VIRTUAL ACCESS: A NEW FRAMEWORK FOR DISABILITY AND HUMAN FLOURISHING IN AN ONLINE WORLD

JOHANNA SMITH* AND JOHN INAZU**

While many commentators have noted the wealth and class disparities that emerge from the digital divide, disability adds another important lens through which to consider questions of access and equity. Online accessibility for disabled people has fallen prey to the same assumptions and impediments that led to the Americans with Disabilities Act ("ADA") addressing disability access in the offline world. Addressing these shortcomings requires a significant conceptual shift in our understanding of "access," even among disabled people. Offline, the sidewalk or doorway hindered access to those who needed assistance walking or moving. Today's virtual sidewalks and doorways complicate access in fundamentally different but no less important ways.

This Article reframes the legal, normative, and theoretical dimensions of the intersection of disability and online access to suggest a more granular approach than those provided by existing judicial and scholarly interventions. Our approach sets forth three recommendations. First, we suggest greater attention to online analogues for offline legal categories that create different zones for human interaction: public forums, public accommodations, non-public spaces, and what one of us has termed "private public forums"—the privately owned venues that functionally replace the public forum, especially online. Second, contrary to the approach adopted in some jurisdictions, we propose eliminating any requirement of a physical nexus between an online site and an in-person operation. Third, we recommend directing most regulatory requirements toward three kinds of commercial entities whose power, influence, and design functionality best position them to remedy existing gaps in online disability access—entities we call design services, communication platforms, and online mediators. Design services provide browsers, operating systems, and website design tools and templates. Communication platforms connect individual users through social media and other sharing mechanisms. Online mediators aggregate information to connect customers with product and service providers. If these three kinds of companies can set design norms for individual websites and apps, much of the framework for disability access will be in place. But as we will explain, not all individual users can or should be forced to incur compliance costs related to website and application design—some small sites are properly exempted from such oversight. For this reason, we suggest that design services make disability access the baseline; that communication platforms and online mediators

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** Sally D. Danforth Distinguished Professor of Law and Religion, Washington University School of Law. Thanks to Amanda Davey, Abe Hester, Clare Carter, Rachel Mattingly Phillips, Seth Reid, and Alex Siemers for research assistance. Thanks also to Bradley Areheart, Alex Hartemink, Laurie Maffley-Kipp, Tove Klovning, Mark Valeri, Abram Van Engen, Laura Wolk, and participants at a faculty workshop at Washington University School of Law for comments on earlier drafts. We also thank Benjamin Alexander, Kyle Clark, and the other editors of the *Wisconsin Law Review* for their careful work on this Article.

implement accessibility once they reach certain size or revenue thresholds; and that certain users be permitted to opt out of disability access features.

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INTRODUCTION

In 2003, Mark Lemley observed that "public accessibility of [the internet's] key features is so deeply ingrained that we simply take it for granted."[1] But this broad accessibility is deeply ingrained only for the non-disabled world.[2] In fact, online accessibility for disabled people[3] has fallen prey to the same assumptions and impediments that led the Americans

1. Mark A. Lemley, *Place and Cyberspace*, 91 CALIF. L. REV. 521, 535 (2003).

2. Ben Brazil, *Virtual World Provides a Real-Life Haven for the Disabled*, L.A. TIMES: DAILY PILOT (Oct. 3, 2018, 9:00 AM), https://www.latimes.com/socal/daily-pilot/entertainment/tn-wknd-et-second-life-20181003-story.html [https://perma.cc/CQ5K-UBAL] ("Over and over again, if you look at the history of technology, often the tech gets developed assuming the consumer is able-bodied. Then a couple of years later they realize they forgot about the disabled folks, and they develop some kind of add-on, which usually doesn't work.").

3. To conform with current trends in the disabled community, we use the term "disabled people" in lieu of older terminology, *e.g.*, "persons with disabilities," but do not modify original quoted language. *See, e.g.*, Brittany Wong, *It's Perfectly OK to Call a Disabled Person 'Disabled,' and Here's Why*, HUFFPOST (July 6, 2021), https://www.huffpost.com/entry/what-to-call-disabled-person_l_5d02c521e4b0304a120c7549 [https://perma.cc/W9K3-2PRF].

with Disabilities Act ("ADA") to address access barriers before internet access and usage became commonplace.[4]

Congress enacted the ADA in 1990 intending to remedy pervasive disability discrimination, which often manifested as segregation, "relegation to lesser services," and failure to make the modifications necessary to enable participation and access.[5] The portion of the ADA most applicable to online accessibility is Title III's prohibition of discrimination on the basis of disability in places of public accommodation. Title III requires that public accommodations make "reasonable modifications" so that their goods, services, and facilities are accessible to disabled people.[6] The obligation to make these reasonable modifications is limited: public accommodations are not required to make changes that would fundamentally alter the nature of their goods, services, facilities, privileges, advantages, or accommodations or that would result in an undue burden.[7] But as we explain later in this Article, conforming a company's internet presence with industry accessibility standards is relatively inexpensive—especially when applied at scale—which means that online accessibility measures should seldom qualify as fundamental alterations.[8]

Courts and scholars began exploring the connections between disability and online access in the early 2000s. The first judicial decision came in 2002, when a federal court held that an airline's website was not subject to the ADA's accessibility requirements for places of public accommodation because it was neither a physical "place" of public accommodation nor a "nexus" connecting users to a physical place.[9] Some courts followed this distinction between websites with a nexus to the physical world and those that lacked such a connection, while other courts

4. Americans with Disabilities Act of 1990, Pub. L. No. 101–336, 104 Stat. 327 (codified at 42 U.S.C. §§ 12101–12213).

5. Americans with Disabilities Act of 1990 § 2, 104 Stat. 327, 329 (codified at 42 U.S.C. § 12101(a)(2), (5)).

6. 42 U.S.C. § 12182(b)(2)(A)(ii).

7. § 12182(b)(2)(A)(ii)–(iii).

8. *See infra* Section II.C.

9. *Access Now, Inc. v. Sw. Airlines Co.*, 227 F. Supp. 2d 1312, 1319, 1321 (S.D. Fla. 2002); *see also* Richard E. Moberly, *The Americans with Disabilities Act in Cyberspace: Applying the "Nexus" Approach to Private Internet Websites*, 55 MERCER L. REV. 963, 965–66 (2004) (describing the early attempts to apply the ADA to the internet while also advocating for the physical nexus approach to online accessibility). Disabled plaintiffs first attempted to apply Title III of the ADA to online access in a 1999 lawsuit against America Online (AOL); the case settled quickly. *See* Paul Taylor, *The Americans with Disabilities Act and the Internet*, 7 B.U. J. SCI. & TECH. L. 26, 31–32 (2001) (citing Complaint, *Nat'l Fed'n of the Blind v. America Online, Inc.*, No. SA-99-CA-214-EP (D. Mass. 1999) (asserting that AOL's proprietary software could not be accessed by standard screen-readers)).

rejected the physical nexus test.[10] Early scholarly commentary focused similarly on the physical nexus test.[11]

The most significant theoretical development came in Bradley Areheart and Michael Stein's 2015 article, *Integrating the Internet*.[12] Areheart and Stein set out a normative and statutory argument based on the ADA's focus on public accommodations. Their proposal improved upon the insufficiently narrow approach taken by most courts.[13] But it left

10. *See* discussion *infra* Part IV. Many early interpretations of internet accessibility drew from prior caselaw that had assessed whether the ADA's "public accommodations" language referred to only physical places. *Compare Pallozzi v. Allstate Life Ins. Co.*, 198 F.3d 28, 31 (2d Cir. 1999) (concluding that the ADA regulates the underwriting practices of insurance companies because the statute applies to the "goods and services"—not merely the physical spaces—of covered entities), *and Carparts Distrib. Ctr., Inc. v. Auto. Wholesaler's Ass'n of New England, Inc.*, 37 F.3d 12, 19 (1st Cir. 1994) (holding that "places of 'public accommodation'" did not refer only to physical places), *with McNeil v. Time Ins. Co.*, 205 F.3d 179, 182, 188 (5th Cir. 2000) (rejecting application of the ADA to insurance policies by determining that the ADA applied to only "physical use of the services of a place of public accommodation" rather than requiring modifications to the services themselves), *and Parker v. Metro. Life Ins. Co.*, 121 F.3d 1006, 1011 (6th Cir. 1997) (ruling that public accommodations are only physical places and the necessary "physical nexus" does not exist if the defendant entity does not have an office open to the public), *and Ford v. Schering-Plough Corp.*, 145 F.3d 601, 613 (3d Cir. 1998) (noting that "an insurance *office* must be physically accessible to the disabled but need not provide insurance that treats the disabled equally with the non-disabled" (emphasis added)).

11. Taylor, *supra* note 9, at 47 (arguing that applying the ADA to the internet would restrict the freedom of content creators); Moberly, *supra* note 9, at 967, 979 (arguing that the ADA should apply only to "physical concrete structures" and "should regulate the manner in which these physical places of public accommodation use their website to communicate with the public and to permit access to their goods and services because those types of roles should qualify as having a nexus to the place of public accommodation"); Robert L. Burgdorf, Jr., *Restoring the ADA and Beyond: Disability in the 21st Century*, 13 TEX. J. C.L. & C.R. 241, 288–89 (2008) (concluding that the ADA should apply to all online services without regard for physicality); *see also* Carrie L. Kiedrowski, Note, *The Applicability of the ADA to Private Internet Web Sites*, 49 CLEV. ST. L. REV. 719, 746 (2001) (arguing that "First Amendment challenges to [website accessibility requirements will] fail because accessibility does not alter [] speech or content"); Michael O. Finnigan, Jr., Brian C. Griffith & Heather M. Lutz, Comment, *Accommodating Cyberspace: Application of the Americans with Disabilities Act to the Internet*, 75 U. CIN. L. REV. 1795, 1825–26 (2007) (arguing that the ADA should not apply to the internet).

12. Bradley Allan Areheart & Michael Ashley Stein, *Integrating the Internet*, 83 GEO. WASH. L. REV. 449 (2015). Areheart and Stein note that there was relatively little preceding scholarship, limited mostly to student notes. *Id.* at 453 n.23. Intervening scholarship has also been heavily composed of student notes, produced in large part during the COVID-19 pandemic. *See, e.g.*, Constancio Carvajal Paranal III, Note, *The Internet as a Public Accommodation and Its Impact on Higher Education*, 22 ASIAN-PACIFIC L. & P.J. 143 (2021); Julie Moroney, Note, *Reviving Negotiated Rulemaking for an Accessible Internet*, 119 MICH. L. REV. 1581 (2021); Youlan Xiu, Note, *What Does Web Accessibility Look Like Under the ADA?: The Need for Regulatory Guidance in an E-Commerce World*, 89 GEO. WASH. L. REV. 400 (2021); Ernesto Claeyssen, Note, *Buy It on the 'Gram: The Need to Extend the Americans with Disabilities Act to the E-Commerce World*, 72 RUTGERS U. L. REV. 1517 (2020).

13. *See infra* text accompanying notes 197–209.

open important details about how and where the ADA should apply online, arguing instead that "the internet" as a whole should be considered a place of public accommodation.[14] As we explain, that comprehensive approach overregulates some online sites that should operate independently from legal and regulatory disability norms, including many personal sites and sites of small businesses whose revenue falls below certain thresholds.[15] Such a broad, "all or nothing" approach also risks leaving critical needs unaddressed should courts and policymakers decline to classify the entire internet as a public accommodation.[16]

Most recently, Congressmen Ted Budd (R-NC), J. Luis Correa (D-CA), and Richard Hudson (R-NC) cosponsored H.R. 1100, the Online Accessibility Act, for the purpose of amending the ADA "to include consumer facing websites and mobile applications owned or operated by a private entity" and "to establish web accessibility compliance standards for such websites and mobile applications."[17] However, the proposed bill left open for agency clarification many important questions about its scope and the balance between mandated access and "small business concerns."[18]

In Part VI, we propose amending the ADA through a more targeted approach.[19] But we turn first to some of the conceptual challenges that any reform proposal should seek to address. Some of these challenges arise from the complexity of online engagement. Because this complexity is more easily visualized in offline contexts, we introduce the metaphor of the mixed-use real estate development. Ensuring meaningful disability access to a mixed-used development involves attending to distinct but interwoven challenges involving parking lots, sidewalks, doorways, elevators, and different kinds of public, private, and semi-public occupants of the development. Each of these components has varying degrees of public-facing interaction, and each is necessary to ensuring disability access.

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14. Areheart & Stein, *supra* note 12, at 452–53.

15. The cost to a company is frequently relevant to a reasonable accommodation determination. *See infra* note 120.

16. Only a handful of scholars have addressed the question of online disability access since Areheart and Stein. *See, e.g.*, Blake E. Reid, *Internet Architecture and Disability*, 95 IND. L.J. 591 (2020); Victoria Smith Ekstrand, *Democratic Governance, Self-Fulfillment and Disability: Web Accessibility Under the Americans with Disabilities Act and the First Amendment,* 22 COMMC'N L. & POL'Y 427 (2017).

17. Online Accessibility Act, H.R. 1100, 117th Cong. (2021). The Online Accessibility Act was first introduced in October 2020, *see* Online Accessibility Act, H.R. 8478, 116th Cong. (2020), but subsequently died in committee. *See H.R.8478 - Online Accessibility Act*, CONGRESS.GOV (Oct. 1, 2020), https://www.congress.gov/bill/116th-congress/house-bill/8478/actions.

18. H.R. 1100 §§ 601(a), (b)(2), (c)(3) (2021).

19. *See infra* Part VI.

Access to individual websites or mobile applications requires resolving a similarly complex set of related access challenges. We rely on the mixed-used development metaphor to illustrate part of this complexity. But the online access challenges are in some ways complicated even more by the challenge of *nesting*. As we explain, nesting calls attention to legal and conceptual challenges posed when some entities operate within a broader frame of differently situated entities. For example, a government post office might rent space from the privately owned mixed-use development, creating a public entity nested within a private one. Offline, these relationships are relatively rare. But online, they are everywhere. Social media platforms like Twitter and Instagram host public, private, and semi-public accounts, and some of those accounts themselves aggregate differently situated entities.[20] All of these complexities contribute to the analytical challenges of ensuring meaningful access online. Those challenges become even more important when we recognize the increasing number of services and opportunities that are today available exclusively online (one of several reasons that the physical nexus test is outdated).

Relying in part on the preceding insights, this Article reframes the legal, normative, and theoretical dimensions of the intersection of disability and online access to suggest an approach more granular than that proposed by Areheart and Stein but more comprehensive than the piecemeal (and often contradictory) judicial decisions in this area of law. Our approach includes three recommendations:

First, we suggest greater attention to online analogues for offline legal categories that create different zones for human interaction: public forums, public accommodations, non-public spaces, and what one of us has termed "private public forums"—the privately owned venues that functionally replace the public forum, especially online.[21] These offline legal categories should serve as guideposts for regulating online accessibility.

Second, contrary to the approach adopted in some jurisdictions, we propose eliminating any requirement of a physical nexus between an online site and an in-person operation.

Third, we recommend directing most regulatory requirements toward commercial entities whose power, influence, and design functionality best position them to remedy existing gaps in online disability access. We call these entities *design services*, *communication platforms*, and *online mediators*. Design services provide browsers, operating systems, and

20. *See* John D. Inazu, *Virtual Assembly*, 98 CORNELL L. REV. 1093, 1128–30 (2013) [hereinafter Inazu, *Virtual Assembly*]; JOHN D. INAZU, CONFIDENT PLURALISM: SURVIVING AND THRIVING THROUGH DEEP DIFFERENCE 61–62 (2018) [hereinafter INAZU, CONFIDENT PLURALISM].

21. INAZU, CONFIDENT PLURALISM, *supra* note 20, at 58–65 (describing private public forums as "forums owned and managed by private actors rather than by the government" and citing examples of the public house, privately owned shopping malls, and social media platforms).

website tools and coding. Communication platforms connect individual users through social media and other sharing mechanisms. Online mediators aggregate information to match customers with product and service providers. If these three kinds of companies can nudge individual users toward accessible websites, apps, and content, much of the framework for disability access will be in place.[22]

We begin in Part I by setting out the ways in which online engagement has increased in recent decades, as underscored by the recent COVID-19 pandemic. Part II explores the challenges and opportunities of online accessibility for disabled people. Part III considers how the online world complicates access in ways both similar and dissimilar to physical spaces. Part IV examines current judicial and scholarly approaches to regulation of online disability access. Part V explains our three recommendations, and Part VI suggests how to implement them legislatively and judicially.

I. Online Engagement and Human Flourishing in the Era of the ADA

Recent decades have demonstrated why meaningful access for disabled people must include online access. When Congress passed the ADA in 1990 to address persistent discrimination against disabled people in employment, transportation, communication, and recreation,[23] most human interaction occurred in person in physical places. Even when the ADA was amended in 2008, our life was not nearly as online as it is today.[24] But technological developments over the past decade and the

22. Some large companies—like Google—serve simultaneous design service, communication platform, and online mediator roles. As we will explain, not all individual users can or should be forced to incur compliance costs related to website and application design—some small sites are properly exempted from such oversight. For this reason, we propose three specific implementations. First, design services should be required to offer the tools and coding for disability access as their assumed baseline. Second, communication platforms and online mediators with annual revenue exceeding certain agency-set dollar thresholds should be required to implement accessibility. Third, the traditional categories of public accommodations—along with their online analogues—should also be required to meet these accessibility standards. *See infra* Section V.C.

23. Americans with Disabilities Act of 1990, Pub. L. No. 101-336, 104 Stat. 327 (codified at 42 U.S.C. §§ 12101–12213).

24. Areheart and Stein observe that it is "somewhat surprising that the ADA Amendments Act of 2008 did not address Internet accessibility under Title III, because the question had by that time been raised in multiple forums." Areheart & Stein, *supra* note 12, at 469. This omission may have been because Congress did not think an express amendment to that effect was needed; before and after the 2008 amendments, the DOJ held a technologically flexible interpretation of the ADA. *See infra* text accompanying note 229; *Achieving the Promises of the Americans with Disabilities Act in the Digital Age—Current Issues, Challenges, and Opportunities: Hearing Before the Subcomm. on the Const., C.R., and C.L. of the H. Comm. on the Judiciary*, 111th Cong. 6 (2010) (statement of Samuel R.

massive shift online during the COVID-19 pandemic have shown how much of our communication, education, employment, formation, and flourishing happens virtually.

Today's "internet" involves more than just websites but includes e-mail, multiplayer online games, virtual worlds, virtual reality, electronic books, and real-time navigation.[25] None of these existed at the enactment of the ADA.[26] Although the World Wide Web was first available for public use in 1991,[27] the first iteration of the now-ubiquitous Google search engine did not appear until 1998.[28] Meanwhile, the regulatory and accessibility contours of the web were only beginning to be explored when the Federal Trade Commission (FTC) held its first hearings on internet privacy in 1995.[29] The following year, the founder of the Electronic Frontier Foundation, John Perry Barlow, published an influential essay, *A Declaration of the Independence of Cyberspace*, declaring (in words that today seem utterly fanciful) that the internet would be unrestricted in both access and content:

> We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force, or station of birth. We are creating a world where anyone,

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Bagenstos, Principal Deputy Assistant Att'y Gen., U.S. Dep't of Just.) ("[T]he position of the Department of Justice has been clear. Title III applies to the Internet sites and services of private entities that meet the definition of public accommodations set forth in the statute, whether or not they operate exclusively online . . . .").

25. Reid, *supra* note 16, at 609.

26. Americans with Disabilities Act of 1990 104 Stat. 327 (codified at 42 U.S.C. §§ 12101–12213); *cf. Direct Mktg. Ass'n v. Brohl*, 575 U.S. 1, 17 (2015) (Kennedy, J., concurring) ("But in 1992, the Internet was in its infancy.").

27. James Boyle, *Is the Internet Over?! (Again?)*, 18 DUKE L. & TECH. REV. 32, 36 (2019). In 1990, what eventually became the World Wide Web was in model form for only internal use at CERN, the European nuclear research organization. *Id.* at 32–33, 36. Tim Berners-Lee drew the earliest draft model of the World Wide Web in 1989. His boss at CERN responded to the proposal with the notation, "Vague but exciting. . ." *Id.* at 32–33. The Federal Networking Council defined the term "internet" in 1995. BARRY M. LEINER ET AL., BRIEF HISTORY OF THE INTERNET 17 (1997), https://www.internetsociety.org/wp-content/uploads/2017/09/ISOC-History-of-the-Internet_1997.pdf [https://perma.cc/P6WL-T2FC].

28. *From the Garage to the Googleplex*, GOOGLE (last visited Nov. 3, 2020), https://about.google/intl/en_us/our-story/ [https://perma.cc/Y66P-5YWB]. Wikipedia followed three years later. Lily Rothman, *Wikipedia at 15: How the Concept of a Wiki Was Invented*, TIME (Jan. 15, 2016, 7:00 AM), https://time.com/4177280/wiki-history-wikipedia/ [https://perma.cc/D54T-9LBV]; *see also* Virginia Heffernan, *Just Google It: A Short History of a Newfound Verb*, WIRED (Nov. 15, 2017, 7:00 AM), https://www.wired.com/story/just-google-it-a-short-history-of-a-newfound-verb/ [https://perma.cc/C47D-ZGUX].

29. *See* FEDERAL TRADE COMM'N, PRIVACY ONLINE: A REPORT TO CONGRESS 2 (June 1998), https://www.ftc.gov/sites/default/files/documents/reports/privacy-online-report-congress/priv-23a.pdf [https://perma.cc/2K2K-7QFS].

> anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity.[30]

The social media revolution began in earnest in the early 2000s.[31] MySpace and LinkedIn launched in 2003, and Mark Zuckerberg and fellow Harvard students created TheFacebook.com in 2004.[32] In 2007, Apple gave people the ability to access the entire web through the pocket-sized, hand-held iPhone.[33] The combination of user-friendly, internet-connected physical devices (what became known as "the Internet of Things")[34] and a proliferation of social media platforms has led to a level of online engagement inconceivable in 1990. Indeed, the last fifteen years have seen seismic shifts in internet-based technology.[35] Today we can

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30. John Perry Barlow, *A Declaration of the Independence of Cyberspace*, 18 DUKE L. & TECH. REV. 5, 6 (2019).

31. The first online platform was the Beverly Hills Internet in 1995, later renamed as Yahoo! GeoCities. Brian McCullough, *David Bohnett, Founder of GeoCities*, INTERNET HIST. PODCAST (May 11, 2015), http://www.internethistorypodcast.com/2015/05/david-bohnett-founder-of-geocities/ [https://perma.cc/6CYC-W9AY]. Early platforms like GeoCities functioned as web host subscription services rather than the modern personal page format. *See* Ken Gagne, Opinion, *Yahoo GeoCities Closes on Oct. 26*, COMPUTERWORLD (Oct. 23, 2009, 1:24 PM), https://www.computerworld.com/article/2468045/yahoo-geocities-closes-on-oct--26.html [https://perma.cc/4X6J-Z78T]. GeoCities was followed by websites such as Six Degrees, which is reminiscent of modern social network services and served as successful models for later services. *See* Doug Bedell, *Meeting Your New Best Friends Six Degrees Widens Your Contacts in Exchange for Sampling Web Sites*, DALL. MORNING NEWS (Oct. 27, 1998), http://web.archive.org/web/20010104125400/www.dougbedell.com/sixdegrees1 .html [https://perma.cc/BX47-M3FK?type=image]. Six Degrees is often recognized as the first contemporary social network and was notable for using real usernames in lieu of screennames, abandoning subscription services in favor of allowing direct advertising to its users. *Id.*

32. *See* Marx Buscemi Eisbrenner Group, *A Timeline of Social Media*, MBE GROUP (June 30, 2020), https://mbe.group/a-timeline-of-social-media/ [https://perma.cc/AR58-5K3N]; Mark Hall, *Facebook*, ENCYC. BRITANNICA (July 8, 2021), https://www.britannica.com/topic/Facebook [https://perma.cc/5VLR-BDCW]; *About LinkedIn*, LINKEDIN, https://about.linkedin.com/ [https://perma.cc/FH8J-EAHW] (last visited Sept. 13, 2021).

33. *iPhone*, ENCYC. BRITANNICA (June 18, 2020), https://www.britannica.com/technology/iPhone. The BlackBerry 5810, introduced in 2002, had enabled users to access email on their cellphones but did not otherwise provide the general web access that the iPhone later offered. Phil Goldstein, *BlackBerry 5810 Kickstarted the Mobile Work Era*, BIZTECH MAG. (Nov. 11, 2016), https://biztechmagazine.com/article/2016/11/blackberry-5810-kickstarted-mobile-work-era [https://perma.cc/39SM-TDSN].

34. Matt Burgess, *What Is the Internet of Things? Wired Explains*, WIRED (Feb. 16, 2018), https://www.wired.co.uk/article/internet-of-things-what-is-explained-iot [https://perma.cc/D9YP-EXXU].

35. Between 2005 and 2019, the percentage of adult Americans with some social media presence rose from five to seventy-two percent. *Social Media Fact Sheet*, PEW RSCH. CTR. (Apr. 7, 2021), https://www.pewresearch.org/internet/fact-sheet/social-media/ [https://perma.cc/9868-J25J].

access the internet from all sorts of devices—from watches and tablets to cars and toasters[36]—and we can use the internet for all sorts of activities that were at one time exclusively in-person: from banking to protesting to double-checking the contents of our refrigerators.[37]

We also have been shaped by the rise of online mediators that aggregate information and connect users and providers. Online mediators like Craigslist, Expedia, Amazon Marketplace, Airbnb, and Uber are not simply the websites of brick-and-mortar stores, like Target.com. Rather, they are an entirely new creation from the age of the internet: aggregators that provide new levels of freely accessible information and convenience for consumers searching for transportation or businesses whose in-person services can be accessed only via an online platform.[38] These entities "mediate many of our daily interactions."[39] Rob Frieden observes that they "offer faster, better, smarter, cheaper, and more convenient solutions to consumers' wants, needs, and desires than what traditional 'bricks and mortar' ventures offer."[40] And Orly Lobel notes that they "reconfigure a range of industries by altering basic patterns of supply and demand and shifting incentives previously associated with traditional purchasing decisions."[41] Beyond reconfiguring industries, some of these entities—like

36. Brian Heater, *Smart Toasters are Here*, TECHCRUNCH (Jan. 7, 2017, 3:32 PM), https://techcrunch.com/2017/01/07/toaster/ [https://perma.cc/A76B-MGHP].

37. *Samsung Family Hub*, SAMSUNG, https://www.samsung.com/us/explore/family-hub-refrigerator/features/ [https://perma.cc/BR7C-FJ75] ("See inside your refrigerator from anywhere").

38. *See* Abbey Stemler, Joshua E. Perry & Todd Haugh, *The Code of the Platform*, 54 GA. L. REV. 605, 613–14 (2020).

39. *Id.* at 608. Kenneth A. Bamberger and Orly Lobel note that these platforms "are two-sided markets coordinated by a digital provider: networks where the customers and providers interact between an intermediary platform" and therefore "rely on network effects which involve two distinct groups that ultimately benefit each other." Kenneth A. Bamberger & Orly Lobel, *Platform Market Power*, 32 BERKELEY TECH. L.J. 1051, 1069 (2017).

40. Rob Frieden, *Two-Sided Internet Markets and the Need to Assess Both Upstream and Downstream Impacts*, 68 AM. U. L. REV. 713, 721 (2019).

41. Orly Lobel, *The Law of the Platform*, 101 MINN. L. REV. 87, 115 (2016). Lobel notes a long list of affected industries. *Id.* at 95 ("Industries affected by the platform economy include hotels (Airbnb; Couchsurfing; Homeaway; Vrbo); office space (Liquid Space; ShareDesk); parking spaces (ParkingPanda; Park Circa); transportation (Lyft; Sidecar; Uber); restaurants (EatWith; Feastly; Blue Apron; Munchery); used clothing (ThredUp); household tools (Open Shed); outdoor gear (Gearcommons); capital (Zopa; Prosper; Kickstarter; Bitcoin; Kiva); broadcasting (Aereo; FilmOn.com); legal services (Upcounsel); medical services (Healthtap; Teledoc; CrowdMed); academic services (Uguru); everyday errands, such as grocery shopping and laundry (TaskRabbit; Instacart; Airtasker; Washio); and specialized errands, such as flower delivery (BloomThat), dog walking (DogVacay), and package delivery (Shyp)."). Sometimes these innovations come at the expense of more traditional offline markets. *See, e.g.*, Katrina M. Wyman, *Taxi Regulation in the Age of Uber*, 20 N.Y.U. J. LEGIS. & PUB. POL'Y 1, 3–4 (2017). ("[B]y the end of 2014, [taxi] medallion values were falling precipitously and a good number of those who purchased medallions at [New York] City's recent auctions were suffering from

Etsy or Amazon Marketplace—have never existed in any physical, brick-and-mortar fashion.

While some aspects of virtual life have been much-critiqued,[42] online mediators, social media, and other web-based communications also create new possibilities for internet-based human flourishing. These possibilities were already evident by the beginning of 2020, but when stay-at-home orders were issued across the country in March 2020 in response to the COVID-19 pandemic, even more offline activities moved online.[43] Consider the following examples:

Food. Many households began ordering groceries online—either for parking lot pickup or home delivery—instead of going into the store themselves.[44] Online retail and meal delivery likewise expanded, with brick-and-mortar stores offering curbside pickup options for online orders and more consumers using Instacart, UberEats, or other delivery options.[45]

Education. Educators at universities and K-12 schools began teaching over Zoom, Google, and other online platforms. The internet facilitated class discussion groups—both over video and via online forums—and

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buyer's remorse. Almost a year later, in November 2015, some medallion owners suggested in court papers that the private secondary market for medallions had deteriorated so much that it was 'frozen.'").

42. *See* Christopher Sibona, *Unfriending on Facebook: Context Collapse and Unfriending Behaviors*, 47 HAW. INT'L CONF. ON SYS. SCI. 1676 (2014) (describing the psychology of unfriending on Facebook); SHERRY TURKLE, ALONE TOGETHER: WHY WE EXPECT MORE FROM TECHNOLOGY AND LESS FROM EACH OTHER 179–83 (2011) (describing the way that young people create a virtual version of themselves and the stress of "profile production"); Kyle Langvardt, *Regulating Habit-Forming Technology*, 88 FORDHAM L. REV. 129, 141–52 (2019) (describing how companies design their users' habits and the harms of such design); David Sax, Opinion, *Our Love Affair with Digital Is Over*, N.Y. TIMES (Nov. 18, 2017), https://www.nytimes.com/2017/11/18/opinion/sunday/internet-digital-technology-return-to-analog.html [https://perma.cc/FHJ2-P9BJ] ("Today, when my phone is on, I feel anxious and count down the hours to when I am able to turn it off and truly relax."); NICHOLAS CARR, THE SHALLOWS: WHAT THE INTERNET IS DOING TO OUR BRAINS 6–7 (2010).

43. *See generally* Lillian Rizzo & Sawyer Click, *How COVID-19 Changed Americans' Internet Habits*, WALL ST. J. (Aug. 15, 2020), https://www.wsj.com/articles/coronavirus-lockdown-tested-internets-backbone-11597503600 [https://perma.cc/4AXV-TM28]; Mark Beech, *COVID-19 Pushes up Internet Use 70% and Streaming More Than 12%, First Figures Reveal*, FORBES (Mar. 25, 2020), https://www.forbes.com/sites/markbeech/2020/03/25/covid-19-pushes-up-internet-use-70-streaming-more-than-12-first-figures-reveal/?sh=66f300b93104 [https://perma.cc/HWE9-QVQC].

44. *See, e.g.*, Alexia Elejalde-Ruiz, *Pandemic May Permanently Change Food Industry*, BOS. HERALD (Jan. 4, 2021), https://www.bostonherald.com/2021/01/04/pandemic-may-permanently-change-food-industry/ [https://perma.cc/6URA-C6YC].

45. Nathaniel Popper, *Americans Keep Clicking to Buy, Minting New Online Shopping Winners*, N.Y. TIMES (May 13, 2020), https://www.nytimes.com/interactive/2020/05/13/technology/online-shopping-buying-sales-coronavirus.html [https://perma.cc/4SAX-HYK2].

teacher-student conferences. National parks, museums, and historic sites became accessible through an expanded virtual world, offering live-streams of key attractions[46] and virtual tours of exhibits and grounds.[47]

Professional Services. In the legal field, courtroom appearances, client presentations, and even interviews occurred online.[48] Professional development programs became wholly internet-based webinars and online conferences.[49] Outside the law, employers and employees use the internet to host meetings, share presentations, and submit work product.[50]

Health. Doctors began seeing patients virtually, with the Centers for Medicare & Medicaid Services expanding reimbursement to cover telemedicine services while anticipating telehealth visits to top one billion by the end of 2020.[51] An initially steep spike in telehealth use has since stabilized at a level thirty-eight times that before the pandemic.[52] The

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46. *See, e.g.*, Explore Live Nature Cams, *Brooks Falls – Katmai National Park 2021, Alaska powered by EXPLORE.org*, YOUTUBE (June 11, 2021), https://www.youtube.com/watch?v=nprdq03e8yI [https://perma.cc/4T65-YW2J].

47. *See, e.g.*, Smithsonian, *National Museum of Natural History – Virtual Tours*, https://naturalhistory.si.edu/visit/virtual-tour [https://perma.cc/A9QZ-XWYW] (last visited Nov. 3, 2020); *The Alamo*, https://www.thealamo.org/visit/tours-and-experiences/3d-panoramic-tour [https://perma.cc/54YY-GSKR] (last visited Nov. 3, 2020).

48. For an extended discussion of the challenges and opportunities posed by remote legal proceedings, see Alicia L. Bannon & Douglas Keith, *Remote Court: Principles for Virtual Proceedings During the COVID-19 Pandemic and Beyond*, 115 NW. U. L. REV. 1875 (2021); Dan Roe, *Amid Virtual OCI, Law Firms Lean on More Interviews While Perfecting Callbacks*, AM. LAW. (Feb. 4, 2021), https://www.law.com/americanlawyer/2021/02/04/amid-virtual-oci-law-firms-lean-on-more-interviews-while-perfecting-callbacks/?slreturn=20210805190243 [https://perma.cc/PX9G-KHLX].

49. *See, e.g.*, Rishi Iyengar, *Sorry, but Video Meetings Are Here to Stay*, CNN (Dec. 22, 2020), https://www.cnn.com/2020/12/22/tech/video-conferencing-2021-coronavirus-vaccine/index.html [https://perma.cc/M6GY-QSR3]; Dylan Jackson, *How Lawyer Professional Development Went Virtual, and Why Some Programs Fall Flat*, AM. LAW. (Mar. 2, 2021), https://www.law.com/americanlawyer/2021/03/02/how-lawyer-professional-development-went-virtual-and-why-some-programs-fall-flat/ [https://perma.cc/7PYT-N3KQ].

50. *See, e.g.*, Kate Conger, *Facebook Starts Planning for Permanent Remote Workers*, N.Y. TIMES (May 21, 2020), https://www.nytimes.com/2020/05/21/technology/facebook-remote-work-coronavirus.html?searchResultPosition=13 [https://perma.cc/G6FS-7BGC].

51. Leslie V. Norwalk & Richard Wade, *Incentivize Innovations that Make Telemedicine Indispensable amid COVID*, HILL (July 24, 2020), https://thehill.com/opinion/technology/508853-incentivize-innovations-that-make-telemedicine-indispensable-amid-covid [https://perma.cc/L9KD-8MX9]. The shift to telemedicine and other online medical services during COVID-19 amplified existing trends toward moving medical information online. *See* Areheart & Stein, *supra* note 12, at 460 (describing the proliferation of websites containing medical information and the shift to electronic medical records).

52. Oleg Bestsennyy, Greg Gilbert, Alex Harris & Jennifer Rost, *Telehealth: A Quarter-Trillion-Dollar Post-Covid-19 Reality?*, MCKINSEY & CO. (July 9, 2021),

fitness industry began and continues to offer live-streamed and pre-recorded workout classes.[53] Counseling services became more widely available than ever before: the internet removed lengthy commutes for clients who relied on public transportation and brought counseling services to some rural areas for the first time ever.[54] This virtual "telepsychiatry" can sometimes be as effective as in-person counseling sessions[55]—with the added benefits of both removing the stigma of sitting in a counselor's waiting room and offering patients with anxiety the opportunity to receive treatment without leaving home.[56]

Religion. Churches and other houses of worship live-streamed services or posted them for on-demand online viewing.[57] And community-building religious practices like small groups and religious counseling pivoted to online meeting spaces, too.[58]

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https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/telehealth-a-quarter-trillion-dollar-post-covid-19-reality# [https://perma.cc/X3U6-NV9B].

53. Jess Cording, *How COVID-19 Is Transforming the Fitness Industry*, FORBES (July 13, 2020), https://www.forbes.com/sites/jesscording/2020/07/13/covid-19-transforming-fitness-industry/#3936a3ab30a7 [https://perma.cc/7BF6-V4LM].

54. Harriet Brown, *After Trying Remote Therapy, Some May Never Go Back to In-Person Sessions*, VICE (July 6, 2020), https://www.vice.com/en_us/article/y3zbmx/teletherapy-more-widely-accepted-covid-19-pandemic [https://perma.cc/7NYS-VG7L].

55. Sam Hubley, Sarah B. Lynch, Christopher Schneck, Marshall Thomas & Jay Shore, *Review of Key Telepsychiatry Outcomes*, 6 WORLD J. PSYCH. 269, 269 (2016), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4919267/pdf/WJP-6-269.pdf [https://perma.cc/P8NK-R5FU] (systematically reviewing 452 telepsychiatry studies). Although differences in clinical outcomes for patients receiving therapy online and patients receiving therapy in person may be negligible for many patients, virtual therapy may pose significant, unique challenges for others. *See* Adam Gopnik, *The New Theatrics of Remote Therapy*, NEW YORKER (May 25, 2020), https://www.newyorker.com/magazine/2020/06/01/the-new-theatrics-of-remote-therapy [https://perma.cc/4JL3-ZNYV]. Therapists struggle with aspects of treating obsessive-compulsive disorder, post-traumatic stress disorder,

> and other disorders online [because of] cues missed due to the limited frame of a computer screen. The jiggling foot, the knotted hands, the subtle shifting in the chair that telegraphs unease with a topic of conversation are all lost to the doctor in tele-sessions. For patients battling substance abuse it's hard to get away with the telltale gait of intoxication or the smell of alcohol on the breath in an in-person session. Not so hard on Zoom.

Jeffrey Kluger, *Online Therapy, Booming During the Coronavirus Pandemic, May Be Here to Stay*, TIME (Aug. 27, 2020), https://time.com/5883704/teletherapy-coronavirus/ [https://perma.cc/UCR8-5UUM].

56. Brown, *supra* note 54.

57. *See, e.g.*, Mary Pieper, *North Iowa Churches Continue to Make Connections*, GLOBE GAZETTE (Mar. 7, 2021), https://globegazette.com/north-iowa-churches-continue-to-make-connections/article_68c5c6d4-323c-5340-9ee2-e426f5eb884d.html.

58. Elizabeth Dias, *After Weeks on Zoom, Churches Consider Plans to Reopen*, N.Y. TIMES (June 6, 2020), https://www.nytimes.com/2020/05/07/us/church-reopening-coronavirus.html?searchResultPosition=2 [https://perma.cc/7J9W-PXJQ].

Relationships. The internet reached and continues to reach into dating, with dating websites, "virtual dates" like Zoom-based speed dating,[59] virtual museum tours, virtual game nights, and cooking together over videoconference.[60] Both videoconferencing and social media enabled friendships to continue across distances and through pandemic-induced quarantines.

Activism.[61] When George Floyd was murdered by Minneapolis police during the height of the COVID-19 pandemic, the internet both disseminated information and served as a protest platform. The viral videos of Floyd's murder spread globally via Twitter, Instagram, and other social media platforms.[62] Rallies were organized on Facebook,[63] and activists around the globe posted blank, black posts with the hashtag "#BlackoutTuesday" to stand in solidarity with the Black Lives Matter racial justice organization.[64]

Entertainment. During the 2020 NBA playoffs, fans sat remotely courtside using virtual reality headsets, and their images could stream live on video boards surrounding the court.[65] Fans of *Saturday Night Live*

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59. Alyson Krueger, *Virtual Dating Is the New Normal. Will It Work?*, N.Y. TIMES (Apr. 18, 2020), https://www.nytimes.com/2020/04/18/nyregion/coronavirus-dating-video.html?action=click&module=RelatedLinks&pgtype=Article [https://perma.cc/T5XM-XB5Z]. Singles use videoconferencing to talk to potential partners more than ever before: sixty-nine percent of singles are open to using videoconferencing in the dating context, but only six percent of singles were doing so pre-COVID. Helen Fisher, *How Coronavirus Is Changing the Dating Game for the Better*, N.Y. TIMES (May 7, 2020), https://www.nytimes.com/2020/05/07/well/mind/dating-coronavirus-love-relationships.html [https://perma.cc/XHD4-DW97]. And this is improving dating culture—reducing the in-person pressures of sex and negotiating who picks up the tab. *Id.*

60. Rachel Wolfe, *Online Dating in the Coronavirus Era: How to Get with the Game*, WALL ST. J. (June 9, 2020), https://www.wsj.com/articles/online-dating-in-the-coronavirus-era-how-to-get-with-the-game-11591722007 [https://perma.cc/N7CK-M7JW].

61. *See generally* Inazu, *Virtual Assembly*, *supra* note 20. As Areheart and Stein observe, other democratic practices like voter registration sometimes happen online. Areheart & Stein, *supra* note 12, at 460–61.

62. Jon Emont & Philip Wen, *How Protests over George Floyd's Killing Spread Around the World*, WALL ST. J. (June 11, 2020), https://www.wsj.com/articles/social-media-helps-spur-global-protests-over-george-floyds-death-11591880851 [https://perma.cc/WH6S-JW2D].

63. *Id.*

64. Joe Coscarelli, *#BlackoutTuesday: A Music Industry Protest Becomes a Social Media Moment*, N.Y. TIMES (June 4, 2020), https://www.nytimes.com/2020/06/02/arts/music/what-blackout-tuesday.html [https://perma.cc/M4TD-FGBW].

65. Shaun Powell, *How Virtual Fans Found Their Seats at NBA Season Restart*, NBA (Aug. 10, 2020), https://www.nba.com/news/virtual-fans-help-restart-atmosphere [https://perma.cc/H7PS-DHPQ].

continued to watch their favorite actors interact via online mediums.[66] Concerts likewise moved online, as stars from every genre of music took to various live-streaming platforms to perform and interact with fans.[67]

In short, the internet played a significant connecting role during the first two decades of the twenty-first century, it became the primary conduit for daily interaction for many Americans during the COVID-19 pandemic, and it retains a prominent role today. Because many of these connecting activities are essential to human flourishing, ensuring online access for disabled people is also critical to that flourishing.[68]

II. Challenges and Opportunities for Online Disability Access

Moving from a predominantly offline environment to an online one introduces important challenges and opportunities for online disability access. Although many commentators have noted the wealth and class disparities that emerge from the digital divide,[69] disability adds another

66. Shyla Watson, *'SNL' Did an At-Home Episode and It Was Actually Pretty Fantastic*, BUZZFEED (Apr. 12, 2020), https://www.buzzfeed.com/shylawatson/saturday-night-live-at-home-recap [https://perma.cc/JY6M-YFP8].

67. *Coronavirus Stay-at-Home Orders Lead to a Full Bill of Live-Streamed Concerts*, USA TODAY (May 29, 2020), https://www.usatoday.com/picture-gallery/tech/2020/05/29/coronavirus-concerts-musicians-stars-performing-stay-home-gigs/5277644002/ [https://perma.cc/VD27-LVDV].

68. For various arguments exploring human flourishing in the context of disability, see, for example, STANLEY HAUERWAS, SANCTIFY THEM IN THE TRUTH: HOLINESS EXEMPLIFIED 16 (1999) [hereinafter, HAUERWAS, SANCTIFY]; STANLEY HAUERWAS, SUFFERING PRESENCE: THEOLOGICAL REFLECTIONS ON MEDICINE, THE MENTALLY HANDICAPPED, AND THE CHURCH 213 (1986) [hereinafter, HAUERWAS, SUFFERING]; HANS S. REINDERS, THE FUTURE OF THE DISABLED IN LIBERAL SOCIETY: AN ETHICAL ANALYSIS 194 (2000); Jacobus tenBroek, *The Right to Live in the World: The Disabled in the Law of Torts*, 54 CALIF. L. REV. 841, 841–52 (1966); *cf.* ROBIN L. WEST, RE-IMAGINING JUSTICE: PROGRESSIVE INTERPRETATIONS OF FORMAL EQUALITY, RIGHTS, AND THE RULE OF LAW 80 (2003).

69. "[P]eople [in developing countries] lack many things: jobs, shelter, food, health care and drinkable water. Today, being cut off from basic telecommunications services is a hardship almost as acute as these other deprivations, and may indeed reduce the chances of finding remedies to them." Press Release, U.N. Secretary-General, Sec'y-Gen. Addresses World Telecomm. Exhibition and F., U.N. Press Release SG/SM/7164, at 2–3 (Oct. 11, 1999). The digital divide has been recognized as a problem since the mid-1990s. By 1999, the National Telecommunications and Information Administration within the U.S. Department of Commerce was describing the digital divide, which it defined as "the divide between those with access to new technologies and those without," as "one of America's leading economic and civil rights issues." Larry Irving, *Introduction* to NAT'L TELECOMM. & INFO. ADMIN., FALLING THROUGH THE NET: DEFINING THE DIGITAL DIVIDE, at xiii (1999), https://www.ntia.doc.gov/legacy/ntiahome/fttn99/FTTN.pdf [https://perma.cc/C5ZD-WXHC]. The term "digital divide . . . encompasses a wide spectrum of disparities and differences based on race, gender, age, income, education, type of household, geographic location, physical abilities, and the level of economic development." Peter K. Yu, *Bridging the Digital Divide: Equality in the Information Age*, 20 CARDOZO ARTS & ENT. L.J. 1, 7 (2002). The divide is frequently linked to wealth and

important lens through which to consider questions of access and equity.[70] Addressing these questions requires a significant conceptual shift in our understanding of "access," even among disabled people. Offline, sidewalks and doorways hindered access to those who needed assistance walking or navigating. Today's virtual sidewalks and doorways complicate access in fundamentally different but no less important ways.

A. Challenges

A 2016 Pew Research Center survey found that twenty-three percent of disabled Americans—compared with eight percent of non-disabled Americans—never use the internet.[71] Structural barriers almost certainly contribute to that disparity. As Areheart and Stein note, "at a time when there are fewer physical architectural barriers than ever before, digital architectural barriers are springing up every day to undermine Title III's normative social integration mandate."[72]

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class disparities. *See, e.g.*, JAN VAN DIJK, THE DIGITAL DIVIDE (2020); Valerie Hawkins, *The Role of the Digital Divide in Poverty*, MEDIUM (Jan. 4, 2018), https://medium.com/@librariesval/the-role-of-the-digital-divide-in-poverty-813c395a9a29 [https://perma.cc/DH8D-M5CP]. In a survey by the Pew Research Center, just over half of lower-income respondents indicated that they have a computer and broadband (59% and 57%, respectively), whereas nearly all higher-income respondents had a computer and broadband (92% and 93%, respectively). Emily Vogels, *Digital Divide Persists Even as Americans with Lower Incomes Make Gains in Tech Adoption*, PEW RSCH. CTR. (June 22, 2021), https://www.pewresearch.org/fact-tank/2021/06/22/digital-divide-persists-even-as-americans-with-lower-incomes-make-gains-in-tech-adoption/ [https://perma.cc/4KK2-4E7F].

70. The digital divide for disabled people is exacerbated both by the disability itself and by the lower socioeconomic status that often coincides with disabilities. *See* Kristen Bialik, *7 Facts About Americans with Disabilities*, PEW RSCH. CTR. (July 27, 2017), https://www.pewresearch.org/fact-tank/2017/07/27/7-facts-about-americans-with-disabilities/ [https://perma.cc/62UW-4LZW].

71. Monica Anderson & Andrew Perrin, *Disabled Americans Are Less Likely to Use Technology*, PEW RSCH. CTR. (Apr. 7, 2017), https://www.pewresearch.org/fact-tank/2017/04/07/disabled-americans-are-less-likely-to-use-technology/ [https://perma.cc/P56Y-4BPP]. This Pew study is the latest survey of disabled Americans' use of technology.

72. Areheart & Stein, *supra* note 12, at 458. The DOJ's 2010 Final Regulatory Impact Analysis made a similar point:

> Some of the most frequently cited qualitative benefits of increased access are the increase in one's personal sense of dignity that arises from increased access and the decrease in possibly humiliating incidents due to accessibility barriers. Struggling to join classmates on a stage, to use a bathroom with too little clearance, or to enter a swimming pool all negatively affect a person's sense of independence and can lead to humiliating accidents, derisive comments, or embarrassment. These humiliations, together with feelings of being stigmatized as different or inferior from being relegated to use other, less comfortable or pleasant elements of a facility (such as a bathroom instead of a

Disabled people use a wide variety of assistive technologies to access the internet. Speech recognition, eye tracking technologies, and other alternative-input devices give access to people with motor disabilities.[73] Closed captioning gives deaf and hard-of-hearing people access to the audio contained within videos and other media. Screen readers—which can provide Braille, spoken, or large print outputs—offer blind and visually impaired people access to the highly visual world of the internet.[74] Audio descriptions provide verbal commentary that makes visual media more accessible.[75] Universal design coding can make websites compatible with these assistive technologies.[76] But the assistive technologies are only as good as the code and design: if the websites and programs are incompatible with assistive technologies, these assistive gateways become meaningless.[77]

Consider screen readers, which describe a webpage's elements to blind or otherwise visually impaired people. The technology relies on short phrases that a developer must embed in the photos, graphics, links, and buttons that appear on websites.[78] The screen reader then processes the embedded phrases and announces the text aloud to the user so that he knows what element is currently under the cursor's focus.[79] But as with many buildings constructed before the ADA, accessibility often is not built into the original design of the website or application. Because of the inaccessible design, screen readers often feed the user a string of

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> kitchen sink for rinsing a coffee mug at work), all have a negative effect on persons with disabilities.

Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, 75 Fed. Reg. 56,236, 56,244 (Sept. 15, 2010) (to be codified at 28 C.F.R. pt. 36).

73. Areheart & Stein, *supra* note 12, at 464.

74. *Id.* at 463.

75. U.S. DEP'T OF THE INTERIOR, OFFICE OF THE CHIEF INFORMATION OFFICER, STANDARD OPERATING PROCEDURES FOR CREATING ACCESSIBLE AUDIO/VISUAL MEDIA 5 (Sept. 7, 2017).

76. Disability rights activists developed the idea of universal design in the 1990s, creating "a framework for the design of places, things, information, communication and policy to be usable by the widest range of people operating in the widest range of situations without special or separate design." Mary A. Hums, Samuel H. Schmidt, Andrew Novak & Eli A. Wolff, *Universal Design: Moving the Americans with Disabilities Act from Access to Inclusion*, 26 J. LEGAL ASPECTS SPORT 36, 40 (2016) (quoting the Institute for Human Centered Design). Today, universal design coding applies these principles to the internet, with the goal of making online spaces as inclusive of the broadest possible range of users. *See generally* WENDY CHISHOLM & MATT MAY, UNIVERSAL DESIGN FOR WEB APPLICATIONS (2008).

77. *See generally* JONATHAN LAZAR, DANIEL GOLDSTEIN & ANNE TAYLOR, ENSURING DIGITAL ACCESSIBILITY THROUGH PROCESS AND POLICY (2015).

78. Areheart & Stein, *supra* note 12, at 463.

79. *See id.*

incomprehensible code as the user navigates the page.[80] Web designers add screen-reader patches only after launch, if at all.[81] The problem is then compounded when backend users of design services and communication platforms—like a Twitter user or website owner—omit explanatory phrases when adding or uploading content like graphics or pictures. For example, Twitter permits users to add descriptive text to their photos that can be read out by screen readers, but the platform does not require users to add such text.[82] Facebook now auto-generates alternative text for photos posted to its site, but it does not require users to edit or augment the AI-generated text before posting a photo.[83] The unedited text leads to underwhelming—if not misleading—descriptions that fail to describe the full, rich context of a photo.[84] For example, Facebook described a wedding photo of one of us as "1 person, wedding and outdoor"—hardly an adequate description for a father-daughter dance. Or consider something of far more dire consequence: an online infographic describing the COVID-19 safety procedures for a university. Depending on the website's AI technology, the AI-generated text might describe the image as "mask, stick figures, thermometer" instead of giving the more detailed description of "image with mask icon stating that masks must be worn at all times; image with stick figures stating that people must stay six feet apart; and image with thermometer stating that temperatures must be taken daily and reported if they rise above 100.4 degrees."[85]

Even seemingly trivial aspects of social media design are often inaccessible to screen readers. Social media platforms provide little support for GIFs (Graphics Interchange Format), which means that a screen reader user cannot tell what the GIF contains.[86] The individual

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80. *Id.*

81. Anne Quito, *There's Already a Blueprint for a More Accessible Internet. If Only Designers Would Learn It*, QUARTZ (Nov. 15, 2018), https://qz.com/1407450/theres-already-a-blueprint-for-a-more-accessible-internet/ [https://perma.cc/2TJF-ZQVF].

82. *How to Make Images Accessible for People*, TWITTER, https://help.twitter.com/en/using-twitter/picture-descriptions [https://perma.cc/HGB7-Y2X5] (last visited Sept. 13, 2021).

83. *How Does Automatic Alt Text Work on Facebook?*, FACEBOOK, https://www.facebook.com/help/216219865403298 [https://perma.cc/8CDX-BXNP] (last visited Sept. 13, 2021).

84. Nicole Lee, *Behind Facebook's Efforts to Make Its Site Accessible to All*, ENGADGET (July 13, 2016), https://www.engadget.com/2016-07-13-behind-facebooks-efforts-to-make-its-site-accessible-to-all.html [https://perma.cc/HU4D-YCHA].

85. Indeed, during the early days of the COVID-19 pandemic, many informative graphics and charts containing critical information were posted online in a format inaccessible to screen readers. *COVID-19: Risks and Challenges for the Visually Impaired*, U.S. ASS'N BLIND ATHLETES (May 12, 2020), https://www.usaba.org/covid-19-risks-and-challenges-for-the-visually-impaired/ [https://perma.cc/3MJK-D6GK].

86. *Usability and Accessibility: Social Media*, YALE UNIV., https://usability.yale.edu/web-accessibility/articles/social-media [https://perma.cc/J7Q5-QVSN] (last visited Jan. 4, 2020).

words that make up a hashtag are rarely capitalized, meaning that the screen reader often pronounces them as one long and incomprehensible word rather than the pithy phrase they were intended to be.[87] In the summer of 2020, Twitter proposed "audio tweets"—with no transcription plan—and inadvertently revealed that the company lacked a dedicated accessibility team.[88] And social media posts increasingly contain screenshots from other news sources that cannot be read by screen readers because they lack alternative text describing the visual content.[89] Often, these accessibility problems have simple fixes, such as capitalizing words, adequately describing GIFs or videos, or embedding the captured text into the screenshot photos that are inserted within articles as part of the article text.[90] But these fixes are rarely required by the private policies of communication platforms[91]—and certainly not mandated under existing federal law.

Meanwhile, even something as seemingly benign as a digital login process can pose an insurmountable burden for users with cognitive disabilities, especially those people whose disabilities relate to memory, reading, numbers, or perception.[92] Typical login protocols require a "cognitive function test," which requires a user to "remember[] random strings of characters," perform a "pattern gesture . . . on a touch screen," or "identify[] which images include a particular object."[93] Websites often lack alternative login methods that would make them accessible to disabled people: graphical passwords, improved interface design, and

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87. *Id.*

88. Kim Lyons, *Twitter's Audio Tweets Revealed an Accessibility Miss, and Now the Company Wants to Fix It*, VERGE (June 18, 2020, 8:28 AM), https://www.theverge.com/2020/6/18/21296032/twitter-audio-tweets-accessibility-volunteers [https://perma.cc/HSD5-KJEG]. Twitter's "audio Tweet" blunder was typical of many tech roll-outs: the technology is developed, and accessibility is considered as an add-on after the fact. Quito, *supra* note 81.

89. Will Butler, *The Trouble with Screenshorts*, BUZZFEEDNEWS (June 11, 2015, 9:01 AM), https://www.buzzfeednews.com/article/wilbutler/the-trouble-with-screenshorts#.vbDZy3n25 [https://perma.cc/X7L8-E7AP].

90. Quito, *supra* note 81; Butler, *supra* note 89. Instagram recently introduced a transcription feature for "stories"—images and short videos that last only twenty-four hours on a user's profile. The feature will transcribe videos so that other users—including those who are deaf or hard-of-hearing—can read what is being said. Kait Sanchez, *Instagram Will Now Let You Auto-Caption Stories with Just a Sticker*, VERGE (May 4, 2021, 11:00 AM), https://www.theverge.com/2021/5/4/22417837/instagram-captions-sticker-stories-accessibility [https://perma.cc/3LK7-UHQQ].

91. Quito, *supra* note 81.

92. *Understanding Success Criterion 3.3.7: Accessible Authentication*, W3C, https://www.w3.org/WAI/WCAG22/Understanding/accessible-authentication.html [https://perma.cc/R6D9-7JAB] (last visited Jan. 4, 2020).

93. *Id.*

additional time before time-outs.[94] In some cases, login filters lacking disability-based modifications can directly inhibit participation in the democratic process for disabled people in a world where our speech, petition, and assembly rights are frequently exercised online.[95]

The stakes of internet-based accessibility challenges rise even higher in education. Teachers and professors now distribute and grade assignments over the internet, but PDFs are frequently inaccessible, images often lack alternative text, and the same problems that arise in internet-based social media communications also pose difficulties for students with disabilities in an educational context.[96]

These device-based and code-based accessibility limitations can also lead to substantial financial burdens for disabled people. Access costs create or exacerbate a digital divide between the non-disabled and the disabled: most jobs now require filling out an online form as the very first application step.[97] But many job-hunting websites are wholly or partially inaccessible to persons with visual or other perceptual disabilities.[98] These inaccessible intermediaries can prevent disabled people from obtaining employment, which in turn hurts financial stability, which in turn limits their internet access or ability to purchase adaptive technology, further entrenching the digital divide.[99]

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94. *See also Making Content Usable for People with Cognitive and Learning Disabilities* § 4.7.1.2, W3C (Dec. 11, 2020), https://www.w3.org/TR/coga-usable/ [https://perma.cc/2H83-SQFS].

95. *See* discussion *infra* Section III.A; *see also* Vanessa K. Hackett, Note, *Puzzling Logic: The Constitutionality of Congress's "Logic Puzzle" E-Mail Filters*, 41 SUFFOLK U. L. REV. 933, 936–37 (2008) (arguing that these filters "prevent[] individuals with . . . learning disabilities from expressing their opinions to their respective elected officials").

96. *See, e.g.*, Carl Straumsheim, *'Glacial Progress' on Digital Accessibility*, INSIDE HIGHERED (May 18, 2017), https://www.insidehighered.com/news/2017/05/18/data-show-small-improvements-accessibility-course-materials [https://perma.cc/SDC4-GAFQ].

97. *See* Jonathan Lazar, Abiodun Olalere & Brian Wentz, *Investigating the Accessibility and Usability of Job Application Web Sites for Blind Users*, 7 J. USABILITY STUDS. 68, 69 (2012) (highlighting the inaccessibility of many job application websites through blind user-based testing).

98. *Id.* at 69–71, 84.

99. Accessibility concerns also apply to seemingly less important services. Video games pose the code-based challenges described above, as well as device-based challenges. Players with motor impairments sometimes struggle with button-mashing on video game controllers. *See, e.g.*, Jason M. Bailey, *Adaptive Video Game Controllers Open Worlds for Gamers with Disabilities*, N.Y. TIMES (Feb. 20, 2019), https://www.nytimes.com/2019/02/20/business/video-game-controllers-disabilities.html [https://perma.cc/KZ6S-J858]; Edward C. Baig, *Video Games Are a 'Great Equalizer' for People with Disabilities*, USA TODAY (May 16, 2019, 5:03 AM), https://www.usatoday.com/story/tech/2019/05/09/passionate-video-gamers-dont-let-their-disabilities-stop-them/3661312002/ [https://perma.cc/XNC8-ZF6J]. And some video games that historically have been accessible to mobility-impaired persons become less

Information asymmetries also introduce the possibility of price discrimination. As Areheart and Stein observe, "if a company offers special prices available only on its website (as many do) and the website itself is inaccessible (as many are), it could lead to discriminatory pricing in the acquisition of goods—especially when service fees are added for speaking to customer representatives."[100] In some cases, courts have recognized that even access to online information might itself qualify as a service, the denial of which might fall within the scope of public accommodations provisions under the ADA.[101] Access to information gives consumers and website users the ability to shop around; even disabled *consumers* who do not become *customers* are discriminated against when website infrastructure blocks information access.[102]

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accessible as they become more sophisticated. *See* Erin Hawley, *Symmetra Needs to Stay Accessible for Disabled Gamers*, GEEKY GIMP (June 7, 2018), https://geekygimp.com/symmetra-needs-stay-accessible-disabled-gamers/ [https://perma.cc/5SKL-GNE9]. The growth of internet-based virtual reality ("VR") poses even more complications for internet accessibility. Much of VR relies on standing, moving, and other motor skills, as well as the ability to hear. Erin Hawley, *Accessing VR: Don't Leave Disabled People Behind*, GEEKY GIMP (Mar. 3, 2019), https://geekygimp.com/accessing-vr-dont-leave-disabled-people-behind/ [https://perma.cc/UW3A-CL65]. These built-in requirements often leave behind the deaf user who relies on sign language, the user who has difficulty holding up their head (much less a heavy VR headset), and the user who lacks the use of arms or legs. *Id.* Although there are many issues with VR, VR-based community building is possible. *See* Bill Thomas, *Community Building with VR: Is This the Next Discord?*, TECHRADAR (Dec. 23, 2018), https://www.techradar.com/news/community-building-with-vr-is-this-the-next-discord [https://perma.cc/WG8G-XC9U].

100. Areheart & Stein, *supra* note 12, at 459.

101. *See, e.g.*, *Gniewkowski v. Lettuce Entertain You Enters., Inc.*, 251 F. Supp. 3d 908, 913–14 (W.D. Pa. 2017) ("The Court finds that because Ameriserv's website barred Plaintiffs' screen reader software from reading the content of its website, Plaintiffs were unable to conduct on-line research to compare financial services and products; and this constitutes an injury-in-fact under Article III of the ADA.").

102. *See id.* at 918 (concluding that even though the plaintiffs were not customers, they nonetheless had a right to accessible online information about "what services AmeriServ has to offer potential customers"); *see also Martinez v. San Diego Cnty. Credit Union*, 264 Cal. Rptr. 3d 600, 615 (Ct. App. 2020) (finding both that a plaintiff's allegations that he could not effectively browse defendant's website to find locations, products, and services "are sufficient to show the requisite nexus between the website and Credit Union's physical locations" and that public website information facilitates access to products and services, which permits informed consumer choices); *Carroll v. Wash. Gas Light Fed. Credit Union*, No. 17-cv-1201, 2018 WL 2933412, at *3 n.2 (E.D. Va. Apr. 4, 2018) ("[T]he ADA does not impose a 'client' or 'customer' requirement to sue."); *Gathers v. 1-800-Flowers.com, Inc.*, No. 17-cv-10273-IT, 2018 WL 839381, at *4 (D. Mass. Feb. 12, 2018) (accepting *Gniewkowski*'s proposition that "plaintiffs suffered an injury in fact under the ADA where 'Defendant's website barred Plaintiffs' screen reader software from reading the content of its website,' such that 'Plaintiffs were unable to conduct on-line research to compare financial services and products'"). *But see Mitchell v. Buckeye State Credit Union*, No. 18-CV-875, 2019 WL 1040962, at *3 n.4 (N.D. Ohio Mar. 5, 2019) (finding *Gniewkowski* inapposite because the defendant credit union did not purport to provide its information to the public at large). In the offline context, courts likewise have

B. Opportunities

As much as expanding internet-based lifestyles carry accessibility challenges, they also create opportunities by *normalizing*, *anonymizing*, *augmenting*, and *connecting (online and offline)*. These opportunities benefit all of us in various ways, but only if we can access them:

Normalizing. Internet-based videogamers or virtual-world users can choose to disclose—and thereby normalize—their disabilities. On the internet, non-disabled people can experience a virtual life with a disability, discovering first-hand the frustrations of inaccessible doorways or a slower ambulatory speed.[103] For example, in one virtual world, a user with a disability builds experiences that demonstrate to other users the side effects of her different medications.[104]

Anonymizing. Users can also experience virtual life and anonymous communication platforms like Reddit without disclosing their disabilities, thereby avoiding the stigma of physical or social complications that their disabilities may carry. Video games can bridge a gap between non-disabled and disabled worlds by breaking down the barriers of social isolation for disabled people: "The trappings, the scary parts of disability, don't define and don't have to define you [in video games], and that's really breathtaking."[105] And consumers who order groceries or food over the internet can access the goods and services of the modern world without being forced to disclose their disability.

Augmenting. For autistic users, avatars or online identities may give them the chance to live without the social impediments their disability may

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recognized that deterring a customer from attempting to enter a building to obtain services may constitute discrimination. *Kreisler v. Second Ave. Diner Corp.*, 731 F.3d 184, 188–89 (2d Cir. 2013) (per curiam).

103. *See* Eun-Kyoung Othelia Lee, *Use of Avatars and a Virtual Community to Increase Cultural Competence*, 32 J. TECH. HUM. SERVS. 93, 95, 104 (2014); Lee, *supra* note 84 (discussing Facebook's use of an "Empathy Lab," where employees virtually simulate the experience of a disabled user on their site, thereby helping developers to better implement accessible solutions).

104. Bernhard Drax, *Our Digital Selves: My Avatar is Me*, YOUTUBE (May 17, 2018), https://www.youtube.com/watch?v=GQw02-me0W4 [https://perma.cc/CS3C-9NL4], at 19:50. As with many issues related to empathy and disability, these experiences raise important questions about embodiment, dependency, and what is the most "real" human experience. For a helpful treatment of these questions, see generally, HANS S. REINDERS, RECEIVING THE GIFT OF FRIENDSHIP: PROFOUND DISABILITY, THEOLOGICAL ANTHROPOLOGY, AND ETHICS (2008); WEST, *supra* note 68; REINDERS, *supra* note 68; HAUERWAS, SANCTIFY, *supra* note 68; ALASDAIR MACINTYRE, DEPENDENT RATIONAL ANIMALS: WHY HUMAN BEINGS NEED THE VIRTUES (1999); STANLEY HAUERWAS, DISPATCHES FROM THE FRONT: THEOLOGICAL ENGAGEMENTS WITH THE SECULAR (1994); HAUERWAS, SUFFERING, *supra* note 68.

105. Hawken Miller, *'It's My Escape.' How Video Games Help People Cope with Disabilities*, WASH. POST (Oct. 14, 2019), https://www.washingtonpost.com/video-games/2019/10/14/its-my-escape-how-video-games-help-people-cope-with-disabilities/ [https://perma.cc/2837-2A6M].

create.[106] Single-player role-playing games give users with autism predictability, scripting, and the ability to participate without speaking.[107] Virtual worlds give a "persistence of place"—the virtual world continues to exist even after users log off—that allows for social relations and community building.[108]

Accommodating. Virtual interfaces create access to offline spaces: users with severe ambulatory disabilities can view and experience historic sites or rugged terrain that they cannot currently access in person.[109] Users of virtual worlds like *Second Life* can express "how I see myself on the inside" and explore a virtual world without "being body bound, being able to be yourself."[110] Virtual worlds and communication platforms broaden social networks for some deaf users, who are able to communicate in the chat function with users who do not know American Sign Language.[111] Likewise, users with disabilities can participate in regular meetups in which they otherwise could not.[112] Through virtual worlds, a person "who is homebound, room-bound, or bed-bound, when they can put a laptop on the bed, or on their lap, or on their belly, or mount it on a phone that's strapped to their wheelchair, they have access to a social world that the physical world has prohibited."[113] Similarly, some video games—including SimCity—offer a "colorblind mode," which adjusts the color

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106. *See* Leslie Jamison, *The Digital Ruins of a Forgotten Future*, ATLANTIC (Dec. 2017), https://www.theatlantic.com/magazine/archive/2017/12/second-life-leslie-jamison/544149/ [https://perma.cc/B9B2-HGZN]; Kel Smith, *Universal Life: Multi-User Virtual Environments for People with Disabilities*, USER EXPERIENCE (June 2010), https://uxpamagazine.org/environments_for_people_disabilities/ [https://perma.cc/4HE2-XG57].

107. *See* Amalena, *Autism and the Virtues of Single-Player RPGs*, GEEKY GIMP (Sept. 24, 2017), https://geekygimp.com/autism-and-the-virtues-of-single-player-rpgs/#more-1721 [https://perma.cc/4SGZ-CVBX]. As one user explained,

> Second Life has been a kind of lifeline for me, allowing to socialize and interact with other people from the comfort and safety of my own home . . . . When I feel a panic attack coming on, I can teleport to my own little hideaway and listen to calming music, or log out if I want to unplug completely. It isn't that easy in real life. If I get a panic attack in a mall, there isn't really anywhere nearby where I can hide out until it passes. Being in Second Life has also allowed me to meet many wonderful people with similar conditions to my own, and I have been able to learn a lot of coping skills from them.

Brazil, *supra* note 2.

108. Drax, *supra* note 104, at 8:35.

109. *See supra* text accompanying notes 46–47.

110. TOM BOELLSTORFF, COMING OF AGE IN SECOND LIFE: AN ANTHROPOLOGIST EXPLORES THE VIRTUALLY HUMAN 134, 137 (2008).

111. *Id.* at 137.

112. Drax, *supra* note 104, at 46:45.

113. *Id.* at 1:08:24–1:08:46.

scheme within the game to better enable play by colorblind users.[114] Quadruple amputees can play video games or access the internet using a modified joystick that they control with breathing tubes and their mouths.[115]

Connecting Online. Disabled people can find one another through online social media platforms and discover that they are not as alone as they previously thought. Building communities rooted in solidarity also creates possibilities for advocacy and political action that would be far less likely by disconnected individuals.[116]

Connecting Offline. The internet can connect disabled users to opportunities in the physical world. Ride-sharing companies like Uber and Lyft offer disabled people a new degree of independence, as they no longer are forced to rely on friends, family members, or notoriously unreliable and inefficient public paratransit.[117] Public paratransit typically requires a rider to schedule pickup at least twenty-four hours in advance.[118] But ride-sharing apps often offer pickups within minutes of requesting a ride.[119] These tools offer disabled people much of the instantaneous flexibility enjoyed by the non-disabled world. Online grocery delivery apps offer many people with ambulatory disabilities the ability to obtain groceries independently without a long trek up and down grocery store aisles and blind shoppers the independence to choose items without the use of a sighted assistant.

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114. Dave Cook, *SimCity Has 3 Colour-Blindness Modes, Developer Explains Filters*, VG247 (Jan. 25, 2013), https://www.vg247.com/2013/01/25/simcity-has-3-colour-blindness-modes-developer-explains-filters/ [https://perma.cc/25PX-MMY7].

115. Miller, *supra* note 105.

116. *See generally* Inazu, *Virtual Assembly*, *supra* note 20, at 1110–11.

117. Ride-sharing platforms have even provided new employment opportunities for deaf and hard-of-hearing drivers. *See, e.g.*, Andrea K. McDaniels, *Lyft Introduces New Feature for Deaf Passengers and Drivers*, BALT. SUN (July 13, 2018), https://www.baltimoresun.com/business/bs-hs-lyft-deaf-20180713-story.html [https://perma.cc/NXX7-NL9E] (describing ride-sharing company Lyft's visual "new ride" notification system); *Using the App for Deaf and HOH Partners*, UBER, https://help.uber.com/driving-and-delivering/article/using-the-app-for-deaf-and-hoh-partners?nodeId=d1d88d1f-0dcf-4ce8-a3a9-c3955d14c2ff [https://perma.cc/5PUZ-ET3V] (last visited Sept. 4, 2021) (describing ride-sharing company Uber's visual trip request notifications and text-based messaging systems for drivers).

118. *See* Tayjus Surampudi, *The Future of Wheelchair Accessible Transportation: How Uber and Lyft (and Maybe Waymo) Are Transforming How People with Disabilities Get Around*, MEDIUM (Oct. 17, 2018), https://medium.com/@tssurampudi/the-future-of-wheelchair-accessible-transportation-how-uber-and-lyft-and-maybe-waymo-are-8f9f7e9a82d4 [https://perma.cc/63TJ-XRBL].

119. *Id.*

C. The Unique Role of Online Mediators

The opportunities for online human flourishing just described often result from economies of scale and the technical efficiencies made possible by the scope and reach of the internet. This aggregating capacity creates one of the most important differences between meaningful access online and offline: the increased prevalence of online mediators that connect individuals desiring to find one another. These mediators connect buyers with sellers, employers with job seekers, service providers with service users, and relationship seekers with one another. Offline, many longstanding mediators like travel agents and taxicab dispatchers are on the decline. But online, mediators play a far more prominent role than they ever did offline.

Online mediators disperse the cost of accessibility.[120] Ride-sharing applications like Lyft and Uber have harnessed the internet's connective power to make private transportation more accessible to disabled people by offering one accessible application—rather than burdening each private driver with accessible coding responsibilities. Their apps are accessible to blind users through screen-reader software.[121] And in their mediating role, they make the physical world more accessible to disabled people by giving them more transportation independence than ever before, allowing them to avoid inefficient paratransit that would require scheduling hours or even days in advance.[122]

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120. Offline, the cost of providing auxiliary aids to make a place or service accessible is sometimes so significant that it would "fundamentally alter" the place or service or make it so expensive that it creates an "undue burden" on the public accommodation, and the public accommodation is thus not required to make the accommodation. 42 U.S.C. §§ 12182(b)(2)(A)(ii)–(iii). Courts consider the nature of the action and the financial resources of the entities involved, among other factors, in assessing whether an aid would create an undue burden on the public accommodation. 28 C.F.R. § 36.104 (2020). *See, e.g.*, *Roberts ex rel. Rodenberg-Roberts v. KinderCare Learning Ctrs., Inc.*, 86 F.3d 844, 846 (8th Cir. 1996) (per curiam) (affirming the district court's finding that parents' request that a daycare provide one-on-one care for their child created an undue burden because it would have generated a ninety-five dollar per week loss to the company).

121. *Accessibility for Ridesharing Services: 2019 Update*, BUREAU INTERNET ACCESSIBILITY (July 16, 2019), https://www.boia.org/blog/accessibility-for-ridesharing-services-2019-update [https://perma.cc/MU8W-JWM2].

122. *Id.* But even with these strides, Uber and Lyft do not provide a perfectly accessible experience for disabled people. *See, e.g.*, Press Release, U.S. Attorney's Office for the Central District of California, Lyft Agrees to Resolve Allegations that It Violated Federal Law When Its Drivers Denied Rides to Individuals with Disabilities (June 22, 2020), https://www.justice.gov/usao-cdca/pr/lyft-agrees-resolve-allegations-it-violated-federal-law-when-its-drivers-denied-rides [https://perma.cc/Y8MJ-GSCR]. Uber and Lyft may pose security vulnerabilities to disabled people that traditional government transportation did not. *See* Surampudi, *supra* note 118. And the costs of private ride-sharing services may exacerbate socioeconomic divides within the disabled community: fewer people using paratransit may lower the perceived need for these free or subsidized public services.

Although the internet's scale creates new opportunities, the exclusively online access point for many of these mediators also raises the stakes of accessibility. Some mediators, like Uber, Lyft, Airbnb, and Vrbo, offer services that are available exclusively through their proprietary, internet-based platforms. Unlike with taxi rides or hotel bookings, a blind consumer cannot pick up the phone to call an Uber or enter a physical office space to reserve an Airbnb stay. Similarly, mediators like Amazon Marketplace offer goods that can be obtained only via their online platform. Outside of the company's proprietary online platform, there is no other way to contact the company about its goods and services. Thus, in some respects, the risks of an inaccessible online mediator are even more significant than those of the pre-ADA, inaccessible offline service mediators (like a travel agency or taxi stand). Offline, a consumer with an ambulatory disability could at least call or write to a service mediator located within an inaccessible building. In other words, one inaccessible access point did not necessarily deny a disabled consumer the services of that place of public accommodation. But if an intermediary's internet-based platform is inaccessible to users with disabilities, the user has no other way to access services. For example, during the COVID-19 pandemic, meal delivery services Grubhub and Seamless lacked accessibility features that could have given disabled people access to the kinds of services enjoyed by the rest of the population.[123]

Other online mediators serve as additional, convenient access points to services that *can* be obtained in multiple ways. Google Flights aggregates flight options that can also be found on airline websites, online booking agencies like Kayak.com, or even through phone-based ticket reservations.[124] Zillow aggregates home sale listings that can also be found on other real estate websites and directly from real estate agencies.[125] Fashion websites like Thread.com and ShopStyle aggregate clothing from a variety of stores and designers, offering a way to purchase products that could be obtained elsewhere—at a brick-and-mortar store, by phone, or on

123. Kristen Lopez, *The Food Delivery Revolution Is Leaving Disabled Customers Behind*, FOOD & WINE (Oct. 10, 2019), https://www.foodandwine.com/news/food-delivery-apps-accessibility-dominos-pizza-case [https://perma.cc/XK6L-VKAR].

124. *Find Plane Tickets on Google Flights*, GOOGLE, https://www.support.google.com/travel/answer/2475306?hl=en&ref_topic=2475360 [https://perma.cc/7APM-T48M] (last visited Sept. 5, 2021).

125. *Where Does Zillow Get Its Listings?*, ZILLOW (Jan. 2021), https://zillow.zendesk.com/hc/en-us/articles/213394668-Where-does-Zillow-get-its-listings- [https://perma.cc/46HB-P57B].

that store's website.[126] These mediators create more access opportunities for disabled people than they might otherwise have offline.[127]

Still other online mediators pose more nuanced challenges: websites like Indeed.com and Monster.com are two of only a handful of job posting websites that both aggregate information *and* serve as the initial intake point for many job applications.[128] Unlike the online mediators that offer services through their exclusive, proprietary platforms, these mediators' users may be able to access the same information—like a certain job posting—on more than one intermediary.[129] Thus, if any one of these mediators is inaccessible to a user, the user can switch to an accessible one. However, these services are also often available only online. Unlike a consumer searching for an airline ticket, the job seeker generally must use the internet to look at job postings and apply for positions. There is no phone number she may call or office into which she may stop to find aggregated job postings or submit the initial application, which is almost always submitted online.[130] To the extent a job seeker even could search offline for available positions, the search would be extremely inefficient or costly.[131]

III. THE COMPLEXITY OF ONLINE SPACES

The challenges and opportunities canvassed in the previous section play out across a vast array of websites, applications, and other user

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126. Demetrius Williams, *How Aggregator Sites Are Transforming the Fashion Industry*, TRANSLATEMEDIA (Aug. 24, 2018), https://www.translatemedia.com/us/blog-usa/aggregator-sites-transforming-fashion-industry/ [https://perma.cc/7KTZ-H67P].

127. *See supra* text accompanying note 109.

128. Websites like Apartments.com and Zillow offer similar services for landlords seeking tenants. Landlords may post available rental listings, and tenants can seamlessly apply directly through the online mediator. The online mediator then generates rental history, references, and a third-party vendor's credit and criminal history report for the landlord to review. *See, e.g.*, *Tenant Screening and Rental Background Check*, ZILLOW, https://www.zillow.com/z/rental-manager/tenant-screening/?= [https://perma.cc/7R6N-VR6Z] (last visited Sept. 5, 2021); *Tenant Screening & Background Checks*, APARTMENTS.COM, https://www.apartments.com/rental-manager/features/online-tenant-screening [https://perma.cc/58LA-V6SU] (last visited Sept. 5, 2021).

129. When online mediators like Uber, Lyft, Airbnb, and Vrbo first launched, many drivers and home hosts cross-listed on multiple platforms, but today the algorithms of these online mediators make cross-posting difficult, if not impossible. *See* Brett Helling, *How to Drive for Uber and Lyft (at the Same Time)*, RIDESTER, https://www.ridester.com/drive-for-uber-and-lyft/ [https://perma.cc/F3TR-RVLX] (last updated June 30, 2021).

130. One significant exception is the fast-disappearing employment agency.

131. For example, the job seeker would have to visit each potential employer in person, ask if they have any openings, fill out a paper application, and then leave to visit the next potential employer. *See, e.g.*, *Is It Better to Apply for Jobs in Person or Online?*, INDEED (Feb. 22, 2021), https://www.indeed.com/career-advice/finding-a-job/applying-for-a-job-in-person-vs-online [https://perma.cc/EY5C-8YTY].

interfaces. Courts and scholars have given insufficient attention to the different kinds of websites and interfaces and to how they each present different accessibility challenges. In fact, questions about the ADA's applicability to these sites raise familiar (though blurred) lines encountered offline between public spaces, private spaces, and places of public accommodation. Subsets of public places and public accommodations that also facilitate First Amendment activities like speech, assembly, and protest raise additional justifications for ensuring that disabled users can meaningfully access the online world.

A. Legal Categories of Spaces and Places

Offline, most statutory and constitutional frameworks for equality of opportunity and meaningful access begin with public places and spaces: public employment, public schools, public services, and public forums.[132] Thus, in the offline world, the ADA's most straightforward application is to government-owned public places: government buildings, public parks, streets, and sidewalks.[133] At the other end of the spectrum are those private spaces usually limited to family and friends. A private home need not be fully compliant with ADA building requirements.[134] Bathrooms, doorways, and stairs may be completely inaccessible—unequal in access—in most single-family, private homes.

The most conceptually difficult category is the one in the middle: "public accommodation," which encompasses privately owned and controlled spaces that are nonetheless open to the public, such as restaurants, hotels, amusement parks, and other commercial businesses.[135] The degree and scope of regulatory oversight over these private entities vary across public accommodations laws,[136] with the ADA's definition

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132. *See, e.g.*, Stanley H. Friedelbaum, *Private Property, Public Property: Shopping Centers and Expressive Freedom in the States*, 62 ALB. L. REV. 1229 (1999) (discussing free speech rights in private shopping malls); Steven D. Smith, *Constitutional Divide: The Transformative Significance of the School Prayer Decisions*, 38 PEPP. L. REV. 945 (2011) (discussing prayer in the context of public schools).

133. *See also* 29 U.S.C. § 794(a) (prohibiting disability discrimination in federally funded programs).

134. *See* 42 U.S.C. § 12182(a) (applying the ADA's antidiscrimination on the basis of disability provisions to public accommodations rather than all private entities). 28 C.F.R. § 35.151(j) (2020) (requiring that only residential properties owned by a public entity need to comply with the 2010 Standards for Accessible Design).

135. 3C SHAMBIE SINGER, SUTHERLAND STATUTES AND STATUTORY CONSTRUCTION § 76:6 (8th ed. 2020) ("Civil rights statutes often define the literal, spatial sphere of their antidiscrimination operation using the phrase 'places of public accommodation.' In the most generic sense, 'places of public accommodation' ordinarily are facilities, both public and private, used by the public.").

136. *See, e.g.*, ALA. CODE § 21-7-1(b)(6) (2019) (defining public accommodation as "[a] common carrier, airplane, motor vehicle, railroad train, motor bus, streetcar, boat, or other public conveyance or mode of transportation, a hotel, a timeshare that is a transient

being among the more expansive ones.[137] All three of these categories—public places, private places, and public accommodations—exist online, too. And the way we regulate these categories offline can inform how we regulate corresponding online spaces.

Both public sites and public accommodations include sites that facilitate important First Amendment activities and where private citizens can gather and express their views and beliefs. Within public sites, these are public forums, and within public accommodations, they are private public forums: privately owned sites that functionally supplant public forums because they, too, facilitate freedoms like speech and assembly.[138] The First Amendment activities facilitated by these sites thus raise additional justifications for ensuring meaningful access.[139]

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public lodging establishment, a lodging place, a place of public accommodation, amusement, or resort, and other places to which the general public is invited, subject only to the conditions and limitations established by law and applicable alike to all individuals"); COLO. REV. STAT. § 24-34-601(1) (2020) ("'[P]lace of public accommodation" means any place of business engaged in any sales to the public and any place offering services, facilities, privileges, advantages, or accommodations to the public, including but not limited to any business offering wholesale or retail sales to the public; any place to eat, drink, sleep, or rest, or any combination thereof; any sporting or recreational area and facility; any public transportation facility; a barber shop, bathhouse, swimming pool, bath, steam or massage parlor, gymnasium, or other establishment conducted to serve the health, appearance, or physical condition of a person; a campsite or trailer camp; a dispensary, clinic, hospital, convalescent home, or other institution for the sick, ailing, aged, or infirm; a mortuary, undertaking parlor, or cemetery; an educational institution; or any public building, park, arena, theater, hall, auditorium, museum, library, exhibit, or public facility of any kind whether indoor or outdoor. 'Place of public accommodation' shall not include a church, synagogue, mosque, or other place that is principally used for religious purposes."); KY. REV. STAT. ANN. § 344.130 (2020) ("[A] 'place of public accommodation, resort, or amusement' includes any place, store, or other establishment, either licensed or unlicensed, which supplies goods or services to the general public or which solicits or accepts the patronage or trade of the general public or which is supported directly or indirectly by government funds, except that [private clubs, single boarding rooms in private residences, or religious organizations are not places of public accommodation].")

137. *Compare* 42 U.S.C. § 12181(7) (Americans with Disabilities Act of 1990), *with* 42 U.S.C. § 2000a(b) (Civil Rights Act of 1964); *see also* Joseph William Singer, *No Right to Exclude: Public Accommodations and Private Property*, 90 NW. U. L. REV. 1283, 1435–36 (1996) ("The Americans with Disabilities Act of 1990 contains an expansive definition of public accommodations and includes a long list of establishments that have duties to serve the public without discrimination on the basis of disability. In addition to common carriers, innkeepers, restaurants, and places of entertainment, the statute regulates all retail stores, doctors' and lawyers' offices, laundromats, barber shops and beauty shops, funeral parlors, hospitals, insurance agents, and schools, including daycare centers.").

138. *See* INAZU, CONFIDENT PLURALISM, *supra* note 20, at 58–65. The arguments in this section draw from this earlier work.

139. In fact, the public forum is one of the core features of the First Amendment, rooted in the First Amendment's right of assembly but today protected mostly under free speech doctrine. *Id.* at 58–59. For an introduction to public forum doctrine based on the television show *Parks & Recreation*, see *id.* at 50–52, 64.

Public forums can be physical spaces like streets and parks.[140] They can also be nonphysical (or what the Supreme Court has sometimes called "metaphysical") spaces like a forum on public school campuses that allows students to form groups around issues and ideas that matter to them.[141] When these public forums are inaccessible, the First Amendment rights of disabled people are harmed.[142] And, of course, public forums can exist online as well as offline.[143] As Victoria Smith Ekstrand argued in a 2017 article focusing on online disability access, online public forums are increasingly important to democratic practices.[144] Justice Anthony Kennedy made an even stronger claim in *Packingham v. North Carolina*: "While in the past there may have been difficulty in identifying the most important places (in a spatial sense) for the exchange of views, today the answer is clear. It is cyberspace . . . , and social media in particular."[145]

Although the public forum doctrine focuses on government-owned spaces, private public forums have long served similar functions. One of the earliest examples is the public house, or what we know today as simply the pub. Modern versions of the pub began with British taverns that carried over to the American colonies.[146] As Baylen Linnekin has observed,

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140. Streets and parks are "quintessential public forums." *Perry Educ. Ass'n v. Perry Loc. Educators' Ass'n*, 460 U.S. 37, 45 (1983). In limited public forums, by contrast, "the State is not required to and does not allow persons to engage in every type of speech," and "[t]he State may be justified 'in reserving [its forum] for certain groups or for the discussion of certain topics.'" *Good News Club v. Milford Cent. Sch.*, 533 U.S. 98, 106 (2001) (quoting *Rosenberger v. Rector & Visitors of Univ. of Va.*, 515 U.S. 819, 829 (1995)). Nevertheless, speech restrictions in limited public forums "must not discriminate against speech on the basis of viewpoint, and the restriction must be 'reasonable in light of the purpose served by the forum.'" *Id.* at 106–07 (citations omitted).

141. *Rosenberger v. Rector & Visitors of Univ. of Va.*, 515 U.S. 819, 830 (1995) (noting that "the same principles are applicable" to a limited public forum that is "a forum more in a metaphysical than in a spatial or geographic sense"); *Christian Legal Soc'y Chapter v. Martinez*, 561 U.S. 661 (2010) (student group forum).

142. *See generally Frame v. City of Arlington*, 657 F.3d 215, 227–28 (5th Cir. 2011) (quoting *Boos v. Berry*, 485 U.S. 312, 318 (1988) ("The Supreme Court also has recognized that public sidewalks are 'traditional public fora' that 'time out of mind' have facilitated the general demand for public assembly and discourse. When a newly built or altered city sidewalk is unnecessarily made inaccessible to individuals with disabilities, those individuals are denied the benefits of safe transportation and a venerable public forum.") (footnote omitted)).

143. *See generally* Inazu, *Virtual Assembly*, *supra* note 20, at 1111.

144. Ekstrand, *supra* note 16, at 435–36. Ekstrand noted in this context Justice Anthony Kennedy's oft-cited dictum in *Packingham v. North Carolina* that websites are "the principal sources for knowing current events, checking ads for employment, speaking and listening in the modern public square, and otherwise exploring the vast realms of human thought and knowledge." 137 S. Ct. 1730, 1737 (2017).

145. *Packingham*, 137 S. Ct. at 1735. Eugene Volokh makes similar observations in his consideration of treating social media platforms as common carriers. *See* Eugene Volokh, *Treating Social Media Platforms Like Common Carriers?*, 1 J. FREE SPEECH L. (Aug. 2021).

146. INAZU, CONFIDENT PLURALISM, *supra* note 20, at 58–59.

colonial taverns were used "for nearly every public purpose, including 'council and assembly meetings, social gatherings, merchants' associations, preaching, [and] the acting of plays.'"[147]

Today's private public forums extend well beyond the pub. People gather in privately owned shopping malls, streets, and parks. These contexts introduce competing First Amendment values. On the one hand, access to private public forums is essential to furthering core First Amendment discourse, especially when those forums functionally supplant government-owned public forums.[148] On the other hand, the private nature of these forums gives them a significant degree of control over which discourse norms they wish to impose and correlative associational rights.[149] The Supreme Court has occasionally waded into these issues.[150] But its guidance has been far from clear, and its last words on the private public forum came over forty years ago—well before the age of the internet.[151] In the meantime, our migration online for commerce, communication, and community has meant that online versions of the private public forum have far outpaced offline examples like privately owned shopping centers. Today, already complex questions about statutory and constitutional requirements for public accommodations are further complicated by their growing online presence.

One final complication of different online spaces and places is the challenge of *nesting*—when a forum or entity in one legal category falls within a larger forum of a different category.[152] For example, a government agency might host a policy discussion (creating a limited public forum) on Facebook (a private public forum). Indeed, most government agencies have Instagram, Facebook, Twitter, and other social media accounts.[153] And on the accounts, the agencies often provide question-and-answer

147. *Id.* at 58.

148. *Id.* at 61–63.

149. *Id.* at 59–62.

150. In 1968, the Supreme Court concluded that a private shopping center open to the public could not prevent citizens from exercising their First Amendment rights on its property. *Amalgamated Food Emps. Union Loc. 590 v. Logan Valley Plaza, Inc.*, 391 U.S. 308, 325 (1968). Justice Hugo Black, writing in dissent, suggested that the relevant question was "[u]nder what circumstances can private property be treated as though it were public?" *Id.* at 332 (Black, J., dissenting). Four years later, the Court went a different direction in upholding the right of a shopping center to exclude Vietnam War protesters who had wanted to distribute handbills. *Lloyd Corp. v. Tanner*, 407 U.S. 551, 570 (1972). Then, in 1980, the Court contended that individual states could still impose restrictions on private shopping centers in order to protect the expressive liberties of patrons and visitors. *Pruneyard Shopping Ctr. v. Robins*, 447 U.S. 74, 88 (1980).

151. *Pruneyard*, 447 U.S. at 88.

152. Inazu first discusses the idea of nested online groups in Inazu, *Virtual Assembly*, *supra* note 20, at 1096, 1129. *See also* INAZU, CONFIDENT PLURALISM, *supra* note 20, at 61–63 (using Twitter to illustrate the concept of nesting).

153. Alissa Ardito, *Social Media, Administrative Agencies, and the First Amendment*, 65 ADMIN. L. REV. 301, 302–03, 309 (2013).

services that they do not offer in another easily accessible format. For example, travelers may submit to the Transportation Security Administration's (TSA) Instagram account questions about and images of items with which they would like to fly.[154] The TSA then offers interactive, official advice about what the traveler should leave home.[155] Lyrissa Lidsky notes that in these situations "it is not clear into what First Amendment category an interactive government sponsored social media site falls" or how we should balance the editorial discretion of the government officials running the online discussion with any monitoring or filtering that Facebook might impose.[156] Similar dynamics occur when a private entity is nested within a private public forum. Offline, we have surprisingly few examples of private groups nested within private public forums. But online social networks create millions of these relationships. And most nested groups rely at some level on privately owned and managed communication platforms.[157] Platforms like Facebook are the

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154. Press Release, Transportation Security Administration, *TSA Instagram Account Reaches 1 Million Followers* (Sept. 17, 2019), https://www.tsa.gov/news/press/releases/2019/09/17/tsa-instagram-account-reaches-1-million-followers [https://perma.cc/KFN2-W9GQ].

155. *Id.*

156. Lyrissa Lidsky, *Public Forum 2.0*, 91 B.U. L. REV. 1975, 1996–97 (2011). The government website example also raises questions of impediments to meaningful democratic participation. *See* Ardito, *supra* note 153, at 303 (arguing that the federal government's burgeoning "commitment to online participation, commendable in principle, is rife with pitfalls in practice . . . [, including] the First Amendment's freedom of speech guarantee[,]" particularly because of administrative agencies' use of social media—a privately regulated space—as a platform for public interaction).

157. *See* Dawn C. Nunziato, *The Death of the Public Forum in Cyberspace*, 20 BERKELEY TECH. L.J. 1115, 1116 (2005). Nunziato argues that the First Amendment places affirmative obligations on the government to create public forums for expression. These affirmative obligations help facilitate expression that might not happen due to inequities in private property ownership—thereby correcting for market imperfections. Nunziato reconceptualizes the "traditionality" requirements of the public forum doctrine. When Nunziato wrote, the iPhone had not yet been invented, and Facebook was brand new (and only accessible to users with a .edu email address). Most of these providers have significant discretion to censor expression or terminate service altogether through their Terms of Service. *Id.* at 1121 (quoting *Agreement to Rules of User Conduct*, AMERICA ONLINE, http://www.aol.com/copyrightlrules.html [https://perma.cc/X739-B2GE] (last visited Apr. 25, 2005)). Nunziato notes that "courts have rejected challenges to private Internet actors' speech restrictions on the grounds that such actors are not state actors, nor the functional equivalent of state actors, under applicable First Amendment doctrine." *Id.* at 1128; *see also* Haley Britzky, *The Army Esports Team Is Back Online After Trolls Kept Asking About War Crimes,* TASK & PURPOSE (Aug. 14, 2020, 8:54 PM), https://taskandpurpose.com/news/army-esports-game [https://perma.cc/96W2-QHMY] (describing a decision by Twitch, a live-streaming video platform for gamers, to temporarily pause an army team after some users asked team members what their "favorite war crime" was); *but see* Tony Romm, Rachel Lerman, Cat Zakrzewski, Heather Kelly & Elizabeth Dwoskin, *Facebook, Google, Twitter CEOs Clash with Congress in Pre-Election Showdown*, WASH. POST (Oct. 28, 2020, 4:42 PM), https://www.washingtonpost.com/technology/2020/10/28/twitter-facebook-google-

shopping malls, cable television companies, and newspapers of old—privately run businesses whose services place them at the nexus of our social, political, and economic interactions.[158] These commercial entities have extraordinary power—arguably far greater power than that exerted by the shopping malls of an earlier generation.[159] And with this greater power over traditional First Amendment activities comes justification for greater oversight.[160]

B. An Offline Analogy: The Mixed-Use Development

We can illustrate the complexity of these issues with an offline analogy: the increasingly popular mixed-use real estate development. Think of the different kinds of spaces and legal categories in a typical, newly constructed development that might span half a block and include streets and sidewalks, a parking area, and multistory buildings. Let's assume four floors: a first floor with various restaurants and services; a second floor with private offices; a third floor with hotel rooms; and a fourth floor with permanent, owner-occupied residences.[161]

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senate-hearing-live-updates/ [https://perma.cc/US4H-4U7F] (describing Senate efforts to review Section 230 liability for technology companies and assess social media content control practices).

158. For an analysis of the potential applicability of "quasi-municipality doctrine" to the virtual world, see Peter Sinclair, *Freedom of Speech in the Virtual World*, 19 ALB. L.J. SCI. & TECH. 231, 252–57 (2009). The quasi-public nature of ISPs and their indispensable importance to what we do online also counsels in favor of network neutrality, which holds that "network providers may not discriminate against content, sites, or applications." Jack M. Balkin, *The Future of Free Expression in a Digital Age*, 36 PEPP. L. REV. 427, 429 (2009). For considerations of these dimensions in an offline context, see Gregory P. Magarian, *The First Amendment, the Public-Private Distinction, and Nongovernmental Suppression of Wartime Political Debate*, 73 GEO. WASH. U. L. REV. 101 (2004).

159. *See* Joseph Thai, *Facebook's Speech Code and Policies: How They Suppress Speech and Distort Democratic Deliberation*, 69 AM. U. L. REV. 1641, 1643 (2020) ("Facebook's self-promulgated rules for what content can or cannot be published on its platform regulate more speakers than any other speech regime in the history of humanity.")

160. *See, e.g.*, Complaint for Injunctive and Other Equitable Relief, *FTC v. Facebook, Inc.*, No. 20-cv-03590 (D.D.C. Dec. 9, 2020); Complaint, *United States v. Google, LLC*, No. 20-cv-03010 (D.D.C. 2020).

161. At the design and construction phases, this mixed-use development is subject to several federal standards for new construction, primarily the ADA's and FHA's Accessibility Guidelines. *See* 28 C.F.R. §§ 36.401–36.407 (2020); 36 C.F.R. § 1191 app. B, app. D (2019); 24 C.F.R. § 100.205 (2020). If the mixed-used development is built using any federal funds, it may also be responsible for complying with the Rehabilitation Act accessibility standards. *See generally* 24 C.F.R. §§ 8.1–8.6 (2020). The ADA Accessibility Guidelines (ADAAG) impose physical accessibility baselines on both newly constructed commercial facilities and newly constructed public accommodations. These accessibility guidelines provide "scoping and technical requirements for accessibility" to physical places: "sites, facilities, buildings, and elements[.]" 36 C.F.R. § 1191 app. B § 101.1 (2019). There are a few grandfathering provisions, such as historic buildings that cannot

The first access issue is ensuring that streets, sidewalks, and curbs are designed to accommodate disabled people.[162] Public entrances to the complex itself must also be accessible.[163] Failing to address these initial points of entry prevents disabled people from accessing any of the varied activities and services inside the development.

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be retrofitted and buildings for which certain accessibility aspects are unfeasible as a matter of design. For example, new construction is exempt where "the unique characteristics of terrain prevent the incorporation of accessibility features"—but only for those features that are not possible. 28 C.F.R. § 36.401(c) (2020). Thus, a building might be exempt from certain elements of wheelchair accessibility but would nevertheless be required to have chimes at its elevators and doors of a certain weight. And if providing physical access to a historic property that is a place of public accommodation would "threaten or destroy" its "historical significance[,]" the property need only comply to the extent feasible. *Id.* § 36.405. Likewise exempt are construction sites—their scaffolding, hoists, and trailers; machinery spaces like piping catwalks and electric substations; and diving boards and water slides. 36 C.F.R. § 1191 app. B §§ 203.2, 203.5, 203.14, 203.11. And the FHA imposes similar obligations on newly constructed multi-family dwellings of four units or more. Beyond these new construction guidelines, the regulations diverge: the public accommodations must continue to make their programs and services accessible—even to the point of making reasonable modifications for disabled people. But the private condo on the fourth floor or the church in the storefront need not make even reasonable modifications for disabled people. *See infra* note 170.

162. A newly constructed mixed-use development must provide an "accessible route" between accessible parking spaces and loading zones, public streets and sidewalks, and public transportation stops to the building entrance. 36 C.F.R. § 1191 app. B § 206.2.1. In general, these routes cannot be obstructed by security barriers, like bollards or checkpoints. *Id.* at app. B § 206.8. Should a route cross a curb, the development must provide curb ramps to maintain the path's accessibility. *Id.* at app. D § 406.1. Both surface parking lots and parking garages must contain a minimum number of accessible parking spaces. *See id.* at app. B § 208 tbl. 208.2. These parking spaces are located adjacent to access aisles that allow space for a wheelchair or other assistive device to exit the vehicle and then take the shortest possible accessible route to an entrance. *Id.* at app. B § 208.3.1; *id.* at app. D § 502.3. Valet drop-offs must have an accessible passenger loading zone. *Id.* at app. B §§ 209.2.1, 209.4.

163. At least sixty percent of the public entrances must also be accessible, as well as pedestrian entrances from the parking garage into the building and at least one entrance into each tenancy. *Id.* at app. B §§ 206.4–206.4.2, 206.4.5. The doors, both at these entrances and those on an accessible route throughout the building, must be wide enough for a wheelchair to enter and cannot consist exclusively of revolving doors or turnstiles, which are difficult for the mobility-impaired to navigate. *Id.* at app. B §§ 206.5–206.5.1; *Id.* at app. D §§ 404.2–404.2.1, 404.2.3–404.2.4. Doors must also have a low threshold to allow wheelchairs and other mobility devices to enter and exit. *Id.* at app. D §§ 404.2.4, 404.2.5. The door handles are also specified: handles must be "operable with one hand" such that they do not require "tight grasping, pinching, or twisting of the wrist" or more than five pounds of force to operate. *Id.* § 404.2.7. For persons with limited use of their hands or fingers, these door handles enable them to open them without significant dexterity or coordination. As the disabled patron walks through the doorway, the doors must take at least five seconds to close to protect individuals with mobility impairments who may walk slowly. *Id.* § 404.2.8.1.

Once inside, questions of access are more nuanced.[164] First, there must be an accessible route within the mixed-use development.[165] The route must accommodate the widest range of people possible: ideally offering both ramps for wheelchair users and stairs for people with limited stamina or heart disease for whom the longer distance of a ramp would be a greater barrier than steps themselves.[166] Without an accessible route, disabled people could not escape to an exit or refuge area in an emergency or even access elevators to carry them to each story.[167]

On the first floor, the government post office branch that leases space from the development, the family-owned travel agency, and the national chain coffee shop must all be fully accessible to disabled people.[168] These

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164. *Cf.* Dan Hunter, *Cyberspace as Place and the Tragedy of the Digital Anticommons*, 91 CALIF. L. REV. 439, 455–56 (2003) (noting that there are both private and public spaces online and that much of our understanding of the physical world has mapped onto our understanding of the "online world").

165. This route must connect "accessible elements[] and accessible spaces" within the building. *Id.* at app. B § 206.2.2. Throughout this route, where there are changes in the rise of a floor, builders must include ramps with a limited running slope—and where possible, builders must include stairs side by side with these ramps. *Id*. at app. D §§ 405.1–405.2. *See also id.* at app. D § 405.2 advisory note. Each ramp must have a landing at the top to allow people to maneuver and open doors. *Id.* at app. D § 405.7. And many ramps must have a handrail that can be grabbed safely and securely by users who may lose their balance; most must have edge protections to prevent wheelchairs casters or the tips of crutches from slipping. *Id.* at app. D §§ 505.9, 405.9. Within this route, objects cannot protrude more than four inches if they are significantly above the floor. *Id.* at app. D § 307.2. This gives blind people who use canes "sufficient time to detect the element with the cane before there is body contact." *Id.* at app. D § 307.2 advisory note. Further, the signage throughout the building must meet certain accessibility standards: signage that identifies permanent rooms or spaces like restrooms or floor numbers must be made of non-glare, high-contrast characters, which makes them more legible for persons with low vision. *Id.* at app. D § 703.5; *id.* at app. B § 216.2. And when a sign contains a pictogram, as in the case of a restroom's stick figures, that pictogram must be high-contrast and accompanied by text and Braille descriptors. *Id.* at app. B § 216.2; *id.* at app. D §§ 703.6.2–703.6.3.

166. *Id.* at app. D § 405.2 advisory note.

167. *Id.* at app. B §§ 106.5, 206.2.3. An "accessible means of egress" is a "continuous and unobstructed" accessible route to an "area of refuge, a horizontal exit, or a public way." *Id.* at app. B § 106.5. The accessibility of this means of egress is measured by compliance with the International Building Code, a nongovernmental industry standard. *Id.* at app. B § 207.1. The flooring materials used in this route must be firm to allow wheelchair users to propel over the surface and to reduce the risk of tripping for para-ambulatory persons. The floor must be composed of "stable, firm, and slip resistant" surfaces, such as firm carpet with a low pile height. *Id.* at app. D §§ 302.1–302.2. Heavy carpet piling can increase the wheelchair roll resistance or the risk of tripping. *See id.* at app. D § 302.2 advisory note. Within those floors, drain openings cannot be wider than one-half inch—to protect wheelchair wheels' passage. *Id.* at app. D § 302.3. And the floors must be level, with a running slope of no more than 1:20. *Id.* at app. D § 402.2.

168. As a federal agency, the post office branch is subject to the accessibility standards of the Rehabilitation Act, which shares similar goals to the ADA but has higher accessibility standards. For the coffee shop, the ADA requires restaurants to provide an accessible route to all dining areas. *Id.* at app. B § 206.2.5. The bathrooms of these spaces

features will allow coffee shop patrons with ambulatory disabilities to have an experience similar to that of non-disabled patrons: accessing window seating, passing through the ordering line, and attending events in a back room.[169] But the church that meets in leased storefront space is not required to be fully accessible because it is a religious institution.[170] Meanwhile, the first-floor commons where people stop for a lunch break, for a conversation, or to wait for a friend effectively replaces the city park or town square: it serves the role of a traditional public forum but remains privately owned, raising yet another distinct set of access questions.[171]

The units on the higher floors are not directly accessible once inside the initial points of entry of the mixed-use development. When a person with a disability wishes to ascend to the upper floors of the mixed-use development, she may need some combination of elevators, escalators, or lifts. The elevator itself must be accessible and include audible notifications for blind people, visual notifications for deaf users, and

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also must have turning space sufficient for wheelchairs, as well as mirrors that accommodate both ambulatory and wheelchair-bound users. *Id.* at app. B §§ 213.3.2, 213.3.5; *id.* at app. D §§ 603.2.1, 603.3. Toilets must have grab bars that enable transfer from a wheelchair or assist users with other mobility issues. *Id.* at app. D § 604.5. The toilet paper dispensers cannot restrict the flow of the roll to enable use by persons with motor disabilities. *Id.* at app. D § 604.7. Bathrooms with stalls must contain at least one stall that is wheelchair accessible, with sufficient area for wheelchair maneuvering and doors that open out of the stall. *Id.* at app. B § 213.3.1; *id.* at app. D §§ 604.8.1, 604.8.1.2. The sinks must be of a height accessible to a wheelchair user, with protections under the sink from sharp objects or abrasive pipes to protect the user's knees; the soap and towels must be located within certain reach ranges to enable users with ambulatory issues to use them easily. *Id.* at app. B § 213.3.4; *id.* at app. D §§ 606.1, 606.3, 606.5. Throughout, "reaches" must be limited to a regulatory maximum—to ensure that persons in wheelchairs can access goods and services, even things like hand dryers or paper towel machines in the bathroom. *See generally id.* at app. D § 308 (discussing various regulatory maximums for reach ranges).

169. *See generally id.* at app. B § 206.2.5 advisory note (discussing the similarity of experiences within the listed exceptions). At least five percent of the seating and standing spaces at "dining surfaces" must offer sufficient height and clearance for a wheelchair user to approach. *Id.* at app. B § 226.1; *id.* at app. § 902.2–902.3. The coffee shop sales counters likewise must be accessible: no more than a certain height to give wheelchair users an equivalent experience and located along an accessible route. *Id.* at app. D §§ 904.3–904.4. *See also Kalani v. Starbucks Coffee Co.*, 698 F. App'x 883, 886–87 (9th Cir. 2017) (finding that Starbucks had denied patrons a meaningfully equivalent experience to nondisabled patrons because Starbucks lacked wheelchair-accessible, interior-facing seating).

170. 42 U.S.C. § 12187 (excluding "religious organizations" and "entities controlled by religious organizations, including places of worship[,]" from the ADA's public accommodation accessibility requirements). Some aspects of the space in its initial design and build might need to be ADA-compliant, as a component of the newly constructed mixed-use development, a commercial building. *See id.* § 12183.

171. *See* discussion *supra* Section III.A.

extended opening and closing times to accommodate individuals who ambulate slowly.[172]

The second floor contains private offices, some of which are linked to the first-floor businesses and nonprofits. The pathways around the office, as well as those into and in the break areas and restrooms, must all be accessible.[173] But some parts of the office—like work surfaces or small spaces used only by employees—do not have to be fully accessible.[174] And unlike public accommodations, which must have visible fire alarms to warn deaf people of a fire, the office need only have the wiring capability for installing these systems at a later time, should an employee need one.[175] The second-floor church office, operated by an exempt religious institution, would not be subject to the same requirements applied to the coffee shop's second-floor business office.[176]

As a place of public accommodation, the common areas of the third-floor hotel must be accessible, and entrances to the hotel's guestrooms must be wide enough for wheelchair passage, to enable social interaction

172. Elevators must have call buttons within a certain reach range and with a clear floor in front of them to allow wheelchair users to reach them. 36 C.F.R. § 1191 app. B § 206.6; *id.* at app. D §§ 407.2.1.1, 407.2.1.3. The "up" button must be above the "down" button to enable blind users to call the correct elevator. *Id.* at app. B § 206.6; *id.* at app. D § 407.2.1.4. The elevator must have various visible and audible signals throughout the use process to allow independent use by blind and deaf users: call buttons with visible signals to show that a call was made and answered; visible and audible signals to indicate which car is answering a call; and audible signals within the car—one sound for "up" and two for "down." *Id.* at app. B § 206.6; *id.* at app. D §§ 407.2.1.5, 407.2.2.1, 407.2.2.3; *id.* at app. B § 206.6; *id.* at app. D § 407.2.2.3. And to protect users who may enter the elevator slowly, the doors must remain open for at least three seconds. *Id.* at app. B § 206.6; *id.* at app. D § 407.3.5. Within the elevator, the control buttons—like those for an emergency stop, alarm, or phone—must have both a tactile symbol and a Braille message to accommodate blind users. *Id.* at app. B § 206.6; *id.* at app. D § 407.4.7.1.

173. The second-floor office space at the mixed-used development must have accessible "circulation paths," that is, pathways routinely used by pedestrians, like elevators, hallways, and courtyards. *Id.* at app. B §§ 106.5, 206.2.8.; *see also id.* at B § 206.3. The bathrooms, kitchenettes, and breakrooms used by employees in the office space must also be accessible—containing grab bars and necessary turn radii. *Id.* at app. B § 106.5.

174. *Id.* at app. B § 206.2.8; *id.* at app. B § 226.1 advisory note. However, the employer may be required to make reasonable accommodations on an as-needed basis for employees with disabilities:

> With respect to work surfaces, this means that employers may need to procure or adjust work stations such as desks, laboratory and work benches, fume hoods, reception counters, teller windows, study carrels, commercial kitchen counters, and conference tables to accommodate the individual needs of employees with disabilities on an "as needed" basis.

Id. at app. B § 226.1 advisory note.

175. *Id.* at app. B §§ 215.1, 215.3; *id.* at app. D § 702.1.

176. 42 U.S.C. § 12187.

among all hotel guests.[177] Additionally, a certain percentage of those guestrooms must have even more accessible spaces, like special bathroom design, space for a wheelchair to turn, and visible communication features for deaf guests.[178]

The fourth-floor, private, owner-occupied condos must have certain components of accessibility at their design and construction stages.[179] Any common areas, like mail rooms, must be readily accessible.[180] Individual units must allow wheelchair users to pass through the doors and must contain reinforced bathroom walls to permit later grab-bar installation.[181] But unlike some of the hotel's guestrooms, these private condos need not be fully accessible.[182] Once the units are sold to individual owners, they

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177. 36 C.F.R. § 1191 app. B § 224.1.2. The hotel is exempt if the "transient lodging units"—guestrooms—are owned and controlled by individual owners. 28 C.F.R. § 36.406(c)(2) (2020). Further, if the dwelling units are for exclusively residential use, not transient lodging, they need not comply. *Id.* § 36.406(c)(3).

178. For a table of the required percentages, see 36 C.F.R. § 1191 app. B tbl. 224.2. These covered rooms must have accessible balconies, a sleeping area with clear floor space on both sides of the bed, a vanity with a countertop of a size similar to that provided in non-accessible guestrooms, a roll-in or accessible bath and shower, and turning space sufficient for a wheelchair. *Id.* at app. D §§ 806.2.2, 806.2.3, 806.2.4, 806.2.4.1, 806.2.6. Some guestrooms must also have communication features that assist guests with deafness, like a device that gives a visible notification of a doorbell, a visible fire alarm, and telephones that are compatible with TTY. *Id.* at app. B §§ 215.4, 224.4; *id.* at app. D § 806.3.2. These accessible features must be integrated in the hotel, dispersed among "various classes of guest rooms"—like those with different room size, bed size, cost, view, and bathroom fixtures—rather than segregating disabled guests in one area. *Id.* at app. B § 224.5.

179. The accessibility of newly constructed housing units is governed by the Fair Housing Act (FHA), which shares similar goals and aims with the ADA. The FHA requires that new (post-1991) construction of buildings containing four or more dwelling units be built in accordance with certain accessibility guidelines. 42 U.S.C. § 3604(f)(7); 24 C.F.R. § 100.201 (2020). Builders comply with these standards by following the American National Standard for buildings and facilities. 42 U.S.C. § 3604(f)(4). This hypothetical assumes both that this mixed-use development contains at least four condo units, thereby subjecting design to FHA standards, and that these condos are built with neither federal nor state nor local funds, which would subject the units to heightened accessibility requirements under the Rehabilitation Act or Title II of the ADA.

180. *Id.* § 3604(f)(3)(C)(i). *See also* Joint Statement, DEP'T OF HOUS. & URB. DEV. & DEP'T OF JUST., ACCESSIBILITY (DESIGN AND CONSTRUCTION) REQUIREMENTS FOR COVERED MULTIFAMILY DWELLINGS UNDER THE FAIR HOUSING ACT 24 (2013), https://www.ada.gov/doj_hud_statement.pdf [https://perma.cc/FQF2-BJ8Q] (noting that "the common areas of covered multifamily dwellings that qualify as places of public accommodation under the ADA"—such as "a rental office in a multifamily residential development, a recreational area open to the public, or a convenience store located in that development"—are covered by both the design and construction requirements of the FHA and the ADA's Standards for Accessible Design).

181. *Id.* § 3604(f)(3)(C)(ii); *id.* § 3604(f)(3)(C)(iii)(III). Inside the unit, the light switches, electrical outlets, and thermostats must be in accessible locations. *Id.* § 3604(f)(3)(C)(iii)(II).

182. For example, roll-in showers are not a necessary aspect of the condo design. *See* Joint Statement, *supra* note 180, at 22.

may have no ongoing compliance requirements. As private residences, they can be made entirely inaccessible to disabled people.[183]

Online access presents similar but in some ways even more complicated questions than those posed by the offline mixed-use development. Like the mixed-use development, the internet raises issues of access at multiple levels: both in the online spaces themselves and in the architectural byways that provide access to user-facing online spaces.[184] Unlike the mixed-use development, which has only a handful of entry points through the parking area or storefront, online users have an immense range of initial entry points through computers, smart phones, virtual assistants, and many other devices.[185] The range and variety of entry points ease the burden to make a particular entry point accessible. If the sidewalk into the development is not accessible, there may not be an easy alternative. But if one brand of smartphone lacks accessibility features, another option may be available.[186]

Simply being online (connected through a physical device and a service provider) does not mean that a user can access the online analogues of the stores, common spaces, and residences in our mixed-use development example.[187] Instead, the user must first successfully navigate design services—web browsers, operating systems, and web design tools—which are the hallways, stairwells, and elevators of the internet that permit users to access both private and public online spaces. These entities do not themselves provide the product or service the user is seeking; they are merely essential go-betweens that connect the user with the product or service provider. Thus, much like the need for elevators to access many of the mixed-use development's accessible features, a website's internal accessibility is meaningless if the user is blocked from accessing it by an inaccessible browser.

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183. In contrast to these private residences, the hotel on the third floor is subject to an entirely different—and expanded—set of obligations. Beyond new construction guidelines, the accessibility regulations diverge: the public accommodations and office spaces must continue to make their programs and services accessible—even to the point of making reasonable modifications for disabled people. But the private condo on the fourth floor and the church offices on the second need not make even reasonable modifications for disabled people.

184. *Cf.* Reid, *supra* note 16, at 605–08 (describing the "external" nature of internet architecture as a relevant consideration in disability access).

185. *See supra* text accompanying note 37.

186. In an ideal world, smartphones of all kinds would be universally accessible to ensure that disabled people, like non-disabled consumers, have choices within the smartphone market.

187. The service provider is theoretically another barrier to initial entry because a user cannot gain online access without one. But as a practical matter, the service provider does not operate in a way that creates barriers for disability access. (Of course, the provider may create other kinds of barriers to entry, such as cost.)

Assuming that the user successfully navigates initial access and the design services, the destination website or application must also have certain accessibility features. Blind users require website coding that is compatible with screen readers and image posting that contains descriptive text. Likewise, deaf and hard-of-hearing users need closed captioning on videos. But it is not enough for a company's website alone or application alone to be accessible. Without accessibility throughout each facet of a company's online presence, the disabled user's experience may not be meaningful because they may not have full access to all the information available to non-disabled users. For example, a particular webpage may offer users special discounts and promotions; certain websites work best only on certain browsers; or the company's Instagram may describe a product in a unique way. Just as hotels must offer a mix of room styles that each contain accessible features, so, too, many public-facing entities with an online presence should offer accessible features in each iteration of their online presence.

As with the mixed-use development, most online entities are situated within structures built by commercial providers: design services and communication platforms. In the online context, design services are the most important commercial providers because the most important or desired entities are initially hosted or accessed there. Making websites and apps accessible is relatively inexpensive if the design services build them into their original design.[188] Businesses may host their primary website on website-building design services like Squarespace or WordPress. Businesses with otherwise-established primary websites may still reach consumers through other online avenues, like Twitter, Facebook, and Instagram, which in turn are sometimes accessed through design services like browsers. But much like the mixed-use development—which facilitates groups as varied as government employees in the post office, worshipers in the church storefront, friends at the coffee shop, and families in the fourth-floor residences—design services support a variety of private, sometimes not outward-facing, individuals and groups. For example, Squarespace and WordPress host church websites, private blogs, and family hubs.[189] And browsers in turn create access points for every variety of personal webpage. As in the mixed-use development, these entities need to provide accessibility frameworks at the outset. But

188. Gottfried Zimmerman & Gregg Vanderheiden, *Accessible Design and Testing in the Application Development Process: Considerations for an Integrated Approach*, 7 UNIVERSAL ACCESS INFO. SOC'Y 117, 118 (2008).

189. Jeremy Basham, *Is WordPress or Squarespace Better for Church Websites?*, CHURCH DESIGN CO. (Aug. 26, 2021), https://churchdesign.co/tutorials-guides/is-wordpress-or-squarespace-better-for-church-websites [https://perma.cc/86UZ-89JX]; *See also* Steve Benjamins, *63 Inspiring Examples of Blogs in 2021*, SITEBUILDERREPORT, https://www.sitebuilderreport.com/inspiration/blog-examples [https://perma.cc/T4SX-HZNE] (last updated July 13, 2021).

although these entities use the same online "spaces" that more public, commercial entities employ, the private websites, like private homes, should present different access requirements and expectations. And like the post office within the mixed-use development, government presence online often depends on a private entity—from Facebook Live events hosted by members of Congress to the Twitter accounts of Parks and Recreation departments—which may create additional accessibility responsibilities.

IV. EXISTING JUDICIAL, SCHOLARLY, AND REGULATORY APPROACHES

The preceding sections have illustrated the complexity and variation of online spaces. Scholars have generally ignored or oversimplified these nuances when addressing the standards and scope of online disability accessibility. And judicial guidance has been confusing and, at times, contradictory.

These shortcomings have meant that the ADA's principal goals of fostering inclusion and human dignity in all aspects of society have gone largely unrealized in online spaces.[190] In offline, physical spaces, government regulations established two key standards for applying Title III.[191] First, most newly constructed public spaces and some newly constructed private spaces must meet the accessibility standards promulgated by either the Department of Justice or the Access Board, which is the federal agency charged with ensuring federal agency compliance with various disability access laws.[192] Second, beyond standards for initial physical construction, state and local governments and public accommodations have an ongoing obligation to make "reasonable accommodations" so that their physical places, programs, and services are "meaningfully accessible" to disabled people.[193] Meaningful access means giving disabled people an experience as close as possible to that of non-disabled persons and in the most integrated setting possible.[194] These

190. *See* 42 U.S.C. § 12101.

191. *See generally id.* (referencing the findings and purpose of the ADA).

192. The standards require certain accessibility benchmarks in new buildings of state and local governments, public accommodations, and commercial facilities. *See supra* Section III.B.

193. 42 U.S.C. § 12101; 24 C.F.R. § 100.201 (2020).

194. 42 U.S.C. § 12182(b)(1)(B). *See, e.g.*, *Argenyi v. Creighton Univ.*, 703 F.3d 441, 449 (8th Cir. 2013); *Kalani v. Starbucks Coffee Co.*, 698 F. App'x 883, 886–87 (9th Cir. 2017) (ensuring meaningful access in a coffee shop means providing wheelchair users *both* interior-facing and wall-facing accessible seating options); *Baughman v. Walt Disney World Co.*, 685 F.3d 1131, 1135–37 (9th Cir. 2012) (permitting a disabled plaintiff's claim to move forward when she was denied the ability to use a Segway as a mobility device); *A.G. v. Paradise Valley Unified Sch. Dist. No. 69*, 815 F.3d 1195, 1204 (9th Cir. 2016) (using the same standard for public schools under Title II of the ADA); *PGA Tour, Inc. v. Martin*, 532 U.S. 661, 682–83 (2001) (recognizing right of a mobility-impaired golfer to

accommodation requirements are bounded by a reasonableness standard.[195] In granting reasonable accommodation requests, public accommodations are not required to fundamentally alter their services or programs.[196] If a request to make something accessible would fundamentally alter the nature of the service or program, the request is not "reasonable."[197]

Translating these doctrines into the online world has been complicated. There are three main categories of website accessibility cases.[198] Blake Reid has called these the Nexus-Between-Website-and-Place cases, the Standalone-Websites-as-Place cases, and the Physical Places Only cases:

> 1. *Nexus-Between-Website-and-Place*. One line of cases, followed by courts in the [Third and] Ninth . . . Circuits, concludes that websites alone are not public accommodations but can be the subject of a Title III claim to the extent they have a sufficient nexus to a physical place of public accommodation—often found, for example, with websites for retail establishments.[199]

use a cart during a professional tournament); *Kreisler v. Second Ave. Diner Corp.*, 731 F.3d 184, 188–89 (2d Cir. 2013) (requiring ramps into elevated buildings because even *deterring* a person with a disability from entering could be a denial of meaningful access). *But see Gil v. Winn-Dixie Stores, Inc.*, 993 F.3d 1266, 1279 (11th Cir. 2021) (declining to apply the ADA to a grocery store's website because, although the website provided customers with more efficient and private services, it was not the only point of access to the physical store).

195. 42 U.S.C. § 12182(b)(2)(A)(ii); *see also A.L. v. Walt Disney Parks & Resorts US, Inc.*, 900 F.3d 1270, 1292 (11th Cir. 2018).

196. *Id.* § 12182(b)(2)(A)(ii); *see also A.L.*, 900 F.3d at 1293 (explaining that courts consider whether the requested modification would fundamentally alter the public accommodation's nature).

197. Thus, for example, the game of golf must still remain golf—despite reasonable modifications. *PGA Tour*, 532 U.S. at 689.

198. Blake Reid rightly notes that many would-be cases in this area settle for fear of creating bad precedent. Reid, *supra* note 16, at 599 n.51.

199. Reid, *supra* note 16, at 598. The Fifth and Sixth Circuits have also adopted the nexus test "by implication." *Access Now, Inc. v. Blue Apron, LLC*, No. 17-cv-116-JL, 2017 U.S. Dist. LEXIS 185112, at *10 (D.N.H. Nov. 8, 2017); *see, e.g.*, *Magee v. Coca-Cola Refreshments USA, Inc.*, 833 F.3d 530, 534 n.23 (5th Cir. 2016) (Title III of the ADA applies to only "physical places"); *Parker v. Metro. Life Ins. Co.*, 121 F.3d 1006, 1014 (6th Cir. 1997) (Title III of the ADA deals with "physical place[s] open to public access"). Reid placed the Third Circuit in a third category of cases—Physical Places Only—but the Third Circuit's caselaw better fits in this first category. Reid, *supra* note 16, at 599. Reid also placed the Eleventh Circuit in this category based in part on the court's decision in *Rendon v. Valleycrest Prods., Ltd.*, 294 F.3d 1279, 1285 (11th Cir. 2002). Reid, *supra* note 16, at 598–99 n.47. The Eleventh Circuit has since rejected any application of *Rendon*'s nexus analysis to the internet context, and the circuit therefore is more appropriately placed in Reid's "Physical Places Only" category. *See Gil*, 993 F.3d at 1281.

> 2. *Standalone-Websites-as-Place*. A second line of cases, followed by courts in the First, Second, and Seventh Circuits, concludes that even standalone websites should be considered places of public accommodation under Title III. The common thread of reasoning in these cases is that websites can be "analogous to a brick-and-mortar store or other venue that provides similar services"[200] and thus fall within the category of entities regulated by Title III.
>
> 3. *Physical Places Only* (No Websites). A third line of cases, followed in the [Eleventh] Circuit, concludes that websites cannot be treated as public accommodations even with a nexus to a physical place of public accommodation.[201]

In the Nexus-Between-Website-and-Place category, the Ninth Circuit found that Domino's Pizza must have an accessible website because it was an "auxiliary aid[] and service[]" that "facilitate[d] access to the goods and services" of the *physical* pizza restaurants.[202] And likewise, the websites of Target needed to be accessible because the websites were "gateway[s]" to their physical, brick-and-mortar stores.[203] But under the nexus theory, the Ninth Circuit also refused to apply the ADA to eBay's website because, unlike the Domino's website, the online services that eBay provided lacked a connection to any physical place.[204] The Third Circuit also follows a version of the nexus test. The Third Circuit defines a public accommodation as a *physical* place, thus requiring for a Title III claim some nexus between the physical place covered by Title III and the requested online services.[205] Thus, the Third Circuit draws a material distinction between a plaintiff's inability to access online restaurant information—like a PDF copy of the menu that an in-person customer receives—and a plaintiff's ability to use internet-based restaurant services—like a website form that takes a customer's pizza order and payment method and applies online-only coupons. The former does not fulfill the nexus requirements, although the latter would.[206] Similarly, the

200. Reid, *supra* note 16, at 599.

201. *See, e.g.*, *Gil*, 993 F.3d at 1277 (expressly holding that the ADA's public accommodation provisions extend exclusively to "actual, physical places" and therefore not websites). Reid, *supra* note 16, at 598–99.

202. *Robles v. Domino's Pizza, LLC*, 913 F.3d 898, 904–05 (9th Cir.), *cert. denied*, 140 S. Ct. 122 (2019).

203. *Nat'l Fed'n of the Blind v. Target Corp.*, 452 F. Supp. 2d 946, 955 (N.D. Cal. 2006).

204. *Earll v. eBay, Inc.*, 599 F. App'x 695, 696 (9th Cir. 2015).

205. *Menkowitz v. Pottstown Mem'l Med. Ctr.*, 154 F.3d 113, 120 (3d Cir. 1998).

206. *Walker v. Sam's Oyster House, LLC*, No. 18-193, 2018 U.S. Dist. LEXIS 158439, at *5–6 (E.D. Pa. Sept. 17, 2018).

Third Circuit determined that the website of a cryptocurrency exchange lacked any nexus with a brick-and-mortar building, thus avoiding website accessibility requirements.[207]

Only the Standalone-Websites-as-Place circuits follow the ADA drafters' intent as identified by Areheart and Stein, namely, that the statute would evolve over time and that its "public accommodation" definition would provide mere illustrative examples rather than an exhaustive, restrictive list.[208] For example, in the District of New Hampshire, the online grocery delivery service, Blue Apron, was sufficiently analogous to a grocery store—despite lacking any brick-and-mortar presence—to be required to make its websites screen-reader-accessible.[209] Similarly, Netflix, whose video streaming service has no public-facing physical presence, was likewise required to create an accessible website as a public accommodation.[210] Thus, the federal circuits are split, and the law has neither kept pace with the evolving realities of the internet nor consistently furthered the normative goals of the ADA.

The scholarly proposals have also lacked specificity. In their 2015 article, *Integrating the Internet*, Areheart and Stein noted the similarities between the ADA's list of public accommodations and those covered by the 1964 Civil Rights Act and suggested that the ADA's list likely was inspired by efforts to eliminate what the drafters saw as segregation similar to that of Jim Crow.[211] Drawing from the legislative histories of both acts, Areheart and Stein argued that "the Internet is rightly understood as a place of public accommodation" under the ADA.[212] They emphasized that Congress intended the ADA's list of public accommodations to be non-exhaustive, a mere launching point for expanding accessibility as technology advanced.[213] Areheart and Stein also rightly argued that the

207. *Mahoney v. Bittrex, Inc.*, No. 19-3836, 2020 U.S. Dist. LEXIS 5746, at *6 (E.D. Pa. Jan. 14, 2020).

208. Areheart & Stein, *supra* note 12, at 470–71.

209. *Access Now, Inc. v. Blue Apron, LLC*, No. 17-cv-116-JL, 2017 U.S. Dist. LEXIS 185112, at *12 (D.N.H. Nov. 8, 2017).

210. *Nat'l Ass'n of the Deaf v. Netflix, Inc.*, 869 F. Supp. 2d 196, 201–02 (D. Mass. 2012).

211. Areheart & Stein, *supra* note 12, at 482–84. Title III of the ADA identifies twelve categories of public accommodations, including motion picture houses, places of public gathering, sales establishments, and places of recreation. 42 U.S.C. § 12181(7).

212. Areheart & Stein, *supra* note 12, at 449. Areheart and Stein argued that both the ADA and the 1964 Civil Rights Act were motivated by the normative goals of integration, social inclusion, and equality of opportunity (and, to a lesser degree, concerns about "human dignity, commerce, and democratic considerations"). *Id.* at 476.

213. *Id.* at 470–71. Our modern understanding of all businesses' duty to serve the public may be narrower than how the Antebellum Era conceived of the duty. *See generally* Joseph William Singer, *No Right to Exclude: Public Accommodations and Private Property*, 90 NW. U. L. REV. 1283 (1996). For both English and American antebellum legal thinkers like William Blackstone and Joseph Story, the common law imposed a duty to serve on public accommodations and common carriers *not* because of their possible

"Internet is now the primary conduit for the exercise of First Amendment rights."[214] Accordingly, traditional First Amendment theories of democratic self-governance and self-expression (which posit that a "democracy *must guarantee* equal access to information and political power"[215] and safeguard speech as a means of personal expression)[216] establish a separate constitutional argument for internet accessibility.

Victoria Smith Ekstrand's 2017 article, *Democratic Governance, Self-Fulfillment, and Disability: Web Accessibility Under the Americans with Disabilities Act and the First Amendment*, reinforced Areheart and Stein's constitutional argument, asserting that "a First Amendment right of [online] access . . . deserve[s] deeper reflection"[217] and may potentially bolster disability advocates' arguments for Web accessibility "[w]here the ADA has faltered."[218] Appealing to First Amendment principles of democratic governance and self-fulfillment, Ekstrand argued that by issuing expanded accessibility guidelines for federal government websites, the U.S. Access Board has implicitly acknowledged that "government Web sites [are] online public forums."[219] In doing so, the federal government has actively protected the First Amendment rights of disabled individuals through facilitating access to online "participat[ion] in democratic governance."[220] Ekstrand also noted that these affirmative First Amendment protections are "supported by international civil liberties groups, human rights activists, and scholars," among whom there is a growing consensus that access to the internet is so fundamental for expressive and information-gathering functions as to be a basic civil right.[221]

Whereas Areheart, Stein, and Ekstrand focus on *why* the ADA mandates web accessibility for individuals with disabilities, Blake Reid's 2020 article, *Internet Architecture and Disability*, focused on *how* this might be accomplished.[222] Reid suggested that internet accessibility is better served by using a "broader framework . . . informed not only by the

monopolistic role in travel, but because they held themselves out to the public as available to provide services. *Id.* at 1309–10, 1312–13, 1324–25. The duty to serve thus likely extended to all businesses that held themselves out as ready to serve the public. *Id.* at 1331. This broad understanding of the responsibility of all businesses to serve everyone constricted following the Civil War, as the presumptive "right to exclude" became a means for many businesses to deny services to African Americans and limit access to newly granted civil rights. *Id.* at 1345.

214. Areheart & Stein, *supra* note 12, at 489.

215. *Id.* at 490 (emphasis added).

216. *Id.* at 494.

217. Ekstrand, *supra* note 16, at 449.

218. *Id.* at 431.

219. *Id.* at 453.

220. *Id.*

221. *Id.* at 455.

222. Reid, *supra* note 16, at 594.

experience of using the internet, but by the internet's layered architecture."[223] He explained that disability law scholars tend to view the internet from a user-focused (or "internal") perspective, which conceptualizes websites as places and has, in turn, driven an implicit assumption that websites and the internet as a whole are virtually synonymous.[224] Although Reid found this internal perspective understandable given ADA litigation's focus on place-based inclusion concerns,[225] he also offered an "external" perspective of the internet's layered architecture that would address accessibility issues beyond mere website access.[226] Reid focused beyond "content" layers (like individual websites, messages, and uploaded videos) and considered "application" layers (like video streaming applications) that facilitate content delivery, the network layers that provide internet transmission protocols, and the physical layers that provide wired and wireless internet access services.[227] A regulatory approach that acknowledges these layers would help to distinguish which part of the internet delivery system is responsible for making accessibility-based changes. Reid argued that this layer-conscious approach better addresses the inevitable, granular questions involved in creating a "regulatory scheme [that] details precisely what must be altered and how" but stopped short of recommending any specific policy proposals.[228]

Regulatory attention to online disability access has also fallen short. In 1996, then-Assistant Attorney General Deval Patrick seemed to anticipate that entities covered by the ADA would, regardless of medium, be required to make their communications accessible. He wrote: "Covered entities that use the internet for communications regarding their programs, goods, or services must be prepared to offer those communications through accessible means as well."[229] But even thirty years after the ADA's passage, the Department of Justice has failed to issue definitive regulations setting standards for internet accessibility. The closest attempt—a federal rulemaking initiated in 2010 to determine the internet accessibility requirements for Title III entities—was "withdrawn for

223. *Id.* at 595.

224. *Id.* at 604.

225. *Id.* at 607.

226. *Id.* at 604. Reid also flagged the complex problems that could arise in implementing accessibility regulations at the content, application, network, and physical layers of the internet. *Id.* at 612–13.

227. *Id.* at 612–13.

228. *Id.* at 613 (internal quotation marks and alterations omitted).

229. *See* Letter from Deval L. Patrick, Assistant Att'y Gen., C.R. Div., U.S. Dep't of Just., to Hon. Tom Harkin, U.S. Senator (Sept. 9, 1996) (available at https://www.justice.gov/crt/foia/file/666366/download).

further review" by the Trump administration in 2017.[230] And without this binding administrative interpretation, at least some federal courts remain largely unpersuaded that the ADA's legislative history requires private websites to be accessible.[231]

The most promising development by far is House Resolution 1100 proposing to amend the ADA with the Online Accessibility Act.[232] The bill would cover "consumer facing websites and mobile applications owned or operated by a private entity" and "establish web accessibility compliance standards for such websites and mobile applications."[233] The bill would prohibit exclusion by reason of disability from both "participation in" and "the full and equal benefits of the services of" these websites and mobile applications by requiring "substantial compliance" with the Web Content Accessibility Guidelines.[234] However, the bill leaves open for agency interpretation important questions about what qualifies as a "consumer facing website," what qualifies as "alternative means of access," and the degree to which "flexibility for small business concerns" would inhibit the bill's intended purposes.[235] Likewise, the bill imposes an administrative remedy exhaustion requirement, which is not required for other ADA claims.[236]

V. Rethinking Guidelines for Regulating Disability Access in Online Spaces

Because current approaches to online disability access lack both doctrinal and normative clarity, we propose reframing the analysis in a way that better reflects the lived experiences of human beings, online and offline. We recommend three basic guidelines. First, we suggest greater attention to online analogues of offline legal categories: public forums, public accommodations, non-public spaces, and private public forums. Second, contrary to the approach adopted in some jurisdictions, we reject any requirement of a physical nexus between an online site and an in-person operation. Third, we recommend directing most regulatory requirements toward design services, communication platforms, and online mediators: the commercial entities whose power, influence, and

230. Nondiscrimination on the Basis of Disability: Accessibility of Web Information and Services of State and Local Government Entities and Public Accommodations, 83 Fed. Reg. 1890, 1890–91 (Jan. 12, 2018) (withdrawn for further review).

231. *Compare supra* text accompanying notes 167–68, *with* 29 U.S.C. § 794d (Section 508 of the Rehabilitation Act, requiring government websites be accessible).

232. Online Accessibility Act, H.R. 1100, 117th Cong. (2021).

233. *Id.*

234. *Id.* § 601(a).

235. *Id.* §§ 601(a), (b), (c)(1)(A), (c)(3).

236. *Id.* § 602.

design functionality best position them to remedy existing gaps in online disability access.

A. Adopt Online Analogues to Offline Categories

Our first recommendation is to pay greater attention to offline space and place categories in applying disability access regulations online. Because DOJ has yet to implement standards for disability access to the internet, courts should at a minimum require that the online analogues of offline public accommodations be accessible.[237] As drafted, the ADA is sufficiently flexible to adapt to online challenges. Its stated purposes include "provid[ing] a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities" and "invok[ing] the sweep of congressional authority . . . in order to address the major areas of discrimination faced day-to-day by people with disabilities."[238] And the ADA's definition of "public accommodation" focuses primarily on the kind of service provided rather than the entity's existence in the physical world. Indeed, the statute seems to use the terms "establishment" and "place" interchangeably—referring simultaneously to "a restaurant, bar, or other *establishment* serving food or drink" and "a motion picture house . . . or other *place* of exhibition or entertainment."[239] The statutory focus is on the entity's function: serving food, creating space for the public to gather, offering entertainment, providing education, offering banking or transportation services. These functions exist online just as much as—if not more so than—they do offline.

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237. *See* 42 U.S.C. § 12101(a)(2) (describing Congress's finding that "historically, society has tended to isolate and segregate individuals with disabilities"); *id.* § 12101(a)(5) (describing Congress's finding that "individuals with disabilities continually encounter various forms of discrimination, including outright intentional exclusion, . . . failure to make modifications to existing facilities and practices, . . . segregation, and relegation to lesser services, programs, activities, benefits, jobs, or other opportunities"). Indeed, some courts already accept this argument. *See, e.g.*, *Access Now, Inc. v. Blue Apron, LLC*, No. 17-CV-116-JL, 2017 WL 5186354, at *12 (D.N.H. Nov. 8, 2017) ("[T]he plaintiffs 'must show only that the web site falls within a general category listed under the ADA.' Here, as Access Now argues, Blue Apron may amount to an online 'grocery store,' which is listed under Title III's definition of 'public accommodation,' or at the very least may fall within the general 'other sales' or 'other service establishment' categories. This suffices at the 12(b)(6) stage to prevent dismissal." (internal citations omitted)); *Nat'l Ass'n of the Deaf v. Netflix, Inc.*, 869 F. Supp. 2d 196, 201 (D. Mass. 2012) ("Plaintiffs convincingly argue that the Watch Instantly web site falls within at least one, if not more, of the enumerated ADA categories. The web site may qualify as: a 'service establishment' in that it provides customers with the ability to stream video programming through the internet; a 'place of exhibition or entertainment' in that it displays movies, television programming, and other content; and a 'rental establishment' in that it engages customers to pay for the rental of video programming.").

238. §§ 12101(b)(1), (b)(4) (emphasis added).

239. *Id.* §§ 12181(7)(B)–(C) (emphasis added). *See also* Areheart & Stein, *supra* note 12, at 469–70.

As written, the ADA thus provides guiding, limiting principles for courts to use a function-based analysis in applying the ADA's anti-discrimination requirements online. Courts assessing ADA public accommodation discrimination claims should thus first assess whether the entity with an internet presence functions like one on the non-exhaustive list of public accommodations in Title III. Within this analysis, the online food delivery application "serv[es] food";[240] Amazon provides the online equivalent of a "clothing store, hardware store, [and] shopping center" combined;[241] and Airbnb and Vrbo offer a semi-virtual "hotel" and "travel service."[242] Courts then should require that online entities serving the same functions as offline public accommodations provide meaningful access to disabled users. This will require that these online entities offer accessible websites and mobile applications to avoid discriminating against disabled users—much like hotels must offer accessible parking, restaurants must offer accessible seating, and the mixed-use development, which they occupy, must have accessible design and construction.

Absent regulatory guidance, courts should look to the experience of nondisabled users and require online entities to provide a meaningfully similar experience for disabled users—constrained, as always, by consideration of whether a change would constitute a fundamental alteration or pose an undue burden on the entity.[243] These entities with an online presence also must fulfill users' reasonable accommodation requests within fundamental alteration limits and without regard for whether the user is an actual customer.[244]

B. Eliminate the Physical Nexus Test

Our second recommendation is to eliminate the physical nexus test. Although the Nexus-Between-Website-and-Place line of cases attempts to create some distinction among websites, it fails to account for the complex facets of online spaces and services. For example, virtual worlds and online forums—both those hosted by government websites and by private communication platforms—have no connection to services, activities, or experiences in the physical world. Instead of connecting users to the physical world, they replace aspects of the physical world.[245] In virtual

240. *Id.* § 12181(7)(B).

241. *Id.* § 12181(7)(E).

242. *Id.* §§ 12181(7)(A), (F).

243. *Id.* § 12182(b)(2)(A)(iii).

244. *See supra* notes 101–02.

245. The internet contexts that replace the physical world—rather than connect to the physical world—demonstrate the complexity of applying existing legal frameworks to the online world. Professor Orin Kerr has described this as the "problem of perspective"—do we view the internet as a virtual equivalent of the physical world? Or do we view the internet in terms only of how it interacts with the physical world?

worlds like *Second Life*, users are not linked to a physical experience or space; rather, users create their own communities.[246] Online townhalls do not merely inform users about an upcoming in-person, physical townhall; rather, the website *is* the townhall. Online mediators serve as supplemental connection points to the physical world.

Still other entities with an online presence connect users to the physical world but not in the way that the physical nexus test expects or accounts for. Instead, the online access points are the only means for accessing the services that these entities offer. For example, Airbnb and Vrbo offer short-term rentals of hosts' private homes.[247] But these entities are not just aggregators—like Google Flights—or even the supplemental means of accessing a brick-and-mortar store's services—like Target.com. Rather, for these entities, the internet is the *only* way to access the services they offer; consumers cannot call or write or go to a brick-and-mortar storefront to reserve an Airbnb stay or Uber rideshare.

These examples, whose inaccessibility excludes disabled people from our modern world that the ADA was intended to open, show the limits of the physical nexus test. Courts should consider the different categories of online presence in assessing whether, how, and to what degree an entity's online presence must be accessible to disabled people. But the complexity of these categories—and the distinct ways they interact with or replace the physical world—shows that the physical nexus test for ADA website compliance is an artificial and antiquated distinction. Indeed, the internet has made physical presence—or at least a connection to physical presence—irrelevant not just to disability access but across a variety of legal contexts. In many cases, earlier legal standards that once prioritized physical presence have been refashioned.[248] Consider the following examples:

> The Internet's facts depend on whether we look to physical reality or virtual reality for guidance. We can model the Internet's facts based on virtual reality, looking from the perspective of an Internet user who perceives the virtual world of cyberspace and analogizes Internet transactions to their equivalent in the physical world. Alternatively, we can model the facts based on the physical reality of how the network operates. . . . In a surprising number of situations, we arrive at one [legal] result when applying law from an internal perspective and a different result when applying law from an external perspective.

Orin S. Kerr, *The Problem of Perspective in Internet Law*, 91 GEO. L.J. 357, 357 (2003).

246. *See* Brazil, *supra* note 2.

247. The popularity and number of online platforms offering short-term rentals have exploded in recent years. Benjamin Edelman & Abbey Stemler, *From the Digital to the Physical: Federal Limitations on Regulating Online Marketplaces*, 56 HARV. J. LEGIS. 141, 149 (2019) ("[I]n the summer of 2010, roughly 47,000 guests stayed with Airbnb hosts, but by the summer of 2015 the number had grown more than 300-fold to 17 million.").

248. *See generally* Kelby S. Carlson, Comment, *From Storefront to Dashboard: The Use of the Americans with Disabilities Act to Govern Websites*, 67 CATH. U. L. REV.

Sales Tax. For decades, a physical presence rule governed the collection and remittance of state sales and use tax by out-of-state businesses.[249] The rule was created in the age of mail-order catalogues: few retail sales occurred in states where companies did not have salesmen or brick-and-mortar stores.[250] Thus, if a company's only connection to a state was through the United States Postal Service or a common carrier, the company lacked the physical connection to the state and the state's services to constitutionally justify forced participation in a state's taxation scheme.[251] Originally, the Supreme Court assumed that such a bright-line rule encouraged business development and avoided expanding the "quagmire" of state taxation authority.[252] But in 2018, the Supreme Court reversed this rule, recognizing that the physical nexus rule for sales taxation was out of date—a nineteenth-century relic that no longer reflected twenty-first century economic realities.[253] The physical presence rule operated as a "judicially created tax shelter for businesses that decide to limit their physical presence and still sell their goods and services to a State's consumers—something that has become easier and more prevalent as technology has advanced."[254] Although the Court always recognized the

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521, 522 (2018) (providing an overview of the ADA's text, legislative history, and "varying case law" treating non-physical spaces as places of public accommodation).

249. *See* Nathan Townsend, *Winding Back* Wayfair*: Retaining the Physical Presence Rule for State Income Taxation*, 72 VAND. L. REV. 1391, 1395 (2019) (reviewing the rationale and doctrinal evolution of the physical presence rule).

250. *See* Adam B. Thimmesch, *The Fading Bright Line of Physical Presence: Did* KFC Corporation v. Iowa Department of Revenue *Give States the Secret Recipe for Repudiating* Quill*?*, 100 KY. L.J. 339, 339 (2011–12).

251. *See Nat'l Bellas Hess, Inc. v. Dep't of Revenue*, 386 U.S. 753, 758 (1967), *abrogated by Quill Corp. v. North Dakota*, 504 U.S. 298 (1992), *overruled by South Dakota v. Wayfair, Inc.*, 138 S. Ct. 2080 (2018).

252. *See Quill*, 504 U.S. at 315–16 (*quoting Nw. States Portland Cement Co. v. Minnesota*, 358 U.S. 450, 457–58 (1959)), *overruled by Wayfair*, 138 S. Ct. at 2081.

253. *See Wayfair*, 138 S. Ct. at 2092. Critiquing *Quill*, the Court wrote:

> The *Quill* majority expressed concern that without the physical presence rule "a state tax might unduly burden interstate commerce" by subjecting retailers to tax-collection obligations in thousands of different taxing jurisdictions. But the administrative costs of compliance, especially in the modern economy with its Internet technology, are largely unrelated to whether a company happens to have a physical presence in a State. For example, a business with one salesperson in each State must collect sales taxes in every jurisdiction in which goods are delivered; but a business with 500 salespersons in one central location and a website accessible in every State need not collect sales taxes on otherwise identical nationwide sales. In other words, under *Quill*, a small company with diverse physical presence might be equally or more burdened by compliance costs than a large remote seller. The physical presence rule is a poor proxy for the compliance costs faced by companies that do business in multiple States.

Id. at 2093 (internal citation omitted).

254. *Id.* at 2094. The Court continued,

rule as an artificial standard, the rule became even more artificial—indeed entirely so—in the face of the modern economy's day-to-day functions.[255] Thus, in 2018 the Court acknowledged the dramatic technological and social changes ushered in by the internet age: "buyers are closer to most major retailers than ever before—regardless of how close or far the nearest storefront."[256] The internet makes businesses "present" for consumers in every state regardless of physical "presence" in the traditional sense.[257] And virtual "showroom[s]" offer "far more inventory, in far more detail, and with greater opportunities for consumer and seller interaction than might be possible for local stores."[258] Although the rule was intended initially to prevent undue burdens on remote sellers, the rule's application in the modern era became a "poor proxy" for actual compliance costs.[259] Large, out-of-state corporations avoided collecting sales tax, but a small company with stores in multiple states could still be burdened.[260]

Data Privacy. Recent data privacy laws in many states have shown that physical presence does not determine the reach of regulatory authority. The California Consumer Privacy Act, which went into effect in 2020, regulates the collection, storage, and sharing practices of companies that possess the personal information of California residents—regardless of whether the information is collected online or offline and regardless of whether the company has any *physical* presence in California.[261] Indeed, the corresponding proposed regulations

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> When the day-to-day functions of marketing and distribution in the modern economy are considered, it is all the more evident that the physical presence rule is artificial in its entirety. . . . What may have seemed like a 'clear,' 'bright-line tes[t]' when *Quill* was written now threatens to compound the arbitrary consequences that should have been apparent from the outset.

Id. at 2095.

255. *Id.*

256. *Id.* (quoting *Direct Mtkg. Ass'n v. Brohl*, 575 U.S. 1, 18 (2015) (Kennedy, J., concurring) ("Today buyers have almost instant access to most retailers via cell phones, tablets, and laptops. As a result, a business may be present in a State in a meaningful way without that presence being physical in the traditional sense of the term.")).

257. *Id.* (quoting *Brohl*, 575 U.S. at 18 (Kennedy, J., concurring)).

258. *Id.*

259. *Id.* at 2093.

260. For a more in-depth discussion of the possible analytical connections between the Court's *Wayfair* decision and the ADA, see generally Cassidy C. Duckett, Comment, *Intangible Accessibility: How* Wayfair *Paves the Way for an Expanded ADA*, 93 TEMP. L. REV. ONLINE 1 (2021).

261. CAL. CIV. CODE § 1798.140(c) (2020). The CCPA applies to for-profit businesses that

> collect[] consumers' personal information or on the behalf of which that information is collected and that alone, or jointly with others, determine[] the purposes and means of the processing of consumers' personal information, that do[] business in the State of California, and that satisf[y] *one* or more of the following thresholds:

acknowledge that some businesses to which the law applies operate entirely online.[262] Thus, even companies that lack any physical presence in California—but still do business "within" the state because of their online practices—must comply with certain consumer rights that were created by the CCPA if the companies hold a California consumer's information.[263] The internet has undermined our traditional understanding of that which states may regulate—reaching far beyond their borders because the internet reaches everywhere.[264] The Federal Trade Commission's (FTC) consumer protection enforcement has followed a similar path. In a 1998 report to Congress about online data privacy concerns, the FTC stated that it understood that its sixty-year-old authority to seek injunctive or equitable relief for unfair and deceptive trade

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> (A) Has annual gross revenues in excess of twenty-five million dollars ($25,000,000) . . .
>
> (B) Alone or in combination, annually buys, receives for the business's commercial purposes, sells, or shares for commercial purposes, alone or in combination, the personal information of 50,000 or more consumers, households, or devices.
>
> (C) Derives 50 percent or more of its annual revenues from selling consumers' personal information.

Id. § 1798.140(c)(1) (emphasis added). The CCPA also applies to entities that control or are controlled by such businesses and share branding with those businesses. *Id.* § 1798.140(c)(2). Companies may avoid compliance only if

> every aspect of that commercial conduct takes place wholly outside of California. For purposes of this title, commercial conduct takes place wholly outside of California if the business collected that information while the consumer was outside of California, no part of the sale of the consumer's personal information occurred in California, and no personal information collected while the consumer was in California is sold.

Id. § 1798.145(a)(6).

262. Final Proposed Regulations for the California Consumer Privacy Act, at 11, https://oag.ca.gov/sites/all/files/agweb/pdfs/privacy/oal-sub-final-text-of-regs.pdf [https://perma.cc/XF3M-JVS4] (proposed Aug. 14, 2020) (to be codified at 11 CCR § 999.312(a)). The final CCPA regulations implicitly acknowledge that disabled people face unique online access challenges. The regulations require that companies comply with the CCPA's requirements in a disability-accessible manner. *See id.* at 4–9.

263. *See* CAL. CIV. CODE § 1798.100(a) (2020) (right to know personal information); *id.* § 1798.105(a) (right to deletion); *id.* §1798.120(a) (right to opt out of sale of personal information). These privacy regulations are not unique to California. The Nevada Internet Privacy Statute also recognizes how the internet has permanently changed business—as well as the regulatory jurisdiction of states. Nevada's statute applies to commercial websites that collect and maintain covered information from Nevada's consumers and that have some connection with Nevada, which can be just "consummat[ing] some transaction with . . . a resident." NEV. REV. STAT. § 603A.330(1) (2019). Like California's privacy statutes, even companies that lack any physical presence within Nevada may still be required to disclose Nevada consumers' information or not sell that information. *See id.* § 603A.345 (deletion rights); *id.* § 603A.340 (notice rights).

264. *See* Townsend, *supra* note 249, at 1393.

practices extended into the online context.[265] The purpose of the FTC's authorizing statute, the Federal Trade Commission Act of 1914 (FTCA), was, in part, to protect consumers.[266] The FTC considers a business's failure to comply with its own stated information practices to be a deceptive trade practice—regardless of whether that failure occurs online or in a physical store—because the FTCA's application evolved so that it could maintain its original, consumer-protecting purposes in a new world.[267] Indeed, the FTC began applying its traditional consumer protection authority to internet-based businesses as early as 1999.[268] The fact that the deceptive practices arose in an *online* context—one never contemplated by the FTCA's drafters—was immaterial.

Copyright. Similarly, copyright law has evolved to meet the changing times. In 1996, John Perry Barlow predicted that copyright law would be too rigid and inflexible to accommodate the impending Digital Age. Applying old copyright formulas to the new online world was like selling "wine without bottles":

> Intellectual property law cannot be patched, retrofitted, or expanded to contain digitized expression any more than real estate law might be revised to cover the allocation of broadcasting spectrum. (Which, in fact, rather resembles what is being attempted here.) We will need to develop an entirely new set of methods as befits this entirely new set of circumstances.[269]

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265. FED. TRADE COMM'N, PRIVACY ONLINE: A REPORT TO CONGRESS 40–41 (1998) https://www.ftc.gov/sites/default/files/documents/reports/privacy-online-report-congress/priv-23a.pdf [https://perma.cc/F5PA-PSML]. Section 5 of the FTCA was amended in 1938 to add "deceptive" practices to the FTC's jurisdictional authority over "unfair" commercial practices.

266. *See* 15 U.S.C. § 45.

267. *See* FED. TRADE COMM'N, *supra* note 265, at 40–41.

268. *See In Re GeoCities* Complaint, FTC, Docket No. C-3850, at https://www.ftc.gov/sites/default/files/documents/cases/1999/02/9823015cmp.htm [https://perma.cc/5WEF-B4AQ]. *See also* R. Ken Pippin, *Consumer Privacy on the Internet: It's "Surfer Beware,"* 47 A.F. L. REV. 125, 134 (1999).

269. John Perry Barlow, *Selling Wine Without Bottles: The Economy of Mind on the Global Net*, 18 DUKE L. & TECH. REV. 8, 9 (2019). Barlow continued,

> Throughout the history of copyrights and patents, the proprietary assertions of thinkers have been focused not on their ideas but on the expression of those ideas. The ideas themselves, as well as facts about the phenomena of the world, were considered to be the collective property of humanity. One could claim franchise, in the case of copyright, on the precise turn of phrase used to convey a particular idea or the order in which facts were presented.
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> The point at which this franchise was imposed was that moment when the "word became flesh" by departing the mind of its originator and entering some physical object, whether book or widget. The subsequent arrival of other commercial media besides books didn't alter the legal importance of this

But Barlow was wrong. Old intellectual property law *did* evolve successfully—albeit somewhat imperfectly—to cover rapidly copied and shared videos, music, and text. The legal understanding of the word "copy" changed from the statute's definition, "material objects," to include "temporary and ephemeral instantiations"—without any changes to the statutory language itself.[270] A "copy" is now any appearance of any part of an otherwise-copyrightable work.[271] In the internet era, these copies are "licensed," not sold, such that the "licensor" retains maximum control over the intellectual property.[272]

These examples suggest why the ADA nexus rules created by some courts are misplaced: the world has moved online since 1990, and in those online realms a connection to brick-and-mortar places does not sufficiently ensure the kind of inclusion that the ADA was designed to afford. In sales tax, data privacy, and copyright, legal standards adapted to an online context to protect the class of people they were intended to protect and to advance the public policy goals they were intended to advance. They do not remain mired in dated interpretations that would fail to protect against harms envisioned to be addressed by these laws.

C. Regulate the Unique Role of Design Services, Communication Platforms, and Online Mediators

The preceding two subparts have shown that current approaches to online disability access fail to recognize different kinds of online presence and overemphasize the importance of a nexus to the offline, physical

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> moment. Law protected expression and, with few (and recent) exceptions, to express was to make physical. . . .
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> Mental to physical conversion was even more central to patent. A patent, until recently, was either a description of the form into which materials were to be rendered in the service of some purpose or a description of the process by which rendition occurred. In either case, the conceptual heart of patent was the material result. If no purposeful object could be rendered due to some material limitation, the patent was rejected. Neither a Klein bottle nor a shovel made of silk could be patented. It had to be a thing and the thing had to work.
>
> Thus the rights of invention and authorship adhered to activities in the physical world. One didn't get paid for ideas but for the ability to deliver them into reality. For all practical purposes, the value was in the conveyance and not the thought conveyed.
>
> In other words, the bottle was protected, not the wine.

Id. at 9–10. *See also* Jessica Litman, *Imaginary Bottles*, 18 DUKE L. & TECH. REV. 127, 128–29 (2019) (reviewing how copyright owners have evolved in response to online proliferation).

270. Litman, *supra* note 269, at 132.

271. Jessica Litman, *Fetishizing Copies, in* COPYRIGHT IN AN AGE OF LIMITATIONS AND EXCEPTIONS 107, 107 (Ruth L. Okediji ed., 2018).

272. *See* Litman, *supra* note 269, at 133.

world. In fact, individual websites can be tied to a wide range of offline entities: government offices, large companies, small nonprofits, social groups, families, churches, public accommodations, and universities.[273] Offline, the law distinguishes between these entities for a variety of prudential, normative, and constitutional reasons.[274] Most of these reasons also apply online, and they apply regardless of whether the website meets a physical nexus test.

One key difference between online and offline regulation is that individual websites are part of a complex nesting of architectural layers that often includes *design services* like WordPress and Squarespace and *communication platforms* like Facebook or Twitter.[275] Unlike the offline world, the varied groups, businesses, and individuals that create websites usually depend on these commercial providers.[276] And in the context of

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273. Government websites are mandated by 29 U.S.C. § 794d (Section 508 of the Rehabilitation Act of 1973) to give disabled employees and members of the general public access to their functions and information at a level comparable to a person without a disability. These so-called Section 508 rules and accessibility requirements must be implemented by all federal agencies. *Id.* § 794d(a)(1)(A). Nonfederal websites run by organizations that receive federal aid must be accessible as well. *Id.* § 794(a). Such organizations must provide "reasonable accommodation" to disabled employees and the general public. *Id.* § 701(a)(4).

274. Debate about the reach of public accommodation law—even well-settled accommodations laws such as the Civil Rights Act of 1964—continues in both academic and public discourse. For example, libertarian Senator Rand Paul (R-KY) is known for his challenges to portions of the Civil Rights Act, stating that despite finding racism abhorrent, "[private] institution[s]" should be "free from regulations limiting [their] choice of what customers to serve." Samuel R. Bagenstos, *The Unrelenting Libertarian Challenge to Public Accommodations Law*, 66 STAN. L. REV. 1205, 1221 (2014). Some scholars have championed a view that public accommodations laws ought to apply to any private institutions that "possess monopoly power" but not those that wield less commercial or social power. *Id.* at 1232 (quoting Richard A. Epstein, *The Constitutional Perils of Moderation: The Case of the Boy Scouts*, 74 S. CAL. L. REV. 119, 120 (2000)); *see also* Richard A. Epstein, *Public Accommodations Under the Civil Rights Act of 1964: Why Freedom of Association Counts as a Human Right*, 66 STAN. L. REV. 1241, 1261 (2014).

275. Lawrence Solum and Minn Chung set forth a descriptive and normative argument about architectural layering in internet regulation in a 2004 article. Lawrence B. Solum & Minn Chung, *The Layers Principle: Internet Architecture and the Law*, 79 NOTRE DAME L. REV. 815 (2004). At the time that Solum and Chung wrote, the "application layer" consisted of commercial service providers that offered a basket of services (and in an era that predated widespread website design). *See id.* at 841. Today, the application layer is even more complex and differentiated between service providers, platforms, and other communication facilitators. *See* Richard S. Whitt, *A Deference to Protocol: Fashioning a Three-Dimensional Public Policy Framework for the Internet Age*, 31 CARDOZO ARTS & ENT. L.J. 689, 736–37 (2013).

276. Of course, this dependency is not always present. Some website designers rely on open-source code and software that would be difficult or impossible to regulate. In these cases, we would argue that the burden of regulatory compliance would revert to the individual website owner and be differentiated by the categories we described earlier. In other words, a government entity or public accommodation would need to ensure disability access to a website relying on open-source architecture, but a private site would not. *See*

disability access, these providers are legally and normatively better positioned to absorb the cost and inconvenience of most disability access than are individual website owners (especially, for example, owners of personal websites) or communication platform users.[277] As we discussed in Section II.C, a third category of commercial provider, *online mediators*, also factors heavily in online interactions. These entities are usually large enough (or funded with enough venture capital) to create their own interfaces (websites, apps, or both) without design services.

We therefore propose that much of the regulatory burden should fall on these commercial providers. Design services should be required to offer the tools and coding that permit their clients and users to design disability-accessible online spaces. And communication platforms and online mediators whose annual revenues exceed certain thresholds likewise should be required to implement accessibility in their online presence.[278]

There are at least three important reasons that these commercial providers should bear most of the regulatory compliance costs. First, they typically have more money and scale to implement the accessibility solutions that would be deemed "reasonable" under Title III's assessment, which often considers cost as a factor.[279] Thus, potential undue burden concerns surrounding website or application compliance costs would be largely mitigated by the economies of scale that these commercial providers offer.[280]

Second, they typically work on front-end design architecture that can provide solutions in an easier, more global, and more cost-effective fashion than can content generators like individuals designing personal websites or small and under-resourced nonprofits attempting to establish an online presence.[281] Third, the normative issues in other areas of the law

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Blake E. Reid, *Internet Architecture and Disability*, 95 IND. L.J. 591, 619–20 (2020) ("[T]he majority of websites are not built from scratch by their proprietors, but instead by customizing elaborate commercial and open-source content management platforms like WordPress . . . .").

277. *Cf.* Taylor, *supra* note 9, at 46 ("[E]xtending the ADA's requirements to the internet could be seen as exacting a 'penalty' on Web publishers whenever they choose to relay information in a way found to be insufficiently 'accessible' to the handicapped. The penalty takes the form of the increased costs of buying space on a Web server to accommodate the extra information required to create handicapped accessible content, and other related direct costs such slower downloads, increased consumer frustration, and a potential loss of customers.").

278. *See infra* Part VI.

279. 42 U.S.C. § 12181(9)(A).

280. *See generally supra* note 120. To limit undue burden concerns, we specifically recommend that only these commercial providers that meet a certain agency-determined revenue threshold be required to comply with industry accessibility standards.

281. Areheart & Stein, *supra* note 12, at 465–66 ("[T]he cost of removing barriers to Internet accessibility is relatively small when compared to the potential benefits. Accessibility is cheaper still when built directly into new website construction."). Areheart

that usually create tensions between design services, communication platforms, and online mediators and individual content generators cut in the same direction on the particular question of disability access.

We can illustrate this last point with two examples. Consider first Section 230 of the Communications Decency Act (CDA), which shields "interactive computer services" from liability for material published by content generators using those services.[282] These protections are usually

and Stein contend that "[r]etrofitting inevitably leads to unnecessary expense and unnecessary delay." *Id.* at 466.

282. 47 U.S.C. § 230(c). The CDA defines "interactive computer service" as "any information service, system, or access software provider that provides or enables computer access by multiple users to a computer server, including specifically a service or system that provides access to the Internet and such systems operated or services offered by libraries or educational institutions." *Id.* § 230(f)(2). The only Supreme Court cases to include the phrase "interactive computer service" do not address its meaning or application. *See, e.g.*, *Nat'l Cable & Telecomms. Ass'n, Inc. v. Gulf Power Co.*, 534 U.S. 327 (2002); *Reno v. ACLU*, 521 U.S. 844 (1997). Lower courts, however, have had many opportunities to consider what services or entities meet the statutory definition, and they have consistently given the term broad application to support the underlying policy goals. *Ricci v. Teamsters Union Loc. 456*, 781 F.3d 25, 28 (2d Cir. 2015) (the term "has been construed broadly to effectuate the statute's speech-protective purpose"); *Nemet Chevrolet, Ltd. v. Consumeraffairs.com, Inc.*, 591 F.3d 250, 354 (4th Cir. 2009) ("To further the policies underlying the CDA, courts have generally accorded § 230 immunity a broad scope"); *Fair Hous. Council of San Fernando Valley v. Roommates.Com, LLC*, 521 F.3d 1157, 1174 (9th Cir. 2008) ("[C]lose cases, we believe, must be resolved in favor of immunity, lest we cut the heart out of section 230 by forcing websites to face death by ten thousand duck-bites[] . . . ."). In a leading case from the early days of the CDA, the Fourth Circuit described "interactive computer services" as "[o]ne of the many means by which individuals access the Internet . . . These services offer not only a connection to the Internet as a whole, but also allow their subscribers to access information communicated and stored only on each computer service's individual proprietary network." *Zeran v. Am. Online, Inc.*, 129 F.3d 327, 328–29 (4th Cir. 1997). The court had no trouble determining that "AOL is just such an interactive computer service" with regard to its bulletin board service. *Id.* at 329. Other services found to be interactive computer services include anti-malware and spam filtration (see below on access software providers); a social media website, *Fed. Agency of News LLC v. Facebook, Inc.*, 432 F. Supp. 3d 1107, 1117 (N.D. Cal. 2020); online customer review and star-rating system, *Kimzey v. Yelp Inc.*, 21 F. Supp. 3d 1120, 1123 (W.D. Wash. 2014); an employer that provided its employees access to the internet, *Lansing v. Sw. Airlines Co.*, 980 N.E.2d 630, 637 (Ill. App. Ct. 2012) ("We find that, under the plain language of the statute and its broad definition of an ICS, an employer like defendant qualifies as a provider or user of an ICS because defendant uses an information system or service that multiple users, like defendant's employees, use to access the Internet."); *Delfino v. Agilent Techs., Inc.*, 52 Cal. Rptr. 3d 376, 389–90 (Cal. Ct. App. 2006) ("Agilent's proxy servers are the primary means by which thousands of its employees in the United States access the Internet. In light of the term's broad definition under the CDA, we conclude that Agilent was a provider of interactive computer services."); individuals who operate websites and web forums, *Charles Novins, Esq., P.C. v. Cannon*, No. 09-5354, 2010 WL 1688695, at *2 (D.N.J. Apr. 27, 2010); comment sections on news sites, *Collins v. Purdue Univ.*, 703 F. Supp. 2d 862, 878 (N.D. Ind. 2010); a search engine, *Murawski v. Pataki*, 514 F. Supp. 2d 577, 591 (S.D.N.Y. 2007); an internet service provider providing access to internet as well as communication tools (*e.g.*, email), *Green v. Am. Online, Inc.*, 318 F.3d 465, 469–70 (3d Cir. 2003) (parties did not dispute that AOL was "the world's

justified because of concerns that service providers facing potential liability would over-regulate speech of individual users.[283] But requiring design services, communication platforms, and online mediators to provide content-neutral disability access features does not regulate the substance of any user-generated speech; at most, it requires users to provide translations, but the substance and meaning of those translations remain within the control of the users.[284]

The interaction of antidiscrimination law and associational rights provides a second example supporting the normative argument of placing the compliance burden on design services, communication platforms, and online mediators. In many other areas of the law, requiring the third-party host to impose broad-based nondiscrimination norms on users would overreach into the associational autonomy of private groups.[285] Here again, there is no analogous concern with online disability access. A private, anti-disability group that uses a communication platform or owns a private website hosted by a design service could still limit its membership to exclude people with certain disabilities. Requiring the design service or communication platform to provide technical access

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largest interactive computer service"); a library's public computers, *Kathleen R. v. City of Livermore*, 104 Cal. Rptr. 2d 772, 777 (Cal. Ct. App. 2001) ("Respondent provides an 'interactive computer service' in this case because its library computers enable multiple users to access the Internet."); and website hosting, *Doe v. Franco Prods.*, No. 99C7885, 2000 WL 816779, at *5 (N.D. Ill. June 22, 2000), *aff'd on other grounds*, 347 F.3d 655 (7th Cir. 2003). "Generally, websites are considered interactive computer services because they allow numerous users to access and use their services such as searchable databases." *Smith v. Trusted Universal Standards in Elec. Transactions, Inc.*, No. 09-4567 (RBK/KMW), 2011 WL 900096, at *5 (D.N.J. Mar. 15, 2011).

283. *See* Felix T. Wu, *Collateral Censorship and the Limits of Intermediary Immunity*, 87 NOTRE DAME L. REV. 293, 302 (2011) (finding that the prevention of collateral censorship is the "prime rationale" for immunity articulated by both commentators and courts). Wu defines collateral censorship as "when a (private) intermediary suppresses the speech of others in order to avoid liability that otherwise might be imposed on it as a result of that speech." *Id.* at 295–96*; see also Doe v. Backpage.com, LLC*, 817 F.3d 12, 29 (1st Cir. 2016) (finding that "First Amendment values . . . drive the CDA"); *Zeran v. Am. Online, Inc.*, 129 F.3d 327, 331 (4th Cir. 1997) ("The specter of tort liability in an area of such prolific speech would have an obvious chilling effect."); Note, *Section 230 as First Amendment Rule*, 131 HARV. L. REV. 2027, 2035 (2018) (arguing that without immunity, intermediaries would censor constitutionally protected speech). However, not all defenders of Section 230 even mention "free speech" or the "First Amendment." *See, e.g.*, H. Brian Holland, *In Defense of Online Intermediary Immunity: Facilitating Communities of Modified Exceptionalism*, 56 U. KAN. L. REV. 369, 369 (2008) (supporting Section 230 as necessary to the "Internet exceptionalism, cyberlibertarian movements").

284. And to the extent that these accessibility requirements are not content neutral, First Amendment concerns dictate that individual content generators should be permitted to circumvent accessibility features. *See infra* text accompanying notes 287–88.

285. *See, e.g.*, *Boy Scouts of Am. v. Dale*, 530 U.S. 640, 656 (2000) (right of association); *Hosanna-Tabor Evangelical Lutheran Church & Sch. v. EEOC*, 565 U.S. 171, 190 (2012) (ministerial exception).

through its front-end architecture satisfies the access concern and in no way impinges on the associational autonomy of the user—in the same way that a communication platform offering an English language option in no way impinges on the user's autonomy to associate with only non-English speakers. To return to our mixed-use development analogy, this solution ensures access to the elevator without requiring residents in individual condos to leave their doors unlocked or have roll-in showers. Accessible coding permits users with disabilities to "get through the door" of online spaces, although it can likewise facilitate the kind of private, exclusive use enjoyed by individual condo owners.

Placing the compliance burden primarily on design services, communication platforms, and online mediators also mitigates the possibility of overregulation. A private blog hosted on WordPress is not the same as the online ordering system for Domino's Pizza. If disability regulations mandated compliance at the individual website level, the private blog would have legal and normative objections unavailable to large businesses.[286]

One implication of regulating design services and communication platforms is accessibility measures that require a degree of translation. Consider the difference between closed-captioning a video (for a deaf user) and providing alternate text so a screen-reader can describe a picture (for a blind user). The closed caption will involve something close to a transcription, which will minimize subjective translation decisions. There will, of course, be some translation, such as classifying the mood of background music or characterizing the tone or intensity of a speaker. But closed captioning is mostly a verbatim rendering.[287] At first glance, generating the alternate text of an image for screen-readers appears to be similar—the computer-generated voice is reading text verbatim. But generating the text itself requires a degree of translation that makes this accessibility feature much closer to American Sign Language offline than to closed-captioning online. Someone, or something, needs to reduce a picture to a short textual description.

Let's assume that online accessibility requires text captions for pictures and other visual components of a platform or website. And let's further assume that the compliance burden falls on the design service or communication platform. The service or platform must make an initial design decision: it could either automatically generate text descriptions

286. This focus also obviates the need to consider categorical exemptions present in the ADA's regulatory framework. *See* 42 U.S.C. § 12187 (describing houses-of-worship exemptions from the ADA's requirements). It is difficult to envision how any of the normative justifications for exempting houses of worship would apply online. But focusing the regulatory effects on the intermediaries avoids these questions altogether.

287. *Motion Picture Ass'n of Am., Inc. v. FCC*, 309 F.3d 796, 798 (D.C. Cir. 2002).

using artificial intelligence,[288] or it could require individual users to include their own description prior to uploading a picture or other visual content. Either option introduces interpretive challenges. If the design service or communication platform decides to generate text descriptions automatically, it will risk underspecifying or misidentifying the picture. At a minimum, an automatically generated description should allow for an easy override by the user providing the content. But whether the service or platform permits the override or simply forces every user to generate text descriptions for every visual upload, user autonomy introduces its own set of risks and uncertainties. Consider, for example, the content provider angry at these regulatory accessibility requirements who decides to complicate life for blind users by mislabeling all of his pictures: the picture of the ugly cat becomes "cute dog," the picture of the small child is labeled "old man," and so on. Or consider the more banal, but equally frustrating, example of the content provider who finds this requirement merely tiresome and types a single character or nondescript "n/a" to meet the platform's requirements. On private user-generated websites, this kind of chaos and disruption would have to be permitted. Though the design service or communication platform would be required to provide accessibility tools, the private user would be free to ignore the platform's accessible features.[289]

Regulating these kinds of companies whose annual revenue exceeds a certain dollar threshold will capture the vast majority of online mediators, as well as larger freestanding sites like Netflix and Blue Apron. At the same time, a minimum revenue threshold will protect certain small businesses and startups from overly burdensome compliance requirements in the design services they provide and the communications platforms they host. Although small business exemptions are usually tied to the number of employees,[290] we believe an annual revenue threshold will better account for market realities of digital and online companies, many of which rely upon a small number of employees to generate significant revenue.

Regulating the design services, communication platforms, and online mediators will not completely solve access challenges. There are at least

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288. See *supra* text accompanying notes 81–90 for a discussion about the problems associated with AI-generated descriptions.

289. Online mediators and large corporations might be subjected to more stringent compliance requirements. For example, a commercial site with egregiously mislabeled pictures and images may not satisfy the "reasonable accommodation" requirement for a blind user relying on a screen reader to access the site. *See generally US Airways, Inc. v. Barnett*, 535 U.S. 391, 401 (2002) (discussing the legislative intent for the word "reasonable").

290. *See Mary Jo C. v. N.Y. State and Local Ret. Sys.*, 707 F.3d 144, 162 (2d. Cir. 2013) (referencing Congress's explicit exclusion of employers with fifteen or fewer employees from ADA coverage).

two categories of online presence that can bypass these entities: (1) large companies and organizations that hire custom designers to build their websites and applications and (2) tech-savvy coders who build their own websites and applications. In these cases, we think the most appropriate regulatory solution is to rely on default distinctions between those companies that qualify as public accommodations and those that do not: public accommodations that build their own websites and applications should be required to make them accessible to disabled people; and design services, communication platforms, and online mediators with annual revenues above a certain threshold should also be required to make their products accessible; but private entities and nonprofits that are not otherwise public accommodations should not be subject to this requirement. As discussed above, this parsing will help ensure that disabled people can maximize online access while minimizing undue burdens on fiscally limited businesses or organizations. Meanwhile, larger and well-funded websites that would not be classified as design services, communication platforms, or online mediators cannot avoid compliance.[291]

To see how these proposed changes would look, consider their application to design services, communication platforms, and online mediators. A design service like Squarespace would provide individual website builders with design tools that permit the Squarespace-hosted website's drop-down menus, forms, and icons to be read by a screen reader and navigated by a keyboard. A communication platform like Twitter would embed AI-generated text on all images posted to the platform, with prompts for users to add or edit the existing text. Videos posted on the platform would not begin playing automatically, as that can interrupt screen-reader narration. Posted videos would contain mandatory closed captioning. Online mediators like Kayak would offer search fields, sort functions, and graphics that are both intelligible to screen readers and understandable for users with intellectual disabilities. Search fields would indicate to screen readers which fields are required and which are optional. Icons would be designed such that users with motor disabilities who may struggle with precisely navigating a mouse around a webpage may still access the page's features using keyboard functions. To the extent that these entities all offer accounts to individual users, those accounts would have special alternative password options that make it easier for users with intellectual disabilities to remember their password and users with motor disabilities to enter their password before the site times out. Their online presence would be marked by high color contrasts to ensure readability by people with visual disabilities. They would also limit the use of

291. *See supra* text accompanying notes 278–79.

CAPTCHA and other cognitive tests in favor of other authentication methods.[292]

All of these entities would post conspicuous contact information to which a user could submit a reasonable accommodation request.[293] And unlike the existing status quo, in which disabled plaintiffs can at most bring claims against only a handful of public-facing companies that operate on the internet, these proposed changes would grant disabled plaintiffs a clear, private right of action against design services, communication platforms, and online mediators, too. Existing ADA caselaw, including that assessing the undue compliance burdens on companies, would provide a helpful analytical framework to address these claims.[294]

VI. Implementing Changes

The most straightforward path to better internet accessibility is amending the ADA. In particular, these seven amendments to Title III would correct existing shortcomings:

1. Amend 42 U.S.C. § 12181(7) to change the definition of "Public accommodation" to read, "The following private entities are considered public accommodations for purposes of this title [42 USCS §§ 12181 et seq.], if the operations of such entities affect commerce and without regard to whether such entities operate in person, online, or both—."295
2. Add 42 U.S.C. § 12181(12) to read, "Design Service. The term 'design service' means commercial browsers, operating systems, and website design tools and templates that host internet-based entities or provide access to the internet."

292. These companies should replace CAPTCHA and other cognitive tests with reasonable substitutes to ensure that disabled people do not have less secure accounts than non-disabled people. Companies can use regular, robust website monitoring to avoid the redundancy attacks that CAPTCHA can help prevent. *See, e.g.*, *What is a DDOS Attack?*, Amazon Web Servs., https://aws.amazon.com/shield/ddos-attack-protection/ [https://perma.cc/7X86-A85G] (last visited Jan. 3, 2021). And to secure private website or application-based accounts, companies can use two-factor authentication, which offers phone calls and text messages to verify a user's identity. *See* Kyle Chivers, *What Is Two-Factor Authentication (2FA) and How Does It Work?*, Norton (Oct. 15, 2020), https://us.norton.com/internetsecurity-how-to-importance-two-factor-authentication.html [https://perma.cc/K2PE-7D23].

293. Of course, these reasonable accommodation requests will be subject to the same burden-shifting requirements to which other ADA claims are subject. *See, e.g.*, *Raytheon Co. v. Hernandez*, 540 U.S. 44, 49 n.3 (2003) (citing *McDonnell Douglas Corp. v. Green*, 411 U.S. 792 (1973)).

294. *See* sources cited *supra* note 120.

295. 42 U.S.C. § 12181(7).

3. Add 42 U.S.C. § 12181(13) to read, "Communication Platform. The term 'communication platform' means commercial entities with either a total number of users or a certain annual revenue as set by regulations that connect private and commercial users over the internet through social media or other sharing mechanisms."
4. Add 42 U.S.C. § 12181(14) to read, "Online Mediator. The term 'online mediator' means commercial entities operating on the internet with an annual revenue as set by regulations that aggregate consumer information from either their own independent contractors or other product and service providers."
5. Amend 42 U.S.C. § 12182(b)(2)(A) to add subsection (vi) to read, "To the extent that the public accommodation has any internet presence, a failure to follow generally recognized industry standards for online accessibility, such as the Web Content Accessibility Guidelines from the World Wide Web Consortium."[296]
6. Add 42 U.S.C. § 12201(i) to read, "Internet Presence. Nothing in this title [42 U.S.C. §§ 12181 et seq.] shall require an individual to first prove that an online public accommodation has any physical presence before that individual may receive a reasonable accommodation."
7. Add 42 U.S.C. § 12190 to read, "A failure by a public accommodation to follow generally recognized industry standards for online accessibility, such as the Web Content Accessibility Guidelines from the World Wide Web Consortium, shall constitute discrimination on the basis of disability. Liability for this online discrimination on the basis of disability shall not extend to private persons or other entities not otherwise covered by this title who have an online presence hosted, accessed, or aggregated by a design service, communication platform, or online mediator."

Like H.R. 1100, our proposed amendments would apply portions of the ADA to websites and would tether online accessibility compliance to external standards, ensuring the ADA's continued salience to evolving technology.[297] But our proposed amendments offer a more nuanced and more comprehensive approach than H.R. 1100 for at least three reasons. First, unlike the proposed bill, our amendments would operate within and clarify existing public accommodations caselaw, ensuring that plaintiffs have access to three decades of well-developed precedent.[298] Second, our amendments would impose clear liability on certain powerful commercial

296. *Id.* § 12182(b)(2)(A) prohibits and defines "discrimination" for the purposes of the ADA. This proposed subsection would include within prohibited discrimination the failure to provide an accessible internet presence.

297. *See* Online Accessibility Act, H.R. 1100, 117th Cong. (2021).

298. Rather than relying on Title III of the ADA's existing public accommodations framework, H.R. 1100 would create an entirely new title within the ADA. *See id.* § 2.

players—design services, communication platforms, and online mediators—who often but do not always have "consumer-facing" websites or applications yet play an outsized role in the development and aggregation of consumer-facing content.[299] Third, our amendments rely upon existing remedial mechanisms—government and private enforcement—rather than creating a new administrative remedy exhaustion requirement that exists nowhere else in the ADA's regulations on public accommodations.[300]

This would not be the first time that Congress amended the ADA in response to judicial decisions that undermined its purpose. Between the ADA's passage in 1990 and the 2008 Americans with Disabilities Amendments Act (ADAA), both the Supreme Court and lower federal courts significantly narrowed the ADA's scope.

Courts required that the threshold question of whether a plaintiff was disabled be assessed by reference to assistive measures that might mitigate the impairment.[301] Thus, a plaintiff who effectively managed his diabetes with insulin and a healthy diet was not sufficiently disabled to qualify for ADA protections.[302] A plaintiff fired after seizing at work was not disabled enough to qualify for ADA protections because he was generally able to manage his epilepsy with medication.[303] And a plaintiff whose hearing aids corrected her impairment did not fall under ADA protection although she was fired because her employer feared she might forget to bring the hearing aids to work.[304]

Courts required plaintiffs who had shown they were disabled to meet a strict interpretation of "substantially limited in a major life activity." Plaintiffs had to show not only substantial limitation in the activity for which they sought an accommodation, but also that their disability severely restricted them from activities that were of central importance to daily life, like household chores, bathing, and teeth-brushing.[305] Thus, a plaintiff who had adapted his daily life to accommodate his muscular dystrophy did not receive ADA protections in employment because he was

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299. *See id.* § 601(a).

300. Although courts have interpreted Title I of the ADA, which governs employment relationships, as requiring pre-suit administrative exhaustion, courts generally do not interpret Title II or Title III as imposing similar requirements on claims arising thereunder. *See, e.g.*, *McInerney v. Rennsselaer Polytechnic Inst.*, 505 F.3d 135, 139 (2d. Cir. 2007); *Botosan v. Paul McNally Realty*, 216 F.3d 827, 832 (9th Cir. 2000).

301. *Sutton v. United Air Lines, Inc.*, 527 U.S. 471, 475 (1999). *See also* Chai R. Feldblum, Kevin Barry & Emily A. Benfer, *The ADA Amendments Act of 2008*, 13 TEX. J. C.L. & C.R. 187, 218–19 (2008) (collecting cases).

302. *Orr v. Wal-Mart Stores, Inc.*, 297 F.3d 720, 724 (8th Cir. 2002).

303. *Todd v. Academy Corp.*, 57 F. Supp. 2d 448, 454 (S.D. Tex. 1999).

304. *Eckhaus v. Consolidated Rail Corp.*, No. Civ. 00-5748 (WGB), 2003 WL 23205042, at *10 (D.N.J. Dec. 24, 2003).

305. *See Toyota Motor Mfg., Ky., Inc. v. Williams*, 534 U.S. 184, 198 (2002). *See also* Feldblum, Barry & Benfer, *supra* note 301, at 221–24 (collecting cases).

not substantially limited in most of his major life activities.[306] Similarly, a plaintiff who experienced both nighttime and daytime seizures that prevented sleep and caused memory loss was not "disabled" because many people fail to receive a full night's sleep and many people suffer a few incidents of forgetfulness each week.[307]

In response to these decisions, disability rights groups and business leaders negotiated for remedial legislation that became the ADAA.[308] The amendments required much lower thresholds for proving a disability, and they rejected both consideration of mitigating measures and the overly restrictive interpretation of "substantially limits."[309]

As in the lead-up to the ADAA, judicial interpretation of the ADA to the internet has at best failed to grant disabled Americans the ADA's full and robust protections and at worst undermined the broad purpose of the ADA's anti-discrimination provisions in an online context. The ADAA offers a model for how Congress can ensure the ADA protects disabled Americans in the face of changing technology. As in 2008, a second round of ADA amendments will require support from both the disability rights and business communities, but changes are essential for ensuring meaningful protections for disabled Americans.

CONCLUSION

Americans are online. And the ADA must keep pace with the online world to ensure meaningful access for disabled people.[310] Current judicial and scholarly approaches have not yet identified an appropriate balance of regulatory, normative, technological, and prudential factors necessary to achieve such access. Carefully parsing the complex architecture underlying our online engagement allows us to start the pursuit of disabled equality by asking the right questions. As we have suggested, these questions involve not only the means of access but also the relationship of democratic practices and constitutional values to that access. While the precise contours of these relationships remain uncertain, clarifying the relative roles and responsibilities of all relevant stakeholders opens the

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306. *McClure v. General Motors Corp.*, 75 Fed. App'x. 983 (5th Cir. 2003).

307. *EEOC v. Sara Lee Corp.*, 237 F.3d 349 (4th Cir. 2001).

308. *See* Feldblum, Barry & Benfer, *supra* note 301, at 229–30. For a history of these negotiations, see generally Kevin Barry, *Toward Universalism: What the ADA Amendments Act of 2008 Can and Can't Do for Disability Rights*, 31 BERKELEY J. EMP. & LAB. L. 203 (2010).

309. *See* Barry, *supra* note 308, at 275.

310. In the Final Regulatory Impact Analysis to its updated 2010 ADA regulations, the Department of Justice acknowledged that the pursuit of human dignity must be considered in the cost-benefit analysis of proposed regulations. 75 Fed. Reg. 56,236, 56,244 (Sept. 15, 2010) (codified at 28 C.F.R § 36); *see also* Rachel Bayefsky, *Dignity as a Value in Agency Cost-Benefit Analysis*, 123 YALE L.J. 1733 (2014).

door to meaningful online access. Now the question shifts from how to whether we will continue to pursue the ADA’s purpose of holistic inclusion.