

Bridging the Digital Chasm through the Fundamental Right to Technology

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The COVID-19 pandemic exposed extreme inequities in Internet access throughout the United States. It is estimated that approximately 42 million American people still lacked the capacity to purchase broadband Internet access as of February 2020. Given the scale of this social problem and the urgent need to address it, this Article suggests that it is time to recognize a new fundamental right to technology as a liberty protected by the Fourteenth Amendment to the U.S. Constitution. This new right, if recognized and protected, would stimulate a paradigm shift. It would expand Internet access by triggering proactive governmental measures, enhanced judicial protection, and scrutiny of technology companies' responsibilities.

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I. INTRODUCTION

The coronavirus (COVID-19) pandemic exposed within America severe inequities in Internet access. Amid the multiple rounds of lockdowns, around 50 million American students relied on the Internet to receive their education.¹ However, 9.7 million of the students had no reliable access to the Internet in their homes.² As an emergency measure and despite health risks, some schools resorted to installing WiFi networks for students to access the Internet in school parking lots.³ These 9.7 million young people also lack access to Netflix, TikTok, YouTube, and other forms of social media entertainment.⁴ All have become important means of defying boredom, loneliness, and even despair during the pandemic.⁵ Worse still, with virtually all health information about combating COVID-19 developing online, lack of Internet access can be a matter of life or death.⁶

Back in 2010, the Federal Communications Commission (FCC) committed to ensuring all Americans had access to broadband Internet by 2020 through its National Broadband Plan.⁷ In 2015, President Obama proclaimed that the Internet is “no longer a luxury” for American people.⁸ Yet the reality is that as of February 2020, 42 million American people still lacked the capacity to purchase broadband Internet access.⁹ The COVID-19 pandemic has made clear that this digital divide,

1. Enjoli Francis, *Organizations Help Kids Bridge Digital Schooling Divide by Providing Internet Learning Tools*, ABC NEWS (Sept. 22, 2020, 6:30 PM), <https://abcnews.go.com/Technology/organizations-kids-bridge-digital-schooling-divide-providing-internet/story?id=73146197>.

2. *Interactive Map: America's Unconnected Students*, DIGITAL BRIDGE K-12 <https://digitalbridgek12.org/toolkit/assess-need/connectivity-map> (last visited Dec. 6, 2020).

3. Cecilia Kang, *Parking Lots Have Become a Digital Lifeline*, N.Y. TIMES (May 5, 2020), <https://www.nytimes.com/2020/05/05/technology/parking-lots-wifi-coronavirus.html>.

4. Tony Romm, *'It Shouldn't Take a Pandemic': Coronavirus Exposes Internet Inequality Among U.S. Students as Schools Close Their Doors*, WASH. POST (Mar. 16, 2020, 6:22 AM), <https://www.washingtonpost.com/technology/2020/03/16/schools-internet-inequality-coronavirus/>.

5. See, e.g., AJ Willingham, *Stuck at Home, Families Find a New Way to Bond: Creating TikTok Videos*, CNN (Apr. 19, 2020, 1:29 PM), <https://edition.cnn.com/2020/04/19/us/tiktok-coronavirus-quarantine-dance-trnd/index.html>; Derrick Bryson Taylor, *The Social Media Challenges Helping Keep Boredom at Bay*, N.Y. TIMES (Apr. 22, 2020), <https://www.nytimes.com/2020/04/22/style/challenges-social-media-coronavirus.html>.

6. See Press Release, United Nations, Digital Divide ‘a Matter of Life and Death’ amid COVID-19 Crisis, Secretary-General Warns Virtual Meeting, Stressing Universal Connectivity Key for Health, Development (June 11, 2020), <https://www.un.org/press/en/2020/sgsm20118.doc.htm>; Amanda Holpuch, *US's Digital Divide 'is Going to Kill People' as Covid-19 Exposes Inequalities*, THE GUARDIAN (Apr. 13, 2020, 8:08 AM), <https://www.theguardian.com/world/2020/apr/13/coronavirus-covid-19-exposes-cracks-us-digital-divide>.

7. See FED. COMM'NS COMM'N, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN 135-136 (2010), <https://transition.fcc.gov/national-broadband-plan/national-broadband-plan.pdf>.

8. Presidential Memorandum, THE WHITE HOUSE, Expanding Broadband Deployment and Adoption by Addressing Regulatory Barriers and Encouraging Investment and Training (Mar. 23, 2015), <https://obamawhitehouse.archives.gov/the-press-office/2015/03/23/presidential-memorandum-expanding-broadband-deployment-and-adoption-addr>.

9. John Busby, Julia Tanberk & BroadbandNow Team, *FCC Reports Broadband Unavailable to 21.3 Million Americans, BroadbandNow Study Indicates 42 Million Do Not Have Access*,

which could even be termed a “digital chasm”¹⁰ now, must be addressed with urgency.

The Emergency Educational Connections Act was proposed to create a federal fund of \$2 billion to ensure K-12 students have adequate home Internet connectivity and devices during the pandemic.¹¹ However, this is merely a temporary measure when what is desperately needed is a long-term solution.¹² Against this backdrop, this Article puts forth a fundamental rights approach to technology that lends a new legal momentum to the task of addressing inequality in Internet access. It is time to recognize a fundamental right to technology of which Internet access is vital part.¹³ This proposed right creates a constitutional mandate entitling everyone to the benefits of progress in fundamental technologies such as the Internet, thereby paving the way for their fair distribution.

First, this Article explores how both government and market failures have led to the extreme inequalities in Internet access across the United States (U.S.). Then the Article demonstrates the importance of the Internet in protecting both individual liberties and societal interests. Lastly, the Article concludes by discussing how the recognition of a right to technology would stimulate a paradigm shift. It would expand Internet access by triggering proactive governmental measures, enhanced judicial protection, and scrutiny over technology companies’ responsibilities.

II. ROOTS OF INEQUITIES IN ACCESS TO THE INTERNET

The digital divide is a global problem of great complexity.¹⁴ In the U.S., there are three major contributing factors. First, a broadband connection is too expensive for low-income households.¹⁵ A Pew Research Center Study shows that 43% of all American adults believe that cost is the main reason for not having home broadband service.¹⁶ The typical cost of a home connection in the U.S. is over \$60

BROADBANDNOW RESEARCH (Feb. 3, 2020), <https://broadbandnow.com/research/fcc-underestimates-unserved-by-50-percent>.

10. The “digital chasm” is a term coined by Jon Sallet to describe “a cluster of digital divides that are larger, longer lasting, multi-faceted, and harder to close.” Tom Wheeler, *5 Steps to Get the Internet to All Americans: COVID-19 and the Importance of Universal Broadband*, BROOKINGS (May 27, 2020), <https://www.brookings.edu/research/5-steps-to-get-the-internet-to-all-americans>.

11. Emergency Educational Connections Act of 2020, H.R. 6563, 116th Cong., 2nd Sess. (2020).

12. *See Q & A with Professor Yoo on Internet Connectivity During the Novel Coronavirus Pandemic*, U. PENN. CAREY LAW SCH. (May 5, 2020), <https://www.law.upenn.edu/live/news/10028-q-a-with-professor-yoo-on-internet> (“[T]he spread of COVID-19 has made crystal clear the importance of finding the most effective ways to extend the benefits of the internet to the half of the world that is still unconnected.”).

13. *See* Haochen Sun, *The Fundamental Right to Technology*, 48 HOFSTRA L. REV. 445, 447 (2019) [hereinafter Sun, *The Fundamental Right*] (arguing that “a new fundamental right to technology should be recognized under the U.S. Constitution”).

14. *See* Peter K. Yu, *Bridging the Digital Divide: Equality in the Information Age*, 20 CARDOZO ARTS & ENT. L.J. 1 (2002); PIPPA NORRIS, DIGITAL DIVIDE: CIVIC ENGAGEMENT, INFORMATION POVERTY, AND THE INTERNET WORLDWIDE 4-9 (2001).

15. Ronald Klain, *Inequality and the Internet*, DEMOCRACY J. (Summer 2015), <https://democracyjournal.org/magazine/37/inequality-and-the-internet>.

16. U.S. DEP’T OF HOUS. AND URB. DEV., EVIDENCE MATTERS: DIGITAL INEQUALITY AND LOW-INCOME HOUSEHOLDS (Fall 2016), <https://www.huduser.gov/portal/periodicals/em/fall16/highlight2.html>.

a month,¹⁷ but a study by the Benton Foundation suggested that low-income Americans can only afford to pay around \$10 a month for this service.¹⁸

Second, broadband service is unavailable in many geographically isolated rural areas. For example, in rural Greenfield, Massachusetts and in the Appalachian community of Garrett County, Maryland, 40% of the population did not have access to broadband Internet in 2016.¹⁹ This figure is consistent in rural towns across the entire country, where 39% of residents lacked such access in 2016.²⁰ The cost of stringing or trenching fiber-optic cables across vast and challenging terrain to reach small populations is prohibitively expensive for many service providers given the limited income such a service would generate.²¹ While some service providers have spent money installing this infrastructure, their prices are set exorbitantly high to recoup their costs.²²

Third, the government's efforts to eliminate the digital divide are proving to be an utter failure. Due to a myriad of policy failures, the FCC did not effectively alleviate the digital divide through its reorientation of the Universal Service Fund from telephone service to broadband service and the subsequent creation of the Lifeline program.²³ In 2015, President Obama established the Broadband Opportunity Council, a body intended to develop plans for universal broadband access.²⁴ In its January 2017 progress report, the Council celebrated "fulfilling, and even exceeding, the initial commitments outlined."²⁵ Some of the completed actions listed included the development of the National Communications and Information Administration's Broadband USA program providing direct technical assistance to 129 communities in 36 states and publishing a guide to federal funding of broadband projects.²⁶ Besides making it easier to use economic development administration grants for broadband planning and infrastructure, the Council has made little genuine progress.²⁷

17. See Dustin Nelson, *Here's How Much the Internet Costs in Every Country Around the World*, THRILLIST (Jan. 8, 2018, 9:25 PM), <https://www.thrillist.com/news/nation/how-much-internet-costs-in-every-country>.

18. Jonathan Sallet, *Our Broadband Moment—Acting Now and Looking Forward*, BENTON INSTITUTE FOR BROADBAND SOCIETY (Mar. 19, 2020), <https://www.benton.org/blog/our-broadband-moment—acting-now-and-looking-forward> (reporting "that low-income people can only afford to pay about \$10 per month for broadband.").

19. Apama Nathan, *From ZIP Codes to Paywalls: The Internet as a New Frontier of Inequality*, SCIENCE IN THE NEWS (Dec. 14, 2018), <http://sitn.hms.harvard.edu/flash/2018/internet-inequality>.

20. *Id.*

21. See, e.g., Wheeler, *supra* note 10.

22. See Nathan, *supra* note 19.

23. See Daniel A. Lyons, *Narrowing the Digital Divide: A Better Broadband Universal Service Program*, 52 U.C. DAVIS L. REV. 803, 805–06 (2019). In the article, Professor Lyons concludes that "the reforms [the FCC] has adopted are unlikely to narrow the digital divide." *Id.* at 806.

24. See Klain, *supra* note 15.

25. BROADBAND OPPORTUNITY COUNCIL AGENCIES' PROGRESS REPORT, at 3 (Jan. 2017), https://www.ntia.doc.gov/files/ntia/publications/broadband_opportunity_council_agencies_progress_report_jan2017.pdf.

26. *Id.* at 9–10.

27. Steve Blum, *Too Little, Too Late From the Federal Broadband Opportunity Council*, TELLUS VENTURE ASSOC. (Feb. 11, 2017), <https://www.tellusventure.com/blog/little-late-federal-broadband-opportunity-council> (Examples of such jargon include: "DOT encouraged..." "GSA and BroadbandUSA have discussed..." "BroadbandUSA...is beta testing..." "ATJ engaged with NSF...although no ATJ-

Under the Trump administration, the FCC has taken a market-based approach to addressing the digital divide. FCC Chairman Ajit Pai, whom President Trump appointed soon after taking office, framed the aim of addressing the digital divide as doing what is necessary to help the private sector build networks.²⁸ FCC Commissioner, Michael O’Rielly wrote a statement celebrating the work of private telecommunications companies in making broadband widely available to meet the demands of users. He questioned whether every part of the country required high-speed Internet, criticized the prioritization of fiber-optic services, and endorsed one of the FCC’s subsidy programs as the best course of action should it be forced to intervene in some rural areas.²⁹ However, the market-based approach is designed to accommodate major companies such as AT&T, which leaves the geographically isolated with limited choice, low speeds and high prices concerning Internet access.³⁰

III. INTERNET ACCESS AND THE FUNDAMENTAL RIGHT TO TECHNOLOGY

As Part II demonstrates, the confluence of government and market failures in the U.S. created great inequities in Internet access. How can low-income urban households and rural families gain better access to the Internet? The U.S. Constitution expressly protects fundamental rights ranging from the freedom of expression and religion to the right to keep and bear arms.³¹ The Constitution also allows courts to recognize unenumerated fundamental rights as liberties protected by the Due Process Clause of the Fourteenth Amendment,³² which prescribes that no State shall “deprive any person of life, liberty, or property, without due process of law”³³ Accordingly, the Supreme Court has developed a liberal approach to identifying unenumerated fundamental rights.³⁴ Unenumerated rights may be recognized as fundamental if they are essential to the protection of individual

related proposals were selected for funding...” “The Office of Educational Technology requested funding...”).

28. Steve Blum, *Trump’s Broadband Policy Has Direction, But No Destination*, TELLUS VENTURE ASSOC. (Jan. 29, 2017), <https://www.tellusventure.com/blog/trumps-broadband-policy-has-direction-but-no-destination>.

29. Michael O’Rielly, *Federal Broadband Infrastructure Spending: Potential Pitfalls*, FED. COMM’NS COMM’N. (Feb. 1, 2017, 2:00 PM), <https://www.fcc.gov/news-events/blog/2017/02/01/federal-broadband-infrastructure-spending-potential-pitfalls>.

30. Steve Blum, *Don’t Subsidize Fiber, Just Give the Money to AT&T Says FCC Commissioner*, TELLUS VENTURE ASSOC. (Feb. 2, 2017), <https://www.tellusventure.com/blog/dont-subsidize-fiber-just-give-the-money-to-att-says-fcc-commissioner>.

31. U.S. CONST. amends. I, II.

32. See *Griswold v. Connecticut*, 381 U.S. 479, 486 (1965) (Goldberg, J., concurring) (“[T]he concept of liberty protects those personal rights that are fundamental, and is not confined to the specific terms of the Bill of Rights.”).

33. U.S. CONST. amend. XIV, § 1.

34. See Sun, *The Fundamental Right*, *supra* note 13, at 452–58.

liberty³⁵ and the promotion of social interests.³⁶ In the last few decades, the Court identified privacy,³⁷ abortion,³⁸ consensual sodomy,³⁹ and same-sex marriage⁴⁰ as unenumerated fundamental rights protected by the Due Process Clause. Internet access is fundamentally important to protect individual liberty and promote social interests. Following the liberal approach to applying the Due Process Clause, this Article argues for recognition of a new fundamental right to technology that ensures equal access to the Internet.

A. The Internet as a Fundamental Technology

Due to rapid developments in hardware and software that allow us to disseminate and receive critical information, the Internet has become a fundamental communications technology for two main reasons. First, Internet access plays an essential role in promoting liberties ranging from free speech, to media freedom, to education, as already demonstrated by a wealth of scholarly research.⁴¹ Seminal judicial rulings have proven the importance of the Internet for freedom of expression. In *Reno v. American Civil Liberties Union*,⁴² the U.S. Supreme Court explained how the Internet revolutionized ways in which freedom of expression is promoted:

[The Internet] provides relatively unlimited, low-cost capacity for communication of all kinds. . . Th[e] dynamic, multifaceted category of communication includes not only traditional print and news services, but also audio, video, and still images, as well as interactive, real-time dialogue. Through the use of chat rooms, any person with a phone line can become a town crier with a voice that resonates farther than it could from any soapbox. Through the use of Web pages, mail exploders, and newsgroups, the same individual can become a pamphleteer.⁴³

Apart from its speech-enhancing functions, courts and researchers ascertained the Internet's broader roles in promoting liberty through our daily participation in

35. See *Planned Parenthood of Southeastern Pennsylvania v. Casey*, 505 U.S. 833, 851 (1992) (“[Matters] involving the most intimate and personal choices a person may make in a lifetime, choices central to personal dignity and autonomy, are central to the liberty protected by the Fourteenth Amendment.”); *Lawrence v. Texas*, 539 U.S. 558, 562 (2003) (“Liberty presumes an autonomy of self that includes freedom of thought, belief, expression, and certain intimate conduct.”).

36. See *Obergefell v. Hodges*, 576 U.S. 644, 669 (2015) (ruling that protection of the right to marriage “is a keystone of our social order”); *Juliana v. United States*, 217 F. Supp. 3d 1224, 1250 (D. Or. 2016) (recognizing “the right to a climate system capable of sustaining human life” as a fundamental right because of its fundamental role in maintaining “a free and ordered society”).

37. See *Roe v. Wade*, 410 U.S. 113, 152–53 (1973).

38. See *Planned Parenthood*, 505 U.S. at 834.

39. See *Lawrence*, 539 U.S. at 564–65, 574, 578–79.

40. See *Obergefell*, 576 U.S. at 665.

41. See generally, YOCHAI BENKLER, *THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM* 7–16 (2006); CHRISTOPHER YOO, *THE DYNAMIC INTERNET: HOW TECHNOLOGY, USERS, AND BUSINESSES ARE TRANSFORMING THE NETWORK* 1 (2012).

42. *Reno v. ACLU*, 521 U.S. 844, 844 (1997).

43. *Id.* at 870.

modern society.⁴⁴ The Internet is a source of information and knowledge and makes services provided by public and private institutions more accessible.⁴⁵ In so doing, it is a daily utility that “transform[s] nearly every aspect of our lives, from profound actions like choosing a leader, building a career, and falling in love to more quotidian ones like hailing a cab and watching a movie.”⁴⁶

Second, the Internet creates digital public spaces that are vital to societal interests. Former Secretary of State Hillary Clinton famously stated that Internet freedom is as fundamental as free speech itself because the Internet is the twenty-first century town square.⁴⁷ The journalists involved in Occupy Wall Street collectively issued a statement emphasizing that “[a]ccess to open communications platforms is critical for the human species evolution and survival.”⁴⁸ Judicial rulings have concurred with these views. In *Packingham v. North Carolina*, the Supreme Court pointed out that the Internet is as important as public streets and parks, traditional public forums that merit the full spectrum of free speech protection.⁴⁹ Further, the rise of social media outlets as dynamic new additions to the Internet makes it a vehicle for socially beneficial communicative activities, which range from debating and sharing photos on Facebook to seeking jobs and advertising for professionals on LinkedIn.⁵⁰ Accordingly, courts have ruled that online search engines benefit society by improving public access to information.⁵¹

B. *The Internet and COVID-19*

The COVID-19 pandemic reinforced the Internet’s status as a communications technology fundamental to the promotion of individual and societal well-being. According to a recent Pew Research Center survey, fifty-three percent of adults in the U.S. say the Internet has been essential during the pandemic.⁵² A study of mobile device data showed that in February 2020, before the effects of the virus

44. *Carpenter v. United States*, 138 S. Ct. 2206, 2210 (2018) (holding that Internet access through cell or smart phones “is indispensable to participation in modern society”).

45. *United States v. Eaglin*, 913 F.3d 88, 98 (2d Cir. 2019) (“[A]ccess to the Internet is essential to ... everyday life, as it provides avenues for seeking employment, banking, accessing government resources, reading about current events, and educating oneself.”).

46. *U.S. Telecom Ass’n v. FCC*, 825 F.3d 674, 698 (D.C. Cir. 2016).

47. Hillary Rodham Clinton, U.S. Sec’y of State, *Internet Rights and Wrongs: Choices & Challenges in a Networked World*, Remarks at The George Washington University (Feb. 15, 2011), available at <https://2009-2017.state.gov/secretary/20092013clinton/rm/2011/02/156619.htm>.

48. Mera Szendro Bok, *What Does Occupy Wall Street Have To Do With Internet Freedom and Media Reform? Everything!*, MEDIA JUSTICE (Oct. 26, 2011), <https://mediajustice.org/news/what-does-occupy-wall-street-have-do-internet-freedom-and-media-reform-everything/>.

49. *Packingham v. North Carolina*, 137 S. Ct. 1730, 1735 (2017) (“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—the ‘vast democratic forums of the Internet’ in general, and social media in particular.” (citation omitted) (citing *Reno v. ACLU*, 521 U.S. 844, 868 (1997)).

50. *Id.* at 1735–36 (citations omitted) (quoting *Reno*, 521 U.S. at 870).

51. *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146, 1165 (9th Cir. 2007) (Ruling that “a search engine provides social benefit by incorporating an original work into a new work, namely, an electronic reference tool”).

52. Emily A. Vogels, Andrew Perrin, Lee Raine & Monica Anderson, *53% of Americans Say the Internet Has Been Essential During the COVID-19 Outbreak*, PEW RES. CTR. (Apr. 30, 2020), <https://www.pewresearch.org/internet/2020/04/30/53-of-americans-say-the-internet-has-been-essential-during-the-covid-19-outbreak>.

had begun to be felt in the U.S., individuals from high income areas with full access to the Internet were more likely to leave their homes, but following state social distancing directives in March, individuals from low-income areas became more likely to leave their homes.⁵³ Furthermore, the study showed that the same result was evident in areas of high and low Internet penetration, noting the correlation between income and Internet access.⁵⁴ More people from low-income areas have breached social distancing guidelines, partly because their inability to take advantage of the important functions the Internet has provided during the pandemic forced them to leave their homes to work or meet friends.⁵⁵

Against this backdrop, the pandemic makes clear the fundamental importance of the Internet primarily in four ways. First, it shows that the Internet is essential to modern education. Although many students have long been disadvantaged by not having access to the home Internet, the pandemic exposed the severity of this often-overlooked hardship.⁵⁶ Twenty-one percent of U.S. parents claimed that their children would be unable to complete their schoolwork at home due to lack of Internet access, twenty-two percent claimed their children had to leave the house to use public Wi-Fi networks to do so, and a further twenty-nine percent said their children would have to do their schoolwork on a cell phone.⁵⁷

Second, Internet access is essential for adults working from home consistent with social distancing guidelines. Companies and individuals alike have viewed these circumstances as an opportunity to experiment with a working from home model that may become the norm in an increasingly digital world.⁵⁸ The pandemic increased demand for digital services that facilitate remote working, with the use of apps such as Zoom and WebEx dramatically increasing.⁵⁹ However, this creates serious problems for those without the stable Internet needed to make use of such services. Worse, the digital divide has left some with no way to work while social distancing guidelines are in place, putting their livelihoods at risk.⁶⁰

Third, the Internet performs an important service throughout the pandemic in providing entertainment. A study has suggested that, since the outbreak, as many as thirty-eight percent of American consumers have tried out a new digital media subscription, more than two-thirds of whom say they will continue their

53. Lesley Chiou & Catherine Tucker, *Social Distancing, Internet Access and Inequality*, 7–8 (Nat'l. Bureau of Econ. Rsch., Working Paper No. 26982, 2020), <https://www.nber.org/papers/w26982>.

54. *Id.*

55. *Id.*

56. Romm, *supra* note 4.

57. See Vogels et al., *supra* note 52.

58. Shelly Banjo, Livia Yap, Colum Murphy & Vinicy Chan, *Coronavirus Forces World's Largest Work-From-Home Experiment*, BLOOMBERG (Feb. 2, 2020, 4:00 PM), <https://www.bloomberg.com/news/articles/2020-02-02/coronavirus-forces-world-s-largest-work-from-home-experiment>.

59. Ella Koeze & Nathaniel Popper, *The Virus Changed the Way We Internet*, N.Y. TIMES (Apr. 7, 2020), <https://www.nytimes.com/interactive/2020/04/07/technology/coronavirus-internet-use.html> (finding that Zoom rose from around 2 million daily uses on February 29th to well above 6 million in March and Google Classroom rose from a similar level to around 5 million and Microsoft Teams rose by around 1 million daily sessions).

60. See, e.g., Ephrat Livni, *The Coronavirus Crisis Proves the Internet Should Be a Public Utility*, QUARTZ (Mar. 26, 2020), <https://qz.com/1826043/the-coronavirus-crisis-proves-internet-should-be-a-public-utility>.

subscription after the pandemic has passed.⁶¹ The internet also facilitates personal connections during this period of increased isolation. For instance, people livestream religious services, weddings and funerals that they are unable to physically attend,⁶² and individuals have created popular online pop quizzes and book clubs.⁶³ These new forms of socialization also gave a huge boost to relatively obscure video chatting apps such as Duo and Houseparty.⁶⁴ In the meantime, those without Internet access are at greater risk of feeling cut off from family members, friends, and society in general.⁶⁵

Finally, the Internet provides important access to essential information, supplies, and services amid the pandemic. It remains an important source of information about the virus and in some cases the primary means available of making contact with a doctor.⁶⁶ People also rely on the Internet to ensure their access to justice. For a certain part of 2020, the vast majority of federal and state courts in the U.S. conducted virtual court proceedings via the Internet.⁶⁷ The Supreme Court recently conducted a virtual hearing for the very first time.⁶⁸

C. Global Recognition

The fundamental importance of Internet access is attracting growing global support. For example, the results of several major surveys indicate overwhelming public support for protection of this right. According to a BBC World Service poll, almost four in five people around the world surveyed in 2009–2010 regarded Internet access as a fundamental right.⁶⁹ Similarly, a 2012 survey—of more than 10,000 Internet users from twenty countries—found that “[e]ighty-three percent of respondents agreed or agreed strongly that Internet access should be considered a basic human right.”⁷⁰

Recognizing the growing importance of Internet access, the United Nations (UN) called for a global movement to fully integrate it into human rights

61. Don Reisinger, *Coronavirus Is Conditioning New Entertainment Habits That May Not Change Post-Pandemic*, FORBES (June 23, 2020, 12:10 AM), <https://www.forbes.com/sites/donreisinger/2020/06/23/coronavirus-is-conditioning-new-entertainment-habits-that-may-not-change-post-pandemic/#6d1ca81d1194>.

62. Eleanor Sarpong, *Covid-19 Shows Why Internet Access Is a Basic Right. We Must Get Everyone Connected.*, ALL. FOR AFFORDABLE INTERNET (Apr. 15, 2020), <https://a4ai.org/covid-19-shows-why-internet-access-is-a-basic-right-we-must-get-everyone-connected>.

63. Cristina Criddle, *Coronavirus: Ways to Stay Social Online While in Self-Isolation*, BBC NEWS (Mar. 20, 2020), <https://www.bbc.com/news/technology-51966087>.

64. See Koeze & Popper, *supra* note 59.

65. See Holpuch, *supra* note 6.

66. *See id.*

67. See Janna Adelstein, *Courts Continue to Adapt to Covid-19*, BRENNAN CTR. FOR JUST. (Sept. 10, 2020), <https://www.brennancenter.org/our-work/analysis-opinion/courts-continue-adapt-covid-19>.

68. See *Covid-19 Forces Courts to Hold Proceedings Online*, THE ECONOMIST (June 14, 2020), <https://www.economist.com/international/2020/06/14/covid-19-forces-courts-to-hold-proceedings-online>.

69. *Internet Access is ‘a Fundamental Right’*, BBC NEWS (Mar. 8, 2010), <http://news.bbc.co.uk/2/hi/technology/8548190.stm>.

70. Press Release, Internet Soc’y, *Global Internet User Survey Reveals Attitudes, Usage, and Behavior* (Nov. 20, 2012), <https://www.internetsociety.org/news/press-releases/2012/global-internet-user-survey-reveals-attitudes-usage-and-behavior/>.

considerations.⁷¹ In his 2011 report, Frank La Rue—the former Special Rapporteur on the Promotion and Protection of the Right to Freedom of Opinion and Expression—underscored that the Internet not only enables individuals to exercise their human rights but also promotes the progress of society as a whole.⁷² Subsequently, the UN Human Rights Council adopted a resolution in 2016, emphasizing “the importance of applying a comprehensive human rights-based approach when providing and expanding access to the Internet.”⁷³ Media coverage of these developments suggested that the UN recognized Internet access as a human right.⁷⁴ Based upon these UN efforts, scholars have argued for a liberal reading of Article Nineteen of the International Covenant on Civil and Political Rights as the legal basis for recognizing and protecting Internet access as a human right.⁷⁵

The European Court of Human Rights has also safeguarded Internet access through the right to freedom of expression as prescribed by Article Ten of the European Convention on Human Rights. In *Cengiz and Others v. Turkey*, the Court ruled that the Turkish government’s blocking of YouTube violated the right to freedom of expression.⁷⁶ In particular, the Court highlighted the role of the Internet as speech-enhancing technology that promoted participation in political and social discourse and facilitated the creation of user-generated content.⁷⁷

Indian courts have also recognized Internet access as a fundamental right. In September 2019, the Kerala High Court held that the right to Internet access should be protected as a fundamental right on the grounds that it is a part of the right to education as well as the right to privacy under Article Twenty-one of the Constitution of India.⁷⁸ In January 2020, the Indian Supreme Court concurred with that opinion, ruling that “the freedom of speech and expression and the freedom to practice any profession or carry on any trade, business or occupation over the

71. U.N. Human Rights Council, *The Promotion, Protection and Enjoyment of Human Rights on the Internet*, U.N. Doc. A/HRC/32/L.20 (June 27, 2016), <https://undocs.org/A/HRC/32/L.20>.

72. Special Rapporteur on the Promotion and Protection of the Right to Freedom of Opinion and Expression, Human Rights Council, U.N. Doc. A/HRC/17/27, at 1 (May 16, 2011) (by Frank La Rue).

73. Human Rights Council Res. 32/13, U.N. Doc. A/HRC/RES/32/13, at 2 (July 18, 2016).

74. David Kravets, *U.N. Report Declares Internet Access a Human Right*, WIRED (June 3, 2011, 2:47 PM), <https://www.wired.com/2011/06/internet-a-human-right>; Nicholas Jackson, *United Nations Declares Internet Access a Basic Human Right*, THE ATLANTIC (June 3, 2011), <https://www.theatlantic.com/technology/archive/2011/06/united-nations-declares-internet-access-a-basic-human-right/239911>.

75. See, e.g., Molly Land, *Toward an International Law of the Internet*, 54 HARV. INT’L L.J. 393, 394 (2013) (“Article 19’s guarantee of a right to the technologies of connection also fills a critical gap in human rights law.”).

76. *Cengiz v. Turkey*, Apps. Nos. 48226/10 & 14027/11, Eur. Ct. H.R. (2015).

77. *Id.* para. 49, 52.

78. *Shirin R.K. v. State of Kerala*, WP(C). NO. 19716 OF 2019(L), 20 High Court of Kerala (Sept. 19, 2019), <https://globalfreedomofexpression.columbia.edu/wp-content/uploads/2019/09/FAREEMA-SHIRIN-R.K.pdf>.

medium of [I]nternet enjoys constitutional protection....”⁷⁹ Similarly, courts in Costa Rica and France have recognized Internet access as a fundamental right.⁸⁰

IV. RECOGNIZING THE FUNDAMENTAL RIGHT TO TECHNOLOGY

A. Nature and Scope of the New Right

While this Article focuses on Internet access, other technologies, such as electricity, transportation, telephones, and medicine,⁸¹ also play vitally important roles in the lives of individuals and in society. Therefore, the application of the liberal approach to recognizing unenumerated fundamental rights as liberties protected by the Due Process Clause should extend beyond Internet access to other technologies under a broader fundamental right to technology. This aligns with several surveys demonstrating the importance of technologies. For example, in a recent survey the Pew Research Center asked Americans what had contributed to the greatest improvement in their lives in the past five decades.⁸² Respondents gave technology greater credit than both the expansion of civil rights and economic improvement.⁸³ They also predicted that technology would be the most important force for improvements in their lives in the next five decades.⁸⁴ Another recent study by the Charles Koch Institute produced similar results, showing that more than an absolute majority of Americans believe that technology has made their overall life better and expect technology to continue improving the quality of life of their children.⁸⁵

What are fundamental technologies? In light of the liberal approach, these are technologies that are fundamentally important to realizing individual liberties and to promoting societal interests. Technologies such as electricity, transportation, telephones, and medicine improve the quality of people’s lives, enabling them to pursue economic, political and cultural freedom as they wish.⁸⁶ Without adequate access to these technologies, quality of life declines. With respect to societal interests, these technologies are essential to increasing productivity and efficiency in the provision of goods and services and to promoting the quality of communications and health care systems.

The new fundamental right to technology has two major functions. First, it entitles everyone to enjoy the benefits of fundamental technologies and creates a

79. *Bhasin v. Union of India* No. 1031/2019, Supreme Court of India 127 (Jan. 10, 2020), <https://globalfreedomofexpression.columbia.edu/wp-content/uploads/2020/02/AB-v.-Union-of-India-Full-Judgment.pdf>.

80. Liu Huawen & Yan Yuting, *Interpretation of the Concept of the Right to Internet Access from the Perspective of International Law*, 15 J. HUM. RTS. 140, 147 (2016).

81. See Rochelle Cooper Dreyfuss, *Patents and Human Rights: The Paradox Re-examined*, 3 GLOB. PERSP. & CHALLENGES TO INTELL. PROP. SYS. 54, 65 (2016).

82. Mark Strauss, *Four-in-Ten Americans Credit Technology with Improving Life Most in the Past 50 Years*, PEW RES. CTR. (Oct. 12, 2017), <http://www.pewresearch.org/fact-tank/2017/10/12/four-in-ten-americans-credit-technology-with-improving-life-most-in-the-past-50-years>.

83. *Id.*

84. *Id.*

85. Press Release, Ipsos Public Affairs, GET Creative/USA Today Network, Charles Koch Institute – Technology Survey (Mar. 1, 2019).

86. See, e.g., RONALD C. TOBEY, TECHNOLOGY AS FREEDOM 3 (1997).

mandate for ensuring the equal distribution of such benefits. In fact, international human rights treaties already recognize and protect the right to technology.⁸⁷ The Universal Declaration of Human Rights (UDHR) states that “[e]veryone has the right . . . to share in scientific advancement and its benefits,”⁸⁸ and the International Covenant on Economic, Social and Cultural Rights refers to the right to “enjoy the benefits of scientific progress and its applications.”⁸⁹ It should be noted that the fundamental right to technology does not protect enjoyment of benefits from derivative technologies that “embody improvements to the fundamental technologies and offer extra benefits.”⁹⁰ For example, one could assert that to protect the fundamental right to technology, a local government should provide public transportation and phone connection services. However, he or she cannot rely upon this right to assert that Mercedes Benz buses should be utilized for public transportation, nor that the local government should provide every resident with an iPhone.

On the other hand, the fundamental right to technology protects everyone from seriously harmful uses of all technologies. It prohibits governments, companies, and individuals from utilizing technology in a manner that may jeopardize the maintenance of a democratic political system, improvement of environmental protection, enhancement of innovation capacity, and achievement of food security, among other interests. For example, when a government utilizes digital technologies to unduly filter or even shut down the Internet, it undermines or denies completely the individual freedom of information and also the power of the Internet to promote socially beneficial exchange of information.⁹¹

B. Objections Against the New Right

Despite the potential benefits of a new right to technology, there have been vehement objections to the recognition of Internet access as a legal right. Were these objections to be accepted, a legal right to the benefits of other fundamental technologies could also be denied. Vinton Cerf, who is recognized as one of the “fathers of the Internet” for co-designing a set of protocols used for data transmission over computer networks,⁹² has been a leading dissenting voice. For example, he has argued:

[T]echnology is an enabler of rights, not a right itself. There is a high bar for something to be considered a human right. Loosely put, it must be among the things we as humans need in order to lead healthy, meaningful lives, like freedom from torture or

87. See Haochen Sun, *Reinvigorating the Human Right to Technology*, 41 MICH. J. INT'L L. 279, 279-80 (2020) [hereinafter Sun, *Reinvigorating the Human Right*].

88. G.A. Res. 217 (III) A, Universal Declaration of Human Rights (Dec. 10, 1948) [hereinafter UDHR].

89. International Covenant on Economic, Social and Cultural Rights, art. 15.1(b), G.A. Res. 2200A (XXI), at 993 (Dec. 16, 1966) (entered into force Jan. 3, 1976).

90. Sun, *The Fundamental Right*, *supra* note 13, at 465.

91. See JONATHAN ZITTRAIN, *THE FUTURE OF THE INTERNET AND HOW TO STOP IT* 8-9, 117-18 (2008).

92. *Internet Hall of Fame Pioneer: Vint Cerf*, INTERNET HALL OF FAME, <https://www.internethalloffame.org/inductees/vint-cerf> (last visited on Dec. 6, 2020).

freedom of conscience. It is a mistake to place any particular technology in this exalted category, since over time we will end up valuing the wrong things. For example, at one time if you didn't have a horse it was hard to make a living. But the important right in that case was the right to make a living, not the right to a horse.⁹³

Human rights, in Cerf's view, are synonymous with the ends of human life, such as freedom of expression and freedom from torture.⁹⁴ The Internet merely serves as a means to these ends by providing access to and disseminating information with unprecedented ease,⁹⁵ only facilitating the protection of human rights such as freedom of expression. Therefore, it is not desirable to protect the Internet, a technological tool, as a human right. This line of reasoning would extend to other technologies as well. Relying upon the views of Cerf and others, governments have rejected that Internet access should be protected as a fundamental right.⁹⁶

This Article argues that this position misunderstands the relationship between human rights and technology in three ways. First, human rights themselves serve freedom, justice, and peace, and these are the greater ends of human life and society. The UDHR makes this clear, stating that "recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of *freedom, justice and peace* in the world."⁹⁷ The right to freedom of expression and to freedom from torture, as protected by the UDHR, facilitate the attainment of these goals. So does the right to technology. When the UDHR was created in 1948, its framers decided to protect it as a human right because the enjoyment of the benefits of technology is of intrinsic worth to these goals.⁹⁸ Today, the COVID-19 pandemic has proven the practical value of this decision. The Internet plays an indispensable role in promoting freedom and justice for people who suffer from lack of access to virtual education and entertainment during the pandemic. If we protect the right to technology to eliminate the digital divide, those people would adequately enjoy the benefits of the technological progress of the Internet.

Second, the human rights system recognizes and protects rights to resources crucially important to human flourishing. These basic resources, such as private

93. Vinton G. Cerf, *Internet Access Is Not a Human Right*, N.Y. TIMES (Jan. 4, 2012), <https://www.nytimes.com/2012/01/05/opinion/internet-access-is-not-a-human-right.html>.

94. *Id.* ("The best way to characterize human rights is to identify the outcomes that we are trying to ensure. These include critical freedoms like freedom of speech and freedom of access to information...").

95. *Id.* ("The Internet has introduced an enormously accessible and egalitarian platform for creating, sharing and obtaining information on a global scale. As a result, we have new ways to allow people to exercise their human and civil rights.").

96. See e.g. Azaan Javaid, *Access to Internet Is Not a Fundamental Right but an Enabler of Rights, J&K Govt Tells SC*, THE PRINT (Apr. 29, 2020, 10:23 PM), <https://theprint.in/india/access-to-internet-is-not-a-fundamental-right-but-an-enabler-of-rights-jk-govt-tells-sc/411521> ("The [Jammu and Kashmir] government submitted that the internet was an 'enabler of rights and not a right in itself', and that 'the present 2G speed of internet does enable one to create, access, utilise and share information and knowledge'.").

97. UDHR, *supra* note 88 (emphasis added).

98. See Sun, *Reinvigorating the Human Right*, *supra* note 87, at 285-86.

property, food, water, and housing, all enable individuals to sustain and prosper in their private spaces and communities.⁹⁹ By the same token, fundamental technologies such as the Internet, as this section demonstrates, are resources crucial for human flourishing, and therefore, the benefits of such technologies are worthy of human rights protection. This is exactly why, since its inception, the UDHR has embraced the right to technology as a human right.¹⁰⁰ Moreover, resources-based human rights are supportive or enabling. For example, the realization of the rights to property, food, and water sustain one's capability in exercising the right to freedom of expression.

Third, beyond a narrow right to Internet access, a broader right to technology is needed to protect a wide range of technological benefits. Returning to Cerf's analogy, there is no need to recognize "the right to a horse" over the right to make a living. However, there is a need to protect the right to property, which entitles one to own the horse that he or she utilizes to make a living as well as other personal belongings. The same logic applies to Internet access. There is no legal right that merely protects one's access to the Internet. However, Internet access can be protected by the right to technology. As the property right protects many types of things, this broader right protects not only Internet access but also the benefits of other fundamental technologies.

V. PROTECTING THE FUNDAMENTAL RIGHT TO TECHNOLOGY

Recognizing the fundamental right to technology would help to bridge the digital chasm in the U.S. in three ways. First, it would require the government to proactively protect this right by expanding access to the Internet. Second, it would empower courts to conduct judicial reviews of the validity of relevant governmental decisions in the public interest. Third, it would encourage technology companies to take responsibility to promote public access to technological benefits.

A. Proactive Protection by the Government

The fundamental right to technology creates two advantages in stimulating government action that ensures a fair distribution of benefits accruing from the Internet. First, it would motivate the government to embrace universal and affordable access to the Internet as an ultimate policy objective. Elevated to fundamental right status, the government should make every effort to protect Internet access as a technological benefit that every individual is entitled to enjoy equally.¹⁰¹ It can no longer be a daily utility for some and an unaffordable luxury for others. As discussed, the COVID-19 pandemic proves the urgency of protecting this right. We have seen the pivotal importance of the Internet to people's daily lives and to society. In the post-pandemic era, it will play an even more important

99. See e.g., UDHR, *supra* note 88, arts. 17 (protecting the right to property), 25 (protecting the right to food).

100. Sun, *Reinvigorating the Human Right*, *supra* note 87, at 279–80.

101. See e.g., ANNE PEACOCK, HUMAN RIGHTS AND THE DIGITAL DIVIDE 17-18 (2019) (discussing how the recognition of a human right to access the Internet functions to impose obligations on governments to bridge the digital divide).

role in promoting individual and societal well-being.¹⁰² For instance, as many companies have decided to allow their employees to work remotely online and more companies will follow this decision, Internet access will become the precondition for this major shift in the employment sector.¹⁰³

Rather than a piecemeal approach that temporarily aids certain groups in dire need of Internet access, the government should adopt a comprehensive and systematic strategy. To this end, it should set up a commission comprising of experts from the various stakeholder sectors to examine why Internet access remains inequitable and why the government failed to tackle this issue competently. Based upon this thorough investigation, the commission may make recommendations on the crucial steps that the government must follow in order to achieve universal and affordable Internet access in the U.S.

To address poverty-related aspects of the digital chasm,¹⁰⁴ the commission should suggest how the government can ensure that all public spaces like schools and libraries are equipped with high-speed Wi-Fi. It should also consider whether it is more desirable for the government to provide financial subsidies directly to low-income families so that they can have their homes connected with broadband Internet or provide subsidies to telecommunications companies that will provide broadband Internet connections at affordable rates. With respect to the chasm attributable to geographical isolation,¹⁰⁵ the commission should develop new plans to overcome the misguided actions taken by the government in the past. For example, some state laws forbid local governments from building municipally owned broadband networks.¹⁰⁶

Second, the fundamental right to technology urges the government to make dynamic decisions to expand access to the Internet in pace with evolving technological circumstances, such as the transition to 5G networks. It requires the government to remain responsive and adjust its decisions to guarantee individuals' continued enjoyment of a technologically advanced Internet. For instance, the public can capitalize on this fundamental right by urging the FCC to alter its 2015 definition of "broadband" as services that delivered twenty-five Mbps downstream and three Mbps upstream.¹⁰⁷ Back in 2015, these were the speeds necessary to allow for video streaming.¹⁰⁸ However, the rapid technological development of the Internet has rendered the FCC's broadband definition obsolete and problematic.¹⁰⁹

102. Wheeler, *supra* note 10 ("Our reliance on the internet during coronavirus has recast how we will behave after the crisis has passed. The big lesson is that we have incorporated the internet as a critical part of our personal and professional lives.").

103. Rob McLean, *These Companies Plan to Make Working from Home the New Normal. As in Forever*, CNN BUSINESS (June 25, 2020), <https://edition.cnn.com/2020/05/22/tech/work-from-home-companies/index.html>; Christine Ro, *Why the Future of Work Might be 'Hybrid'*, BBC (Aug. 30, 2020), <https://www.bbc.com/worklife/article/20200824-why-the-future-of-work-might-be-hybrid>.

104. *See supra* notes 15-18 and accompanying text.

105. *See supra* notes 19-22 and accompanying text.

106. *See* Klain, *supra* note 15.

107. *See* Wheeler, *supra* note 10 ("While technology and time have moved on ... the FCC's broadband definition has not."). Mbps, shorthand for "Megabits Per Second," is used to measure data transfer speeds of high bandwidth connections, such as Ethernet and cable modems.

108. *See* Wheeler, *supra* note 10.

109. Ernesto Falcon, *The American Federal Definition of Broadband Is Both Useless and Harmful*, ELECTRONIC FRONTIER FOUNDATION (Jul. 17, 2020), <https://www.eff.org/deeplinks/2020/07/american->

Current fiber-optic networks, for example, can reach speeds as fast as 10000 Mbps.¹¹⁰ Relying on the FCC's broadband definition, the major Internet service providers (ISPs) have chosen not to upgrade fiber-optic networks in the U.S. so as to retain their very lucrative business.¹¹¹ Meanwhile, consumer demands for the technological benefits of the faster Internet speeds have drastically increased. The COVID-19 pandemic has made families' need for enhanced Internet a new normal as they usually have multiple devices connected for activities such as online learning, working, entertainment, and telehealth.¹¹²

B. Enhanced Judicial Protection

The fundamental right to technology would empower courts to conduct judicial review of governmental decisions that unduly impede access to the Internet. Relying on the First Amendment, courts have decided in the past whether governmental decisions that restricted access to Internet infringed the right to free speech.¹¹³ Under the fundamental right to technology, courts would have a new legal basis for protecting people's legitimate interests in accessing the Internet when the First Amendment is not applicable.

Preserving network neutrality is an issue urgently in need of sensible judicial review. As one of the core principles underpinning a free and open internet, network neutrality requires Internet service providers (ISPs) to treat all content equally without discrimination.¹¹⁴ It thereby treats the Internet as a public utility that should not be manipulated by private companies at the expense of the public interest. Without this principle, an ISP can legally discriminate against content or applications by refusing to transmit them or slowing down the speed at which they are transmitted. Despite its importance, the FCC terminated the network neutrality principle in 2017, mostly on the grounds of re-establishing the free market-driven innovation of digital technology.¹¹⁵ Although the House of Representatives passed

federal-definition-broadband-both-useless-and-harmful ("In fact, the 25/3 metric is downright slow by today's standards and needs, and is practically near obsolescence.").

110. See *A Complete Guide to Fiber Optic Internet*, OTELECO, <https://www.otelco.com/resources/a-guide-to-fiber-optic-internet/> (last visited Dec. 6, 2020).

111. Ernesto Falcon, *The House Has a Universal Fiber Broadband Plan We Should Get Behind*, ELECTRONIC FRONTIER FOUNDATION (June 24, 2020), <https://www.eff.org/deeplinks/2020/06/house-introduces-universal-fiber-broadband-plan> ("The big ISPs, which fail to deliver universal access but enjoy comfortable monopolies and charge you prices at 200% to 300% above competitive rates, will resist this effort. Even when it is profitable to deliver fiber, the national ISPs have chosen not to do it in exchange for short-term profits.").

112. See Wheeler, *supra* note 10 ("While technology and time have moved on—and COVID-19 has added to the importance of supporting multiple online devices in homes—the FCC's broadband definition has not. This decision affects the quality of service that rural Americans receive from a subsidized network provider."); Jed Pressgrove, *Does the Federal Broadband Definition Reflect Real-World Need?*, GOVERNMENT TECHNOLOGY (June 24, 2020), <https://www.govtech.com/network/Does-the-Federal-Broadband-Definition-Reflect-Real-World-Need.html> ("Freddoso said the 3 Mbps upload part of the definition seems especially behind the times, now that households are more likely to have multiple instances of two-way communication occurring at the same time.").

113. See, e.g., *Packingham*, 137 S. Ct. at 1730 (ruling that the government's prevention of convicted criminals from using the internet infringes their free speech right).

114. See Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. TELECOMM. & HIGH TECH. L. 141, 167-68 (2003).

115. See *Restoring Internet Freedom*, 33 FCC Rcd. 311 (2017) (declaratory ruling).

the 2019 Save the Internet Act to rescind the FCC's decision, the Senate blocked further consideration of this legislative bill and President Trump proclaimed that he would veto it.¹¹⁶

By triggering the strict scrutiny test, the fundamental right to technology would serve as a new legal basis for courts to review the validity of government decisions such as the FCC's repeal of network neutrality. Pursuant to the jurisprudence of U.S. constitutional law, courts should apply the strict scrutiny test to weigh whether there is a compelling interest for any governmental encroachment upon a fundamental right and whether the government has adopted a narrowly tailored measure to achieve the compelling interest.¹¹⁷ With regard to network neutrality, a court would first require the FCC to supply a compelling reason for repealing this principle. The need to reinstate a free market for innovation of digital technology may not be compelling enough. This is because network neutrality is not intended to restrict telecommunications companies' freedom to conduct research in boosting Internet speed and data transmission capacity. Rather, these companies are only required to transmit all data without favor or disfavor. Also, it may be exceedingly difficult for the FCC to demonstrate the necessity of overriding the need to maintain an open and free Internet by giving telecommunications companies the absolute freedom to decide what content they wish to transmit.

The fundamental right to technology would also empower the court to review whether the FCC's decision constitutes the least restrictive means of achieving its policy objective so as not to run afoul of the second requirement of the strict scrutiny test. The court may point out that, to encourage innovation in digital technology, the FCC could have adopted measures such as providing telecommunications companies with funds to stimulate their Internet research and liaise with the Patent and Trademark Office to capitalize on stronger patent protection of Internet innovations as a stimulus to innovative activities. Given these alternative avenues, the FCC's repeal of network neutrality is likely not the least restrictive means of achieving its policy objective and therefore contravenes the second requirement of the strict scrutiny test.

Therefore, this new fundamental right would enhance the protection of people's interests in technologies. It directly empowers courts to apply a strict scrutiny test in order to stop the government from unduly affecting people's abilities to enjoy technological benefits. It also has the potential of preventing the government from making decisions that may run counter to this new fundamental right given that it will need to meet the higher judicial review standards as required by the strict scrutiny test.

116. Ella Nilsen, *Why the Senate Is Blocking a New Net Neutrality Bill, a Year After Trying to Save It*, VOX (Apr. 10, 2019, 12:00 PM), <https://www.vox.com/2019/4/10/18302186/net-neutrality-house-bill-senate>.

117. *See Regents of the Univ. of Cal. v. Bakke*, 438 U.S. 265, 357 (1978) (“[A] government practice or statute which restricts ‘fundamental rights’ . . . is to be subjected to ‘strict scrutiny’ and can be justified only if it furthers a compelling government purpose and, even then, only if no less restrictive alternative is available.”) (Brennan, White, Marshall, and Blackmun, JJ., concurring in the judgment in part and dissenting in part).

C. Private Companies' Responsibilities

The fundamental right to technology also raises questions of technology companies' responsibilities to contribute to the protection of this right. Should it be added to the corporate social responsibility agenda? And what can technology companies do to protect this right? In the past ten years or so, digital technology companies, such as Amazon, Apple, and Google, have become the world's richest and most politically powerful corporate institutions.¹¹⁸ Through collecting enormous amounts of data from their users, they also become owners of one of the world's most valuable resources.¹¹⁹ Therefore, it is imperative for managers of these companies to reconsider how they should reciprocate users' contributions to their institutional growth by helping to protect these users' fundamental right to technology.¹²⁰

Some major digital companies have started initiatives to protect the public interest in wider and enhanced access to the Internet. For example, Comcast, the largest broadband provider in the U.S., recently improved their "Internet Essentials" package to include speeds of twenty-five Mbps downstream and three Mbps upstream at a monthly price of \$9.95. Although these speeds are far below what most Americans receive,¹²¹ it is still a good start in terms of providing affordable access to the Internet. Another positive example is that Google and Microsoft have shown their support for a free Wi-Fi service scheme, emphasizing its potential to "spark an explosion of innovations and devices that would benefit most Americans, especially the poor."¹²²

VI. CONCLUSION

The COVID-19 pandemic, in triggering an unprecedented use of the Internet, has brought to media attention and scrutiny a long-existing digital chasm that has disadvantaged too many.¹²³ The protection of a fundamental right to technology,

118. See Stephen Johnston, *Largest Companies 2008 vs. 2018, A Lot Has Changed*, MILFORD (Jan. 31, 2018), <https://milfordasset.com/insights/largest-companies-2008-vs-2018-lot-changed> ("Technology companies not only dominate our daily lives (how many times have you checked your iPhone today?) but also the ranking of world's biggest companies.").

119. *Regulating the Internet Giants: The World's Most Valuable Resource Is No Longer Oil, but Data*, ECONOMIST (May 6, 2017), <https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data>.

120. See Haochen Sun, *Corporate Fundamental Responsibility: What Do Technology Companies Owe the World?*, 74 U. MIAMI L. REV. 898, 925 (2020) (arguing that "technology companies should take the responsibility to first appreciate users' contributions and then to consider how they should reciprocate by proactively protecting users' interests.").

121. *Comcast Offering 'Internet Essentials' Package Free for Low-Income Customers for 60 Days*, WXYZ DETROIT (Mar. 13, 2020, 8:07 PM), <https://www.wxyz.com/news/national/coronavirus/comcast-offering-internet-essentials-package-free-for-60-months-during-coronavirus-outbreak>.

122. Cecilia Kang, *Tech, Telecom Giants Take Sides as FCC Proposes Large Public WiFi Networks*, WASH. POST (Feb. 3, 2013), https://www.washingtonpost.com/business/technology/tech-telecom-giants-take-sides-as-fcc-proposes-large-public-wifi-networks/2013/02/03/eb27d3e0-698b-11e2-ada3-d86a4806d5ee_story.html.

123. John Thornhill, *Internet Access Is Both a Human Right and a Business Opportunity*, FINANCIAL TIMES (June 28, 2020), <https://www.ft.com/content/872dc219-d4d8-4896-92d3-7f9d45a5ce90> ("The whole Covid experience has galvanised people and put a spotlight on the issue. It is a silver lining in this cloudy year."); Mercedes García-Escribano, *Low Internet Access Is Driving*

as this Article demonstrates, has the power to pave the way for legal and public policy reforms that are badly needed to bridge this digital chasm for all Americans for generations to come.