact revenue model(s), the core financial incentive of manipulative technology companies is maximizing their users' "time on device."

Second, many Big Tech companies exploit psychological weaknesses in their users and thereby encourage compulsive use.<sup>16</sup> Given their significant financial incentives to maximize users' time on device, Big Tech has invested considerable resources in ensuring that users engage with their technologies as frequently as possible and for the longest duration possible.<sup>17</sup> Specifically, technology companies have drawn on psychological research pioneered by B.F. Skinner<sup>18</sup> and B.J. Fogg<sup>19</sup> to train human brains to treat utilization of an application or website as an "automatic" behavior, or a behavior without conscious self-control.<sup>20</sup> The work of Fogg in particular has proven highly influential. Fogg, a behavioral scientist at Stanford and a tech industry consultant, is the founder of

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<sup>13</sup> See Louise Matsakis, *The WIRED Guide to Your Personal Data (and Who Is Using It)*, WIRED (Feb. 15, 2019), <https://www.wired.com/story/wired-guide-personal-data-collection/> [<https://perma.cc/T8GS-DLVU>] (providing an overview, history, and future predictions regarding consumer data collection).

<sup>14</sup> Nenad Tomic, *Economic Model of Microtransactions in Video Games*, 1 J. ECON. SCI. RSCH. 17, 18 (2018).

<sup>15</sup> See *id.*

<sup>16</sup> See, e.g., Ted Greenwald, *Compulsive Behavior Sells*, MIT TECH. REV. (Mar. 23, 2015), <https://www.technologyreview.com/2015/03/23/249095/compulsive-behavior-sells/> [<https://perma.cc/6XMV-SRSY>].

<sup>17</sup> See Sage Isabella Cammers-Goodwin, "Tech:" *The Curse and the Cure: Why and How Silicon Valley Should Support Economic Security*, 9 U.C. IRVINE L. REV. 1063, 1089 (2019) ("Innovations are not rewarded based on overall impact to humanity but instead off of how wealthy those buying the technology are, how much they can take advantage of users, and how difficult they make their platform to iterate and borrow from.").

<sup>18</sup> Skinner's work explored how rewards or "reinforcers" shape the behavior of animals and humans. See C. B. FERSTER & B. F. SKINNER, *SCHEDULES OF REINFORCEMENT* 2-3 (1957).

<sup>19</sup> See B.J. FOGG, *PERSUASIVE TECHNOLOGY: USING COMPUTERS TO CHANGE WHAT WE THINK AND DO* 5 (2003).

<sup>20</sup> See generally, NIR EYAL, *HOOKED: HOW TO BUILD HABIT-FORMING PRODUCTS* 62, 100 (2014) (describing how to design products and services that encourage the formation of habits in their users).



“captology,” which refers to “the study of computers as persuasive technologies.”<sup>21</sup> This field centers on the creation and design of computing technologies designed to influence human behaviors.<sup>22</sup> As Fogg himself explains, “Facebook, Twitter, Google, you name it, these companies have been using computers to influence our behavior.”<sup>23</sup>

Fogg’s research taught Big Tech how to induce compulsive behaviors<sup>24</sup> through a four-step cycle, well-known in the tech industry as a “hook.”<sup>25</sup> This cycle begins with a trigger, such as the notifications, emails, and other alerts common to many digital platforms.<sup>26</sup> These triggers typically default to interrupting a user immediately in the form of a notification alert, noise, and/or other disruption, rather than an asynchronous message to be viewed when the user consciously decides to visit a platform.<sup>27</sup> The trigger encourages a user to perform a specific action, such as opening an application or logging in to a digital service, which is why such triggers often include a link enabling users to easily perform such an action.<sup>28</sup> This action then produces a reward, such as viewing a photo of a friend on Instagram or reading a tweet from a favorite celebrity.<sup>29</sup> Generally, these rewards take the form of “intermittent variable rewards,” which vary at random from true rewards to nothing of value.<sup>30</sup> For example, users often compulsively refresh their Twitter or Facebook feeds because there *might* be a new message or notification, not unlike a gambler who compulsively pulls the slot machine’s lever because this time they might win big. Psychologists have long noted that variable rewards pro-

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<sup>21</sup> FOGG, *supra* note 19, at 5.

<sup>22</sup> *Id.*

<sup>23</sup> Anthony Wing Kosner, *Stanford’s School of Persuasion: BJ Fogg On How to Win Users and Influence Behavior*, FORBES (Dec. 4, 2012), <https://www.forbes.com/sites/anthonykosner/2012/12/04/stanfords-school-of-persuasion-bj-fogg-on-how-to-win-users-and-influence-behavior/#edbb99f390db> [<https://perma.cc/FRS7-HDU2>].

<sup>24</sup> Irina D. Manta, *Branded*, 69 SMU L. REV. 713, 738 (2016) (citing to EYAL, *supra* note 20, at 3).

<sup>25</sup> EYAL, *supra* note 20, at 39–41.

<sup>26</sup> *Id.*

<sup>27</sup> See Harris, *supra* note 10 (contrasting instant messaging apps to email, which allows the user to respond on their own time).

<sup>28</sup> EYAL, *supra* note 20, at 61–70.

<sup>29</sup> *Id.* at 95–105.

<sup>30</sup> Vivek Wadhwa, *Why We Can’t Stop Checking Facebook*, CHI. TRIB. (Jan. 3, 2018), <https://www.chicagotribune.com/opinion/commentary/ct-perspective-facebook-technology-personal-relationships-mental-health-0104-20180103-story.html> [<https://perma.cc/4VCY-9B22>] (describing how social media apps use the same techniques as casino slot machines that make the player think that he or she won when he or she in fact lost).

duce both the highest rate of response and the greatest resistance to “extinction” (or the ceasing of a habituated behavior).<sup>31</sup> In the fourth and final step of this cycle, a user will be given the opportunity to make a personal investment, which is why “like” buttons, “share” options, and comment boxes have proliferated so extensively.<sup>32</sup> This four-part cycle induces the brain to store associated behaviors in the basal ganglia, the part of the brain which manages automatic behaviors and which stores such behaviors for life.<sup>33</sup>

Other features of these platforms also manipulate human psychology to encourage compulsive use. For example, the human desire for belonging makes human beings highly vulnerable to social approval and disapproval.<sup>34</sup> Big Tech companies therefore often incorporate systems of social approval, such as “likes,” ratings, and comment sections, which drive compulsive use by users seeking positive stimuli from friends, acquaintances, and even strangers.<sup>35</sup> Leah Pearlman, who was the co-inventor of Facebook’s “like” feature, admits that she herself had become addicted to the validation that the feature provided her: “When I need validation—I go to check Facebook. . . I’m feeling lonely, ‘Let me check my phone.’ I’m feeling insecure, ‘Let me check my phone.’”<sup>36</sup>

Additionally, many digital platforms also play off of related human vulnerabilities—including fear, jealousy, and anger. Social media platforms in particular induce feelings of jealousy in their users, which in turn motivate users to contribute more content in a quest for validation and increased self-esteem.<sup>37</sup> Likewise, anger-inducing posts and comments fuel further engagement with the site, serving as far stronger triggers than

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<sup>31</sup> See FERSTER & SKINNER, *supra* note 18, at 5.

<sup>32</sup> EYAL, *supra* note 20, at 135–50.

<sup>33</sup> *Id.* at 16.

<sup>34</sup> See, Keise Izuma, Daisuke N. Saito & Norihiro Sadato, *Processing of the Incentive for Social Approval in the Ventral Striatum during Charitable Donation*, 22 J. COGNITIVE NEUROSCI. 621, 621 (2010) (describing social rewards including the approval of others as a motivating factor in human behavior).

<sup>35</sup> Harris, *supra* note 10 (describing how social media services will promote certain posts in order for them to receive more likes).

<sup>36</sup> Hilary Andersson, *Social Media Apps Are ‘Deliberately’ Addictive to Users*, BBC NEWS (July 4, 2018), <https://www.bbc.com/news/technology-44640959> [<https://perma.cc/3WKV-9NCF>].

<sup>37</sup> See Hanna Krasnova, Helena Wenninger, Thomas Widjaja & Peter Buxmann, *Envy on Facebook: A Hidden Threat to Users’ Life Satisfaction?*, 11TH INT’L CONF. ON WIRTSCHAFTSINFORMATIK (WI) at 6–7 (2013), <https://boris.unibe.ch/47080/1/WI%202013%20Final%20Submission%20Krasnova.pdf> [<https://perma.cc/5D9G-FLMU>] (describing how a sense of envy comes from posts about travel).

more mundane communications.<sup>38</sup> Joanna Hoffman, former Apple employee explains:

You know it's just like tobacco, it's no different than the opioids . . . We know anger is addictive, we know we can attract people to our platform and get engagement if we get them pissed off enough. So therefore what, we should capitalize on that each and every time?<sup>39</sup>

Roger McNamee, an early investor in Facebook, describes how the platform “appeals to your lizard brain—primarily fear and anger.”<sup>40</sup> Now an activist working to protect users from manipulative tactics, he describes himself as “horrificed” at the product he helped to fund.<sup>41</sup>

Relatedly, humans have difficulty regulating their consumptions of foods, services, and products that have no finite end.<sup>42</sup> Because of this, manipulative technologies frequently feature “infinite scrolls,” which allow users to endlessly view content without clicking additional links, and “autoplay” formats, which are so named because they automatically play additional video content without the user consciously choosing to consume additional media.<sup>43</sup> Such features do not give the user’s brain any signal regarding how much time has passed or how much content has been consumed and therefore can lead users to spend excessive time on these technologies.<sup>44</sup> This results in “time distortion,” wherein individuals have difficulty keeping track of the passage of time.<sup>45</sup> In fact, technology designer Aza Raskin, who originally designed the infinite scroll feature, has expressed guilt about his innovation, which he admits causes users to spend excessive amounts of time on digital platforms because these features “don’t give [the user’s]

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<sup>38</sup> See Nicholas Vega, *Facebook ‘Peddling in an Addictive Drug Called Anger’: Steve Jobs Adviser*, N.Y. POST (June 12, 2020), <https://nypost.com/2020/06/12/facebook-peddling-in-an-addictive-drug-called-anger-steve-jobs-advisor/> [https://perma.cc/E8XS-MBAF] (last updated June 15, 2020).

<sup>39</sup> *Id.*

<sup>40</sup> Nellie Bowles, *Early Facebook and Google Employees Form Coalition to Fight What They Built*, N.Y. TIMES (Feb. 4, 2018), <https://www.nytimes.com/2018/02/04/technology/early-facebook-google-employees-fight-tech.html> [https://perma.cc/RZ5X-944W].

<sup>41</sup> *Id.*

<sup>42</sup> Harris, *supra* note 10 (describing a study that found that people ate more when presented with an endless amount of food).

<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

<sup>45</sup> David Greenfield, *Internet Addiction: Epidemiology, Etiology, and Treatment Considerations*, CTR. FOR INTERNET & TECH. ADDICTION (2017), <https://www.ccsad.com/wp-content/uploads/2017/09/300-P.pdf> [https://perma.cc/J87U-Y58Z].

brain time to catch up with [his or her] impulses.”<sup>46</sup> He further describes the manipulative capacity of such technology, saying, “It’s as if they’re taking behavioural [*sic*] cocaine and just sprinkling it all over your interface and that’s the thing that keeps you like coming back and back and back.”<sup>47</sup> Chris Marcellino, co-holder of Apple’s patent for “managing notification connections and displaying icon badges,” also acknowledges that manipulative technologies exploit the same pathways as gambling and drug use, noting that “[t]hese are the same circuits that make people seek out food, comfort, heat, sex.”<sup>48</sup>

### B. The Addictive Potential of Manipulative Technologies

In fact, scientists have come to recognize that “internet addiction” and related conditions share many commonalities with more traditionally recognized substance addictions, such as compulsive use of tobacco, cocaine, alcohol, or opioids. Both types of addictions manifest themselves in the same brain pathways and trigger the same reward centers in the brain.<sup>49</sup> In fact, the brain patterns observed when a heroin user injects heroin are nearly identical to those observed when a gamer initiates a session of World of Warcraft (a videogame that qualifies as a manipulative technology).<sup>50</sup> Both internet addiction and substance addictions are associated with structural and functional changes in various brain regions.<sup>51</sup> In particular, individuals suffering from both types of addiction exhibit decreased gray matter volume and cortical thickness in the regions of the brain that regulate executive control (the cognitive processes that regulate short term memory, attention span, impulse control, and cognitive flexibility), as well as impaired white matter integrity (essential for proper connection and processing between the two hemispheres of the brain).<sup>52</sup>

Full recognition of clinical overuse and/or addiction to the internet and specific digital platforms has been hampered by the newness of these phenomena and the related lack of consensus regarding the official hallmarks of digital addictions. At

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<sup>46</sup> See Andersson, *supra* note 36.

<sup>47</sup> *Id.*

<sup>48</sup> Lewis, *supra* note 8.

<sup>49</sup> ADAM ALTER, IRRESISTIBLE: THE RISE OF ADDICTIVE TECHNOLOGY AND THE BUSINESS OF KEEPING US HOOKED 71 (2017).

<sup>50</sup> *Id.*

<sup>51</sup> Anurag Tripathi, *Impact of Internet Addiction on Mental Health: An Integrative Therapy Is Needed*, 4 INTEGRATIVE MED. INT’L 215, 216 (2017).

<sup>52</sup> *Id.*

least forty-five different scales for diagnosing internet addiction existed as of 2014,<sup>53</sup> and a further seventy-eight different scales for diagnosing problematic smartphone usage existed as of 2020.<sup>54</sup> In addition, there is little agreement as to the dividing line between acceptable usage of, problematic usage of, and clinical addiction to such technologies.<sup>55</sup> As a result of this lack of consensus, studies attempting to estimate the prevalence of problematic internet usage, or problematic usage of specific sites such as Facebook, vary widely from low rates of 0.7%,<sup>56</sup> 4.5%,<sup>57</sup> and 8.4%,<sup>58</sup> to high rates such as 16.5%,<sup>59</sup> 21%,<sup>60</sup> and 72%.<sup>61</sup> Estimates of full-blown addiction range from lows of 1.2%,<sup>62</sup> 1.98%,<sup>63</sup> and 6%<sup>64</sup> to highs of 26.5%,<sup>65</sup>

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<sup>53</sup> Stéphanie Laconia, Rachel Florence Rodgers & Henri Chabrol, *The Measurement of Internet Addiction: A Critical Review of Existing Scales and Their Psychometric Properties*, 41 COMPUT. HUM. BEHAV. 190, 195 (2014).

<sup>54</sup> Bethany Harris, Timothy Regan, Jordan Schueler & Sherece A. Fields, *Problematic Mobile Phone and Smartphone Use Scales: A Systematic Review*, 11 FRONTIERS PSYCH., May 2020, at 1, 17.

<sup>55</sup> *Id.* at 15.

<sup>56</sup> Elias Aboujaoude, Lorrin M. Koran, Nona Gamel, Michael D. Large & Richard T. Serpe, *Potential Markers for Problematic Internet Use: A Telephone Survey of 2,513 Adults*, 11 CNS SPECTRUMS 750, 751 (2006).

<sup>57</sup> Fanni Bányai et al., *Problematic Social Media Use: Results from a Large-Scale Nationally Representative Adolescent Sample*, 12 PLOS ONE, Jan. 2017, at 1, 9.

<sup>58</sup> Yatan Pal Singh Balhara et al., *Correlates of Problematic Internet Use Among College and University Students in Eight Countries: An International Cross-sectional Study*, 45 ASIAN J. PSYCHIATRY 113, 116 (2019).

<sup>59</sup> Mohammed A. Mamun, Sharif Hossain, Sabrina Moonajilin, Mohammed Tanvir Masud, Janatul Mawa Misti & Mark D. Griffiths, *Does Loneliness, Self-esteem and Psychological Distress Correlate With Problematic Internet Use? A Bangladeshi Survey Study*, ASIA-PACIFIC PSYCHIATRY, Apr. 2020, at 1, 4.

<sup>60</sup> Shahrzad Mazhari, *The Prevalence of Problematic Internet Use and the Related Factors in Medical Students*, Kerman, Iran, 4 ADDICTION HEALTH 87, 91 (2012).

<sup>61</sup> Sulki Chung, Jaekyoung Lee & Hae Kook Lee, *Personal Factors, Internet Characteristics, and Environmental Factors Contributing to Adolescent Internet Addiction: A Public Health Perspective*, 16 INT'L. J. ENVIRON. RSCH. & PUB. HEALTH, Nov. 2019, at 1, 10.

<sup>62</sup> Catriona M. Morrison & Helen Gore, *The Relationship between Excessive Internet Use and Depression: A Questionnaire-Based Study of 1,319 Young People and Adults*, 43 PSYCHOPATHOLOGY 121, 123 (2010).

<sup>63</sup> Agneta Johansson & K. Gunnar Götestam, *Internet Addiction: Characteristics of a Questionnaire and Prevalence in Norwegian Youth (12–18 Years)*, 45 SCAND. J. PSYCHOL. 223, 223 (2004).

<sup>64</sup> Cecilia Cheng & Angel Yee-lam Li, *Internet Addiction Prevalence and Quality of (Real) Life: A Meta-Analysis of 31 Nations Across Seven World Regions*, 17 CYBERPSYCHOLOGY, BEHAV. & SOC. NETWORKING 755, 758 (2014).

<sup>65</sup> Miao Xin, Jiang Xing, Wang Pengfei, Li Houru, Wang Mengcheng & Zeng Hong, *Online Activities, Prevalence of Internet Addiction and Risk Factors Related to Family and School Among Adolescents in China*, 7 ADDICTIVE BEHAV. REPS. 14, 16 (2018).

30%,<sup>66</sup> 47%,<sup>67</sup> and 62.2%.<sup>68</sup> These highly variable rates are likely due to variable diagnostic criteria, variable cutoff points, the specific characteristics of the media and subpopulations studied, and, given the rapid growth of the internet and related technologies, the date of the study.

The effort to establish uniform diagnostic criteria for internet addiction and overuse may also be hampered by their ubiquity. If as much as 72% of the population exhibits problematic use of the internet, it seems less a unique pathology of the individual and more a consequence of human nature—and the manipulative potential of many platforms available on the internet. As a result, manipulative technology platforms necessitate special scrutiny of their associated benefits and harms.

## II

### BENEFITS & HARMS OF MANIPULATIVE TECHNOLOGIES

Manipulative technologies confer variable benefits and harms upon their users and makers. This Section considers the costs and benefits of manipulative technologies, as well as the (currently) inseparable nature of the positive and negative elements of many such technologies. Part A analyzes the benefits of manipulative technologies while Part B considers the harms of such technologies. Part C considers various ways to weigh the benefits against the harms, and it finds that the harms for society likely outweigh the benefits.

#### A. Benefits of Manipulative Technologies

##### 1. *Benefits for Users*

Despite their addictive potential, manipulative technologies can confer many benefits on users. Many manipulative technologies provide users with access to useful information about their community, interests, hobbies, or the world at

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<sup>66</sup> Melvyn W. B. Zhang, Russell B. C. Lim, Cheng Lee & Roger C. M. Ho, *Prevalence of Internet Addiction in Medical Students: A Meta-analysis*, 42 ACAD. PSYCHIATRY 88, 89 (2018).

<sup>67</sup> Hosein Jafarkarimi, Alex Tze Hiang Sim, Robab Saadatdoost & Jee Mei Hee, *Facebook Addiction Among Malaysian Students*, 6 INT'L J. INFO. & EDU. TECH. 465, 467 (2016).

<sup>68</sup> This figure includes both the 54% of respondents that were considered to have mild addiction and the 8.24% had moderate addiction. Sandeep Grover, Swapnajeet Sahoo, Ashish Bhalla & Ajit Avasthi, *Problematic Internet Use and Its Correlates Among Resident Doctors of a Tertiary Care Hospital of North India: A Cross-sectional Study*, 39 ASIAN J. PSYCHIATRY 42, 44 (2019).

large.<sup>69</sup> Such technologies often serve as a form of entertainment and relaxation, and the easily-accessible nature of many manipulative technology platforms means that users can spend down time (such as time waiting in a line or on public transport) entertaining or informing themselves.<sup>70</sup> Many users engage with social media and other such platforms in order to communicate and stay connected with loved ones or to find a digital community of new friends and contacts.<sup>71</sup> These platforms also provide users with helpful tools for daily life, as well as avenues to advertise for their small businesses or to generate income through sponsorships, digital sales markets, or other such avenues.<sup>72</sup> Additionally, the fact that many such platforms are often free to users means that anyone can have access to these benefits regardless of financial circumstances, so long as they can afford or find a way to access the internet.<sup>73</sup> In addition, the online communities supported by social media sites can provide valuable support for minorities and those with various health conditions.<sup>74</sup> In these ways, Big Tech confers many benefits on its users and, by extension, society at large. It is worth noting, however, that many of these benefits are not inherent in the manipulative nature of the technologies themselves—it is possible to conceive of digital communities and communication systems that provide connection without exploitative practices.

## 2. *Benefits for Producers & Distributors*

Manipulative design practices have proven incredibly profitable for corporations that utilize these techniques. The potential profitability of such practices can be understood

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<sup>69</sup> See Gohar Feroz Khan, Bobby Swar & Sang Kon Lee, *Social Media Risks and Benefits: A Public Sector Perspective*, 32 SOC. SCI. COMPUT. REV. 606, 608 (2014).

<sup>70</sup> *Id.*

<sup>71</sup> *Id.*

<sup>72</sup> *Id.*

<sup>73</sup> See Gaby Galvin, *States Struggle to Bridge Digital Divide*, U.S. NEWS & World Rep. (Mar. 16, 2017), <https://www.usnews.com/news/best-states/articles/2017-03-16/internet-access-a-staple-of-american-life-yet-millions-remain-under-connected> [<https://perma.cc/T2SF-KZ9X>] (describing how access to the internet alone opens doors that were closed before).

<sup>74</sup> See, e.g., Teresa Correa & Sun Ho Jeong, *Race and Online Content Creation: Why Minorities Are Actively Participating in the Web*, 14 INFO., COMM'C & SOC. 638, 641 (2010) (describing the utility of online platforms for racial minorities); Paul Hodgkin, Louis Horsley & Ben Metz, *The Emerging World of Online Health Communities*, STAN. SOC. INNOVATION REV. (Apr. 10, 2018), [https://ssir.org/articles/entry/the\\_emerging\\_world\\_of\\_online\\_health\\_communities](https://ssir.org/articles/entry/the_emerging_world_of_online_health_communities) [<https://perma.cc/2NH5-AZF9>] (describing how social media sites can provide helpful resources for those with illnesses).

through the proliferation of “free” websites and applications that utilize manipulative design practices, such as Facebook, Twitter, and Snapchat. Rather than charge directly for services or products, these sites all make a small sum of money for each minute a user spends on their site, typically through advertising revenues. Each North American user of Facebook generated the company \$41.41 for the fourth quarter of 2019, while each global user of Facebook generated the company \$8.52 for that same quarter.<sup>75</sup> When multiplied by their daily active user base of 1.66 billion people, it is clear why \$69.66 billion of Facebook’s \$70.70 billion in revenue (or 98.5%) for fiscal year 2019 came from advertising alone.<sup>76</sup> In a similar vein, Twitter’s 330 million users each generate an average of \$9.22 in revenue for the site each year, for a total of over \$3 billion dollars in user-generated revenue.<sup>77</sup> Likewise, Snapchat’s 294 million users each bring in \$4.42 per year, for a total of \$1.3 billion in user-derived revenue.<sup>78</sup> As these examples reveal, even though per-user profits are small, the total revenue potential from capturing users’ attention is enormous.

## B. Harms Caused by Manipulative Technologies

### 1. *Harmful Effects of Manipulative Technologies*

Although manipulative technologies confer benefits upon society, these benefits come at a cost. Researchers are increasingly demonstrating that numerous negative impacts are associated with the use of manipulative technologies, smartphones, and the internet generally. Such negative effects frequently impact the *majority* of survey respondents, providing further evidence that overuse of manipulative technologies has serious negative consequences for society.

#### a. *Interference with Daily Life*

Numerous studies have demonstrated that manipulative technologies and the internet interfere with the daily lives of many users, who are often unable to limit or control their usage. For example, one study of problematic internet use

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<sup>75</sup> See Facebook, Inc., Annual Report (Form 10-K) 1, 46-47 (Dec. 31, 2019), <https://www.sec.gov/ix?doc=/Archives/edgar/data/1326801/000132680120000013/fb-12312019x10k.htm> [https://perma.cc/5SEB-ZRN9].

<sup>76</sup> *Id.*

<sup>77</sup> Web Desk, *Revealed: The Social Media Platforms that Make the Most Revenue off Their Users*, DIGITAL INFO. WORLD (Dec. 1, 2019), <https://www.digitalinformationworld.com/2019/12/revenue-per-social-media-user.html> [https://perma.cc/2U3Y-3R6Z].

<sup>78</sup> *Id.*



amongst college students found that 48.1% of users met clinical criteria for problematic usage while a further 40.7% met criteria for potential problematic usage.<sup>79</sup> The study further found that 96.3% of respondents stayed online longer than intended, 81.5% experienced preoccupations with the internet, 74.1% experienced one or more unsuccessful attempts to limit or stop their internet use, and 44.5% experienced withdrawal symptoms when attempting to reduce or stop their internet use.<sup>80</sup> A second study found that over 50% of respondents experienced negative impacts to their daily lives due to their smartphone use, 75% of respondents felt dependent upon smartphones, and 58% would be “unable to withstand” not having their smartphone with them.<sup>81</sup>

Some evidence suggests that problematic use of the internet has increased recently in part due to the coronavirus pandemic. Studies have shown that rates of severe internet dependence increased by 23% during the pandemic, and nearly half of participants reported increased internet dependence during this period.<sup>82</sup> Moreover, not only did the pandemic result in greater rates of internet addiction, but it also caused greater severity of addiction among those already afflicted with the condition.<sup>83</sup> It remains uncertain whether this will yield a permanent increase in harmful internet usage, or whether such increased rates of abuse and addiction will abate once the pandemic has concluded.

#### b. *Mental Health Harms*

Research also demonstrates that manipulative technologies negatively impact the mental health of users. Facebook, a popular and frequently studied social networking site, provides insight on the effects of social media and other manipulative technologies on mental health. One study revealed that use of Facebook is correlated with lower moment-to-moment happi-

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<sup>79</sup> Susan M. Snyder, Wen Li Anthony, Jennifer E. O'Brien & Matthew O. Howard, *The Effect of U.S. University Students' Problematic Internet Use on Family Relationships: A Mixed-Methods Investigation*, 10 PLOS ONE, Dec. 2015, at 1, 6.

<sup>80</sup> *Id.*

<sup>81</sup> S. Parasuraman et al., *Smartphone Usage and Increased Risk of Mobile Phone Addiction: A Concurrent Study*, 7 INT'L J. PHARM. INVESTIGATION 125, 130 (2017).

<sup>82</sup> Yan Sun et al., *Brief Report: Increased Addictive Internet and Substance Use Behavior During the COVID-19 Pandemic in China*, AM. J. ON ADDICTION 268, 269 (2020).

<sup>83</sup> *Id.*

ness,<sup>84</sup> while a related study found that use of social media platforms is correlated with increased perceived social isolation, itself associated with higher rates of illness and premature death.<sup>85</sup> Further research has associated usage of Facebook with high rates of jealousy, with the site causing nearly a quarter of all envy-producing incidents for the respondents surveyed.<sup>86</sup> The study's author noted that the "magnitude of envy incidents taking place on FB alone is astounding, providing evidence that FB offers a breeding ground for invidious feelings."<sup>87</sup> Facebook has also been associated with peoples' perceptions that they are less happy than their peers<sup>88</sup> as well as jealousy in romantic relationships.<sup>89</sup>

Nighttime social media use in adolescents is associated with lower self-esteem and higher levels of anxiety and depression,<sup>90</sup> while excessive internet use amongst adolescents is associated with depressive symptoms and suicidal ideation.<sup>91</sup> Likewise, internet gaming disorder and overuse of social media are associated with various increased psychological distress measures, putting users at an elevated risk for depression, anxiety, and stress.<sup>92</sup> Similarly, problematic videogame use is correlated with lower life satisfaction and increased rates of anxiety and depression.<sup>93</sup>

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<sup>84</sup> Ethan Kross et al., *Facebook Use Predicts Declines in Subjective Well-Being in Young Adults*, 8 PLOS ONE, Aug. 2013, at 1, 4.

<sup>85</sup> Brain A. Primack et al., *Social Media Use and Perceived Social Isolation Among Young Adults in the U.S.*, 53 AM. J. PREVENTATIVE MED. 1, 5 (2017).

<sup>86</sup> Krasnova, Wenninger, Widjaja & Buxmann, *supra* note 37, at 6.

<sup>87</sup> *Id.*

<sup>88</sup> Hui-Tzu Grace Chou & Nicholas Edge, *"They Are Happier and Having Better Lives than I Am": The Impact of Using Facebook on Perceptions of Others' Lives*, 15 CYBERPSYCHOLOGY, BEHAV., & SOC. NETWORKING 117, 119 (2012).

<sup>89</sup> Amy Muise, Emily Christofides & Serge Desmarais, *More Information than You Ever Wanted: Does Facebook Bring Out the Green-Eyed Monster of Jealousy?*, 12 CYBERPSYCHOLOGY & BEHAV. 441, 441 (2009).

<sup>90</sup> Heather Cleland Woods & Holly Scott, *#Sleepyteens: Social Media Use in Adolescence Is Associated with Poor Sleep Quality, Anxiety, Depression and Low Self-esteem*, 51 J. ADOLESCENCE 41, 46 (2016).

<sup>91</sup> Young Kyung Do, Eunhae Shin, Mary Ann Bautista & Kelvin Foo, *The Associations Between Self-Reported Sleep Duration and Adolescent Health Outcomes: What Is the Role of Time Spent on Internet Use?*, 14 SLEEP MED. 195, 197 (2013). See also Melissa G. Hunt, Rachel Marx, Courtney Lipson & Jordyn Young, *No More Fomo: Limiting Social Media Decreases Loneliness and Depression*, 37 J. SOC. & CLINICAL PSYCH. 751, 763 (2018) (finding that social media use is positively correlated with depression, loneliness, and anxiety).

<sup>92</sup> Hiu Yan Wong et al., *Relationships between Severity of Internet Gaming Disorder, Severity of Problematic Social Media Use, Sleep Quality and Psychological Distress*, 17 INT'L. J. ENV'T RSCH. & PUB. HEALTH, Mar. 2020, at 1, 1.

<sup>93</sup> Rune Aune Mentzoni et al., *Problematic Video Game Use: Estimated Prevalence and Associations with Mental and Physical Health*, 14 CYBERPSYCHOLOGY, BEHAV. & SOC. NETWORKING 591, 591 (2011).

### c. Sleep Disruption

Sleep is another well-recognized casualty of manipulative technologies. For example, social media use in adolescents is correlated with poor sleep quality,<sup>94</sup> and excessive internet use amongst teenagers is associated with shortened sleep duration.<sup>95</sup> Frequent use of computerized games, another type of manipulative technology, has been associated with longer sleep onset latency,<sup>96</sup> less time in bed,<sup>97</sup> and poorer sleep quality.<sup>98</sup> Likewise, problematic use of digital games is associated with greater rates of fatigue and sleep interference.<sup>99</sup>

More broadly, internet addicts are more likely to suffer from excessive daytime sleepiness, insomnia, witnessed snoring, apnea, teeth grinding, and nightmares,<sup>100</sup> as well as short sleep duration.<sup>101</sup> The negative associations between the internet and various manipulative platforms are perhaps unsurprising if you consider the difficulty most adolescents and adults have with disconnecting from their devices: half of all adults check their email overnight, and 60% keep their phones next to them in bed.<sup>102</sup> Similarly, 47% of college students awoken at night to answer text messages.<sup>103</sup>

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<sup>94</sup> Woods & Scott, *supra* note 90.

<sup>95</sup> Do, Shin, Bautista & Foo, *supra* note 91.

<sup>96</sup> Alexandru Gaina, Michikazu Sekine, Hitomi Kanayama, Kayo Sengoku, Takashi Yamagami, Sadanobu Kagamimori, *Short-long Sleep Latency and Associated Factors in Japanese Junior High School Children*, 3 SLEEP & BIOLOGICAL RHYTHMS 162, 163 (2005).

<sup>97</sup> Jan Van den Bulck, *Television Viewing, Computer Game Playing, and Internet Use and Self-reported Time to Bed and Time out of Bed in Secondary-school Children*, 27 SLEEP 101, 101 (2004).

<sup>98</sup> Wong, *supra* note 92, at 1.

<sup>99</sup> Niko Männikkö, Joël Billieux & Maria Kääriäinen, *Problematic Digital Gaming Behavior and Its Relation to The Psychological, Social and Physical Health of Finnish Adolescents and Young Adults*, 4 J. BEHAV. ADDICTIONS 281, 281 (2015).

<sup>100</sup> Kwisook Choi et al., *Internet Overuse and Excessive Daytime Sleepiness in Adolescents*, 63 Psych. & Clinical Neurosci. 455, 455 (2009). *See also* Zainab Alimoradi et al., *Internet Addiction and Sleep Problems: A Systematic Review and Meta-analysis*, 47 SLEEP MED. REVS. 51, 59 (2019) (examining twenty-three studies and finding a strong correlation between Internet addiction and both sleep problems and significantly reduced sleep duration).

<sup>101</sup> Kentaro Kawabe, Fumie Horiuchi, Yasunori Oka, & Shu-ichi Ueno, *Association Between Sleep Habits and Problems and Internet Addiction in Adolescents*, 16 PSYCHIATRY INVESTIGATION 581, 584 (2019).

<sup>102</sup> ALTER, *supra* note 49, at 69.

<sup>103</sup> ADAM GAZZALEY & LARRY D. ROSEN, *THE DISTRACTED MIND: ANCIENT BRAINS IN A HIGH-TECH WORLD* 139 (2016).

#### d. *Reduced Health & Wellness*

In addition to sleep loss, other areas of physical health are negatively impacted by use and overuse of manipulative technologies. Excessive internet use is associated with overweight or obese weight status as well as lower self-reported physical health.<sup>104</sup> Problematic internet use is associated with physical complaints such as headache, feeling of stiffness, backache, neck pain, insomnia,<sup>105</sup> and decreased physical functioning (or a reduced ability to perform necessary tasks at work or school).<sup>106</sup> Similarly, smartphone addiction is associated with reduced physical activity, increased fat mass, and reduced muscle mass.<sup>107</sup> In general, higher daily screen-based time has been associated with physical pain,<sup>108</sup> increased adiposity, unhealthy diet, and reduced quality of life.<sup>109</sup>

Screens also pose a danger to walkers, drivers, and those in their paths. Walkers who use a smartphone while walking experience decreased accuracy and increased likelihood of accidents, and smartphone addicts are more likely to miss stimuli and therefore experience accidents.<sup>110</sup> Similarly, the driver at fault in one-quarter of all crashes used a phone within one minute before the crash occurred.<sup>111</sup> In sum, physical health can suffer from use of manipulative technologies due to the loss of time available for healthful activities, such as physical exercise, sleeping, and cooking, from distracted walking and driving, and from the negative postural and ocular effects of screen overuse.

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<sup>104</sup> Do, *supra* note 91, at 199-200.

<sup>105</sup> Nazlican Güzel Irem Kahveci, Nilay Solak, Murat Cömert, Fatma Nesrin Turan, *Internet Addiction and Its Impact on Physical Health*, 5 TURKISH MED. STUDENT J. 32, 32 (2018).

<sup>106</sup> Kevin J. Kelley & Elon M. Gruber, *Problematic Internet Use and Physical Health*, 2 J. BEHAV. ADDICTIONS 108, 108 (2013).

<sup>107</sup> Sung-Eun Kim, Jin-Woo Kim, Yong-Seok Jee, *Relationship between Smartphone Addiction and Physical Activity in Chinese International Students in Korea*, 4 J. BEHAV. ADDICTIONS 200, 200 (2015).

<sup>108</sup> Paula T. Hakala, Arja H. Rimpelä, Lea A. Saarni, Jouko J. Salminen, *Frequent Computer-Related Activities Increase the Risk of Neck-Shoulder and Low Back Pain in Adolescents*, 16 EUR. J. PUB. HEALTH 536, 536 (2006).

<sup>109</sup> Neza Stiglic & Russell M Viner, *Effects of Screen time on the Health and Well-being of Children and Adolescents: A Systematic Review of Reviews*, 9 BMJ OPEN 1, 1 (2019).

<sup>110</sup> Gabrielle Naïmé Mourra et al., *Using A Smartphone While Walking: The Cost of Smartphone-Addiction Proneness*, 106 ADDICTIVE BEHAV. 1, 1 (2020).

<sup>111</sup> Fredrick Kunkle, *More Evidence that Smartphones and Driving Don't Mix*, WASH. POST (Apr. 4, 2017), <https://www.washingtonpost.com/news/tripping/wp/2017/04/04/more-evidence-that-smartphones-and-driving-dont-mix/> [https://perma.cc/ZQ5J-TZ2H].

e. *Decreased Productivity*

Manipulative technologies also have a documented negative impact on both academic and professional productivity. For example, Facebook use is associated with poorer academic performance, as measured by grade point average (GPA) and hours spent studying per week.<sup>112</sup> Similarly, social media use for nonacademic purposes and social media multitasking have a significant and negative impact on academic performance,<sup>113</sup> and social media addiction has a significant negative relationship with GPA performance.<sup>114</sup> Relatedly, problematic smartphone usage is negatively correlated with learning for understanding and positively correlated with superficial learning.<sup>115</sup>

Like students, workers also suffer from negative productivity effects due to manipulative technologies. Those at risk for internet addiction suffer from reduced workplace productivity and postponement of work.<sup>116</sup> Likewise, smartphone addiction is associated with reduced productivity both at home and in the workplace,<sup>117</sup> while excessive social media use for socialization and entertainment leads to inferior job performance.<sup>118</sup>

Even parenting suffers due to problematic use of the internet. Those at risk for internet addiction are prone to postponing family time.<sup>119</sup> Likewise, parents who overuse digital devices exhibit increased parental distraction, decreased every-

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<sup>112</sup> Paul A. Kirschner & Aryn C. Karpinski, *Facebook® and Academic Performance*, 26 *COMPUTS. HUM. BEHAV.* 1237, 1242 (2010).

<sup>113</sup> Wilfred W.F. Lau, *Effects of Social Media Usage and Social Media Multitasking on the Academic Performance of University Students*, 68 *COMPUTS. HUM. BEHAV.* 286, 290 (2017).

<sup>114</sup> Seyyed Mohsen Azizi, Ali Soroush & Alireza Khatony, *The Relationship Between Social Networking Addiction and Academic Performance in Iranian Students of Medical Sciences: A Cross-sectional Study*, 7 *BMC PSYCH.* 1, 4 (2019).

<sup>115</sup> Dmitri Rozgonjuk, Kristiina Saal & Karin Täht, *Problematic Smartphone Use, Deep and Surface Approaches to Learning, and Social Media Use in Lectures*, *Int'l J. Env't Rsch. & Pub. Health* 1, 7 (2018).

<sup>116</sup> Apoorva Shrivastava, Manoj Kumar Sharma & Palaniappan Marimuthu, *Internet Addiction at Workplace and Its Implication for Workers' Life Style: Exploration from Southern India*, 32 *ASIAN J. PSYCHIATRY* 151, 151 (2018).

<sup>117</sup> Eilish Duke & Christian Montag, *Smartphone Addiction, Daily Interruptions and Self-Reported Productivity*, 6 *ADDICTIVE BEHAV. REPS.* 90, 93 (2017).

<sup>118</sup> Xiongfei Cao & Lingling Yu, *Exploring the Influence of Excessive Social Media Use at Work: A Three-Dimension Usage Perspective*, 46 *INT'L J. INFO. MGMT.* 83, 89 (2019).

<sup>119</sup> Shrivastava, *supra* note 116, at 153.

day parental engagement, and an increased risk that their children will suffer preventable injuries.<sup>120</sup>

Decreased productivity at work, school, and home can be attributed in part to the inefficiencies inherent in attempts to multitask between productive work and manipulative technologies, since switching between two or more tasks leads to poorer learning results in students, poorer performance of individual tasks,<sup>121</sup> reduced memory, reduced productivity, and reduced overall performance.<sup>122</sup> Research suggests that, due to the growing popularity of the internet and digital devices, people now attempt to complete 67 to 81% of all tasks while multitasking, depending upon their age.<sup>123</sup> Thus, the vast majority of all tasks are performed while simultaneously attempting to complete another task, a process which decreases productivity and efficacy. In fact, even when an individual attempts to focus on a single task, the mere presence of a smartphone has been shown to reduce available cognitive capacity and thereby impair performance.<sup>124</sup>

## 2. Time Spent on Digital Devices

The harms associated with manipulative technologies can also be understood by considering the amount of time such technologies take from their users—and the opportunity costs of this substantial time investment. The average American spends six hours and forty-two minutes each day on the internet, for a cumulative total of about 102 full days of internet use per year.<sup>125</sup> Assuming Americans sleep for eight hours daily, they spend just over 40% of their waking hours on the Internet. Although some of that time may be used for productive purposes, an average of over two hours per day is spent on social media sites alone, equating to thirty full days per year and roughly 12.5% of Americans' waking hours.<sup>126</sup>

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<sup>120</sup> Erika Christakis, *The Dangers of Distracted Parenting*, ATLANTIC (2018), <https://www.theatlantic.com/magazine/archive/2018/07/the-dangers-of-distracted-parenting/561752/> [https://perma.cc/237V-D5WR].

<sup>121</sup> Kirschner & Karpinski, *supra* note 112, at 1238.

<sup>122</sup> L. Mark Carrier, Larry D. Rosen & Jeffrey N. Rökkum, *Productivity in Peril: Higher and Higher Rates of Technology Multitasking*, BEHAV. SCIENTIST (Jan. 8, 2018), <https://behavioralscientist.org/productivity-peril-higher-higher-rates-technology-multitasking/> [https://perma.cc/E3DK-ZNX4].

<sup>123</sup> *Id.*

<sup>124</sup> Adrian F. Ward, Kristen Duke, Ayelet Gneezy & Maarten W. Bos, *Brain Drain: The Mere Presence of One's Own Smartphone Reduces Available Cognitive Capacity*, 2 J. ASS'N FOR CONSUMER RSCH. 140, 146 (2017).

<sup>125</sup> *Digital 2020 US, WE ARE SOCIAL* (2020), <https://wearesocial.com/us/digital-2020-us> [https://perma.cc/3HAK-6383].

<sup>126</sup> *Id.*

Younger users tend to spend even more time on digital devices: teens spend an average of nine hours per day using screen media for entertainment purposes (excluding school-work) while children aged eight to twelve spend six and a half hours on screens for non-school purposes.<sup>127</sup> Forty-five percent of teens report being online on a near constant basis, and roughly ninety percent of teens believe that spending too much time online is a problem for their age group.<sup>128</sup> A substantial portion of young adults' online time is spent on social networking sites. One study found that college students spent an average of 2.64 hours per day on Snapchat and 2.28 hours per day on Facebook, for a total of just under five hours per day on only these two sites.<sup>129</sup> Assuming each student slept for eight hours daily, this equates to nearly one-third of his or her waking hours spent on Snapchat and Facebook.

Time spent online can also be understood by the degree of disruption digital devices impose on users. Americans check their phones approximately ninety-six times per day—which equates to once every ten minutes.<sup>130</sup> In addition, the average person checks their email fifteen times a day,<sup>131</sup> twice every hour of the workday, or once every waking hour. Likewise, seventy-two percent of users visit social media sites several times per day.<sup>132</sup>

Given this frequent and prolonged digital engagement, what activities are being pushed aside? Research suggests

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<sup>127</sup> *Landmark Report: U.S. Teens Use an Average of Nine Hours of Media Per Day, Tweens Use Six Hours*, COMMON SENSE MEDIA (Nov. 3, 2015), <https://www.common sense media.org/about-us/news/press-releases/landmark-report-us-teens-use-an-average-of-nine-hours-of-media-per-day#:~:text=SAN%20FRANCISCO%20%E2%80%93%20A%20landmark%20report,media%20for%20school%20or%20homework> [https://perma.cc/N7BE-PYVB].

<sup>128</sup> Jingjing Jiang, *How Teens and Parents Navigate Screen Time and Device Distractions*, PEW RSCH. CTR. (Aug. 22, 2018), <https://www.pewresearch.org/internet/2018/08/22/how-teens-and-parents-navigate-screen-time-and-device-distractions/> [https://perma.cc/X5DF-MXFM].

<sup>129</sup> Dar Meshi, Ofir Turel & Dan Henley, *Snapchat vs. Facebook: Differences in Problematic Use, Behavior Change Attempts, and Trait Social Reward Preferences*, 12 ADDICTIVE BEHAVS. REPS. 1, 3 (2020).

<sup>130</sup> *Americans Check Their Phones 96 Times a Day*, ASURION (Nov. 21, 2019), <https://www.asurion.com/about/press-releases/americans-check-their-phones-96-times-a-day/> [https://perma.cc/3PNP-FHLR].

<sup>131</sup> Mark Murphy, *The Way You Check Email Is Making You Less Productive*, FORBES (Sept. 18, 2016), <https://www.forbes.com/sites/markmurphy/2016/09/18/the-way-you-check-email-is-making-you-less-productive/#5eb7b53d37e3> [https://perma.cc/6S3H-6JKM].

<sup>132</sup> Kristen Herhold, *How People Use Social Media*, MANIFEST (Oct. 17, 2018), <https://themanifest.com/social-media/blog/how-people-use-social-media> [https://perma.cc/WBV4-879N].

that each minute spent on online entertainment equates to 0.27 fewer minutes working, 0.12 fewer minutes sleeping, 0.07 fewer minutes in household activities, and 0.06 minutes in educational activities.<sup>133</sup> Given these rates, someone who spent four hours online for entertainment purposes would consequently work about one hour less, sleep thirty minutes less, spend seventeen fewer minutes on household activities, and spend fourteen fewer minutes on educational activities. Likewise, a typical teen who spends nine hours on online entertainment might miss out on one hour of sleep per day and spend thirty fewer minutes on educational activities. When added up over months or years, the cumulative impact of this lost time is considerable.

### C. Weighing the Benefits & Harms

This Part takes a variety of approaches to weighing the benefits of manipulative technologies against their harms. First, it makes a rough estimate of the value of online time, and it finds that online entertainment time is generally a low value activity. Next, it considers the approach tech developers take to manipulative technologies in their family lives as an informative perspective on the dangers of digital addiction. Third, it acknowledges that the beneficial features of manipulative technologies typically cannot be separated from their harmful effects and the consequences of this inseparability. Fourth, it considers how the harms and benefits of manipulative technologies are distributed within society, and it finds that vulnerable populations suffer for the benefit of a select few. Overall, the analysis suggests that manipulative technologies currently confer more harms than benefits on society.

#### 1. *Value of Online Time*

One way to put manipulative technologies into perspective is to consider the advertising revenue generated by each hour of use. A rough calculation might take the six hours and forty-two minutes the average American spends on the internet daily<sup>134</sup> and multiply that figure by 365 days for the year and

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<sup>133</sup> Scott Wallsten, *What Are We Not Doing When We're Online?* 1 (Nat'l Bureau of Econ. Rsch., Working Paper No. 19549, 2013) ("Each minute of online leisure is also correlated with 0.27 fewer minutes working, 0.12 fewer minutes sleeping, 0.10 fewer minutes in travel time, 0.07 fewer minutes in household activities, and 0.06 fewer minutes in educational activities.").

<sup>134</sup> *Digital 2020 US*, *supra* note 125.



the U.S. population of roughly 328.2 million,<sup>135</sup> and then divide that total by the \$107.5 billion generated by digital advertising revenue in the United States annually.<sup>136</sup> Under such a calculation, each hour of online time would be valued at a paltry \$0.31.

It seems likely that most users could generate more value (both economic and social) than \$0.31 per hour by pursuing other activities, such as additional work, hobbies, healthful behaviors, or time with their families and friends. From an economic perspective, then, time spent on the internet is generally low-value time. It is only because individuals spend so *much* time on the internet that online ad revenue is such a powerful profit engine.

## 2. *Lessons from Tech Developers*

Another way to analyze the benefits and harms is to consider how the makers of manipulative technology use those technologies in their own lives and what their use suggests about their own view of the costs and benefits. A substantial number of technology executives limit or ban themselves or their children from using the technology that they themselves have developed or distributed. Apple cofounder Steve Jobs admitted in 2010 that his children had not used the iPad he created because he and his wife placed firm limits on their children's technology use.<sup>137</sup> Microsoft founder Bill Gates did not let his children have mobile phones until the age of fourteen, and, after that age, he banned his children from using such devices at the dinner table.<sup>138</sup> Similarly, the cofounder of Reddit said of his newborn daughter: "My wife and I both want her to know what it's like to have limits on tech . . . it's really important that she gets time to just be with her thoughts and be with her blocks and be with her toys, so we'll be regulating it

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<sup>135</sup> *Quick Facts*, U.S. CENSUS, <https://www.census.gov/quickfacts/fact/table/US/PST045219> [<https://perma.cc/9RYH-P7J3>].

<sup>136</sup> Megan Graham, *Digital Ad Revenue in the US Surpassed \$100 Billion for the First Time in 2018*, CNBC (May 7, 2019), <https://www.cnbc.com/2019/05/07/digital-ad-revenue-in-the-us-topped-100-billion-for-the-first-time.html> [<https://perma.cc/K2X2-62ND>].

<sup>137</sup> Nick Bilton, *Steve Jobs Was a Low-tech Parent*, N.Y. TIMES (Sept. 10, 2014), <https://www.nytimes.com/2014/09/11/fashion/steve-jobs-apple-was-a-low-tech-parent.html> [<https://perma.cc/7BBQ-QPKX>].

<sup>138</sup> Sarah Berger, *Tech-Free Dinners and No Smartphones Past 10 pm—How Steve Jobs, Bill Gates and Mark Cuban Limited Their Kids' Screen Time*, CNBC (June 5, 2018), <https://www.cnbc.com/2018/06/05/how-bill-gates-mark-cuban-and-others-limit-their-kids-tech-use.html> [<https://perma.cc/BMP6-PEGQ>].

pretty heavily.”<sup>139</sup> Likewise, Justin Rosenstein, who initially developed Facebook’s “like” button, now fears the psychological consequences of such features on users.<sup>140</sup> Accordingly, he has not only removed the Facebook app from his personal phone, but he has had his phone modified so that he is prevented from downloading any apps at all.<sup>141</sup>

In addition, other tech developers have spoken out against the harmful and addictive powers of these technologies, such as Tristan Harris, a former Google employee who has started a foundation that seeks to promote ethical technologies<sup>142</sup> and Sean Parker, Facebook cofounder, who now speaks out about the manipulative potential of digital platforms.<sup>143</sup> In addition, an ever-growing group of tech discontents, including a former Facebook operations manager, a former Facebook executive, the cocreator of Facebook’s like button, early investors in Facebook, and many others, have joined Harris’s movement to fight manipulative design practices.<sup>144</sup>

The fact that many technology developers set limits on their children’s use of manipulative technology or have decided to speak out against the harms of such technologies provides anecdotal—but expert—evidence that regulators should consider when weighing the costs and benefits of imposing additional controls on such technologies.

### 3. *Inseparability of Benefits & Harms*

A third way to balance harms and benefits is to consider the inseparability of positive and negative features of manipulative technologies. Many manipulative technologies are designed so that users are unable to access their benefits without being affected by their negative features. For example, social media users typically cannot use those sites to contact their

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<sup>139</sup> *Id.*

<sup>140</sup> Tom Embury-Dennis, *Man Who Invented ‘Like’ Button Deletes Facebook App Over Addiction Fears*, INDEPENDENT (Oct. 6, 2017), <https://www.independent.co.uk/life-style/gadgets-and-tech/facebook-like-inventor-deletes-app-iphone-justin-rosenstein-addiction-fears-a7986566.html> [<https://perma.cc/Y496-B9ZJ>].

<sup>141</sup> *Id.*

<sup>142</sup> Tristan Harris, CTR. FOR HUMANE TECH., <https://www.tristanharris.com/> [<https://perma.cc/8Z8A-XCV4>].

<sup>143</sup> Michelle Castillo, *Former Facebook President Sean Parker on Consumer Internet: ‘You’re Spending a Lot of Time Trying to Make Your Products as Addictive as Possible,’* CNBC (Oct. 15, 2018), <https://www.cnbc.com/2018/10/15/facebook-early-exec-sean-parker-why-he-left-consumer-tech-for-health.html> [<https://perma.cc/R3QW-3BTY>].

<sup>144</sup> Bowles, *supra* note 40.

loved ones and engage with digital communities without being exposed to manipulative features such as infinite scroll and intermittent variable rewards.<sup>145</sup> Relatedly, most mobile applications default to sending regular notifications and email alerts that spur increased engagement with their applications.<sup>146</sup> Likewise, video game users often must engage with gambling-like loot boxes in order to advance in the video game.<sup>147</sup> Digital video services, such as Netflix and YouTube, generally autoplay additional content without users' express consent, nudging users towards binge-watching.<sup>148</sup> As a likely byproduct of the coupling of harms and benefits, the majority of the time users spend on some of the most popular digital platforms, including Facebook, Snapchat, and Instagram, is rated by users as "unhappy" time as opposed to "happy" time: for such platforms, "unhappy" time is 2.4 times greater.<sup>149</sup>

In a similar vein, the interruptive nature of manipulative technologies means that nonmanipulative digital experiences, such as computer work or online schoolwork, often transition into engagement with manipulative technologies. This concept, known as "bundling," makes it difficult for users to separate their positive experiences with technology from harmful ones, and it makes it far more difficult for users to disengage from manipulative platforms.<sup>150</sup>

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<sup>145</sup> See Liz Stinson, *Stop the Endless Scroll. Delete Social Media from Your Phone*, WIRED (Oct. 1, 2017), <https://www.wired.com/story/rants-and-raves-desktop-social-media/> [https://perma.cc/9QRG-UG7N].

<sup>146</sup> See, e.g., *What Types of Notifications Does Facebook Send?*, FACEBOOK, [https://www.facebook.com/help/1668906000006551?helpref=related&source\\_cms\\_id=390022341057202](https://www.facebook.com/help/1668906000006551?helpref=related&source_cms_id=390022341057202) [https://perma.cc/CNM4-LJZT] (listing the types of notifications Facebook sends to users).

<sup>147</sup> See Gene Park, *How a Star Wars Video Game Faced Charges that It Was Promoting Gambling*, WASH. POST (Nov. 18, 2017), <https://www.washingtonpost.com/news/comic-riffs/wp/2017/11/18/how-a-star-wars-video-game-faced-charges-that-it-was-promoting-gambling/> [https://perma.cc/DB3B-E533]. For an exploration of the legal status of gambling with digital currencies, see John T. Holden, *Trifling and Gambling with Virtual Money*, 25 UCLA ENT. L. REV. 41 passim (2018).

<sup>148</sup> See, e.g., *Autoplay Videos*, YOUTUBE, <https://support.google.com/youtube/answer/6327615?co=GENIE.Platform%3DDesktop&hl=EN#:~:text=help%20CenterCommunity,Autoplay%20videos,been%20inactive%20for%2030%20minutes> [https://perma.cc/H5VP-UVRF] (stating that the autoplay function is switched on by default on YouTube).

<sup>149</sup> *App Ratings*, CTR. FOR HUMANE TECH., <https://www.humanetech.com/app-ratings> [https://perma.cc/V3MD-62RB].

<sup>150</sup> Matt Richtel, *Children's Screen Time Has Soared in the Pandemic, Alarming Parents and Researchers*, N.Y. TIMES (Jan. 16, 2021), <https://www.nytimes.com/2021/01/16/health/covid-kids-tech-use.html> [https://perma.cc/JL82-8DKH] (last updated Jan. 17, 2021).

#### 4. *Distributional Effects*

A fourth way to consider manipulative technology is to assess exactly who benefits from and who is harmed by this technology. Generally, just a few large corporations reap most of the benefits from manipulative technologies. For example, 75% of all digital advertising revenue goes to just ten companies.<sup>151</sup> Even within this subset of corporations, the benefits are heavily weighted towards company founders and their top employees. For instance, Apple's CEO Tim Cook makes 283 times more than a typical Apple employee, who has a median pay of \$55,426,<sup>152</sup> and workers in factories making iPhones who earn just \$3.77 per hour.<sup>153</sup>

While a select few benefit, vulnerable and marginalized groups are more susceptible to the harms of manipulative technology. Studies suggest that children and young adults are particularly vulnerable to negative effects from social media and other manipulative platforms, and children from lower-income families as well as minority children are at an even greater risk.<sup>154</sup> Likewise, research suggests that those with existing mental health issues and poor social support systems suffer disproportionately from internet addiction and overuse.<sup>155</sup> These troubling distributional effects add to the evidence that the benefits of manipulative technologies do not outweigh their harms, at least for the vast majority of those affected.

#### 5. *Overall Assessment*

Weighing the benefits of manipulative technology against their associated harms with any precision proves to be a difficult task, since many of the benefits and harms are unquantifiable, distributed unevenly, or incommensurable. However,

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<sup>151</sup> Graham, *supra* note 136.

<sup>152</sup> Max A. Cherney, *Apple CEO Tim Cook Makes 283 Times the Typical Employee*, MARKETWATCH (Jan. 8, 2019), <https://www.marketwatch.com/story/apple-ceo-tim-cook-makes-283-times-the-typical-employee-2019-01-08> [<https://perma.cc/VN9A-EZZ6>].

<sup>153</sup> See *Apple Soars, Workers Suffer*, GREEN AM., <https://www.greenamerica.org/end-smartphone-sweatshops/tell-samsung/apple-soars-workers-suffer> [<https://perma.cc/ZXR6-3NCY>].

<sup>154</sup> See Letter from Child.'s Screen Time Action Network, to Jessica Henderson Daniel, PhD, ABPP, President, Am. Psych. Ass'n CHILD.'S SCREEN TIME ACTION NETWORK (Aug. 8, 2018), <https://screentimenetwork.org/apapa?eType=EmailBlastContent&eId=5026ccf8-74e2-4f10-bc0e-d83dc030c894> [<https://perma.cc/CT3F-P5VT>].

<sup>155</sup> Hsing Fang Tsai et al., *The Risk Factors of Internet Addiction—A Survey of University Freshmen*, 167 PSYCHIATRY RSCH. 294, 297 (2009).

when considering factors such as the economic value of digital engagement, anecdotal evidence from technology developers, and distributional concerns, the harms of manipulative technologies appear to outweigh their benefits. In addition, because it is currently difficult to separate the harmful features of digital platforms from the beneficial ones, it is difficult for users to escape these harms, at least under the status quo.

### III

#### BIG TECH'S DUTIES TO DIGITAL USERS

Given the emerging evidence that manipulative technologies can lead to harmful consequences for users and society at large, an important question arises: what, if any, duties do Big Tech companies have to those who utilize their products? This Part analyzes the extent to which such corporations have a legal duty to curb their potentially manipulative practices, if at all. In addition, it considers whether Big Tech companies have an ethical obligation to reduce the manipulative power of their digital designs and whether environmental, social, and governance (ESG) frameworks should penalize those corporations that employ manipulative practices.

##### A. A Threshold Issue: Customers v. Users

Much of the discussion about the duties of corporations and their boards is framed around the assumption that corporations have *customers* who make a conscious decision to buy and sell the corporation's goods or services. Indeed, references to a corporation's stakeholders invariably include "customers" in any enumerated list,<sup>156</sup> and "other constituency" statutes that permit directors to consider nonshareholder interests almost always single out "customers" as a key constituency group.<sup>157</sup>

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<sup>156</sup> See, e.g., E. Merrick Dodd, Jr., *For Whom Are Corporate Managers Trustees?*, 45 HARV. L. REV. 1145, 1154 (1932) ("My conception of it is this: That there are three groups of people who have an interest in that institution [of the corporation]. One is the group of fifty-odd thousand people who have put their capital in the company, namely, its stockholders. Another is a group of well toward one hundred thousand people who are putting their labor and their lives into the business of the company. The third group is of *customers* and the general public.") (emphasis added); David Millon, *Two Models of Corporate Social Responsibility*, 46 WAKE FOREST L. REV. 523, 524 (2011) (explaining that sustainability depends upon "the various stakeholders that determine the corporation's success. These include workers, suppliers, and *customers*, as well as investors, and even the environment.") (emphasis added).

<sup>157</sup> See, e.g., 15 PA. CONS. STAT. § 1715 (2019) ("In discharging the duties of their respective positions, the board of directors, committees of the board and

The standard definition of a customer refers to “one that purchases a commodity or service.”<sup>158</sup> However, such a definition does not easily map onto the digital experience. The vast majority of *users* of manipulative technologies typically do not *purchase* these products or services—for example, with respect to smartphone apps, only a small minority of 1 to 5% willingly pay an additional fee for premium services or to engage in microtransactions.<sup>159</sup> For many of these platforms, traditional “purchases” are an afterthought, or all but nonexistent—Facebook, for example, generates 98% of its revenue from advertising alone.<sup>160</sup> Instead, these digital platforms primarily generate revenue by attracting a large volume of users and either selling additional content to a small proportion of them or selling advertising “space” to third parties. In this sense, many Big Tech companies do not fit the classic corporate model.

Because of this atypical orientation, a number of assumptions about the balance of power within a corporation are called into question for digital platforms. First, and most obviously, Big Tech’s users often do not have the same role within a corporation as do traditional customers. The classic corporate model involved attracting customers by offering desirable products at competitive prices. In contrast, corporations built around manipulative technologies want to monopolize user attention, then sell that attention to their actual customers—advertisers. This key difference explains why digital platforms often exploit psychological weaknesses through manipulative

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individual directors of a business corporation may, in considering the best interests of the corporation, consider to the extent they deem appropriate: (1) The effects of any action upon any or all groups affected by such action, including shareholders, employees, suppliers, *customers* and creditors of the corporation, and upon communities in which offices or other establishments of the corporation are located . . . .”) (emphasis added); MO. REV. STAT. § 351.347.1(4) (1993) (permitting consideration of “[s]ocial, legal and economic effects on employees, suppliers, *customers* and others having similar relationships with the corporation, and the communities in which the corporation conducts its business . . . .”) (emphasis added).

<sup>158</sup> *Customer*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/customer> [https://perma.cc/AF4W-SH6S].

<sup>159</sup> For example, just over 1% of those who download a mobile app willingly pay for additional content or prolonged access to the app. Likewise, just 5% of active users spend money on in-app purchase. See Team Braze, *30 Essential Stats on In-app Purchases and Monetization*, BRAZE (July 28, 2016), <https://www.braze.com/blog/in-app-purchase-stats/> [https://perma.cc/89AA-KGNC].

<sup>160</sup> Statista Research Department, *Facebook’s Advertising Revenue Worldwide from 2009 to 2020*, STATISTA (Feb. 5, 2021), <https://www.statista.com/statistics/271258/facebook-advertising-revenue-worldwide/> [https://perma.cc/3Y8G-PQN4].

design: their goal is to “hook” a user into prolonged engagement with a digital platform rather than to satisfy a discrete customer need or want.<sup>161</sup>

A second, related point is that the traditional protections thought to safeguard customers’ interests, such as a competitive marketplace, antitrust regulations, reputational incentives, and consumer protection laws, do not necessarily safeguard digital users’ interests.<sup>162</sup> A competitive marketplace of manipulative digital platforms does not necessarily raise quality or drive down prices (most are already free to users) so much as it bombards users with many different digital “hooks,” each of which competes to overwhelm their conscious judgments. In addition, a wide menu of digital platforms only further incentivizes these sites to engage in manipulative tactics, creating a “race to the bottom” in the quest to most effectively monopolize users’ time and attention. Additionally, unlike standard businesses such as, say, cereal manufacturers or car makers where customers have a wide variety of viable substitutes, digital users cannot so easily swap one platform for another—for instance, opting out of Facebook or Twitter causes a user to lose access to a network of connections that may have taken many years to build. Because of a user’s investment in digital platforms, these users often have inferior “exit” options and experience greater lock-in relative to traditional consumers, meaning that reputational concerns and competitive pressures are less influential than they are in other contexts. Finally, there are relatively few consumer protection laws applicable to digital platforms, at least at present. There is no equivalent to the Food and Drug Administration or Federal Trade Commission to vet the quality of digital platforms or to outlaw particularly harmful practices, leaving consumers more vulnerable to exploitation. In these ways, a digital user is in a far weaker position than a traditional customer.

Third, whereas a customer can typically single out the specific goods or services he or she desires to purchase (anything from an article of clothing to representation in a mergers and acquisitions transaction), manipulative technology companies typically require that users submit to a package deal, wherein

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<sup>161</sup> Of course, more traditional corporations have also offered products that are designed to “hook” their customers (e.g., tobacco products). As a result, such products are generally subject to regulation similar to that proposed herein. See Part V for a discussion of regulatory proposals.

<sup>162</sup> See Mark E. Van Der Weide, *Against Fiduciary Duties to Corporate Stakeholders*, 21 DEL. J. CORP. L. 27, 52 (1996) (describing various protections available to customers).

potentially positive features like chat functionality, photo sharing, or an engaging video game are lumped together with undesirable features like autoplay, infinite scroll, and loot boxes. Because of the all-or-nothing nature of many manipulative technologies, users have far less of an ability to single out beneficial features or to protect themselves from manipulative tactics.

As far as corporate law is concerned, however, the difference between digital users and traditional customers is likely insignificant. Even where laws single out “customers” as an important corporate constituency, the law often also singles out the broader community or society at large. Likewise, when corporate law scholars refer to “stakeholders,” this concept is generally broad enough to encompass the community or society. To the extent that digital users (particularly non-paying digital users) do not technically qualify as “customers” under these laws or legal theories, they would likely qualify under the broad umbrella of “stakeholders” or “other constituencies” as customer analogs, community members, part of the broader society, or some hybrid of the foregoing. Thus, Parts B and C consider what protections, if any, corporate law affords to digital users of manipulative technologies on the grounds that such a group qualifies as a “stakeholder” or “other constituency.”

#### B. Can Corporations Consider Users’ Interests?

As a first order question, *can* corporations consider their users’ interests? The answer, in typical legal fashion, is that it depends. In this case, it depends primarily upon the company’s state of incorporation.



The great preponderance of popular digital platforms, including Facebook,<sup>163</sup> Netflix,<sup>164</sup> Google,<sup>165</sup> Snapchat,<sup>166</sup> Twitter,<sup>167</sup> and YouTube,<sup>168</sup> are incorporated in the state of Delaware. Under Delaware law, corporate directors and officers have a duty to comply with all laws protecting various constituency groups, including users.<sup>169</sup> Beyond this modest obligation to nonshareholder groups, the “objective” of each Delaware corporation is “to promote the value of the corporation for the benefit of its stockholders.”<sup>170</sup> Directors are therefore obliged to “discharge their fiduciary duties to the corporation and its shareholders by exercising their business judgment in the best interests of the corporation *for the benefit of its shareholder owners*.”<sup>171</sup> With the exception of a few notable detractors,<sup>172</sup> corporate law scholars generally interpret

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<sup>163</sup> Facebook, Inc., Eleventh Amended and Restated Certificate of Incorporation of Facebook, Inc. (Oct. 1, 2010), <https://www.sec.gov/Archives/edgar/data/1326801/000119312512046715/d287954dex31.htm> [<https://perma.cc/B75Q-FNCX>] (referring to “Facebook, Inc., a Delaware corporation”).

<sup>164</sup> Netflix, Inc., *Amended and Restated Certificate of Incorporation of Netflix, Inc.* (May 29, 2002), <https://www.sec.gov/Archives/edgar/data/1065280/000119312504128377/dex31.htm> [<https://perma.cc/43HZ-LWD8>] (referring to “Netflix, Inc., a corporation organized and existing under the General Corporation Law of the State of Delaware”).

<sup>165</sup> Snap, Inc., *Amended and Restated Certificate of Incorporation of Snap, Inc.* (2017) <https://www.sec.gov/Archives/edgar/data/0001564408/000119312517029199/d270216dex32.htm> [<https://perma.cc/4BRF-735D>] (referring to “Snap Inc., a Delaware corporation”).

<sup>166</sup> Google, Inc., *Amended and Restated Certificate of Incorporation of Google, Inc.* (Aug. 27, 2003) <https://www.sec.gov/Archives/edgar/data/1288776/000119312504073639/dex301.htm> [<https://perma.cc/W8BZ-E8PZ>] (“This Amended and Restated Certificate of Incorporation was duly adopted in accordance with Sections 242 and 245 of the General Corporation Law of the State of Delaware, and restates, integrates and further amends the provisions of the Corporation’s Certificate of Incorporation.”).

<sup>167</sup> Twitter, Inc., *Amended and Restated Certificate of Incorporation* (2013) <https://www.sec.gov/Archives/edgar/data/1418091/000119312513406804/d564001dex32.htm> [<https://perma.cc/PY6F-XVfV>] (referring to “Twitter, Inc. (the ‘Corporation’), a corporation organized and existing under the laws of the State of Delaware”).

<sup>168</sup> YouTube Inc, SEC. EXCH. COMM’N <https://sec.report/CIK/0001343726> [<https://perma.cc/Z2BZ-9AVY>] (identifying Delaware as the state of incorporation for YouTube Inc). YouTube is wholly-owned by Google.

<sup>169</sup> DEL. CODE. ANN. tit. 8, § 102(b)(7)(ii) (2019).

<sup>170</sup> eBay Domestic Holdings, Inc. v. Newmark, 16 A.3d 1, 34 (Del Ch. 2010).

<sup>171</sup> N. Am. Cath. Educ. Programming Found., Inc. v. Gheewalla, 930 A.2d 92, 101–03 (Del. 2007) (emphasis added).

<sup>172</sup> See, e.g., Margaret M. Blair & Lynn A. Stout, *A Team Production Theory of Corporate Law*, 85 VA. L. REV. 247, 296 (1999) (arguing that Delaware law “reflects a judicial perception that directors’ fiduciary duties to ‘the corporate enterprise’ go beyond a simple duty to maximize shareholder wealth, and encompass the interests of a variety of other corporate constituencies.”); Einer Elhauge, *Sacrificing Corporate Profits in the Public Interest*, 80 N.Y.U. L. REV. 733, 738 (2005) (“Corpo-

such statements of the law to mean that, when the interests of shareholders conflict with those of other stakeholders (e.g., users of manipulative technologies), directors have a duty to prioritize shareholders' interests over others' interests.<sup>173</sup>

Such an interpretation of Delaware law is arguably further supported by amendments to the Delaware General Corporation Law which authorize the creation of "public benefit corporations," which are to "be managed in a manner that balances the stockholders' pecuniary interests, the best interests of those materially affected by the corporation's conduct, and the public benefit or public benefits identified in its certificate of incorporation."<sup>174</sup> The creation of a special type of corporation in which directors are granted the express ability to balance various stakeholders' interests suggests that directors of a typical Delaware corporation are duty-bound to shareholders.<sup>175</sup>

However, even this pro-shareholder interpretation of Delaware law does not preclude boards from considering the interests of other stakeholders, including users of digital platforms. As many have previously pointed out,<sup>176</sup> pursuit of stakeholders' interests may simultaneously maximize shareholders' welfare. Even where the effect of pro-stakeholder activities on shareholder welfare is unclear or difficult to prove, directors are permitted considerable latitude in their decision making, subject to the meager constraint that there is a "rational[ ] re-

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rate managers have never had an enforceable legal duty to maximize corporate profits. Rather, they have always had some legal discretion (implicit or explicit) to sacrifice corporate profits in the public interest.").

<sup>173</sup> See, e.g., Edward Rock, *For Whom is the Corporation Managed in 2020?: The Debate Over Corporate Purpose* 8–11 (Eur. Corp. Governance Inst., Working Paper No. 515/2020), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3589951](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3589951) [<https://perma.cc/39V7-BT3U>] (arguing that "shareholder primacy" is the best description of Delaware law); Stephen M. Bainbridge, *Much Ado About Little? Directors' Fiduciary Duties in the Vicinity of Insolvency*, 1 J. BUS. & TECH. L. 335, 345 (2007) (analyzing Delaware corporate law jurisprudence and concluding that case law confirms that the "duty to maximize shareholder wealth is the principal obligation of directors"); David G. Yosifon, *The Law of Corporate Purpose*, 10 BERKELEY BUS. L.J. 181, 199 (2014) (arguing that Delaware law unambiguously obligates directors to pursue shareholder value).

<sup>174</sup> DEL. CODE ANN. tit. 8, § 362(a) (2019).

<sup>175</sup> See, e.g., Rock, *supra* note 173, at 11 ("Delaware's provision that explicitly permits the board of directors to 'manage or direct the business and affairs of the public benefit corporation in a manner that balances the pecuniary interests of the stockholders, the best interests of those materially affected by the corporation's conduct, and the specific public benefit or public benefits identified in its certificate of incorporation' would not have been necessary had directors of 'regular' corporations been able to do so.").

<sup>176</sup> See, e.g., Bainbridge, *supra* note 173, at 340 n.24 (noting that "in many situations, ethical or humanitarian considerations are wholly consistent with long-term shareholder wealth maximization").

lat[ion]” between the chosen course of action and shareholder benefit.<sup>177</sup> Further, as a practical matter, even when directors believe shareholders’ interests necessarily conflict with those of other stakeholders, the business judgment rule may still shield directors who improperly pursue stakeholder wellbeing from any liability for doing so.<sup>178</sup> Thus, even in Delaware, and even under a narrow conception of the shareholder wealth maximization norm, corporate directors clearly *can* consider and pursue the interests of stakeholders, including digital users, under certain circumstances.

The permissibility of pursuing stakeholder interests is even clearer in the thirty-four states that have adopted “non-shareholder constituency statutes,” which expressly permit (but typically do not require) corporate directors to “consider” the interests of non-shareholder constituency groups, typically including employees, suppliers, creditors, customers, the local community, and society at large.<sup>179</sup> For corporations incorporated in these “constituency states,” it is permissible for directors to *consider* the interests of digital platform users and other such groups, and it is very likely permissible for directors to sacrifice shareholders’ profits to some degree in order to protect those interests.<sup>180</sup>

As a statement of positive law, directors of Big Tech companies have the ability to consider the interests of other constituencies, including users of their digital platforms. Where these stakeholder interests arguably align with shareholder welfare, directors are free to pursue stakeholder welfare as a valid profit-making strategy. Even where stakeholder interests may conflict with shareholder interests, directors in shareholder primacy states such as Delaware are likely to receive broad

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<sup>177</sup> *Revlon, Inc. v. MacAndrews & Forbes Holdings, Inc.*, 506 A.2d 173, 182–83 (Del. 1986).

<sup>178</sup> Bainbridge, *supra* note 173, at 342 (noting that the business judgment “rule occasionally allows directors to escape liability in connection with decisions that failed to maximize shareholder wealth”).

<sup>179</sup> Caroline Flammer & Aleksandra Kacperczyk, *The Impact of Stakeholder Orientation on Innovation: Evidence from a Natural Experiment*, 62 MGMT. SCI. 1982, 1987 (2016).

<sup>180</sup> Stephen M. Bainbridge, *The Shareholder Wealth Maximization Principle Versus Non-shareholder Constituency Statutes*, PROFESSORBAINBRIDGE.COM (May 5, 2012), <https://www.professorbainbridge.com/professorbainbridge.com/2012/05/the-shareholder-wealth-maximization-principle-versus-non-shareholder-constituency-statutes.html> [<https://perma.cc/86L4-FDAM>] (“In other words, the directors may balance a decision’s effect on shareholders against its effect on stakeholders. If the decision would harm stakeholders, the directors may trade-off a reduction in shareholder gains for enhanced stakeholder welfare. This interpretation is virtually compelled by the statutory language.”).

deference in their decisions and directors in states with non-shareholder constituency statutes likely have statutory authority for some decisions that would sacrifice shareholder wellbeing.

### C. Must Corporations Consider Users' Interests?

The discussion of the considerable harm attributable to manipulative design practices in Part II.B suggests that directors at Big Tech companies are aware of the harm they are causing. Given the generally permissive standards discussed in Part III.C, the primary issue is not the *ability* of corporate directors to consider users' interests, but their conscious decision not to do so. Can they be made to? Put another way, what, if any, duties oblige corporate directors to act in furtherance of users' wellbeing? This Part turns to scholarship on corporate purpose for the answer, looking to both shareholder-centric perspectives (Part 1) and stakeholder-centric perspectives (Part 2).

#### 1. *Shareholder-Centric View*

Shareholder-oriented corporate law scholarship holds that as both a positive and a normative matter, directors owe fiduciary duties only to their shareholders and not to other constituencies.<sup>181</sup> The interests of other constituencies, including the "users" under discussion here, are to be protected not by directors but "by contractual and regulatory means."<sup>182</sup> To the extent that those contractual and regulatory means offer insufficient protection, disaffected stakeholders have the right to take "corrective action," typically by terminating their affiliation with an unsatisfactory firm.<sup>183</sup> Efforts to obligate or even merely permit directors to advance nonshareholder interests are viewed as harmful, as other means of protecting such interests are held to be superior.<sup>184</sup>

Under such a view, directors of digital platforms clearly have no duty to advance the interests of their users beyond complying with relevant laws and regulations. In fact, in this view, efforts to advance users' interests at the expense of share-

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<sup>181</sup> Henry Hansmann & Reinier Kraakman, Essay, *The End of History for Corporate Law*, 89 GEO. L.J. 439, 440–41 (2001) (describing the shareholder-oriented view of corporate law).

<sup>182</sup> *Id.*

<sup>183</sup> Van Der Weide, *supra* note 162, at 85.

<sup>184</sup> Jonathan R. Macey, *An Economic Analysis of the Various Rationales for Making Shareholders the Exclusive Beneficiaries of Corporate Fiduciary Duties*, 21 STETSON L. REV. 23, 26 (1991).

holder welfare run counter to directors' legal duties. The remedies available to users are thus (1) disengagement with digital platforms, (2) contract negotiations, and (3) regulatory protections. The first option is likely insufficient. Because they are explicitly designed to create addictive patterns of engagement, many users struggle to disengage with digital platforms, and the most vulnerable groups such as young children and those prone to digital addictions are the least likely to be able to disengage. Further, digital platforms have become, for better or worse, functionally essential in some educational settings, family and friend networks, and professional contexts, further limiting the ability of users to voluntarily disengage. Contract modifications are also an unlikely remedy. Digital platforms invariably contract with users through adhesion contracts, which leave users with virtually no ability to change the terms of the agreement or bargain for a better user experience. These platforms are instead an all-or-nothing proposition—a user must submit to the nature of a given platform in its entirety or lose out on access to the platform altogether. Under the shareholder-centric view, regulatory reforms therefore remain the only remedy with the potential to increase protections for users of digital technologies.

## 2. *Stakeholder-Centric View*

On the other hand, stakeholder-centric scholarship generally takes the position that corporations positively can and normatively ought to act for the benefit of all stakeholders.<sup>185</sup> Under such a view, directors of manipulative technology companies have some obligations to users that extend beyond—perhaps well beyond—the minimum bounds of the law, even in situations in which shareholders' and users' interests conflict.

What exactly do such duties entail? More importantly, what, if anything, can stakeholders do when these duties are not fulfilled? A common criticism of stakeholder theories is

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<sup>185</sup> See, e.g., Lynn A. Stout, *The Shareholder Value Myth*, EURO. FIN. REV. (Apr. 30, 2013), <https://www.europeanfinancialreview.com/the-shareholder-value-myth-2/> [<https://perma.cc/678L-FRQZ>] (“[W]hile earning profits is necessary for the firm’s long-term survival, it is not the *only* corporate objective. Once profitability is achieved, the firm can focus on satisfying other goals, including future growth, controlling risk, and taking care of its investors, employees, customers, even society. Our recent experience with the disappointing results of shareholder primacy suggest this approach may be better not only for shareholders, but for the rest of us as well.”); Dodd, *supra* note 156, at 1154 (describing the four-fold duties of corporate trustees as including obligations to protect the capital investment, as well as to advance the interests of employees, customers, and the public at large).

that such questions have no answers.<sup>186</sup> Because there is no clear delineation of directors' duties to the corporation's separate constituencies and because there is no clear mechanism for enforcement, many scholars argue that stakeholder theories are unworkable in practice.

One version of this critique focuses on the untenability of advancing the interests of multiple, potentially antagonistic parties.<sup>187</sup> When users' interests conflict with those of shareholders, which in turn may differ from the interests of employees or society at large, what is a director to do? In the face of "many masters," the pragmatic answer may be that a director would pursue his or her own interests under the guise of serving whichever constituency best justified this self-interested course of action.<sup>188</sup> In the context of manipulative technologies, this might take the form of users being exploited by opportunistic managers, as these managers would have little to gain from abandoning the highly profitable approach that they are using at present.

A related critique focuses on the allocation of power within a corporation. Regardless of the state of incorporation and the existence or nonexistence of a constituency statute, shareholders are the only class of stakeholders that possess voting rights in annual elections.<sup>189</sup> Many argue that this means, as a practical matter, directors will be predominantly or even entirely focused on pleasing shareholders, given the balance of power between the two groups.<sup>190</sup> Reciprocally, nonshareholder stakeholders have no mechanism by which to compel directors to act in a particular manner and no clear recourse when directors abandon their interests.<sup>191</sup> Even if directors arguably can or must make some efforts to protect users, corporate law provides no legal remedy if directors fail to do so.

Still, some corporate law scholars have proposed various mechanisms by which directors may attempt to balance the competing interests of various stakeholders. Often, such proposals leave stakeholders with many questions and few an-

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<sup>186</sup> See, e.g., Bainbridge, *supra* note 180 (identifying numerous difficulties involved in balancing stakeholders' divergent interests).

<sup>187</sup> See, e.g., Stephen M. Bainbridge, *Interpreting Nonshareholder Constituency Statutes*, 19 PEPP. L. REV. 971, 1005 (1992) ("Because no one can serve two masters at the same time, if shareholder and stakeholder interests conflict, directors cannot be loyal to both constituencies.").

<sup>188</sup> See Lynn A. Stout, *Bad and Not-So-Bad Arguments for Shareholder Primacy*, 75 S. CAL. L. REV. 1189, 1200 (2002).

<sup>189</sup> Rock, *supra* note 173, at 21.

<sup>190</sup> *Id.* at 9.

<sup>191</sup> *Id.*

swers. For example, Professors John H. Matheson and Brent A. Olson envision directors' role as one of "relationship management" between shareholders and other stakeholders in which directors must "actively seek to facilitate a multi-party communication network."<sup>192</sup> Under such a model, the board's duty to users of manipulative technologies would presumably be to express users' potential concerns to other constituencies. Matheson and Olson argue that a corporation's success depends upon its ability to "operate at peak efficiency in all respects," including, in the case of manipulative technologies, satisfying users.<sup>193</sup>

What if, however, a corporation can be more successful by exploiting the weaknesses of the user class? What if such a corporation could in fact become one of the most valuable and profitable enterprises in the world?<sup>194</sup> What can users—or, for that matter, anyone—do if a corporation fails to protect the interests of its users while still complying with the law? This theory leaves the corporation without a clear reason to protect users unless it is ultimately profitable to the corporation, and it leaves users without the ability to compel directors to act in their interests. Ultimately, it seems as though regulators would be more likely to respond to users' concerns than manipulative technology companies themselves.

Relatedly, E. Merrick Dodd proclaimed that customers, or in the case of manipulative technologies, users, "have a right to demand that a concern so large shall not only do its business honestly and properly, but, further, that it shall meet its public obligations and perform its public duties—in a word, vast as it is, that it should be a good citizen."<sup>195</sup> To the extent that being a "good citizen" extends beyond complying with minimum legal requirements, Dodd's formulation depends upon a customer, or in this case, user base with the ability to motivate corpora-

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<sup>192</sup> John H. Matheson & Brent A. Olson, *Corporate Cooperation, Relationship Management, and the Trialogical Imperative for Corporate Law*, 78 MINN. L. REV. 1443, 1487 (1994). Frank Abrams, Chairman of Standard Oil, espoused a similar view, stating, "[t]he job of management . . . is to maintain an equitable and working balance among the claims of the various directly affected interest groups . . . stockholders, employees, customers, and the public at large." Robert Reich, *How Business Schools Can Help Reduce Inequality*, HARV. BUS. REV. (Sept. 12, 2014), <https://hbr.org/2014/09/how-business-schools-can-help-reduce-inequality> [<https://perma.cc/VX9E-XH95>].

<sup>193</sup> Matheson & Olson, *supra* note 192, at 1469.

<sup>194</sup> Facebook, for example, is the seventh most valuable company in the world. See *Global Top 100 Companies*, PRICEWATERHOUSECOOPERS, <https://www.pwc.com/gx/en/services/audit-assurance/publications/global-top-100-companies.html> [<https://perma.cc/FUB3-GP27>] (last visited July 2020).

<sup>195</sup> Dodd, *supra* note 156, at 1154.

tions to act in a beneficial manner. These users/customers could traditionally compel corporate action by suspending purchases of the company's products and by their ability to purchase substitute goods.

What, however, happens when users want to abandon a digital platform but repeatedly fail in their attempts to do so?<sup>196</sup> How can users compel improved corporate behavior when they are themselves compelled to engage with manipulative technologies, both by design and by the requirements of the modern world? In the instant case, the limited corrective power of users to influence managers' actions is overridden by the problematic features of manipulative technologies themselves and the prominent place these technologies have obtained in daily life.

Ultimately, even if such corporations have a duty to their users beyond minimum compliance with other laws and regulations, there is little recourse if such a duty goes unfulfilled. Users have no ability to influence corporate behavior beyond communicating their grievances to corporate actors and attempting to avoid problematic platforms altogether. Although some efforts have been made to encourage increased accountability amongst online platforms and to support users in exiting problematic platforms,<sup>197</sup> little can be done when those efforts prove insufficient under the current legal and regulatory framework.

#### D. Will Corporations Consider Users' Interests?

A related line of inquiry centers on whether corporations will consider users' interests, even if they do not have a clear duty to do so and even if there is no clear mechanism for stakeholders to force them to do so. This Part considers lessons from corporate social responsibility and socially responsible investing (SRI) in how internal and external pressures may compel Big Tech companies to better address the needs of their users.

##### 1. *Corporate Social Responsibility*

One reason that corporations might act in the interests of their users despite the lack of a clear obligation to do so comes

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<sup>196</sup> See Eric P.S. Baumer, Shion Guha, Emily Quan, David Mimno & Geri K. Gay, *Missing Photos, Suffering Withdrawal, or Finding Freedom? How Experiences of Social Media Non-Use Influence the Likelihood of Reversion*, 1 SOC. MEDIA & SOC'Y 1, 8–10 (2015) (describing failed efforts to quit social media sites).

<sup>197</sup> See *infra* subpart IV.H.



from the concept of corporate social responsibility (“CSR”). Broadly defined, CSR refers to a business orientation whereby a corporation pursues social welfare, perhaps even at the expense of profit.<sup>198</sup> Social welfare may be broadly construed, but often the focus is on specific practices viewed as pro-social, such as reducing carbon emissions, improving labor policies, donating to charitable causes, or participating in fair trade practices.<sup>199</sup> The exact nature of this social orientation is variably described as a worthy sacrifice made possible by other profitable endeavors, a profit-making strategy that increases brand loyalty and customer goodwill, and a facade by which corporations merely appear to be pro-social.<sup>200</sup>

Perhaps, it may be argued, the CSR movement has sufficient impetus to (eventually) propel digital platforms to amend their manipulative practices in furtherance of user welfare. There is, indeed, significant effort by former technology leaders to establish a social movement founded on a more “humane” approach to technology platforms that eschews manipulative practices and growing societal recognition of the harmful nature of manipulative technology practices.<sup>201</sup>

It is theoretically possible that companies which profitably utilize manipulative technologies will spontaneously and self-sacrificially become more protective of their users’ wellbeing. However, it is an interesting counterpoint to consider which companies are *already* lauded for their CSR efforts. Perhaps surprisingly, given the manipulative technologies at the core of their respective business models, digital platforms are commonly hailed as heroes of corporate social responsibility. For example, Facebook has been praised for its commitment to reducing greenhouse gas emissions by 75% and converting to 100% renewable energy by the end of 2020.<sup>202</sup> Netflix has been

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<sup>198</sup> See David L. Engel, *An Approach to Corporate Social Responsibility*, 32 STAN. L. REV. 1, 3 (1979).

<sup>199</sup> See, e.g., Devin Thorpe, *Why CSR? The Benefits of Corporate Social Responsibility Will Move You to Act*, FORBES (May 18, 2013), <https://www.forbes.com/sites/devinthorpe/2013/05/18/why-csr-the-benefits-of-corporate-social-responsibility-will-move-you-to-act/?sh=4ea6f01565a3> [https://perma.cc/3MMR-RXTZ], (examining various corporate leaders’ approaches to corporate social responsibility).

<sup>200</sup> Shane M. Shelley, *Entrenched Managers & Corporate Social Responsibility*, 111 DICK. L. REV. 107, 133–34 (2006).

<sup>201</sup> See Bianca Bosker, *The Binge Breaker*, THE ATLANTIC (Nov. 2016), <https://www.theatlantic.com/magazine/archive/2016/11/the-binge-breaker/501122/> [https://perma.cc/AY26-BGBG].

<sup>202</sup> See, e.g., Anmar Frangoul, *Facebook Just Made a Huge Commitment on Renewable Energy*, CNBC (Aug. 29, 2018), <https://www.cnbc.com/2018/08/29/facebook-just-made-a-huge-commitment-on-renewable-energy.html> [https://

lauded for its family-friendly employment policies, which have been dubbed by some as “one of the most generous parental leave policies among big U.S. employers.”<sup>203</sup> Likewise, Twitter is known for its contributions to social movements and civic engagement.<sup>204</sup> More broadly, many companies that engage in manipulative practices, including Netflix and LinkedIn, regularly make the Reputation Institute’s annual list of the “most reputable companies for corporate responsibility.”<sup>205</sup> Similarly, many platforms, including Facebook, Pinterest, and LinkedIn, receive above-average marks for their corporate social responsibility efforts when aggregated across 691 different ranking systems.<sup>206</sup>

The recognition of companies that employ manipulative practices as “socially responsible” provides revealing insights on the problematic nature of such designations. First, while social welfare is a broad, amorphous, and variably defined outcome, recognition of CSR efforts is generally an all-or-nothing proposition. Brands are considered socially responsible, or they are not. It may be, for instance, that the most environmentally conscious firms also derive most of their profits from business models that are manipulative or psychologically exploitative. It may be that companies with the most charitable contributions have the poorest treatment of their workers. Be-

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perma.cc/B39E-9D4C]; Jennifer Nastu, Facebook On Track to Become ‘Largest Corporate Purchaser’ of Renewable Energy, ENVIRONMENT + ENERGY LEADER (Aug. 28, 2018), <https://www.environmentalleader.com/2018/08/facebook-on-track-to-become-largest-corporate-purchaser-of-renewable-energy/> [<https://perma.cc/ZZ7Q-RK7R>].

<sup>203</sup> Rachel Feintzeig & Lauren Weber, *Netflix’s Unlimited Parental Leave Is a Surprising Gift for Workers*, WALL ST. J. (Aug. 5, 2015), <https://www.wsj.com/articles/netflixs-surprising-gift-for-new-parents-1438792809> [<https://perma.cc/3LUM-6AHE>].

<sup>204</sup> See *Twitter for Good: Using the Power of Twitter to Strengthen our Communities*, TWITTER, [https://about.twitter.com/en\\_us/company/twitter-for-good.html](https://about.twitter.com/en_us/company/twitter-for-good.html) [<https://perma.cc/J7NP-R5YH>]; Steven Overly, *Twitter Users Can Now Report Voter Suppression, Misinformation*, POLITICO (Jan. 29, 2020), <https://www.politico.com/news/2020/01/29/twitter-misinformation-voter-suppression-109282> [<https://perma.cc/U8Y7-BKSA>].

<sup>205</sup> Vicky Valet, *The World’s Most Reputable Companies For Corporate Responsibility 2019*, FORBES (Sept. 17, 2019), <https://www.forbes.com/sites/vickyvalet/2019/09/17/the-worlds-most-reputable-companies-for-corporate-responsibility-2019/#73117edb679b> [<https://perma.cc/3C5X-KPN2>].

<sup>206</sup> *LinkedIn Corp. CSR / ESG Ranking*, CSR HUB, [https://www.csrhub.com/CSR\\_and\\_sustainability\\_information/LinkedIn-Corp](https://www.csrhub.com/CSR_and_sustainability_information/LinkedIn-Corp) [<https://perma.cc/XP6W-UT5L>]; *Facebook, Inc. CSR / ESG Ranking*, CSR Hub, [https://www.csrhub.com/CSR\\_and\\_sustainability\\_information/Facebook](https://www.csrhub.com/CSR_and_sustainability_information/Facebook) [<https://perma.cc/XN8H-HYXN>]; *Pinterest Inc CSR / ESG Ranking*, CSR HUB, [https://www.csrhub.com/CSR\\_and\\_sustainability\\_information/Pinterest-Inc](https://www.csrhub.com/CSR_and_sustainability_information/Pinterest-Inc) [<https://perma.cc/F3T9-GVFW>].

cause CSR attributes are vague and often orthogonal, positive CSR recognition does not guarantee that all—or even most— aspects of corporate activities are beneficial, nor that such firms are making a net positive contribution to society.

Second, positive perceptions of digital platforms may perversely insulate these companies from criticism regarding their less beneficial practices and strategies. When such firms are seen as “good,” users may be more willing to engage with the platform and less willing to criticize problematic practices and behaviors. In this way, apathy towards manipulative practices may be one casualty of the attention paid to other pro-social activities.

Third, even in firms allegedly pursuing CSR efforts, directors with no cognizable corporate law duties to users retain discretion over those efforts. Because these directors ultimately serve at the pleasure of the shareholders, users cannot rely upon unprofitable corporate social responsibility efforts to protect their interests in the long-term. Users remain at the mercy of directors (and ultimately, shareholders) to voluntarily abandon profitable practices for the benefit of users.

Ultimately, it is unlikely that CSR and related movements will have the ability to generate substantial, sustained reform of manipulative technologies, given the limitations of these designations and the significant financial incentives Big Tech and its leadership have to preserve their harmful tactics and practices. Given the opposing interests between users and directors, additional social and/or regulatory pressure may be necessary to correct problematic practices.

## 2. *Socially Responsible Investing*

Corporate social responsibility initiatives are augmented and incentivized by socially responsible investing (SRI) efforts that prioritize investment in putatively pro-social corporations.<sup>207</sup> Often, such investors place their savings in specially designated ESG (standing for environmental, social, governance) funds, such as those now offered by major investing firms

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<sup>207</sup> Susan N. Gary, *Best Interests in the Long Term: Fiduciary Duties and ESG Integration*, 90 U. COLO. L. Rev. 731, 740–41 (2019).

including Vanguard,<sup>208</sup> BlackRock,<sup>209</sup> and Fidelity.<sup>210</sup> Such funds can be thematic, focusing on a particular social cause such as the environment or water quality, or they can be a broad-based index including companies well-rated for their overall commitment to ESG.<sup>211</sup> Such indices have become an increasingly popular investment strategy for socially minded investors, with inflows to such funds reaching \$13.5 billion in September of 2019.<sup>212</sup>

Just as many technology companies utilizing manipulative technologies have strong reputations for corporate social responsibility efforts, these same companies often feature prominently in ESG indices. For example, Vanguard's ESG U.S. Stock ETF holds shares in numerous corporations that utilize manipulative technologies, including Google, Facebook, Netflix, and Twitter.<sup>213</sup> Likewise, BlackRock's iShares MSCI USA ESG Select ETF also has holdings in a number of companies that utilize or promote manipulative technologies, including Google, Apple, Microsoft, Facebook, and Netflix.<sup>214</sup>

One approach to discouraging corporate reliance on manipulative design practices would be to exclude companies that utilize manipulative technology from ESG metrics. There have been some efforts in this regard. Facebook was dropped from the S&P 500 ESG Index in 2019 due to concerns over use privacy and data security.<sup>215</sup> Though not specifically dropped because of its use of manipulative practices, it is conceivable

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<sup>208</sup> *ESG Investing: Discover Funds that Reflect What Matters Most to You*, VANGUARD INV. GROUP, <https://investor.vanguard.com/investing/esg/> [<https://perma.cc/625C-TBZ8>].

<sup>209</sup> *Sustainable Investment Solutions*, BLACKROCK, <https://www.blackrock.com/us/individual/investment-ideas/sustainable-investing/sustainable-solutions#equity> [<https://perma.cc/WZ4A-Q43G>].

<sup>210</sup> *ESG Investing with Fidelity*, FIDELITY INVESTMENTS, <https://www.fidelity.com/mutual-funds/investing-ideas/sustainable-investing> [<https://perma.cc/D7EJ-VKS9>].

<sup>211</sup> *See id.*

<sup>212</sup> Mitch Goldberg, *ESG Index Funds Are Hot. That May Be a Risky Thing for Investors*, CNBC (Nov. 17, 2019), <https://www.cnbc.com/2019/11/17/esg-index-funds-are-hot-that-may-be-a-risky-thing-for-investors.html> [<https://perma.cc/M94A-4YTL>].

<sup>213</sup> *Vanguard ESG U.S. Stock ETF (ESGV), Holdings*, VANGUARD INV. GROUP, <https://investor.vanguard.com/etf/profile/portfolio/ESGV/portfolio-holdings> [<https://perma.cc/44PP-XA6P>].

<sup>214</sup> *iShares MSCI USA ESG Select ETF*, BLACKROCK, <https://www.blackrock.com/us/individual/products/239692/ishares-msci-usa-esg-select-etf> [<https://perma.cc/F49N-XFGV>].

<sup>215</sup> Jeff Cox, *Facebook Gets Dumped from an S&P Index that Tracks Socially Responsible Companies*, CNBC (June 13, 2019), <https://www.cnbc.com/2019/06/13/facebook-dumped-from-sp-esg-index-of-socially-responsible-companies.html> [<https://perma.cc/P28J-7552>] (last updated June 14, 2019).

that ESG metrics and indices could soon take such practices into account when selecting companies to include in indices and mutual funds. Indeed, Facebook and Instagram recently adopted tools to give users more control over the time they spend on the sites in response to pressures from the “Time Well Spent” movement.<sup>216</sup> These tools include a timer that provides data on a user’s time spent on the platforms and reminders that notify users after a certain period of time has been spent on the platforms.<sup>217</sup> Pressure in the form of exclusion from ESG funds and indices might have a similar ability to promote reforms. In this way, ESG funds and the related SRI movement could pressure the technology industry to provide more responsible tools and platforms. Still, it is unclear whether such pressures will emerge and, if so, whether they will be sufficiently effective. In the interim, many millions of users continue to suffer from a variety of harms associated with manipulative design.

#### E. Conclusion

Overall, many Big Tech companies are theoretically able to act in users’ best interests. However, it appears unlikely that Big Tech will voluntarily abandon profitable, if manipulative, practices, and there is no mechanism within corporate law to force them to do so. Although innovations in investing strategies and associated public pressures on such companies might lead to some improvements for users, it is unlikely that these efforts would provide a full solution to address manipulative design. Therefore, regulation will likely be needed to protect users from the harmful effects of Big Tech. Section IV that follows explores regulatory attempts to address manipulative technologies.

### IV.

#### EARLY ATTEMPTS AT REGULATION

Given the harmful effects of manipulative technologies and the insufficient role Big Tech has taken in self-regulating its harmful behaviors, lawmakers in the United States and abroad have begun to regulate manipulative technologies. This Section surveys existing and proposed regulations designed to pro-

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<sup>216</sup> Kurt Wagner, *Facebook and Instagram Are Making It Easier to Spend Less Time on Facebook and Instagram. But Why?*, Recode, Vox (Aug. 1, 2018), <https://www.vox.com/2018/8/1/17637428/facebook-instagram-time-well-spent-screen-time> [https://perma.cc/4MYZ-ZCUJ].

<sup>217</sup> *Id.*

tect individuals and society from manipulative technologies. Its aims are twofold: to demonstrate the growing recognition of the harmful potential of manipulative technologies and to explore possible regulatory solutions to address them. Subpart A discusses attempts to establish regulatory nudges, or protective defaults, on potentially manipulative products and platforms. Subpart B examines early attempts to ban specific features or practices. Subpart C explores regulations that restrict use of digital devices in certain physical places. Subpart D describes regulatory efforts to restrict the time of day or the duration of use for some digital technologies. Subpart E details age-based restrictions on children's access to certain digital platforms. Subpart F considers regulatory schemes that seek to provide consumers with a method for opting out of specific manipulative practices. Subpart G details governmental efforts to treat those with severe cases of internet overuse and addiction. Subpart H explores market-based solutions to manipulative technologies. Subpart I offers the Section's conclusion.

#### A. Regulatory Nudging

Some early approaches to protecting users from manipulative technologies involve regulatory nudging, an approach which alters the choices available to users "in a predictable way without forbidding any options or significantly changing their economic incentives."<sup>218</sup> Often, regulatory nudges involve protective defaults, whereby a technology or platform has a reasonable automatic limit that a user may affirmatively choose to alter.

For example, in 2019 the Senate considered the proposed legislation known as the "Social Media Addiction Reduction Technology Act" or the "SMART Act."<sup>219</sup> This bill sought to require that social media companies automatically limit users' overall time on their platforms across all devices to a default of thirty minutes per day, with users having the option to increase that limit.<sup>220</sup> Under the terms of the bill, platforms would reset to the thirty minute limit default each month, with users who had previously chosen to increase their limits retaining the option to revert again to longer periods.<sup>221</sup> Additionally, the bill proposed a limit on "infinite scroll," which would have required

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<sup>218</sup> RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE* 6 (Penguin Books eds, 2009).

<sup>219</sup> Social Media Addiction Reduction Technology Act, S. 2314, 116th Cong. (2019).

<sup>220</sup> *Id.* at § 4(a)(2).

<sup>221</sup> *Id.*

that scrolling ceased after three minutes unless a user affirmatively opted to continue scrolling.<sup>222</sup> Although ultimately unsuccessful, this attempt at regulating addictive technologies utilized “nudges” to help users better control their time.

Utilizing a similar regulatory approach, former U.K. Prime Minister David Cameron reached an agreement in 2013 with the largest internet service providers in the U.K. under which these providers would default to blocking online pornographic materials for all users unless a user affirmatively opted to remove the block and receive such content.<sup>223</sup>

These two initiatives—one unsuccessfully proposed and one successfully implemented—demonstrate how regulators may engage with technology platforms to set protective defaults. Not only do such defaults preserve individual choice in how to engage with manipulative technologies, but they also likely promote individual choice by serving as a helpful counterweight to manipulative practices.

## B. Feature-Specific Bans

Regulators have also considered banning certain features thought to be particularly harmful. In addition to setting protective defaults for a user’s “time on device,” the proposed SMART Act also sought to outlaw social media platforms from engaging in certain harmful practices, including autoplaying additional content and rewarding prolonged engagement through an award system.<sup>224</sup> In addition, several legislators have proposed bills at the state and federal levels that would ban the gambling-like “loot-boxes” (randomized reward systems in video games in which players pay real money for items of uncertain value) for minor-oriented games<sup>225</sup> or for minor users.<sup>226</sup> Although such regulations have yet to be imple-

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<sup>222</sup> *Id.* at § 3(1).

<sup>223</sup> *Online Pornography To Be Blocked by Default, PM Announces*, BBC NEWS (July 22, 2013), <https://www.bbc.com/news/uk-23401076> [<https://perma.cc/M5KL-SU68>].

<sup>224</sup> Social Media Addiction Reduction Technology Act, *supra* note 219 § 3–4.

<sup>225</sup> A bill to regulate certain pay-to-win microtransactions and sales of loot boxes in interactive digital entertainment products, and for other purposes. 116th Congress, 2. 1629, 116th Cong. (2019) at § 1 (proposing a federal ban on loot-boxes in minor-oriented games).

<sup>226</sup> See Michael Brestovansky, ‘Loot Box’ Bills Fail to Advance, HAW. TRIB.-HERALD (Mar. 24, 2018), <https://www.hawaiitribune-herald.com/2018/03/24/hawaii-news/loot-box-bills-fail-to-advance/> [<https://perma.cc/F6KS-GXC8>] (discussing two corresponding bills in the Hawaii House and Senate that sought to prohibit sale of video games containing loot boxes to minors under the age of 21). See also Steven Blickensderfer & Nicholas Brown, *U.S. Regulation of Loot Boxes Heats Up with Announcement of New Legislation*, 9 NAT’L L. REV. (May 9,

mented in the United States, Belgium declared loot boxes entirely illegal under its existing gambling laws in 2018.<sup>227</sup>

As these examples reveal, regulators have taken steps to impose outright bans on certain practices and features thought to be particularly harmful, often in situations where minor users may be harmed. These targeted bans may be considered underinclusive in that they focus only on specific features and overinclusive in that they ban all users from engaging with a design that may only harm a portion of such users. However, when used in a constrained and targeted fashion, such bans may have the potential to curtail especially addictive practices without otherwise affecting the digital experience.

### C. Place-Specific Bans

A third approach to regulating potentially manipulative products is to ban digital access in certain settings where use of a distracting device is particularly dangerous or harmful. One such setting is a moving vehicle. Twenty-two states prohibit drivers from using handheld cell phones, thirty-eight states ban all cell phone use by novice drivers, twenty-three states prohibit all cell phone use for school bus drivers, and forty-eight states ban text messaging for all drivers.<sup>228</sup> The city of Honolulu has even banned the use of mobile devices while walking.<sup>229</sup> Such laws ban access to digital devices in vehicles or while walking in recognition of the particular danger posed by these distractions.<sup>230</sup>

Additionally, some regulators have also sought to ban digital devices from school grounds, given that such products may have a harmful effect on children's learning. Four U.S. states—Arizona, Maine, Maryland, and Utah—have considered but

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2019), [https://www.natlawreview.com/article/us-regulation-loot-boxes-heats-announcement-new-legislation#google\\_vignette](https://www.natlawreview.com/article/us-regulation-loot-boxes-heats-announcement-new-legislation#google_vignette) [<https://perma.cc/93Q9-L9V8>] (indicating that unsuccessful legislation to regulate loot boxes was considered in Hawaii, Washington, California, and Minnesota in 2018).

<sup>227</sup> Tom Gerken, *Video Game Loot Boxes Declared Illegal Under Belgium Gambling Laws*, BBC NEWS (Apr. 26, 2018), <https://www.bbc.com/news/technology-43906306> [<https://perma.cc/BJ3N-NMKE>].

<sup>228</sup> *Distracted Driving Laws by State*, GOVERNORS HIGHWAY SAFETY ASS'N (Feb. 2020) [https://www.ghsa.org/sites/default/files/2020-02/DistractedDrivingLawChart-FEB20\\_0.pdf](https://www.ghsa.org/sites/default/files/2020-02/DistractedDrivingLawChart-FEB20_0.pdf) [<https://perma.cc/C55A-X4M2>].

<sup>229</sup> Bill Chappell, *Honolulu's 'Distracted Walking' Law Takes Effect, Targeting Phone Users*, NAT'L PUB. RADIO (Oct. 25, 2017), <https://www.npr.org/sections/thetwo-way/2017/10/25/559980080/honolulus-distracted-walking-law-takes-effect-targeting-phone-users> [<https://perma.cc/BN6V-YPM7>].

<sup>230</sup> See *Distracted Driving*, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., <https://www.nhtsa.gov/risky-driving/distracted-driving> [<https://perma.cc/VZB9-3GA9>].



have not passed some form of a cellphone ban in schools, while California recently passed legislation that permits (but does not require) districts to adopt policies restricting or prohibiting smartphone use during the school day, subject to certain exceptions.<sup>231</sup> France, for its part, has instituted an outright ban on cellphones in schools for students fifteen and under.<sup>232</sup> Such restrictions seek to limit distractions in contexts where manipulative technologies may be hazardous or harmful to health or productivity.

#### D. Duration- & Time-Specific Bans

A fourth regulatory strategy is to ban users, particularly minor users, from accessing digital technologies at certain times of day or for a prolonged period of time. Such regulations are based on the recognition that young people may be particularly vulnerable to the negative effects of manipulative technologies and particularly prone to overconsumption of digital media.<sup>233</sup> For example, research suggests that teens in the United States spend an average of nine hours per day using screen media for entertainment purposes (excluding school-work) while children ages eight to twelve spend six and a half hours on screens for non-school purposes.<sup>234</sup> A significant portion of this time is at night, with one study finding that 51.7% of preteens and teens regularly used electronic devices after bedtime and that 6.1% awoke from sleep in the night order to play online video games, 15.3% awoke from sleep to send texts, and 11% awoke from sleep to use social media.<sup>235</sup>

Given the potential for manipulative technologies to interfere with young people's sleep, social lives, health, and academic performance, regulators in other countries have taken steps to ban younger users from accessing digital technologies at certain hours or for a prolonged period of time. For example,

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<sup>231</sup> Alyson Klein, *States Have Tried to Ban Cellphones in Schools. It Hasn't Gone Well*, ED. WEEK (Sept. 10, 2019), <https://www.edweek.org/technology/states-have-tried-to-ban-cellphones-in-schools-it-hasnt-gone-well/2019/09> [https://perma.cc/N4VP-S63P].

<sup>232</sup> Alex Ledsom, *The Mobile Phone Ban in French Schools, One Year On. Would It Work Elsewhere?*, FORBES (Aug. 30, 2019), <https://www.forbes.com/sites/alexledsom/2019/08/30/the-mobile-phone-ban-in-french-schools-one-year-on-would-it-work-elsewhere/> [https://perma.cc/9TPZ-DGSG].

<sup>233</sup> See Letter from Child.'s Screen Time Action Network, *supra* note 154

<sup>234</sup> *Landmark Report: U.S. Teens Use an Average of Nine Hours of Media Per Day, Tweens Use Six Hours*, *supra* note 127.

<sup>235</sup> S. Royant-Parola, V. Londe, S. Tréhout & S. Hartley, *The Use of Social Media Modifies Teenagers' Sleep-Related Behavior*, 44 L'ENCEPHALE 321, 322 (2018).

the South Korean National Assembly passed a law in 2011 known as the Youth Protection Revision Act, which blocks access to online video games between midnight and 6:00 a.m. for users under the age of sixteen, unless a parent voluntarily requests an exemption to the law.<sup>236</sup> Similarly, in 2019, the Chinese government promulgated regulations barring users younger than eighteen from playing internet games between 10 p.m. and 8 a.m. and limiting underage users from playing more than ninety minutes on weekdays and three hours on weekends and holidays.<sup>237</sup> These time-specific regulations seek to limit children's use of potentially manipulative products when they might otherwise be sleeping, doing homework, or spending time with their families.

### E. Age-Specific Regulations

Regulators have also taken steps to limit young people from accessing certain digital products. In the United States, the main restriction on minor use of manipulative products comes indirectly, from the U.S. Child Online Privacy Protection Act, which requires parental consent to collect data about children,<sup>238</sup> defined in the act as persons under thirteen.<sup>239</sup> Rather than obtain such parental consent, many manipulative technologies instead entirely prohibit users under the age of thirteen from registering for an account on their digital platform.<sup>240</sup> Despite these restrictions, it is very easy for those younger than thirteen to register for those sites that do limit access by simply providing a false age, since neither age verifi-

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<sup>236</sup> Jiyeon Lee, *South Korea Pulls Plug on Late-Night Adolescent Online Gamers*, CNN (Nov. 22, 2011), <https://www.cnn.com/2011/11/22/world/asia/south-korea-gaming> [<https://perma.cc/FMM6-SXL8>].

<sup>237</sup> Javier C. Hernández & Albee Zhang, *90 Minutes a Day, until 10 P.M.: China Sets Rules for Young Gamers*, N.Y. TIMES (Nov. 6, 2019), <https://www.nytimes.com/2019/11/06/business/china-video-game-ban-young.html> [<https://perma.cc/ALR7-GEDY>] (last updated Nov. 8, 2019).

<sup>238</sup> 15 U.S.C. § 6502 (2012).

<sup>239</sup> 15 U.S.C. § 6501(1) (2012).

<sup>240</sup> See, e.g., *How Do I Report a Child Under the Age of 13 on Facebook?*, FACEBOOK, <https://www.facebook.com/help/157793540954833> [<https://perma.cc/HM7Z-CFVX>] ("Facebook requires everyone to be at least 13 years old before they can create an account (in some jurisdictions, this age limit may be higher)."); *Tips for Parents*, INSTAGRAM, <https://help.instagram.com/154475974694511> [<https://perma.cc/RE77-7THF>] ("Instagram requires everyone to be at least 13 years old before they create an account (in some areas, the age limit may be higher)"); *Snap Inc. Terms of Service (If You Live in the United States)*, SNAPCHAT, <https://www.snap.com/en-GB/terms/> [<https://perma.cc/YN34-EUVG>] ("No one under 13 is allowed to create an account or use the Services.").

cation nor parental consent is required.<sup>241</sup> Indeed, 38% of Facebook and Instagram users signed up under the age of thirteen, despite policies allegedly banning youth access to the site.<sup>242</sup> In 2019, the Senate considered a bill which sought to raise the minimum age to sixteen and to strengthen protections on data privacy for children.<sup>243</sup> Although this bill was unsuccessful, it demonstrates an increased social and legislative interest in protecting children from digital exploitation.

In Europe, digital privacy laws permit children to provide their own consent for digital access at a variety of ages, ranging from thirteen in countries including the U.K. and Sweden to sixteen in countries such as Germany and the Netherlands.<sup>244</sup> Like the U.S., these privacy laws influence the age at which young people can officially register for social media platforms.<sup>245</sup> By setting age limits on access to certain manipulative technologies, regulators attempt to protect young people from accessing manipulative technologies without parental involvement.

## F. Opt-Out Systems

A sixth regulatory approach is to enable registrants to opt-out of certain tactics or policies. One such example is the Controlling the Assault of Non-Solicited Pornography and Marketing (CAN-SPAM) Act of 2003, which requires that commercial emailers include a “visible and operable” opt-out method in all email solicitations.<sup>246</sup> These opt-outs often take the form of a link at the bottom of solicitation emails that permits a user to “unsubscribe.” The FTC reports the regulations have had a significant positive effect on email marketing without substantial cost.<sup>247</sup> Similarly, a recently passed California law gives its

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<sup>241</sup> See *38% of Facebook / Instagram Users Signed Up Under Age 13*, MOBOPINIONS (Jan. 23, 2019), <https://www.mobopinions.com/38-percent-of-facebook-or-instagram-users-signed-up-under-13/> [<https://perma.cc/LPR8-ZKP6>].

<sup>242</sup> *Id.*

<sup>243</sup> A bill to amend the Children’s Online Privacy Protection Act of 1998 to strengthen protections relating to the online collection, use, and disclosure of personal information of children and minors, and for other purposes, S. 748, 116th Cong. (2019).

<sup>244</sup> Ingrida Milkaite & Eva Lievens, *Status Quo Regarding the Child’s Article 8 GDPR Age of Consent for Data Processing Across the EU*, BETTER INTERNET FOR KIDS (Dec. 20, 2019), <https://www.betterinternetforkids.eu/practice/awareness/article?id=3017751> [<https://perma.cc/B9X5-NZE7>].

<sup>245</sup> *Id.*

<sup>246</sup> 15 U.S.C. § 7704(a)(5)(A)(ii).

<sup>247</sup> Press Release, *FTC Completes Review of CAN-SPAM Rule*, FED. TRADE COMM’N (Feb. 12, 2019), <https://www.ftc.gov/news-events/press-releases/2019/02/ftc-completes-review-can-spam-rule> [<https://perma.cc/85BU-YPV5>].

citizens the right to block online businesses from selling their personal information to third parties.<sup>248</sup> This law requires websites operating in California to place a “Do Not Sell My Information” link or logo on their platforms, as well as to modify their privacy policies to contain language regarding the right to opt out from the sale of personal information and instructions on the means to do so.<sup>249</sup> Opt-out systems such as these give consumers greater control over their exposure to potentially harmful or distracting corporate tactics, without instituting an outright ban on such practices.

### G. Treatment of Digital Addiction

Regulators have also taken some steps to address one of the negative consequences of manipulative technology—digital addiction. In the United States, the National Institutes of Health recently funded a study designed to identify the optimal course of treatment for internet addiction.<sup>250</sup> Other countries have taken more direct steps to treat internet addiction and overuse. For example, in the United Kingdom, citizens are eligible to receive government-funded treatment for internet addiction<sup>251</sup> and the British National Health Service has launched a clinic specializing in internet addiction.<sup>252</sup> Similarly, the South Korean government has established an extensive network of counseling centers and hospital programs for the treatment of internet addiction,<sup>253</sup> and it has also sponsored the Jump Up Internet Rescue School, a camp designed to treat children suffering from internet addiction and digital

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<sup>248</sup> Cal. Civ. Code § 1798.105 (West) (“A consumer shall have the right to request that a business delete any personal information about the consumer which the business has collected from the consumer.”).

<sup>249</sup> Times Staff, *Seeing Those Opt-out Messages About Your Personal Information on Websites? Thank California’s New Privacy Law*, L.A. TIMES (Jan. 2, 2020), <https://www.latimes.com/california/story/2020-01-02/california-consumer-privacy-act-do-not-sell-my-info> [https://perma.cc/3DG9-RZZH].

<sup>250</sup> Barbara Booth, *Internet Addiction Is Sweeping America, Affecting Millions*, MODERN MED., CNBC (Aug. 29, 2017), <https://www.cnbc.com/2017/08/29/us-addresses-internet-addiction-with-funded-research.html> [https://perma.cc/E6EA-2NAL].

<sup>251</sup> Victoria Kim, *Brits Receive Government Funded Internet Addiction Treatment*, FIX (Oct. 14, 2015), <https://www.thefix.com/brits-receive-government-funded-internet-addiction-treatment> [https://perma.cc/UNK8-MH4Z].

<sup>252</sup> Sarah Marsh, *NHS to Launch First Internet Addiction Clinic*, GUARDIAN (June 22, 2018), <https://www.theguardian.com/society/2018/jun/22/nhs-internet-addiction-clinic-london-gaming-mental-health> [https://perma.cc/G9GQ-4S52].

<sup>253</sup> See Jong-Un Kim, *The Effect of a R/T Group Counselling Program on the Internet Addiction Level and Self-Esteem of Internet Addiction University Students*, 27 INT’L J. REALITY THERAPY 4, 5 (2008).

game addiction.<sup>254</sup> Relatedly, Italian lawmakers have proposed a bill that would empower the Italian postal police to monitor internet users for signs of overuse and would provide rehabilitation services for those with severe cases of digital addictions.<sup>255</sup> In addition, the law would provide education on internet addiction and overuse to Italian students and their parents.<sup>256</sup> These treatment-based solutions provide government-backed supportive services for those suffering from internet overuse and addiction.

## H. Market Solutions

In addition to regulations related to manipulative technology practices, market solutions have also begun to emerge. Many of these have been in the for-profit sector, with mobile applications or other services offering tools for users who wish to limit their digital access or to avoid potentially harmful sites or practices. Some of these resources specifically target parents who wish to control or monitor their children's time online. For example, Zift is a freemium service that offers parents the ability to monitor their child's online behaviors,<sup>257</sup> and Screen Time is a freemium application that permits parents to set time-based limits on their children's access to screens or to reward their children with additional screen time based upon their behavior.<sup>258</sup> Other services offer self-imposed limits on screen time. One such service is the subscription service Freedom which enables users to block themselves from specific applications and websites like Facebook or Instagram.<sup>259</sup> Similarly, the subscription service Moment tracks a user's daily screen time and provides users with coaching services on reducing their dependency on digital devices.<sup>260</sup> Additional tools help users deal with specific problematic behaviors. For example, the "Icebox" Chrome extension for problem shopping re-

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<sup>254</sup> Chulmo Koo, Yulia Wati, Choong C. Lee & Hea Young Oh, *Internet-addicted Kids and South Korean Government Efforts: Boot-camp Case*, 14 CYBERPSYCHOLOGY BEHAV. SOC. NETWORKING 391, 391 (2011).

<sup>255</sup> Guy Birchall, *Italy is Sending Phone-addicted Teens to Rehab*, N.Y. POST (July 23, 2019), <https://nypost.com/2019/07/23/italy-is-sending-phone-addicted-teens-to-rehab/> [<https://perma.cc/5LR5-UXEN>].

<sup>256</sup> *Id.*

<sup>257</sup> *Features*, ZIFT, [https://wezift.com/features/?gclid=CJwKCAiAz7Tf-BRAKEiwAz8fKOAfcFkiV7gRCC38qm4F6dhhO75fxjhG3ZNNpKlZG\\_9c-QxRnDcdDqxoCZCgQAvD\\_BwE](https://wezift.com/features/?gclid=CJwKCAiAz7Tf-BRAKEiwAz8fKOAfcFkiV7gRCC38qm4F6dhhO75fxjhG3ZNNpKlZG_9c-QxRnDcdDqxoCZCgQAvD_BwE) [<https://perma.cc/A2RQ-AY29>] (last visited Oct. 7, 2021).

<sup>258</sup> SCREEN TIME LABS, <https://screentimelabs.com/> [<https://perma.cc/LD9H-SPX4>].

<sup>259</sup> FREEDOM, <https://freedom.to/> [<https://perma.cc/HFD7-TWGN>].

<sup>260</sup> MOMENT, <https://inthemoment.io/> [<https://perma.cc/KFP6-G657>].

places the “buy” button at online shopping venues with a “put it on ice” button that, once clicked, prevents the user from purchasing the product for a cooling off period (typically thirty days).<sup>261</sup> Relatedly, a number of for-profit treatment programs have emerged to support those with internet addiction, video game addiction, smartphone addiction, and related conditions.<sup>262</sup>

These for-profit solutions help users address problematic behaviors and tendencies; however, users must affirmatively choose to engage these services and, often, they must be willing and able to pay the associated fee. For these reasons market-based solutions likely represent only a part of the necessary response in addressing all harms associated with manipulative technologies.

In addition to for-profit endeavors, non-profit mechanisms for addressing digital overuse and addiction have also begun to emerge. One such example is the Center for Humane Technology, a nonprofit organization that seeks to realign technology development with human needs and values.<sup>263</sup> Its efforts include creating design standards for non-manipulative technology, providing suggestions for users on how to reduce the manipulative potential of websites and applications, and engaging with policymakers on effective ways to regulate digital devices.<sup>264</sup> Similarly, Reboot & Recover is a non-profit that seeks to provide education, prevention, assessment, treatment, and research resources for internet addiction and related conditions.<sup>265</sup> Non-profit efforts such as these provide useful resources and services for those dealing with internet addiction and related conditions, but have yet to achieve widespread success.

## I. Conclusion

The above examples of proposed and passed legislation demonstrate that there is moment towards addressing manip-

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<sup>261</sup> *Beat Impulse Buying with Icebox for Your Chrome Browser*, FINDER, <https://www.finder.com/uk/icebox> [<https://perma.cc/GV99-74MP>].

<sup>262</sup> See, e.g., *Our Story*, RESTART, <https://www.netaddictionrecovery.com/about-restart-tech-treatment/> [<https://perma.cc/2N8K-PWP8>] (offering treatment for internet, smartphone, and video game addictions).

<sup>263</sup> *Who We Are*, CTR. FOR HUMANE TECH., <https://humanetech.com/about-us/#primary> [<https://perma.cc/2THP-UMR8>].

<sup>264</sup> *Our Work*, CTR. FOR HUMANE TECH., <https://www.humanetech.com/who-we-are#work> [<https://perma.cc/3WQA-2Q5T>].

<sup>265</sup> See *About Reboot & Recover*, REBOOT & RECOVER, <https://rebootandrecover.org/about-us/> [<https://perma.cc/44NV-GPJD>].

ulative digital practices. However, such efforts are clearly preliminary. In the United States, few proposed regulations have successfully been made into law, and those few that are operative apply only in narrow contexts. While there are examples of stronger protections at work abroad, such protections are clearly the exception and not the rule.

At this early stage, regulators have the opportunity to shape the future of their citizens' relationships with digital platforms. What remains uncertain is exactly what that future will look like. Will regulators take a largely hands-off approach, leaving it to non-profits and other market actors to attempt to mitigate the harms from manipulative technologies? Will regulators take an approach that is overbroad and potentially stifles beneficial platforms and practices in the interest of protecting citizens? Will regulators incentivize positive conduct or disincentivize harmful conduct? Section V that follows considers the features of an ideal regulatory regime, and it proposes targeted regulations that would apply to the largest and most egregious manipulative technologies.

## V.

### REGULATING MANIPULATIVE TECHNOLOGIES

This Section explores regulatory strategies that have the potential to protect users from harmful practices without significantly impeding users from accessing beneficial features. Subpart A considers guiding principles for effective regulations in this context. Subpart B proposes several regulatory approaches that adhere to those guiding principles and have the potential to protect users without unnecessary interference in the marketplace.

#### A. Designing Good Regulations

What makes for a “good” regulation? History has repeatedly demonstrated that well-meaning lawmakers can write bad laws—the 18th amendment prohibiting alcohol<sup>266</sup> and the 21st amendment effectuating the 18th’s repeal<sup>267</sup> provide just one example of the truth that lawmakers can and do fail in their attempts to effectively regulate products and goods. Laws may be over-inclusive, under-inclusive, or easily evaded. They may be too costly, too burdensome, too limiting, too broad, or too specific. They may even produce worse outcomes than no law

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<sup>266</sup> U.S. CONST. amend. XVIII.

<sup>267</sup> U.S. CONST. amend. XXI.

at all. With an eye to avoiding the many pitfalls that can plague legislation and regulation, this Section enumerates some guiding principles for effective regulatory design in the specific context of manipulative technologies.

### 1. *Agency*

One feature of desirable legislation in the context of manipulative technologies is the ability of such legislation to promote the agency of users. Manipulative technologies are problematic not because people use them, but because people use them more often or for a longer period than they would choose to without psychological exploitation.<sup>268</sup> For this reason, legal strategies that increase users' control over manipulative technologies are particularly desirable.

### 2. *Ease of Use*

Relatedly, good regulations would result in digital products that are easy for consumers to control. Currently, many digital platforms maintain a hold on users simply by making it hard for users to exit their platform or to otherwise control their use. For example, it takes five to six steps for a user to deactivate his or her Facebook account, and this "deactivation" is not effective for a thirty-day period in which the user can automatically restore their account.<sup>269</sup> Likewise, many "freemium" digital platforms require users to contact customer service at specific times before they are able to cancel a digital subscription, even though establishing a subscription can be done at any time with the click of a few buttons.<sup>270</sup> These logistical hurdles promote the company's interests at the expense of users' interests. Beneficial regulations would instead attempt to ensure that it is easy for users to take advantage of the protections available to them, either through protective defaults where the more beneficial option is automatically provided or through specifications on where and how users may access certain required features or controls.

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<sup>268</sup> See Sofia Grafanaki, *Autonomy Challenges in the Age of Big Data*, 27 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 803, 866 (2017) ("Big Data tools come with the danger of slowly and gradually nudging individuals to a preset scheme, and inhibiting their individuality.")

<sup>269</sup> *Deactivating or Deleting Your Account*, FACEBOOK, [https://www.facebook.com/help/250563911970368/?helpref=HC\\_fnav](https://www.facebook.com/help/250563911970368/?helpref=HC_fnav) [<https://perma.cc/TBS7-R2Q6>].

<sup>270</sup> See *Cancel Your Subscription*, N.Y. TIMES, <https://help.nytimes.com/hc/en-us/articles/360003499613-Cancel-your-subscription> [<https://perma.cc/9SR9-AX8J>].



### 3. *Incentives*

A third feature of good regulatory design in this context is the use of incentives to encourage beneficial behaviors or discourage harmful practices. One of the problematic features of manipulative design practices is that they necessarily advantage those platforms willing to use manipulative practices over those platforms unwilling to do so, and they likewise ensure that manipulative design practices within a given platform will, *ceteris paribus*, be more monetarily successful than non-manipulative practices. As a result of manipulative platforms and strategies gaining an upper hand in the marketplace, consumers are less able to choose the types of platforms that they consciously desire to use.

For this reason, positive and negative incentive structures can be a useful tool to restore the balance of power between various digital strategies and platforms and thereby increase true competition in the digital marketplace. For example, state and federal governments might reward companies that do not utilize manipulative technologies with tax benefits or penalize those that profit off of manipulative technologies with additional taxes. Additionally, localities might offer tech-free public spaces a special designation or certification with accompanying financial benefits. Instead of limiting the options available to consumers, such an approach could actually increase the universe of available options and thereby increase users' agency.

### 4. *Specificity*

An additional feature of beneficial regulations is that they are specific and targeted. Although manipulative design practices can be harmful, they are frequently used by platforms that have a number of beneficial features and services. By focusing on specificity, regulators will be better able to ensure that positive features do not become a casualty of overbroad laws and regulations. Additionally, specific and definite legislation allows for accurate planning by entrepreneurs and more efficient capital allocation by investors.

### 5. *Protecting Vulnerable Groups*

Although manipulative technologies are a relatively new phenomenon, ample research has demonstrated that young people and other vulnerable populations, such as those with mental health issues, are particularly susceptible to manipula-

tive technologies.<sup>271</sup> Regulations in this context should therefore be drafted with sensitivity to the particular vulnerabilities of such groups. This sensitivity could take the form of protection only for such young or otherwise vulnerable users, specific and additional protections for young users and other vulnerable users, targeted legislation that focuses on sites particularly appealing to young users and other vulnerable groups, or legislation that features tools or resources for those that are experiencing extreme negative effects from manipulative practices.

## 6. *Administrability*

One potential obstacle in any effort to regulate digital content is the difficulty of monitoring digital platforms for compliance. Given the vast volume of digital content and the potential that platforms will evade regulations via loopholes or digital workarounds, it is vital that regulations of manipulative technologies are designed with administrability as a key goal. Administrability could take many forms, such as enabling digital users to submit complaints about violators or problematic practices to reduce the monitoring burden, designing targeted rules with metrics that are simple to monitor, focusing on a subset of the most problematic practices and websites to minimize the overall burden, or incentivizing positive behaviors rather than policing all digital content. Whatever the form, carefully designed regulations would reduce the risks of un- and under-enforceability.

### B. *Policy Proposals*

The previous section identified a number of features that would be particularly desirable or useful when regulating manipulative technologies. This subpart describes seven regulatory approaches based upon those principles that would better protect users from manipulative practices.

#### 1. *“Nudging” Beneficial Behaviors & Features*

One approach to regulating manipulative technologies is to establish a menu of “best practices” and require platforms to establish default settings adhering to those practices. Users would retain the ability to opt out of these protective defaults. Such “best practices” might be informed by work non-profits have already been doing in establishing ethical design stan-

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<sup>271</sup> See Letter from Child.’s Screen Time Action Network, *supra* note 154.

dards.<sup>272</sup> For free sites, these protective defaults could feature requirements such as (1) infinite scroll disabled, (2) autoplay disabled, (3) a digital timer automatically displayed on webpages and mobile applications to record per session, daily, weekly, and monthly time on the site, (4) pop-up notifications that alert users that a certain amount of time had been spent on the site, (5) all other alerts and notifications disabled, (6) noises automatically set to silent, and (7) “likes,” “badges” and other reward systems automatically disabled. For in-app purchases, defaults could (1) set a reasonable maximum amount of money or time that user could spend across the application in a given day or week, (2) automatically disable certain addictive features, such as loot boxes and timed “regenerations” that require a user to pay a fee or wait a certain period to resume play, and (3) send users an individual invoice for each charge which includes the cumulative total spent.<sup>273</sup> Such approaches would represent an important change to the status quo, where sites typically default to practices that favor the maximum time investment by users and often do not offer users the ability to change default settings; these approaches would do so without fundamentally upending the status quo, as such features would ultimately remain accessible.

## 2. *Expanded User Controls & Feature Disaggregation*

A related regulatory approach would not require specific default arrangements but would require that users be given control over a far wider variety of features and components. For example, users might be able to set limits on the maximum amount of time or money spent on a certain platform, to select the various feature(s) of the site that they wish to use and those manipulative features that they wish to have turned off (for example, to use Facebook chat or Facebook marketplace without Facebook’s news feed), to turn off infinite scroll or autoplay, or to engage with video games with loot boxes and timed regenerations disabled. The regulations might also specify that users be able to enact these controls easily and readily with a minimum of clicks and on a simple and easy-to-use interface. Relatedly, regulations might require that users be able to cancel subscriptions or quit web platforms quickly and easily,

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<sup>272</sup> See *Design Guide (Alpha Version)*, Ctr. for Humane Tech., <https://www.humanetech.com/designguide> [<https://perma.cc/ZQ5B-822W>].

<sup>273</sup> For a discussion of various approaches to regulating digital games, see Erik Allison, *The High Cost of Free-to-Play Games: Consumer Protection in the New Digital Playground*, 70 SMU L. REV. 449, 468 (2017).

without a prolonged waiting period. Regulations that focused on user control and feature disaggregation would empower users and increase their agency, and they would help users access more of a platform's desirable features without exposure to its manipulative features.

### 3. *Middleware*

A third, and related, regulatory approach would employ "middleware," a type of software which "rides on top of an existing platform and can modify the presentation of underlying data."<sup>274</sup> Noted political scientist Francis Fukuyama and his co-authors recently proposed using a "light" or "heavy" form of middleware to curb the influence of Big Tech companies on political discourse.<sup>275</sup> Under the "light" approach, a third-party middleware service would tag digital content to identify controversial, unsupported, or misleading information, much like Twitter has already begun to do to its own content.<sup>276</sup> Under the "heavy" approach, middleware would function as a gateway to the platform's content, with users given the ability to control their digital experience.<sup>277</sup> For example, Fukuyama has suggested that users could employ "heavy" Middleware when shopping on Amazon, perhaps selecting to see only American-made products or perhaps opting to see only products designated "eco-friendly."<sup>278</sup>

Relatedly, middleware could function to curb manipulative practices. Manipulative platforms could be required to open their platforms to middleware. This middleware could allow users to opt in or out of infinite scroll, autoplay, notifications, comment sections, and "like" buttons and related forms of user feedback. Middleware might also be used to give users the ability to limit their time on a digital platform or to shut off access to digital platforms at certain times of day or under certain conditions. Parents could use middleware to control

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<sup>274</sup> Francis Fukuyama, Barak Richman & Ashish Goel, *How to Save Democracy from Technology: Ending Big Tech's Information Monopoly*, [https://www.foreignaffairs.com/articles/united-states/2020-11-24/fukuyama-how-save-democracy-technology?utm\\_medium=promo\\_email&utm\\_source=LO\\_flows&utm\\_campaign=registered\\_user\\_welcome&utm\\_term=email\\_1&utm\\_content=20211122](https://www.foreignaffairs.com/articles/united-states/2020-11-24/fukuyama-how-save-democracy-technology?utm_medium=promo_email&utm_source=LO_flows&utm_campaign=registered_user_welcome&utm_term=email_1&utm_content=20211122) [https://perma.cc/N2K3-M9ML].

<sup>275</sup> *Id.*

<sup>276</sup> Luigi Zingales & Bethany McLean, *Capitalism's Rein: Francis Fukuyama's Proposal to Rein in Big Tech*, CHI. BOOTH REV. at 5:33-6:55 (Dec. 3, 2020), <https://review.chicagobooth.edu/economics/2020/article/capitalism-t-francis-fukuyama-s-proposal-rein-big-tech> [https://perma.cc/DP2K-NARA].

<sup>277</sup> *Id.*

<sup>278</sup> *Id.*

their children's user experience, perhaps permitting them to completely block access to certain sites, to limit access on school days or weekdays, to set time limits for daily use of particular sites, or simply to limit the effects of the most manipulative features.

Middleware could take regulation of digital content further. Because third parties would control the middleware, this technology would ensure that neutral entities would have significant control over these platforms. In this way, middleware would prevent Big Tech companies from sidestepping regulations or using manipulative design practices to limit the efficacy of these regulations.

#### 4. *Defunding Manipulative Technologies after a Reasonable Threshold*

A fourth regulatory approach would involve requiring manipulative technologies to cut off funding streams after a certain reasonable threshold. For example, digital platforms could be required to disable advertising (and other forms of monetization) after a user spent thirty minutes in one session, one hour in one day, or five hours in one week on a given platform. These thresholds could apply to all users, they could only apply to minor users, or they could vary based upon the users' age, with more revenue time available for adult users.

Such limitations would increase the alignment between a platform's incentives and a user's interests. Instead of prioritizing any strategy that maximizes a user's time on the platform, platforms might invest in increasing user satisfaction with their experience, in broadening their user base or product offerings, or in promoting other useful services. Likewise, such limitations would mean that Big Tech could pursue more user-friendly, non-manipulative policies and practices without hurting their bottom line. Moreover, such regulations could decrease problematic distributional effects by ensuring that a company's profits did not arise from exploiting a vulnerable subgroup of users. As such, Big Tech platforms might be more willing to adopt practices and policies to protect vulnerable users, identify problematic behaviors, and refer over-users to support services.

#### 5. *Requiring or Incentivizing Impact Assessments*

A fifth regulatory approach would require or incentivize digital platforms to employ impact assessments before adopting new practices or procedures. Like environmental impact

assessments, in which those planning a particular development project examine and detail the positive and negative effects of the proposed development on various environmental conditions, technology companies might be required or incentivized to study and report upon the potential impacts of proposed changes to their platform on users. For instance, a site contemplating adding an “infinite scroll” display format would consider what impact such a policy change would have on the user experience, a user’s “time on device,” the likelihood that vulnerable users engage in problematic use of the platform, and other related outcomes.

Such reports might encourage well-meaning corporations to more thoroughly consider the impact of potentially harmful policies, provide additional information for users to consider when evaluating a particular platform, or call attention to policies and practices which can result in undue harm. These impact assessments may provide further tools to regulators, who, depending on the circumstances, could challenge the accuracy of a given impact assessment or require modifications to proposals which appear to be unduly harmful.

## 6. *Facilitating Self-Exclusion*

A sixth regulatory strategy builds off of regulatory approaches taken to address problem gambling: self-exclusion programs. Self-exclusions provide gamblers with a mechanism to ban themselves from a casino or an online wagering site.<sup>279</sup> Twenty-five states require gambling venues to provide some form of self-exclusion program to their patrons.<sup>280</sup> In some states, gamblers must self-exclude separately from each individual casino or gaming website, while other states have consolidated registries by which gamblers can exclude themselves from all such venues.<sup>281</sup> Although self-excluders are sometimes successful in gambling despite their self-exclusion, research shows that such programs result in decreased gambling, increased psychological wellbeing, and improved overall functioning.<sup>282</sup>

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<sup>279</sup> AM. GAMING ASS’N, RESPONSIBLE GAMING: REGULATIONS AND STATUTES, 1, 3 (Sept. 2019), [https://www.americangaming.org/wp-content/uploads/2019/09/AGA-Responsible-Gaming-Regs-Book\\_FINAL.pdf](https://www.americangaming.org/wp-content/uploads/2019/09/AGA-Responsible-Gaming-Regs-Book_FINAL.pdf) [https://perma.cc/XS4R-NHC5].

<sup>280</sup> *Id.*

<sup>281</sup> *Id.*

<sup>282</sup> Sally M. Gainsbury, *Review of Self-exclusion from Gambling Venues as an Intervention for Problem Gambling*, 30 J. GAMBLING STUD. 229, 229 (2014).

Regulators could use a self-exclusion program or registry to combat manipulative technologies. For example, regulators could require that manipulative technology companies provide users with easy and direct access to a way to self-exclude from certain platforms for a period of time or for their lifetime. Although users may delete their accounts on various platforms, there are often obstacles to doing so. For example, when a user attempts to delete Facebook, the site waits thirty days before deleting the account, and, if the user logs into the site, Facebook automatically cancels the deletion attempt.<sup>283</sup> Additionally, deleting an account does not always prevent a user from viewing a site in a public mode, nor does it prevent a user from creating a new account on a site shortly after deletion. Self-exclusion could therefore provide users who desire to avoid certain manipulative technologies with a more direct route to doing so. For example, users could indicate that they wish to ban their email address(es) from being used to register for a Facebook or Twitter account, they could sign up to have their existing accounts closed on certain platforms, or they could ban themselves from accessing a particular platform entirely.

Analogously, regulators could also use a “child-exclusion” approach to enable parents to keep their kids off of certain digital platforms until they reach a certain age. After establishing their relationship to a minor child and that child’s age, parents would be given tools to keep their children from accessing certain sites or from forming accounts on those sites until they reached a designated age.

Finally, a variant of self-exclusion programs could also be used to give users more control over the features they encounter on all digital platforms. For example, users could be permitted to enroll in a registry that bans digital platforms from exposing them to autoplay, infinite scroll, “like” systems, or other potentially harmful features. In any iteration, self-exclusion regimes such as these would give users greater control over their digital experience without instituting an outright ban on features that some may wish to retain.

## 7. *Tax Penalties or Benefits*

A seventh approach to regulating manipulative technologies would involve imposing tax penalties on some or all platforms utilizing manipulative tactics or rewarding those that

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<sup>283</sup> *Deactivating or Deleting Your Account*, *supra* note 269.

eschew manipulative practices with reduced taxes or other tax benefits. Such an approach would build off of successful efforts in other arenas, such as taxes on tobacco-containing products. Currently, the federal government imposes a tax of \$1.01 per pack of cigarettes, while state and local governments impose further excise taxes that range from \$7.16 in Chicago, IL to \$0.37 in some parts of Georgia.<sup>284</sup> Research suggests tobacco taxes are one of the most effective ways to reduce per-capita consumption of tobacco, smoking rates, and the number of cigarettes smoked daily.<sup>285</sup> In addition, tobacco taxes provide governments with significant revenue, some of which is used to support general health initiatives, such as the federally-funded Children's Health Insurance Program (CHIP), which provides insurance for children who would otherwise be uninsured,<sup>286</sup> and anti-smoking campaigns.<sup>287</sup>

Although manipulative technologies are typically not bought and sold in the same way as tobacco, tax policy could serve as a useful tool to influence corporate behaviors and thereby reduce the prevalence of manipulative design practices. For example, regulators could impose heightened taxes on targeted digital advertising revenue, which would particularly impact large corporations who control or distribute certain problematic features, such as infinite scroll, autoplay, or "like" buttons.<sup>288</sup> Alternatively, regulators could make tax breaks available to companies that avoid manipulative tactics and/or abide by certain standards for responsible technology, such as those promulgated by the Center for Humane Technol-

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<sup>284</sup> *State CAMPAIGN FOR TOBACCO-FREE KIDS, CIGARETTE EXCISE TAX RATES & RANKINGS* (2021), <https://www.tobaccofreekids.org/assets/factsheets/0097.pdf> [<https://perma.cc/X887-KLZW>].

<sup>285</sup> See TRUTH INITIATIVE, *THE IMPORTANCE OF TOBACCO TAXES 1* (2019), [https://truthinitiative.org/sites/default/files/media/files/2019/03/truth\\_initiative-tobacco\\_taxes-action\\_needed-FINAL.pdf](https://truthinitiative.org/sites/default/files/media/files/2019/03/truth_initiative-tobacco_taxes-action_needed-FINAL.pdf) [<https://perma.cc/T7KV-SQMT>]; *A Win-Win Solution*, CAMPAIGN FOR TOBACCO FREE KIDS, <https://www.tobaccofreekids.org/what-we-do/us/state-tobacco-taxes> [<https://perma.cc/M8F6-ZUH5>].

<sup>286</sup> *Cigarette & Tobacco Taxes*, AM. LUNG ASS'N, <https://www.lung.org/policy-advocacy/tobacco/prevention/tobacco-prevention-program-funding> [<https://perma.cc/8Z87-N2GN>].

<sup>287</sup> *Tobacco Prevention Program Funding*, AM. LUNG ASS'N, <https://www.lung.org/policy-advocacy/tobacco/prevention/tobacco-prevention-program-funding> [<https://perma.cc/2ELR-NAPV>].

<sup>288</sup> A similar approach has been proposed by Noble Prize-Winning Economist Paul Romer. Paul Romer, *A Tax that Could Fix Big Tech*, N.Y. TIMES (May 6, 2019), <https://www.nytimes.com/2019/05/06/opinion/tax-facebook-google.html> [<https://perma.cc/H77S-NB5A>].



ogy.<sup>289</sup> Such an approach may nudge technology companies towards ethical practices by reducing the desirability of manipulative features and/or by increasing the desirability of user-friendly features.<sup>290</sup>

### C. A Hybrid Approach: The Systemically Important Platform

Although each of the above approaches would be a dramatic departure from the status quo and would provide users with significantly increased protection from manipulative practices, this Article proposes a hybrid of the above approaches as an ideal way to regulate manipulative technologies. Specifically, it proposes the establishment of a designation for certain large digital platforms, herein referred to as the “systemically important platform” (or “SIP”) designation, which can be usefully analogized to the systemically important financial institution (“SIFI”) designation in the financial sector.

Systemically important financial institutions are large banks, insurance companies, or other financial institutions deemed by federal regulators to pose a serious threat to the overall economy in the event that they should collapse or default.<sup>291</sup> More colloquially, SIFI’s are the regulatory embodiment of financial institutions that are “too big to fail.”<sup>292</sup> Because of their size and potential to significantly impact financial markets, regulators impose special restrictions on SIFIs with the goal of reducing the risk of collapse or default.<sup>293</sup> For example, SIFIs have higher capital requirements and are barred from engaging in certain activities considered higher-risk.<sup>294</sup> Although the efficacy of such restrictions in preventing

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<sup>289</sup> *Design Guide*, CTR. FOR HUMANE TECH., <https://www.humanetech.com/designguide> [<https://perma.cc/W29T-ZD2Z>] (providing a template to be used in assessing whether a platform exploits human sensitivities).

<sup>290</sup> See Leon Y. Xiao & Laura L. Henderson, *Towards an Ethical Game Design Solution to Loot Boxes: A Commentary on King and Delfabbro*, 19 INT’L J. MENTAL HEALTH & ADDICTION 177, 188–89 (2019) (“Many governments already invest public money in the video game industry (e.g. the UK Games Fund; the UK Video Games Tax Relief scheme; and the Canada Media Fund). The grant and redirection of such existing funds, and the withholding of tax relief from current projects, based on a determination of whether or not the game has strived towards being socially responsible and ethically designed, is justified, as doing so would contribute to the public good.”).

<sup>291</sup> Alessandro Romano, Luca Enriques & Jonathan R. Macey, *Extended Shareholder Liability for Systemically Important Financial Institutions*, 69 AM. U. L. REV. 967, 974 (2020).

<sup>292</sup> *Id.* at 977.

<sup>293</sup> *Id.* at 974–75.

<sup>294</sup> *Id.* at 982.

excessive risk-taking is the subject of considerable debate,<sup>295</sup> the notion of imposing additional regulations on a potentially problematic subset of a large industry provides a useful point of comparison.

In the context of digital technologies, regulators would apply the “systemically important platform” designation to those digital platforms that pose a particular risk to society due to their broad reach and their reliance on manipulative practices. While there would likely be some discretion involved in identifying SIPs, indicators of “broad reach” could include the total revenue of such platforms, the number of monthly active users on the site, the market value of such platforms (if publicly traded), the financial incentives the platform has to maximize a user’s time on the platform, or, ideally, a combination of the foregoing. Likewise, indicators of reliance upon manipulative design might include use of known manipulative practices (such as behavioral “hook” mechanisms, autoplay, infinite scroll, loot boxes, or intrusive notifications), data revealing that a platform is primarily used by minors, young adults, and/or those particularly vulnerable to manipulative practices, and/or evidence that a significant portion of users of the platform exhibit symptoms of overuse or addiction. Examples of platforms that would likely meet these criteria at present include Facebook, YouTube, Instagram, Twitter, Snapchat, and TikTok.

Those sites designated as SIPs would be governed by special rules and regulations designed to combat manipulative practices and to restore agency to users. Specifically, such sites would be required to open themselves to middleware technology that would feature a menu of preset defaults that “nudge” users toward a positive experience with the site. These “nudges” would automatically disable practices and features known to be manipulative, with the option for users to affirmatively consent to such features at their discretion. Additionally, this middleware would give users access to extensive, standardized controls. Such controls would, for example, allow a Facebook user to turn off infinite scroll, the “like” response system, and all notifications, while retaining access to Facebook messenger, Facebook marketplace, and friends’ profiles. Finally, middleware would further provide users with a streamlined way to block access to a given platform, including mechanisms to keep themselves or their children from ac-

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<sup>295</sup> See *id.*

cessing the sites with a certain email address, at certain times of day, in certain locations, or on their personal computer(s), tablet(s), or mobile phone(s).

In addition, regulators would impose additional guidelines that govern the revenue streams of SIPs. For example, sites qualifying for this designation would be subject to additional taxes, with the revenue from such taxes being used to fund efforts to research, treat, and/or prevent digital addictions. Tax rebates could be made available to those platforms conforming to “best practices” that go above the minimum requirements and significantly reduce the risks of overuse and addiction. Regulators would also have the ability to exert greater control over the SIP’s revenue sources. For such sites, monetization would be de-activated for users under a certain age, perhaps eighteen, and/or for users who have spent a prolonged period on the platform that day, week, or month. Demonetizing sites under certain conditions would better align the incentives of site developers with the interests of their users.

Finally, significant changes to these digital platforms would be subject to an impact assessment process designed to assess the potential that such changes may encourage overuse or addiction. Before they are rolled out, researchers and policymakers would analyze whether these changes significantly impacted a users’ “time on device,” their susceptibility to overuse of the platform, and other harmful outcomes. Changes that pose an identifiable and increased risk would need to be modified before being instituted.

Although imposing restrictions on a small subset of digital platforms would be inherently underinclusive, omitting from regulation a wide array of platforms with the potential to cause harm, there are a number of benefits to such an approach. First, many of the largest and most popular digital platforms play an outsized role in Americans’ social and professional lives. Not only do a large proportion of Americans actively engage with these sites (and perhaps already exhibit an unhealthy relationship with them), such sites are particularly difficult for users to exit of their own accord, due not only to ingrained behaviors, but also due to the importance of such sites to some professions and many interpersonal relationships. A SIP designation would in essence declare these platforms to be “too big to manipulate.”

Second, this subset of platforms has been responsible for the development or widespread use of a number of manipula-

tive features and practices that then proliferated across the digital sphere. For example, Facebook first announced its “like” button in 2009, and now many digital platforms feature an analogous response mechanism that allows users to “engage” with digital content by pushing a button.<sup>296</sup> Similarly, Facebook CEO Mark Zuckerberg recently admitted to copying features from competitor websites—a practice that likely helped such features spread across the internet as a whole.<sup>297</sup> Had Facebook been subject to an impact assessment process before launching the “like” button or other “borrowed” features, it is possible that less addictive features might have emerged in their place. Such changes may not have just affected Facebook—they may have been copied by other websites just as the “like” feature has yielded a number of variants on other platforms. In this way, focusing on SIPs might allow regulators to impact the development of manipulative practices across the digital sphere as a whole.

Third, a regulatory scheme focused specifically on SIPs might increase the diversity of platforms and features available to users. Large digital platforms, including Facebook, have been subject to increasing scrutiny as near-monopolies that crowd out new entrants and, potentially, utilize unfair practices to dominate their competition.<sup>298</sup> Imposing an increased regulatory burden only on large and dominant platforms might restore balance to the marketplace. By reducing the ability of large platforms to utilize manipulative practices, regulators could create a space for smaller platforms with novel features to reach a larger audience or for new platforms to develop. Although there is a risk that substitutes might emerge and utilize manipulative practices in lieu of SIPs, such substitutes would themselves eventually be subject to SIP regulations should they utilize manipulative practices at scale. By regulating only the largest digital platforms, the SIP concept could mitigate widespread harm without burdening smaller companies or stifling innovative startups.

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<sup>296</sup> Christopher Zara, *How Facebook's 'Like' Button Hijacked Our Attention and Broke the 2010s*, FAST COMPANY (Dec. 18, 2019), <https://www.fastcompany.com/90443108/how-facebooks-like-button-hijacked-our-attention-and-broke-the-2010s> [<https://perma.cc/7MMQ-5PHY>].

<sup>297</sup> Sarah Perez, *In Antitrust Hearing, Zuckerberg Admits Facebook Has Copied Its Competition*, TECHCRUNCH, (July 29, 2020), <https://techcrunch.com/2020/07/29/in-antitrust-hearing-zuckerberg-admits-facebook-has-copied-its-competition/> [<https://perma.cc/YQ9T-J97J>].

<sup>298</sup> *Id.*

Relatedly, the SIP process serves as a useful cap on manipulative activity. To the extent that a non-SIP platform becomes successful in utilizing manipulative practices and gaining a foothold in the marketplace, its growth would eventually result in it receiving its own SIP designation and thereby becoming subject to applicable regulations. As a consequence, platforms would be disincentivized from investing in manipulative practices and instead might invest greater resources in developing useful non-addictive features and functions or in pre-emptively complying with SIP regulations.

The SIP approach also has advantages with respect to administrability. It is far more practical for regulators to monitor a small subset of digital platforms than the vast universe of all digital platforms. As such, the likelihood that regulations would go unenforced or that sites would develop easy workarounds is greatly reduced. In addition, because such sites are by their nature very popular, users could provide regulators with insights about which platform(s) are in compliance with regulations and which may be violating the letter or spirit of such rules.

Finally, the SIP concept could facilitate substantive regulation in other areas. For instance, in the privacy context, SIPs could be subject to more robust requirements with respect to how they collect, store, and sell users' personal data. In the antitrust context, proposed acquisitions by a SIP, or a merger between two SIPs, may merit increased scrutiny. With respect to speech, the SIP concept may be useful in determining which platforms may merit more robust speech protections, or, alternatively, those that should bear an increased burden in policing online misinformation. In each instance, the SIP framework, as well as an appreciation of such platforms' "time on device" business model and manipulative tactics, would provide useful context for substantive regulation in other areas.

Ultimately, the SIP designation provides a targeted solution to the problems associated with manipulative technologies. This approach would transform the largest and most manipulative digital platforms by simultaneously reducing reliance on manipulative practices, providing users with increased control over their digital experience, simplifying the tools available to users, protecting vulnerable populations from exploitation, and providing a mechanism for penalizing harmful behaviors and incentivizing beneficial practices. At the same time, this approach would have significant administrability advantages over

a broad attempt to regulate all digital platforms because it would concentrate resources and attention on the most problematic and widely used subset of manipulative technologies.

#### CONCLUSION

An oft-repeated maxim asserts “you get what you pay for.” But what do you get when you pay not with money but with your time and attention? Manipulative technologies intentionally exploit psychological vulnerabilities in their users, inducing them to spend a significant proportion of their waking hours on digital platforms. At a societal level, we are only beginning to understand the costs that this exploitation is having on our productivity, attention spans, interpersonal relationships, and mental and physical health. It is likely, however, that such costs will be far greater than the approximately \$0.31 per hour that billions of us diligently generate for the tech giants.<sup>299</sup> In any case, without major regulatory reform, Big Tech will not be footing the bill.

Although there have been early attempts to restrain technology companies from engaging in manipulative practices, those attempts have failed to significantly change the status quo. Likewise, companies that utilize manipulative technologies have no clear corporate law duties to rein in their behavior and protect their users from exploitation and other harms. This Article proposes filling the regulatory void with a novel solution that targets the largest and most exploitative digital platforms, which will be designated “systemically important platforms.” This designation will subject such platforms to heightened restrictions, thereby constraining their ability to engage in manipulative practices and providing users with agency, meaningful choice, and greater control over their digital experience.

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<sup>299</sup> See *supra* section I.C.1.