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Introduction

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Preface

The Indian Journal of Legal Affairs and Research is a testament to our unwavering commitment to excellence in legal scholarship. This volume presents a curated selection of articles that reflect the diverse and dynamic nature of legal studies today. Our contributors, ranging from esteemed legal scholars to emerging academics, bring forward a rich tapestry of insights that address critical legal issues and offer novel contributions to the field. We are grateful to our editorial board, reviewers, and authors for their dedication and hard work, which have made this publication possible. It is our hope that this journal will serve as a valuable resource for researchers, practitioners, and policymakers, and will inspire further inquiry and debate within the legal community.

Description

The Indian Journal of Legal Affairs and Research is an academic journal that publishes peer-reviewed articles on a wide range of legal topics. Each issue is designed to provide a platform for legal scholars, practitioners, and students to share their research findings, theoretical explorations, and practical insights. Our journal covers various branches of law, including but not limited to constitutional law, international law, criminal law, commercial law, human rights, and environmental law. We are dedicated to ensuring that the articles published in our journal adhere to the highest standards of academic rigor and contribute meaningfully to the understanding and development of legal theories and practices.

GLOBAL DIGITAL DIVIDE: JUSTICE AND EQUITY IN TECHNOLOGY

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ABSTRACT

That this article examines the phenomenon of the global digital divide through the perspective of justice and equity in technology, with a particular focus on India and a comparative engagement with other jurisdictions. The spread of digital technologies has been one of the defining features of the late twentieth and early twenty-first centuries, yet access to the internet, digital devices, and the skills necessary to use them remains deeply unequal across and within countries. Far from being a merely technical or market-driven issue, digital exclusion raises fundamental questions of constitutional rights, distributive justice, non-discrimination, and democratic participation.

That the article first conceptualizes the "digital divide" as a multidimensional problem of access, affordability, quality, and meaningful use, and situates it within broader theoretical frameworks of justice, including egalitarian, capabilities-based, and recognition-oriented approaches. It then maps the principal international human rights standards relevant to digital inclusion, notably the rights to freedom of expression, education, participation in cultural life, and non-discrimination as articulated in the **Universal Declaration of Human Rights (UDHR), the International Covenant on Civil and Political Rights (ICCPR), and the Sustainable Development Goals (SDGs).** The analysis highlights how contemporary United Nations (UN) practice increasingly treats internet access as an enabler of existing human rights, rather than as a new stand-alone right.

That, turning to India, the article analyses constitutional and statutory developments that bear directly on the digital divide. Landmark decisions of the Supreme Court and High Courts, including K.S. Puttaswamy v. Union of India, Shreya Singhal v. Union of India, Justice K.S. Puttaswamy (Aadhaar) v. Union of India, Anuradha Bhasin v. Union of India, and Faheema Shirin R.K. v. State of Kerala, are examined to show how courts have progressively linked digital

connectivity with fundamental rights to privacy, free speech, livelihood, education, and equality. Statutory and policy instruments such as the Information Technology Act, 2000, the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016, the Rights of Persons with Disabilities Act, 2016, the Digital Personal Data Protection Act, 2023, and the Digital India initiative are evaluated for their contributions and limitations from an equity perspective.

That the Indian experience is then contrasted with approaches adopted in other jurisdictions. In the United States, the universal service obligations under the Telecommunications Act of 1996 and debates over network neutrality in cases such as Reno v. ACLU and Mozilla Corp. v. FCC are considered. In the European Union (EU), the European Electronic Communications Code and the Open Internet Regulation, as interpreted in decisions such as Telenor Magyarország Zrt. v. Nemzeti Média- és Hírközlési Hatóság Elnöke, illustrate a rights-infused regulatory model. Selected Global South jurisdictions are briefly surveyed to show emerging constitutional recognition of digital inclusion as an aspect of socio-economic rights and access to information.

That the article employs empirical material from international and national sources to demonstrate the scale and structure of the global digital divide. According to the International Telecommunication Union (ITU), around 5.3 billion people approximately 66% of the world's population were using the internet by 2022, leaving about 2.7 billion people offline, disproportionately concentrated in low-income countries and rural areas. In India, although the absolute number of internet users is among the highest in the world, penetration rates remain significantly below those in high-income economies, and access is sharply stratified by income, gender, caste, region, and disability. Statistical comparisons with selected countries illustrate both India's progress and its continuing structural challenges.

That the core argument advanced is that bridging the digital divide is not merely a matter of economic development or technological modernization, but a constitutional and moral imperative. The article articulates at least four strong, interlinked arguments for imposing robust obligations on states and private actors: first, that meaningful digital access is now indispensable for the effective enjoyment of a wide range of fundamental rights; second, that structural inequalities

embedded in markets produce and reinforce digital exclusion, triggering the state's equality and non-discrimination duties; third, that the digital divide distorts democratic participation, public deliberation, and access to justice; and fourth, that global cooperation obligations under international law and the SDGs require resource-sharing, knowledge transfer, and regulatory coordination to promote digital equity. The article concludes with normative and policy recommendations for India, informed by comparative experience, and argues for a rights-based, participatory, and inclusion-centred model of digital governance.

INTRODUCTION

The term "digital divide" originally emerged in policy discourse to describe gaps in access to computers and the internet between different groups, typically along socio-economic, geographic, or demographic lines. Over time, the concept has expanded to encompass several layers of inequality: access to physical infrastructure (broadband, mobile networks, devices), affordability of services and hardware, quality and reliability of connectivity, digital literacy and skills, language and content relevance, and the capacity to participate meaningfully in digital public spheres and economies. The divide thus reflects, and often deepens, pre-existing social and economic hierarchies rather than being a neutral technological phenomenon.

The global dimension of the digital divide is equally salient. Significant disparities exist between high-income and low- and middle-income countries in terms of internet penetration, data speeds, spectrum allocation, investment in fibre-optic backbones, and regulatory capacity. Regions such as sub-Saharan Africa and parts of South Asia cluster at the lower end of most digital development indicators, whereas North America, Western Europe, and parts of East Asia approach near-universal connectivity. These macro-level disparities intersect with micro-level inequalities within states, generating complex patterns of advantage and exclusion that cannot be captured by national averages alone.

Global and national legal systems have been slow to keep pace with the implications of these technological transformations. The initial waves of internet regulation tended to focus on content control, cybercrime, e-commerce, and intellectual property. Questions of distributive justice in

access to digital infrastructure, and the equity dimensions of emerging technologies such as artificial intelligence, cloud computing, and big data analytics, lagged behind. Only in the past decade has a more explicit discourse emerged around digital inclusion, platform power, data justice, and the notion that ***"no one should be left offline***" in an increasingly networked world.[1]

For India, these questions are especially salient. The country has pursued an ambitious agenda of digital transformation, including the flagship ***"Digital India" programme,*** the Aadhaar unique identification system, and large-scale digitization of welfare delivery, financial services, and public services. Simultaneously, the persistence of multi-dimensional poverty, rural-urban divides, gender hierarchies, and caste-based exclusion generates barriers to equitable technological access. The Indian constitutional framework, with its combination of justiciable fundamental rights and directive principles of state policy, offers a rich terrain for articulating a rights-based response to the digital divide, while also raising complex issues about the role of the judiciary, legislature, and regulators.

NORMATIVE FOUNDATIONS: JUSTICE, EQUITY, AND TECHNOLOGY

Any serious engagement with the digital divide must rest on an articulated theory of justice. An exclusively market-oriented approach, which treats connectivity as a private good to be allocated through purchasing power, cannot account for the profound consequences that digital exclusion has for basic liberties, political participation, and socio-economic opportunities. At least three interrelated normative frameworks are particularly useful in grounding a justice-oriented analysis: egalitarianism, the capabilities approach, and theories of recognition.

Egalitarian theories of justice, including those influenced by John Rawls, emphasize fair equality of opportunity and the need to regulate social and economic inequalities so that they are to the greatest benefit of the least advantaged members of society.[2] Applied to the digital context, such approaches suggest that basic levels of internet connectivity, device access, and digital skills should not depend solely on market capacity. Instead, they may constitute part of the "social

[1] World Bank, World Development Report 2016: Digital Dividends 2–5 (2016).
[2] JOHN RAWLS, A THEORY OF JUSTICE 52–65 (rev. ed. 1999).

primary goods" that citizens require to exercise their basic liberties and to compete fairly for positions and resources. On this view, universal and affordable broadband could be analogized to other essential services such as primary education, health care, or basic utilities.

The capabilities approach, associated with Amartya Sen and Martha Nussbaum, focuses on what people are actually able to be and to do their "capabilities" to achieve valuable functioning rather than on the mere distribution of resources or utilities.[3] Digital access and literacy significantly enhance a wide range of capabilities: the ability to obtain information, communicate, access markets and employment, participate in cultural and political life, and secure public services. Conversely, digital exclusion restricts these capabilities, often in ways that compound other forms of deprivation. From a capability perspective, the normative question is whether individuals have genuine opportunities to use technology in ways that they have reason to value, not merely whether infrastructure exists in the abstract.

Recognition-oriented theories, influenced by scholars such as Nancy Fraser, direct attention to the symbolic and cultural dimensions of injustice, including misrecognition, marginalization, and status subordination.[4] In digital spaces, these concerns arise in the dominance of certain languages, cultural narratives, and epistemic frameworks, as well as in algorithmic biases that reproduce stereotypes and exclusions. The digital divide thus has qualitative aspects: even where connectivity exists, marginalized groups may find that online spaces do not reflect their identities, needs, or knowledge, or that they face disproportionate surveillance, harassment, and disinformation. Justice in technology therefore requires both redistribution of material resources and recognition of diverse voices in digital governance.

These theoretical perspectives intersect with doctrinal legal frameworks at the domestic and international levels. The rights to freedom of expression and information, to education, to participation in cultural life, and to non-discrimination create legal obligations on states to remove

[3] Amartya Sen, Capability and Well Being, in The Quality of Life 30, 31–34 (Martha Nussbaum & Amartya Sen eds., 1993); Martha C. Nussbaum, Capabilities and Human Rights, 66 FORDHAM L. REV. 273 (1997).
[4] NANCY FRASER, JUSTICE INTERRUPTUS: CRITICAL REFLECTIONS ON THE "POSTSOCIALIST" CONDITION 11–39 (1997).

structural barriers to effective digital participation. Emerging debates on "data justice" and "digital constitutionalism" similarly seek to locate technology governance within the broader architecture of constitutional democracy, rule of law, and human rights.[5] The remainder of this article explores how these normative commitments are, and ought to be, reflected in legal responses to the global digital divide.

GROUNDS: LEGAL FRAMEWORK AND ARGUMENTS FOR BRIDGING THE DIGITAL DIVIDE

Because the digital divide implicates core civil, political, and socio-economic rights, legal systems at multiple levels generate substantive and procedural grounds for demanding justice and equity in technology. This Part outlines the principal legal bases and articulates a set of arguments for robust state obligations and corresponding duties for powerful private actors in the digital ecosystem.

A. International Human Rights Law

The **UDHR, adopted in 1948,** affirms the rights to freedom of opinion and expression, including the freedom to "seek, receive and impart information and ideas through any media and regardless of frontiers."[6] The **ICCPR,** which is binding on State parties including India, reproduces this standard in **Article 19** and subject restrictions to strict tests of legality, necessity, and proportionality. While neither instrument explicitly mentions the internet, the **Human Rights Committee's General Comment No. 34** recognizes that Article 19 applies to all forms of communication, including electronic and internet-based modes.[7]

UN human rights bodies have increasingly acknowledged both the transformative potential of digital technologies and the risks of exclusion. **The Human Rights Council's Resolution 20/8** on ***"The promotion, protection and enjoyment of human rights on the Internet" affirms that "the***

[5] See, e.g., Jack Balkin, Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society, 79 N.Y.U. L. REV. 1 (2004); Giovanni De Gregorio, Digital Constitutionalism in Europe: Reframing Rights and Powers in the Algorithmic Society, 20 INT'L J. CONST. L. 41 (2022).
[6] G.A. Res. 217 (III) A, Universal Declaration of Human Rights, art. 19 (Dec. 10, 1948).
[7] U.N. Human Rights Comm., General Comment No. 34: Article 19 – Freedoms of Opinion and Expression, ¶ 12, U.N. Doc. CCPR/C/GC/34 (Sept. 12, 2011).

same rights that people have offline must also be protected online" and expresses concern about "inequalities and discrimination in access to and use of information and communications technologies."[8] Subsequent resolutions have called upon states to adopt national strategies to promote affordable access, address gender gaps, and cooperate internationally to reduce digital divides.[9]

The SDGs further embed digital inclusion within the international development agenda. ***Goal 9(c)*** calls for significantly increasing access to information and communications technology and striving to provide universal and affordable access to the internet in least developed countries by 2020, while ***Goals 4, 5, 8, 10, and 16*** contain related commitments on education, gender equality, decent work, reducing inequalities, and building effective, accountable institutions.[10] Though not legally binding in the manner of treaties, the SDGs inform interpretations of existing human rights obligations and provide a shared framework for assessing state conduct.

Indian Constitutional and Statutory Framework

The Constitution of India provides a fertile ground for framing digital inclusion as a rights-based obligation. ***Articles 14 and 15*** guarantee equality before the law and prohibit discrimination on specified grounds. ***Article 19(1)(a)*** protects freedom of speech and expression, and ***Article 21*** has been interpreted expansively to include rights to life with dignity, privacy, and a range of socio-economic entitlements. Article 21A provides for the right to education, while ***Articles 38, 39, 39A, and 41*** within the Directive Principles of State Policy articulate a vision of social justice, including equal justice and free legal aid, and the promotion of the welfare of the people.

In ***K.S. Puttaswamy v. Union of India,*** a nine-judge Bench of the Supreme Court unanimously recognized the right to privacy as a fundamental right under ***Article 21,*** encompassing informational self-determination and decisional autonomy in relation to personal data.[11] The

[8] Human Rights Council Res. 20/8, The Promotion, Protection and Enjoyment of Human Rights on the Internet, U.N. Doc. A/HRC/RES/20/8 (July 16, 2012).
[9] See, e.g., Human Rights Council Res. 32/13, The Promotion, Protection and Enjoyment of Human Rights on the Internet, U.N. Doc. A/HRC/RES/32/13 (July 18, 2016).
[10] G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development, U.N. Doc. A/RES/70/1, at Goals 4, 5, 9, 10 & 16 (Oct. 21, 2015).
[11] K.S. Puttaswamy v. Union of India, (2017) 10 SCC 1 (India)

judgment underscored both the opportunities and perils of digitization, stressing that technological advances must not be allowed to erode basic liberties. Subsequently, in *Justice* ***K.S. Puttaswamy (Aadhaar) v. Union of India,*** the Court upheld the Aadhaar scheme in part but imposed significant constraints on its use and data sharing, drawing attention to concerns of exclusion from welfare benefits due to biometric failures and connectivity gaps.[12] These decisions situate digital identity and data infrastructures squarely within constitutional scrutiny.

In ***Shreya Singhal v. Union of India,*** the Supreme Court struck down ***Section 66A*** of the ***Information Technology Act, 2000,*** as unconstitutional on grounds of vagueness and overbreadth, holding that the provision violated Article 19(1)(a) and could not be justified as a reasonable restriction under ***Article 19(2).***[13] While the case primarily addressed online speech and censorship, it also affirmed that the internet is a critical medium for the exercise of free expression and democratic participation. Later, in ***Anuradha Bhasin v. Union of India,*** the Court examined prolonged internet restrictions in Jammu and Kashmir and held that indefinite suspension of internet services is impermissible, requiring periodic review and adherence to proportionality standards.[14] The Court recognized that access to the internet facilitates core rights including freedom of expression and the freedom to carry on trade and commerce.

The Kerala High Court's decision in ***Faheema Shirin R.K. v. State of Kerala*** went further in explicitly framing internet access as integral to the rights to education and privacy under Article 21.[15] The Court struck down a hostel rule restricting mobile phone use, observing that denial of access to the internet undermined students' ability to participate in modern education and knowledge production. Together, these cases indicate a growing judicial recognition that meaningful internet and technology access are intertwined with the realization of multiple fundamental rights.

[12] Justice K.S. Puttaswamy (Aadhaar) v. Union of India, 2019 1 SCC 1 (India)
[13] Shreya Singhal v. Union of India, (2015) 5 SCC 1 (India)
[14] Anuradha Bhasin v. Union of India, (2020) 3 SCC 637 (India)
[15] Faheema Shirin R.K. v. State of Kerala, 2019 SCC OnLine Ker 1733 (India)

Statutorily, the Information Technology Act, 2000, as amended, provides the basic legal framework for electronic transactions, cybersecurity, and intermediary liability in India. The ***Aadhaar Act, 2016,*** governs the use of biometric identity for delivery of subsidies and services. ***The Rights of Persons with Disabilities Act, 2016,*** mandates that appropriate governments take measures to ensure that persons with disabilities have access to information and communication technology, including through universal design and assistive technologies.[16] More recently, the ***Digital Personal Data Protection Act, 2023,*** seeks to regulate processing of digital personal data and to balance individual rights with "legitimate uses" by the state and private entities.[17] While these instruments are not primarily framed as digital inclusion statutes, they collectively shape the terrain on which equity in technology is negotiated.

Comparative Jurisdictions: United States and European Union

In the United States, ***the Communications Act of 1934,*** as amended by the ***Telecommunications Act of 1996,*** articulates a principle of "universal service," seeking to ensure that all Americans have access to communications services at reasonable and affordable rates.[18] Section 254 of Title 47 of the United States Code sets out mechanisms for universal service support, including for low-income consumers and rural, insular, and high-cost areas.[19] Although originally designed for voice telephony, these mechanisms have progressively been extended to broadband through administrative reforms. Debates over network neutrality have similarly engaged concerns about non-discriminatory access to online content and services. In ***Reno v. ACLU,*** the U.S. Supreme Court recognized the internet as a unique and powerful medium for speech deserving strong First Amendment protection.[20] Later, in ***Mozilla Corp. v. FCC, the D.C.*** Circuit reviewed the Federal Communications Commission's rollback of network neutrality protections, illustrating the contested regulatory terrain over equitable internet access.[21]

[16] Rights of Persons with Disabilities Act, No. 49 of 2016, § 42, INDIA CODE (2016).
[17] Digital Personal Data Protection Act, No. 22 of 2023, INDIA CODE (2023).
[18] Telecommunications Act of 1996, Pub. L. No. 104 104, 110 Stat. 56 (codified in scattered sections of 47 U.S.C.).
[19] 47 U.S.C. § 254 (2018).
[20] Reno v. ACLU, 521 U.S. 844 (1997).
[21] Mozilla Corp. v. FCC, 940 F.3d 1 (D.C. Cir. 2019).

The European Union has developed a more explicitly rights-driven approach. ***The Charter of Fundamental Rights of the European Union protects privacy and data protection (Articles 7 and 8) and freedom of expression and information (Article 11). The European Electronic Communications Code (Directive (EU) 2018/1972***) consolidates the regulatory framework for electronic communications, including provisions on universal service that now encompass adequate broadband access and voice communications at an affordable price.[22] Regulation (EU) 2015/2120 on open internet access establishes enforceable network neutrality rules across the Union.[23] In ***Telenor Magyarország Zrt. v. Nemzeti Média- és Hírközlési Hatóság Elnöke,*** the Court of Justice of the European Union held that zero-rating practices that prioritized certain applications violated the Regulation's requirements of equal and non-discriminatory treatment of traffic, reinforcing the idea that commercial practices must not compromise users' rights to access information and content of their choice.[24]

Core Arguments for a Justice-Oriented Approach

On the basis of the foregoing frameworks, at least four strong, interlocking arguments can be articulated in favor of treating the digital divide as a matter of justice and enforceable obligation rather than mere policy discretion:

First, meaningful digital access is now an indispensable conduit for the enjoyment of multiple fundamental rights, including freedom of expression and information, association, education, health, work, social security, and access to justice. Courts in India and elsewhere have repeatedly acknowledged that everyday activities from applying for jobs and welfare benefits to engaging in political debate and accessing courts are increasingly mediated by the internet. When the state digitizes essential services or communications without ensuring affordable and accessible connectivity, it risks rendering formal rights illusory for those who remain offline. This functional interdependence generates a positive duty on the state to take reasonable measures to ensure inclusive digital infrastructure and literacy, particularly for disadvantaged groups.

[22] Directive 2018/1972, of the European Parliament and of the Council of 11 December 2018 Establishing the European Electronic Communications Code, 2018 O.J. (L 321) 36.
[23] Regulation 2015/2120, of the European Parliament and of the Council of 25 November 2015 Laying Down Measures Concerning Open Internet Access, 2015 O.J. (L 310) 1.
[24] Telenor Magyarország Zrt. v. Nemzeti Média- és Hírközlési Hatóság Elnöke, Joined Cases C 807/18 & C 39/19, ECLI:EU:C:2020:708 (Sept. 15, 2020).

Second, the digital divide entrenches and amplifies existing structural inequalities based on wealth, gender, caste, disability, and geography, thus engaging the constitutional guarantees of equality and non-discrimination. In India, for example, women, rural residents, and members of historically marginalized communities are statistically less likely to own smartphones, afford data, or have access to reliable broadband. Comparable patterns are observable globally, with ITU data showing that in many low-income countries, the gender gap in internet use exceeds 20 percentage points.[25] When access to employment opportunities, financial services, and public information depends on digital connectivity, such disparities can amount to indirect discrimination. Equality jurisprudence therefore supports affirmative action and targeted subsidies to correct these imbalances.

Third, democracy, deliberation, and access to justice increasingly hinge on digital platforms. E-governance initiatives, online consultations, remote court hearings, and digital campaigns have expanded the arenas in which public power is exercised and contested. Without inclusive digital access, marginalized groups risk being excluded from these deliberative spaces, undermining the legitimacy of democratic decision-making and weakening accountability. The Supreme Court of India's endorsement of live-streaming of certain court proceedings, for example, is premised on the idea that technology can widen public access to justice and enhance judicial transparency.[26] However, such measures will only be equitable if accompanied by efforts to ensure that those at the margins can actually access and use these digital channels.

Fourth, the global and networked character of digital infrastructures creates shared responsibilities that transcend national borders. Major platforms, cloud providers, and telecommunications firms operate transnationally, and cross-border data flows underpin contemporary economies. At the same time, under-connected regions bear the opportunity costs of exclusion. International cooperation obligations under human rights law and the SDGs support arguments for technology transfer, capacity-building, and financial and regulatory assistance to low- and middle-income

[25] Int'l Telecommunication Union, Measuring Digital Development: Facts and Figures 2022 2 (2022), https://www.itu.int.
[26] Swapnil Tripathi v. Supreme Court of India, (2018) 10 SCC 639 (India).

countries to build inclusive digital ecosystems.[27] This global justice dimension suggests that equity in technology cannot be left solely to national policy choices or market forces but requires coordinated action underpinned by legal norms.

EMPIRICAL LANDSCAPE: STATISTICS ON GLOBAL AND INDIAN DIGITAL INCLUSION

Empirical data provide crucial context for legal and normative debates. According to the ITU's "Measuring Digital Development: Facts and Figures 2022," approximately 5.3 billion people around 66% of the global population were using the internet in 2022, leaving about 2.7 billion people offline. While global connectivity has grown rapidly over the past decade, the pace has been uneven. High-income countries approach saturation levels of internet use, while many low-income countries still have internet penetration rates below 30%. Rural-urban gaps persist worldwide, with rural areas typically lagging far behind cities in both coverage and quality of service.

The digital gender gap is particularly striking. The ITU reports that globally, a higher proportion of men than women use the internet, with the gap being widest in least developed countries. Structural factors, including lower income, reduced control over household resources, sociocultural norms restricting women's mobility and technology use, lower levels of formal education, and safety concerns about online harassment, all contribute to this disparity. In several regions, women are significantly less likely to own smartphones or have mobile internet subscriptions.[28]

India's digital trajectory is complex. On one hand, the country has made dramatic strides in expanding mobile telephony and internet connectivity, with hundreds of millions of users and rapidly declining data prices following market disruptions in the telecommunications sector.[29] On the other hand, national-level penetration figures obscure stark inequalities. World Bank data

[27] G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development, U.N. Doc. A/RES/70/1, at Goals 4, 5, 9, 10 & 16 (Oct. 21, 2015).
[28] GSMA, The Mobile Gender Gap Report 2023 4–7 (2023), https://www.gsma.com.
[29] Telecom Regulatory Auth. of India, Indian Telecom Services Performance Indicators (various issues), https://www.trai.gov.in.

indicate that by 2022, roughly half of India's population used the internet, compared with near-universal usage in many high-income economies.[30] Access is unevenly distributed: urban areas enjoy higher broadband coverage and speeds, while large segments of rural India, particularly in central and northeastern regions, remain under-connected. Gender, caste, income, and disability strongly shape who can benefit from digital programmes and services.

VI. COMPARATIVE ANALYSIS: INDIA AND OTHER JURISDICTIONS

Comparing India's approach with those of other jurisdictions reveals both convergences and divergences in the legal framing of the digital divide. In India, judicial interventions have played a prominent role in linking digital access to fundamental rights. The courts' recognition of the internet's centrality to free speech, livelihood, education, and privacy has created a constitutional vocabulary for contesting arbitrary shutdowns, exclusionary digitalization, and intrusive data practices. However, judicial decisions alone cannot substitute for comprehensive legislation and regulatory design explicitly oriented towards digital inclusion.

By contrast, the European Union has embedded universal service and open internet obligations within primary legislation and binding regulations. The EU's Open Internet Regulation directly imposes network neutrality requirements and constrains zero-rating and discriminatory practices, thereby seeking to preserve an open and competitive digital environment. The European Electronic Communications Code's broadened conception of universal service, which now includes adequate broadband access at an affordable price, reflects a clear legislative judgment that certain levels of digital connectivity constitute a social minimum to which all residents are entitled. Judicial oversight by the Court of Justice of the European Union, as in ***Telenor Magyarország,*** reinforces this regulatory framework by interpreting it in light of user rights.

The United States presents a more fragmented picture. While the universal service provisions of federal communications law provide tools for extending connectivity, the scope and design of these programmes have been subject to shifting administrative priorities and political contestation.

[30] World Bank, Individuals Using the Internet (% of Population) – India, WORLD DEVELOPMENT INDICATORS, https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=IN (last visited Jan. 12, 2026).

Network neutrality protections have oscillated over time, with regulatory reversals between administrations. Nonetheless, judicial recognition of the internet's importance for free speech, as in ***Reno v. ACLU,*** underscores that any regulatory approach must be compatible with strong First Amendment commitments. Recent initiatives, including expanded broadband funding in federal infrastructure legislation, suggest a renewed emphasis on closing domestic digital divides, albeit within a constitutional framework that is more hesitant to recognize socio-economic entitlements than India's.

Many countries in the Global South, including in Africa and Latin America, have integrated digital access concerns within broader constitutional and statutory reforms on access to information, socio-economic rights, and participation. Constitutional provisions guaranteeing the right to information, for example, increasingly intersect with digitalization of government records and online transparency initiatives. Some jurisdictions have adopted national broadband plans that explicitly target rural connectivity, public access points, and community networks, often with support from multilateral development institutions and regional bodies. These experiences offer valuable lessons for India on community-driven models, spectrum management, and the role of local governments and civil society in co-creating inclusive digital ecosystems.

CHALLENGES AND RISKS: SURVEILLANCE, EXCLUSION, AND ALGORITHMIC BIAS

Efforts to close the digital divide must also confront the risks that digital technologies can entrench new forms of injustice. First, the expansion of digital infrastructure often goes hand in hand with increased surveillance capabilities for both states and corporations. Without strong data protection and oversight mechanisms, marginalized communities may find themselves subject to intensified monitoring, profiling, and control. The Indian Supreme Court in *Puttaswamy* warned against the dangers of surveillance in the absence of clear safeguards and accountability, highlighting the need for privacy-by-design approaches in digital governance.

Second, digitalization of welfare schemes and public services can produce exclusion errors when authentication systems fail, connectivity is unreliable, or users lack the necessary devices or

literacy. Reports of individuals being denied food rations or pensions due to biometric mismatches or connectivity failures in Aadhaar-linked systems exemplify how digital reforms, if poorly designed, can violate rights rather than advance them. Courts have increasingly scrutinized such policies, emphasizing that the pursuit of efficiency cannot justify the denial of basic entitlements to vulnerable persons.

Third, algorithmic decision-making systems and artificial intelligence (AI) tools are being deployed in domains ranging from credit scoring and recruitment to policing and welfare targeting. Without transparency, contestability, and inclusive design, these systems risk reproducing and amplifying historical biases, particularly against marginalized groups. International debates on AI ethics and governance increasingly stress principles of fairness, accountability, and non-discrimination, but their operationalization in domestic law remains nascent.[31] For India and comparable jurisdictions, ensuring that AI deployment does not deepen the digital divide or create new forms of "algorithmic injustice" is an urgent challenge.

Finally, the concentration of economic and informational power in a small number of global platforms raises concerns about competition, media pluralism, and the autonomy of users and states. Platform dominance can limit local innovation, extract disproportionate value from users' data, and shape information flows in ways that are opaque and potentially harmful to democratic discourse. Regulatory responses, including competition law enforcement, platform regulation, and data governance reforms, must therefore be designed with an eye to both global market dynamics and local equity concerns.

TOWARDS A JUSTICE-ORIENTED REGULATORY MODEL: RECOMMENDATIONS FOR INDIA

Against this backdrop, several normative and policy recommendations emerge for India, informed by comparative experience and grounded in the constitutional commitment to justice, liberty, equality, and fraternity. While a full blueprint lies beyond the scope of this article, key directions can be outlined.

First, India should adopt an explicit statutory framework on digital inclusion and universal service in the broadband era, updating and consolidating existing provisions scattered across telecommunications and IT legislation. Such a framework should set clear, time-bound targets for universal, affordable, and quality broadband, with particular attention to rural and remote areas, marginalized communities, and persons with disabilities. Drawing inspiration from the EU's universal service regime and the U.S. universal service mechanisms, the law could establish transparent funding arrangements, including industry levies and public investment, and provide for independent oversight.

Second, rights-based impact assessments should be mandated for major digitalization initiatives, particularly where access to essential services, identification systems, or welfare benefits is concerned. Such assessments should evaluate potential exclusion risks, data protection implications, and gender and caste impacts, and should be conducted in a participatory manner involving civil society, affected communities, and technical experts. Judicially enforceable standards, drawing on proportionality and reasonableness doctrines, can ensure that digital reforms promote rather than undermine fundamental rights.

Third, the regulatory architecture should promote community networks, public access points (such as libraries, schools, and common service centres), and local innovation ecosystems as complements to large-scale commercial deployments. Experiences from other Global South jurisdictions demonstrate that community-owned or cooperative networks can play a vital role in connecting remote and underserved areas, especially when supported by enabling spectrum policies and financial incentives. [31]In India, integrating such models within the broader Digital India strategy could enhance resilience, accountability, and local empowerment.

Fourth, data protection and AI governance frameworks must be aligned with digital inclusion goals. The implementation of the Digital Personal Data Protection Act, 2023, should be closely monitored to ensure that consent and notice requirements are meaningful for users with limited

[31] See Ass'n for Progressive Commc'n, Community Networks: Infrastructures for the Future (2018), https://www.apc.org.

literacy, that data fiduciaries adopt privacy-by-design practices, and that surveillance risks are minimized through strong oversight mechanisms. Emerging AI regulations should incorporate obligations relating to non-discrimination, transparency, and explainability, particularly for high-risk systems used in welfare targeting, credit, employment, and law enforcement. Public procurement standards can leverage the state's purchasing power to promote fair and inclusive technology design.

Fifth, sustained investment in digital literacy and skills development is essential. Legal guarantees of the right to education, read with equality and non-discrimination provisions, support the argument that curricula at all levels should integrate digital competencies, with targeted programmes for girls and women, persons with disabilities, and marginalized communities. Partnerships between government, educational institutions, and civil society can help ensure that training is contextually relevant and accessible in multiple languages and formats, including through accessible ICTs for persons with disabilities.

Sixth, India should actively participate in, and help shape, international and regional forums on digital governance, including debates on cross-border data flows, platform regulation, cybersecurity norms, and AI ethics. Leveraging its experience as a large, diverse democracy pursuing rapid digitalization, India can advocate for global rules that prioritize inclusion, equity, and human rights, and can also seek financial and technical support for domestic inclusion efforts under the umbrella of SDG implementation.

CONCLUSION

The global digital divide is not an incidental by-product of technological innovation, but a structured pattern of inequality that both reflects and reinforces broader social hierarchies. As the internet and digital technologies permeate virtually every sphere of life from politics and education to work, welfare, and culture the stakes of inclusion and exclusion have grown correspondingly high. For India and similarly situated countries, the central challenge is to harness the transformative potential of technology while preventing, and where necessary remedying, its capacity to deepen existing injustices or create new forms of domination.

This article has argued that a justice-oriented approach to the digital divide requires moving beyond instrumental or purely economic framings to recognize digital access as intimately bound up with fundamental rights and constitutional values. Drawing on egalitarian, capabilities, and recognition-based theories, and on international and comparative legal developments, it has shown that meaningful connectivity is today a precondition for exercising many civil, political, and socio-economic rights. The jurisprudence of Indian courts, together with international human rights norms and comparative regulatory models, provides a rich normative toolkit for articulating state obligations and private responsibilities in this domain.

At least four core arguments support treating digital inclusion as a matter of enforceable justice: its centrality to the enjoyment of multiple rights; its role in either mitigating or entrenching structural inequalities; its impact on democratic participation and access to justice; and the global obligations of cooperation and solidarity it implicates. These arguments, taken together, suggest that leaving digital access to market forces or ad hoc policy choices is inconsistent with constitutional commitments to equality, dignity, and the rule of law.

India's path forward will require a combination of legislative reform, regulatory innovation, judicial vigilance, and participatory governance. Explicit recognition of digital inclusion objectives in statute, robust safeguards for privacy and non-discrimination, promotion of community-based and public access models, investment in digital literacy, and proactive engagement in global norm-setting are among the key elements of a justice-centred digital agenda. Comparative experience from the European Union, the United States, and other Global South jurisdictions can inform these efforts, while India's own constitutional jurisprudence can, in turn, contribute to a broader international conversation on digital constitutionalism.

Ultimately, the measure of a society's digital transformation is not the sophistication of its technologies or the volume of its data traffic, but the extent to which technological change advances the freedoms, capabilities, and dignity of all its members, especially those at the margins. Bridging the global digital divide, understood as a project of justice and equity in technology, is therefore one of the central legal and moral tasks of our time.

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