Introduction

The internet has transformed nearly every aspect of life as we know it. In the early days, it served as a static network designed to facilitate short messages between two terminals—content was managed and accessed only by skilled coders. Today, anyone can purchase goods, consume media, and communicate worldwide with just the click of a button. Users serve as creators, commentators, collaborators, activists, and more.[1]

The Internet's vast and complex ecosystem raises challenges in every aspect of governance, from data privacy to content regulation. First and foremost, issues regarding net neutrality (the principle that internet service providers should enable access to all content and applications regardless of the source and without favoring or blocking particular products or websites) have arisen, and some internet service providers limit access to certain services and prioritize specific content. Additionally, privacy and data security have been scrutinized, as debates over surveillance practices and high-profile data breaches have emphasized the need to safeguard user data. The rapid spread of disinformation campaigns demands increased content regulation that avoids infringing on free speech. Further, the ease of information sharing through Internet platforms has substantially increased trademark infringements, copyright violations, and content piracy.

Furthermore, he modern era of the internet has been characterized by the introduction and integration of Artificial Intelligence (the theory and development of computer systems able to perform tasks that usually require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages).[2] Machine learning (the use and development of computer systems that can learn and adapt without following explicit instructions by using algorithms and statistical models to analyze and draw inferences from patterns in data) is currently one of the most prominent applications of AI.[3] These algorithms can interpret troves of user data almost instantaneously to offer personalized content and recommendations, from the next hot Netflix show to individual product recommendations on e-commerce websites.[4]

The complex and interconnected nature of the Internet demands a set of internationally recognized standards to address regulatory concerns amidst the emergence of new technologies.

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[1] "How the Internet Has Changed Everyday Life - BBVA Openmind." https://www.bbvaopenmind.com/en/articles/internet-changed-everyday-life/. Accessed 10 Jul. 2023.

[2] "Artificial intelligence - Oxford Reference." https://www.oxfordreference.com/display/10.1093/oi/authority.20110803095426960. Accessed 10 Jul. 2023.

[3] "What is Machine Learning? - IBM." https://www.ibm.com/topics/machine-learning. Accessed 10 Jul. 2023.

[4] "What Is Machine Learning and Why Is It Important? - TechTarget." https://www.techtarget.com/searchenterpriseai/definition/machine-learning-ML. Accessed 10 Jul. 2023.

Nations have already established varying laws and regulations contradicting a truly borderless internet. So who should govern the Internet?

The International Telecommunication Union is a specialized United Nations agency formed in 1865 to facilitate interoperability and communication between the telecommunications systems of different countries. It is responsible for maintaining radio frequencies and satellite orbits, developing international telecommunications standards, promoting ICT access, and facilitating international cooperation.[5]

Background

<u>The Evolution of the Internet and its Governance</u>

The United States Advanced Research Projects Agency Network (ARPANET) served as the precursor to the modern Internet. It was used from 1969 to 1989, mostly on large and expensive mainframe systems owned by corporations, governments, and universities.[6] ARPANET governance principles were primarily technical—engineers and computer scientists focused on network reliability, protocol development, and data transmission, setting the stage for the development of the Internet as we know it today.[7]

The Domain Name System (DNS) was created in the 1980s, which translated domain names into IP addresses.[8] Soon after, Tim Berners-Lee, a British computer scientist, developed the World Wide Web in the late 1980s and early 1990s. This was the first time users could use hyperlinks and access web pages.[9] The US Department of Commerce directly managed the DNS until 1998, when they signed The Memorandum of Understanding (MoU) to transition control to the newly established Internet Corporation for Assigned Names and Numbers (ICANN).[10] ICANN was formed as a non-profit organization to manage the DNS and IP address allocations and marked the first decentralized and global multi-stakeholder approach to governing the internet.[11]

The United Nations held the World Summit on the Information Society, a series of conferences between 2003 and 2005, to address challenges raised by the evolution of the internet. Several countries held differing viewpoints on issues such as freedom of expression and privacy. The

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[5] "ITU: Committed to connecting the world." https://www.itu.int/. 10 Jul. 2023.

[6] "What is ARPANET and what's its significance? - TechTarget." https://www.techtarget.com/searchnetworking/definition/ARPANET. Accessed 16 Jul. 2023.

[7] "ARPANET - Wikipedia." https://en.wikipedia.org/wiki/ARPANET. Accessed 16 Jul. 2023.

[8] "DNS history. When and why was DNS created? - ClouDNS Blog." 30 May. 2023, https://www.cloudns.net/blog/dns-history-creation-first/. Accessed 16 Jul. 2023.

[9] "The birth of the Web - CERN." https://home.cern/science/computing/birth-web. Accessed 16 Jul. 2023.

[10] "Memorandum of Understanding Between the U.S. Department of ...." https://www.ntia.gov/page/memorandum-understanding-between-us-department-commerce-and-internet-corporation-assigned. Accessed 16 Jul. 2023.

[11] "ICANN History Project." https://www.icann.org/history. Accessed 16 Jul. 2023.

conference emphasized the importance of a multi-stakeholder approach to Internet governance.[12] In 2006, the Internet Governance Forum (IGF) was established to provide a forum for international discussions on Internet governance issues.[13]

The IGF has continued to serve as a critical platform for collaboration between technical experts, governments, civil societies, private sectors, and academia. Additionally, ICANN's responsibilities have expanded to include privacy, cybersecurity, domain name abuse, and addressing policy changes in the digital landscape.[14]

Key Governance Issues

Net Neutrality

The concept of net neutrality was popularized in the early 2000s and was often referred to as "the First Amendment of the Internet." It essentially guarantees equal access to online services and content. In 2007, Comcast (one of the largest U.S. Internet service providers) was discovered to have interfered with customer use of the BitTorrent file-sharing protocol. BitTorrent was a peer-to-peer protocol that allowed users to share large files such as movies and other media across the internet in a decentralized fashion. Comcast intentionally slowed down BitTorrent traffic, violating the principle of net neutrality and raising major concerns regarding Internet Service Providers' power.[15]

In 2015, the European Union adopted strict net neutrality regulations alongside its Digital Single Market initiative, which aims to transition from 28 national digital markets to a single one and open up digital services to all citizens. These regulations prohibit Internet Service Providers from blocking or offering preferential treatment to online services and prevent paid prioritization. The EU hoped this initiative would strengthen business competition in the new digital economy.[16] Other states have adopted similar policies; in 2018, India adopted net neutrality rules prohibiting Internet Service Providers from blocking certain services to preserve a free Internet.[17]

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[12] "World Summit on the Information Society - ITU." 22 Jan. 2015, https://www.itu.int/net/wsis/. Accessed 16 Jul. 2023.

[13] "The first Internet Governance Forum – Oct/Nov 2006 - Elon University." https://www.elon.edu/u/imagining/event-coverage/global-igf/igf-2006/. Accessed 16 Jul. 2023.

[14] "What Does ICANN Do?." 25 Feb. 2012, https://www.icann.org/resources/pages/what-2012-02-25-en. Accessed 16 Jul. 2023.

[15] "EFF study confirms Comcast's BitTorrent interference - Ars Technica." 28 Nov. 2007, https://arstechnica.com/uncategorized/2007/11/eff-study-reveals-evidence-of-comcasts-bittorrent-interference/. Accessed 25 Sep. 2023.

[16] "EUROPEAN COMMISSION Brussels, 6.5.2015 COM(2015) 192 final ...." 6 May. 2015, https://ec.europa.eu/commission/presscorner/api/files/attachment/8210/DSM_communication.pdf. Accessed 25 Sep. 2023..

[17] "India now has the 'world's strongest' net neutrality rules." 12 Jul. 2018, https://money.cnn.com/2018/07/12/technology/india-net-neutrality-rules-telecom/index.html. Accessed 25 Sep. 2023..

Privacy

Privacy has been a prominent concern in Internet governance since web usage soared in the late 1990s and early 2000s. Regulators have struggled to adopt measures that effectively protect personal data due to the sheer volume of data generated and transmitted through the Internet. In 2018, a massive scandal involving Facebook and the political consulting firm Cambridge Analytica drew attention to the risks of mishandled data. Cambridge Analytica obtained Facebook user data without consent and used it to better target and influence potential voters to vote for Donald Trump. The company denied that data was used to influence the election.[18] In 2022, Facebook owner Meta was ordered to pay 725 million dollars to settle legal action over the data breach.[19]

In 2016, the European Union and the United States created the "Privacy Shield"—an agreement that provided a framework for the safe transfer of personal data between the two regions.[20] However, the European Court of Justice invalidated it in 2020 due to concerns surrounding U.S. surveillaince practices.[21] The EU also established the General Data Protection Regulation in 2018 (in response to the Facebook/Cambridge Analytica scandal), which imposed strict punishments for data breaches and violations.[22]

Intellectual Property

Online platforms allow for the sharing of intellectual property at the click of a button. Copyrighted material, trademarks, and patents are all subject to infringement on the Internet. In 2010, Oracle filed a lawsuit against Google that alleged copyright and patent infringement as a consequence of Google's use of Java in the Android Operating System. The case eventually reached the U.S. Supreme Court years later, and in 2021, it was ruled that Google's use of Java constituted "free use" under copyright law and therefore no violation had occurred.[23]

The World Intellectual Property Organization (WIPO) is a specialized agency of the United Nations that currently administers international treaties related to intellectual property.[24] It is

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[18] "Cambridge Analytica and Facebook: The Scandal and the Fallout ...." 4 Apr. 2018, https://www.nytimes.com/2018/04/04/us/politics/cambridge-analytica-scandal-fallout.html. Accessed 25 Sep. 2023..

[19] "Meta agrees to pay $725 million to settle lawsuit over Cambridge ...." 23 Dec. 2022, https://www.cnn.com/2022/12/23/tech/meta-cambridge-analytica-settlement/index.html. Accessed 25 Sep. 2023..

[20] "European Commission launches EU-U.S. Privacy Shield." 12 Jul. 2016, https://europa.eu/rapid/press-release_IP-16-2461_en.htm. Accessed 25 Sep. 2023..

[21] "The Court of Justice invalidates Decision 2016/1250 on the ... - CURIA." 16 Jul. 2020, https://curia.europa.eu/jcms/upload/docs/application/pdf/2020-07/cp200091en.pdf. Accessed 25 Sep. 2023..

[22] "The general data protection regulation - Consilium.europa.eu." 1 Sep. 2022, https://www.consilium.europa.eu/en/policies/data-protection/data-protection-regulation/. Accessed 25 Sep. 2023.

[23] "Google LLC v. Oracle America, Inc. - Wikipedia." https://en.wikipedia.org/wiki/Google_LLC_v._Oracle_America,_Inc.. Accessed 26 Sep. 2023.

[24] "WIPO - World Intellectual Property Organization." https://www.wipo.int/. Accessed 26 Sep. 2023.

complemented by The Agreement on Trade-Related Aspects of Intellectual Property (TRIPS), which is part of the World Trade Organization's (WTO) framework. TRIPS sets minimum standards for the protection of patents, copyrights, and trademarks, and requires member countries to enact and enforce IP laws.[25]

Disinformation and Content Regulation

The proliferation of misinformation and "fake news" significantly increased in the late 2010s. Online communities facilitated the spread of false information as it was created and distributed exponentially faster than content moderators could detect it. Asides from this logistical problem, content regulation is an exceptionally complex dilemma—moderators must allow for open discourse while preventing the spread of harmful misinformation, which places the sanctity of freedom of speech into question. Social media giant Twitter has suspended accounts associated with coordinated campaigns during political elections in the past in attempt to limit misinformation and safeguard public discourse. However, they have been heavily criticized for purportedly stripping people of their freedom of speech.[26]

The Ottawa Declaration on Promoting Internet Freedom and Development outlines principles to address freedom of expression and privacy challenges online. It was adopted in 2012 by the Global Network Initiative (GNI), which includes civil society organizations, companies, investors, and academics who are dedicated to the protection of human rights in the digital age.[27] Additionally, the European Commission introduced a voluntary Code of Practice on Disinformation in 2018. Major platforms (such as Facebook and Google) committed to self-regulatory measures to prevent the spread of misinformation.[28]

The Rise of Artificial Intelligence

Although often viewed as a recent advancement, Google first used Artificial Intelligence commercially to enhance search relevance in the late 1990s.[29] User behaviors were analyzed to produce personalized search results. Soon after, AI became popular in financial institutions due to its predictive analytics capabilities, helping investors forecast market trends and assess risk.[30]

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[25] "WTO | Intellectual property (TRIPS) - gateway." https://wto.org/trips. Accessed 26 Sep. 2023.

[26] "The Unhinged Debate Over Twitter and 'Free Speech'." 19 Dec. 2022, https://nymag.com/intelligencer/2022/12/twitter-free-speech-elon-musk-greenwald-taibbi.html. Accessed 26 Sep. 2023.

[27] "The Global Network Initiative Welcomes the "Declaration for the ...." 29 Apr. 2022, https://globalnetworkinitiative.org/declaration-future-internet/. Accessed 26 Sep. 2023.

[28] "2018 Code of Practice on Disinformation." 16 Jun. 2022, https://digital-strategy.ec.europa.eu/en/library/2018-code-practice-disinformation. Accessed 26 Sep. 2023.

[29] "Exploring the Exciting World of Google's Generative AI Revolution." 28 May. 2023, https://www.linkedin.com/pulse/exploring-exciting-world-googles-generative-ai-odusanwo-mba-ms. Accessed 16 Jul. 2023.

[30] "Artificial Intelligence in Banking 2022: How Banks Use AI." 2 Feb. 2022, https://www.businessinsider.com/ai-in-banking-report. Accessed 16 Jul. 2023.

AI has since been adopted across various industries, most notably by social media companies such as Instagram and Facebook who implement AI to enhance content recommendations and user engagement. AI in social media has generated significant "echo chambers" (an environment in which a person encounters only beliefs or opinions that coincide with their own, so that their existing views are reinforced and alternative ideas are not considered).

Artificial intelligence will reshape countless industries—for better or worse. In healthcare, improved diagnostics and treatment plans will enhance the effectiveness and efficiency of life-saving treatments.[31] However, data privacy, transparency, and informed consent/autonomy will be questioned. In finance, AI algorithms will optimize trading strategies and risk assessment. However, algorithmic bias could lead to discriminatory financial decisions, and an overreliance on software may expose sensitive data to cybersecurity threats.[32] In emerging industries such as 3D printing, AI can add positive things, such as design optimization and predictive maintenance plans, while introducing threats such as design bias and quality control dilemmas.[33]

The International Telecommunications Union

The International Telecommunications Union is one of the most inclusive international organizations in the world, with 193 member states. The ITU includes "sector members"— entities from academia, civil society, and the private sector. These sector members provide insights and specialized knowledge that help shape the telecommunications landscape.[34]

The ITU gathers member states for the World Telecommunication Standardization Assembly (WTSA) every four years. The WTSA is a crucial platform for setting the course of international telecommunications standards—in the past, it has ratified papers covering topics such as cybersecurity and bridging the standardization gap between developing countries.[35] In 2022, the WTSA introduced a draft resolution that aimed to promote the growth of artificial intelligence through international collaboration.[36]

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[31] "The potential for artificial intelligence in healthcare - PMC - NCBI." https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6616181/. Accessed 22 Jul. 2023

[32] "The Growing Impact of AI in Financial Services: Six Examples." https://towardsdatascience.com/the-growing-impact-of-ai-in-financial-services-six-examples-da386c0301b2. Accessed 30 July 2023.

[33] "How Artificial Intelligence and 3D Printing can collaborate." https://www.pre-scient.com/blogs/artificial-intelligence/how-artificial-intelligence-and-3d-printing-can-collaborate.html. Accessed 20 Aug. 2023.

[34] "ITU: Committed to connecting the world." https://www.itu.int/. 30 July 2023.

[35] "World Telecommunication Standardization Assembly (WTSA-20) - ITU." https://www.itu.int/en/ITU-T/wtsa20/Pages/default.aspx. Accessed 30 July 2023.

[36] "T17-WTSA.20-C-0036!A30!MSW-E - ITU." 31 Jan. 2022, https://www.itu.int/dms_pub/itu-t/md/17/wtsa.20/c/T17-WTSA.20-C-0036!A30!MSW-E.docx. Accessed 30 July 2023.

The ITU hosts the Plenipotentiary Conference every four years to elect its senior management team (consisting of a Secretary-General and three sector directors) and set general directions for the committee.[37] Additionally, the ITU Council (consisting of a small subset of member states) meets annually to oversee the work of the ITU and provide guidance between conferences.[38]

Current Situation

ChatGPT

In 2023, OpenAI announced the commercial launch of ChatGPT—an AI chatbot that uses natural language processing to create human-like conversation dialogue. ChatGPT is estimated to have reached 100 million active users within two months of its launch, making it the fastest-growing consumer application in history.[39]

The popularity of ChatGPT will not only exacerbate the previously discussed implications of AI use but also introduce new dilemmas. Anything uploaded to the OpenAI system becomes part of its generative knowledge base, raising significant concerns about intellectual property protection. Additionally, organized crime has recently turned to AI, and numerous malware programs disguised as ChatGPT-like browser extensions have already found their way into mainstream search engines, further raising privacy concerns.[40]

International Developments

General Regulation

Organizations like the International Telecommunications Union and Internet Governance Forum serve as platforms on the global stage for discussions surrounding internet governance. Regional bodies and state governments have implemented their own legislation to address specific governance issues, such as those targeting net neutrality, privacy, IP, and misinformation campaigns that have been previously discussed.

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[37] "ITU Plenipotentiary Conference." https://pp22.itu.int/en/. Accessed 30 July 2023.

[38] "ITU Council Overview." https://www.itu.int/en/council/Pages/overview.aspx. Accessed 5 Aug. 2023.

[39] "ChatGPT sets record for fastest-growing user base - analyst note." 2 Feb. 2023, https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/. Accessed 5 Aug. 2023.

[40] "How ChatGPT is Changing Our World - Tripwire." 22 May. 2023, https://www.tripwire.com/state-of-security/how-chatgpt-changing-our-world. Accessed 10 Aug. 2023.

Some other notable regulatory frameworks include the U.S. Open Internet Order,[41] the U.S. Digital Millennium Copyright Act (DMCA),[42] the European Union Copyright Directive,[43] and Germany's Network Enforcement Act.[44]

AI Governance

In April 2021, the European Commission proposed the AI Act—the first European Union regulatory framework for Artificial Intelligence. Under the AI Act, AI systems would be analyzed and classified based on the risk they pose to users as either "unacceptable risk," "high risk," "generative AI," or "limited risk." The higher the risk, the stricter the regulations.

The European Union is far from the only governmental organization attempting to regulate AI. In October of 2022, the White House and Congress released the Blueprint for AI Rights, a list of five principles to guide the development of AI in a way that protects the American people. They outline safe and effective systems, algorithmic discrimination protections, data privacy, notice and explanation, and human alternatives, consideration, and fallback as the core principles of AI development (but do not mention any kind of repercussions for violations.)[45]

In July, the South China Post reported that the "world's earliest and most detailed regulations on generative artificial intelligence models" would be implemented by mid-August of 2023. The regulations cover all generative AI content services in totality and support the development of "healthy content" that adheres to socialist values.[46]

Stanford University's 2023 AI Index shows that governments around the world passed 37 bills regarding AI in 2022.[47] States are seeking to regulate AI just as fast as it develops.

National Sovereignty

The development of a unified framework for internet governance requires international cooperation. Each nation has a right to national sovereignty (the absolute capability and power of a sovereign nation to independently govern free from external interference), but the internet

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[41] "FCC Releases Open Internet Order." https://www.fcc.gov/document/fcc-releases-open-internet-order. Accessed 29 Sep. 2023.

[42] "What is DMCA?." 28 Feb. 2023, https://www.dmca.com/FAQ/What-is-DMCA. Accessed 29 Sep. 2023.

[43] "The EU copyright legislation | Shaping Europe's digital future." https://digital-strategy.ec.europa.eu/en/policies/copyright-legislation. Accessed 29 Sep. 2023.

[44] "Network Enforcement Act - Wikipedia." https://en.wikipedia.org/wiki/Network_Enforcement_Act. Accessed 29 Sep. 2023.

[45] "Blueprint for an AI Bill of Rights | OSTP - The White House." https://www.whitehouse.gov/ostp/ai-bill-of-rights/. Accessed 10 Aug. 2023.

[46] "A look at artificial intelligence regulations around the world | The Week." 4 Jul. 2023, https://theweek.com/artificial-intelligence/1024605/ai-regulations-around-the-world. Accessed 10 Aug. 2023.

[47] "AI Index Report 2023 – Artificial Intelligence Index - Stanford University." https://aiindex.stanford.edu/report/. Accessed 27 Aug. 2023.

transcends geographical boundaries, putting traditional notions of national sovereignty into question. For example, some nations may use regulations to censor online content that contradicts their religious or cultural values. The need for a unified governance framework must be balanced with freedom of expression.

Harmonizing legal standards across states can be exceptionally complex. A unified governance framework may also necessitate shared enforcement mechanisms, which raises challenges regarding accountability and oversight.

Questions to Consider

- Should ICANN remain at the helm of the Internet?
- What measures should be implemented to safeguard personal data, privacy, and intellectual property on the Internet?
- What role can the International Telecommunications Union play in mediating government regulatory interests and user rights?
- How can the International Telecommunications Union facilitate cross-border collaborations and information sharing?
- How can misinformation campaigns be regulated while preserving freedom of speech?
- How can the International Telecommunications Union develop Internet standards that align with the United Nations' Sustainable Development Goals?
- What international governance standards should be developed to ensure the safety and equality of AI technologies?