# THE ROLE OF ICANN IN INTERNET GOVERNANCE

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## Abstract

This article examines how ICANN has shaped global internet governance. ICANN manages the Domain Name System (DNS), IP address distribution, and network infrastructure integrity, making it a vital part of the internet. After introducing internet governance's primary players and offering an overview, the article details ICANN's organisation and goal. ICANN manages domain names and the internet's unique identifier schemes to keep the internet safe. The article discusses ICANN's principal functions—managing domain name systems (DNS), introducing top-level domains (TLDs), and administering root zones—and its cooperation with Regional Internet Registries (RIRs). The study also examines ICANN's multi-stakeholder model, which includes technical communities, businesses, civil society, and government. We also discuss the Governmental Advisory Committee (GAC), which provides government input on ICANN decisions. International issues include IANA transition disagreements, trademark difficulties with new gTLDs, and ICANN's ownership of vital internet services. The article discusses ICANN's legal power, cybersecurity, DNS misuse, and transparency. In conclusion, the paper discusses ICANN's efforts to promote digital inclusivity and universal access and its possible role in internet governance in light of 5G and the IoT.

**Keywords:** ICANN, internet governance, DNS management, top-level domains, IP address allocation, multi-stakeholder model, cybersecurity, internet fragmentation, digital inclusion, root zone management.

## 1. Introduction

Internet governance refers to efforts to set and enforce internet operation and development norms. Given the internet's centrality in modern civilisation, internet governance is essential to its stability, safety, and availability. This governance balances public, private, and user interests with technical standards, infrastructure management, content control, and legal frameworks. Its priority is keeping the internet open and interoperable for innovation, global communication, and economic progress[981]. As the internet grows, internet governance discussions are shifting to data privacy, equal access, and cybersecurity. Several key actors in global internet governance play distinct but complementary roles. The International Telecommunication Union (ITU) for worldwide cooperation and the Internet Engineering Task Force (IETF) for technical standards enhance communication technologies. Private ISPs, regional internet registries (RIRs), and NGOs also

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[981] Negro G. A history of Chinese global Internet governance and its relations with ITU and ICANN. InChina's Globalizing Internet 2022 Sep 5 (pp. 103-120). Routledge.

participate. ICANN is a leader in DNS management. Since 1998, ICANN has been a charity. Its major job is managing domain names and IP addresses on the internet [982]. It was a turning point in the shift from the US government's top-down management of the internet's resources to a bottom-up, multi-stakeholder model that better reflects global viewpoints. ICANN, which oversees the internet's stability and security, supports a global digital economy and the free flow of information across boundaries.

## 2. ICANN's Structure and Mission

### Organizational Structure

Governments, business entities, technical experts, and civil society all have a say in how ICANN operates, making it a multistakeholder organisation. ICANN's complex organisational chart reflects its vast range of duties and the global nature of internet administration. The ICANN Board of Directors oversees daily operations, decides important policy issues, and ensures ICANN serves the public interest. There are 21 board members, including advisory group liaisons and voting members[983]. By choosing members from a range of countries and backgrounds, ICANN may be able to better serve the needs of all global communities when it makes decisions. The board makes rules for internet unique identifiers and makes sure that ICANN is open and honest. ICANN has many Supporting Organisations (SOs), each of which handles different tasks. These groups need to make rules about IP addresses and domain names. ASO, GNSO, and ccNSO are the three biggest SOs. The ASO is in charge of allocating IP addresses, while the GNSO is in charge of gTLDs like ".com" and ".org." The ccNSO sets the rules for ccTLDs like ".uk" and ".jp," making sure that national interests are taken into account when domain names are managed. Along with supporting groups, ICANN counts on a number

of Advisory Committees (ACs) to represent important stakeholders and give advice[984]. Its members come from many national and foreign organisations, making it the most important. The GAC makes policy suggestions on privacy, intellectual property rights, and cybersecurity to make sure that ICANN follows public policy goals and state interests. The At-Large Advisory Committee (ALAC) works to improve how people think about the internet, and the Security and Stability Advisory Committee (SSAC) looks into how to keep technology safe and stable.

### Mission and Objectives

ICANN's main role is internet naming system stability, integrity, and standardisation. These mechanisms are essential to the global internet, including protocol parameter allocations, DNS, and IP address distribution. ICANN's goals as stewards of these key technologies are internet operational stability and an accessible, inclusive, and competitive online environment. One of ICANN's key goals is DNS management. The internet's "phonebook" is the Domain Name System (DNS), which transforms domain names into numerical IP addresses for computers[985]. DNS is crucial because people would find the internet less user-friendly if they had to memorise long IP numbers to access websites. ICANN oversees the root zone, the foundation of the domain name system, and allocates IP addresses and ensures domain name delegation. ICANN ensures global internet access. ICANN ensures that everyone may access the internet and coordinates its technical components. Encouraging new domain names ensures that users may access a variety of services and digital identities. ".com" and ".net" are generic top-level domains (gTLDs), and ICANN helps create new ones like ".tech" and ".shop". This internet user growth

[982] Becker M. When public principals give up control over private agents: The new independence of ICANN in internet governance. Regulation & Governance. 2019 Dec;13(4):561-76.

[983] Cavalli O, Scholte JA. The role of states in internet governance at ICANN. InPower and Authority in Internet Governance 2021 Mar 14 (pp. 37-55). Routledge.

[984] Zalnieriute M. From Human Rights Aspirations to Enforceable Obligations by Non-State Actors in the Digital Age: The Case of Internet Governance and ICANN. Yale JL & Tech.. 2019;21:278.

[985] Datysgeld M. Understanding the Role of states in global internet governance: ICANN and the question of legitimacy. InGigaNet: Global Internet Governance Academic Network, Annual Symposium 2017 Aug 20.

allows for more distinct and individual web addresses.

## 3. ICANN's Functions in Internet Governance

### Domain Name System (DNS) Management

As the internet's regulatory authority, ICANN manages the Domain Name System (DNS), an online address book. For computers to communicate online, the Domain Name System (DNS) translates human-readable domain names like www.example.com into numerical IP addresses. Without it, online access would require users to memorise long, difficult numbers. ICANN keeps the DNS running by allocating and managing domain names, IP addresses, and internet protocols that allow devices to communicate internationally[986]. To keep the internet running smoothly, the organisation is always improving the structure and homogeneity of these identifiers so that no two entities can share domain names and all domain names are unique.

### Introduction of Top-Level Domains (TLDs)

ICANN helps create and manage Top-Level Domains (TLDs) like ".com," ".org," and ".net". The main types of these TLDs are generic and country code. The current generation of personalised domain extensions like ".tech" and ".store," as well as general TLDs like ".com," ".gov," and ".edu," are not country-specific[987]. These help individuals, groups, and businesses choose domain names that reflect their identity and aims. ICANN has increased the number of generic top-level domains to promote domain name innovation and adaptation. However, some countries have country code top-level domains (ccTLDs) like ".uk" for the UK or ".jp" for Japan. ICANN supervises the delegation of these ccTLDs to the relevant national registries, who set their usage criteria. By regulating TLDs, ICANN balances worldwide standardisation with regional management to preserve the internet's naming system's diversity and integrity.

### Root Zone Management

ICANN is also in charge of the DNS root zone, which has the official list of TLDs and the IP numbers that go with them. Root zone management makes sure that system function and domain name delegation go smoothly[988]. These partnerships are necessary for the internet to work properly, since a problem in the root zone could make it impossible to access email and websites. To keep the global DNS system running, which is necessary for everything we do online, ICANN makes sure the root zone is stable and safe. Internet safety and trust are ICANN's top priorities when it comes to managing the root zone.

## 4. ICANN's Multi-Stakeholder Model

### What is the Multi-Stakeholder Model?

Governments, businesses, civil society groups, and the technical community are all involved in ICANN's multi-stakeholder administration. This way of thinking encourages open, inclusive, and team-based decision-making and stops any one group from controlling internet resources like the Domain Name System. The multi-stakeholder approach says that the people who use the internet should be involved in its governance. This is based on the idea that the internet is a global public resource[989]. Making decisions based on comments from stakeholders helps ICANN adapt internet governance to new situations. When making policy and operational choices, ICANN takes into account what governments, corporations, NGOs, and users have to say. ICANN can handle complicated problems related to internet governance while also maintaining the safety and integrity of the internet by encouraging all stakeholders to talk to each other openly.

[986] Haugen HM. The crucial and contested global public good: principles and goals in global internet governance. Internet Policy Review (2020). 2020;9(1):1-22.

[987] Zalnieriute M. Human Rights Rhetoric in Global Internet Governance: New ICANN Bylaw on Human Rights. Harv. Bus. L. Rev. Online. 2019;10:1.

[988] Jongen H. Heterarchy and Global Internet Governance: The Case of ICANN. InHeterarchy in World Politics 2022 Dec 30 (pp. 179-189). Routledge.

[989] ten Oever N. The metagovernance of Internet governance. InPower and authority in internet governance 2021 Mar 14 (pp. 56-75). Routledge.

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### ICANN's Decision-Making Process

ICANN makes rules by reaching an agreement. Stakeholders work together to set rules for DNS security, managing IP addresses, and allocating domain names, instead of having rules imposed from above. Community groups, supporting groups, and advisory committees can have an effect on ICANN's policies through the multi-stakeholder approach. Since everyone in the international internet community has knowledge and skills that can help make policy, the consensus-building approach is very important [990]. To get feedback from the public, ICANN holds open forums, comment times, and meetings with stakeholders. This makes sure that ICANN's rules are clear, responsible, and looked at all over the world.

### Role of the Governmental Advisory Committee (GAC)

The Governmental Advisory Committee (GAC) is an important part of ICANN's plan to include governments in decision-making. At the GAC, national governments and international groups can get together to talk about and suggest public policy solutions for internet governance. The GAC's suggestions are not required, but ICANN has to look at them. ICANN works with the government on a number of problems, such as cybersecurity, privacy laws, and the assignment of domain names. It is the GAC's job to connect ICANN's technical and practical duties with the global and national laws and rules that control the internet. This keeps ICANN's non-governmental, multi-stakeholder method to managing the internet, but it lets governments make rules for the internet.

### 5. ICANN and International Controversies

### Debates on Internet Governance

For a long time, ICANN has been a part of debates about who should run the internet's resources. Some people who are against the

Internet Corporation for Assigned Names and Numbers (ICANN) say that it controls the internet too much, which raises worries about centralisation and openness. Some people don't think a private US company should be in charge of the whole internet. Some people believe that ICANN's multi-stakeholder approach is better for managing the internet on a global scale because it is more democratic, open, and focused on users. In their view, ICANN's framework makes it impossible for any government or company to control the internet. These issues come up when people talk about how to balance the needs of the government, the business sector, and ordinary people in a digital space that everyone uses.

### US Government Oversight and IANA Transition

The US government's oversight of ICANN throughout its past has been one of its most controversial points. Because ICANN had a deal with the US Department of Commerce, the US government was in charge of IANA at first. People around the world didn't like this agreement because they saw it as proof of one country having too much power on the internet[991]. In 2016, after years of talks and pressure from other countries, the U.S. government gave ICANN to a global group of stakeholders. This was the switch to IANA. It changed the way the internet is governed because it moved important internet tasks from a centralised federal government to a less centralised international body. People thought it was a good start towards a more fair and inclusive internet government, but it didn't fix ICANN's problems with power and responsibility.

### Controversies over New gTLDs and Trademark Issues

The introduction of new generic top-level domains (gTLDs) by ICANN has caused a lot of debate and has had an impact on businesses, brand protection, and hacking. ICANN added more domain extensions besides ".com," ".net," and ".org" in 2012 with a big gTLD expansion.

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[990] Zalnieriute M. Human Rights Rhetoric in Global Internet Governance: New ICANN Bylaw on Human Rights. Harvard Business Law Review (2020) Vol. 2020;10:20-6.

[991] Thapa BE, Opiela N, Tiemann J. Internet Governance as an Arena of International Politics. Key Issues. 2019(Spec. Iss.):1-8.

People, businesses, and groups could register more specific domains like ".tech," ".store," and ".bank" through this program. The goal was to make the domain name system more creative, diverse, and competitive. Because of the growth, there has been cybersquatting and trademark infringement. This is when people or groups buy domain names that sound like well-known brands to trick the owners of those brands into paying them. Some cyber experts are worried that new gTLDs could make it easier for fraud and phishing to happen online. At the same time, businesses are worried about the cost and difficulty of protecting their trademarks in a much bigger domain name field. The Uniform Domain-Name Dispute-Resolution Policy (UDRP) and the Trademark Clearinghouse are two things that ICANN has done to deal with these problems[992]. However, the arguments over the expansion of generic top-level domains (gTLDs) show how hard it is for the organisation to balance stakeholder rights and new ideas. As the internet grows and more people rely on it, ICANN's strategy of working with many stakeholders and taking part in complicated international issues put it at the centre of discussions about how to manage the internet.

## 6. Challenges Faced by ICANN

### Jurisdiction and Legal Issues

ICANN, the worldwide internet governance institution, struggles with jurisdiction and law. ICANN, situated in California, operates under U.S. law. This causes conflict between its global mandate and its accountability to one country's courts. ICANN is a private, non-profit organisation subject to U.S. law, raising doubts about its impartiality and global authority. Many outside groups ask if the US government and corporations have an unfair advantage in internet legislation because ICANN is in the US[993]. Even if the 2016 IANA change reduced U.S. government influence over ICANN, legal and

jurisdictional links remain problematic. Some governments and regions have urged that ICANN shift to a jurisdiction with less country domination or adopt a more global legislative framework. It's difficult to achieve this without disrupting governance and infrastructure.

### Cybersecurity and DNS Abuse

Cybersecurity and DNS fraud are also getting worse, which is another big problem for ICANN. Because it is so important to how the internet works, cybercriminals target the Domain Name System (DNS). Abuse of the DNS includes phishing, domain name hijacking, DDoS attacks, and ransomware operations. Even though ICANN is in charge of DNS security, stability, and resiliency, cyberspace is always changing, which makes it hard to stop these attacks. One big problem is the responsibility of domain registrars and registries to find and stop DNS abuse[994]. Some people think that ICANN isn't doing enough to protect names from damage or punish users who break security rules. IoT devices, 5G networks, and other improvements in technology have made cyberattacks more likely to be sophisticated and widespread. Because of this, ICANN must keep updating its security standards. There is still a fine line between internet security and ICANN's goal of making the internet open and easy to use.

### Accountability and Transparency Concerns

Internet users worldwide have long monitored ICANN's transparency and accountability. ICANN must be transparent and accountable to retain stakeholder trust as it controls internet technical activity. The multi-stakeholder method includes all relevant stakeholders, although others believe its complexity and difficulties for normal people to connect with it limit transparency and inclusion. In cases where the public disagrees with the ICANN Board of Directors' decision, there are doubts[995]. A major difficulty is making

[992] Carr M. Global internet governance. InInternational organization and global governance 2023 Apr 28 (pp. 776-786). Routledge.

[993] Negro G. China and Global Internet Governance. The Emergence of China's Smart State. 2023 Oct 16:153.

[994] Becker M. When public principals give up control over private agents: The new independence of ICANN in internet governance. Regulation & Governance. 2019 c;13(4):561-76.

[995] Cavalli O, Scholte JA. The role of states in internet governance at ICANN. InPower and Authority in Internet Governance 2021 Mar 14 (pp. 37-55). Routledge.

ICANN's internal procedures transparent, egalitarian, and open to stakeholder and public assessment. ICANN has several review systems, including the Accountability and Transparency Review Team (ATRT), which regularly evaluates the organization's progress in these areas. The internet and its governance are dynamic systems, therefore ICANN must regularly improve its internal procedures to meet new problems and maintain stakeholders' trust.

## 7. ICANN's Role in the Future of Internet Governance

### Evolving Role in Global Governance

ICANN responds to new technology to administer the worldwide internet. 5G, the IoT, and blockchain will transform the internet and possibly expand ICANN's role. ICANN must manage IP address allocation for IoT devices as the number of internet-connected gadgets rises. As 5G networks become more powerful and speedy, ICANN will be under pressure to ensure the DNS infrastructure can handle greater traffic and demand. Additionally, blockchain technology can decentralise the domain name system and change domain name registration and management. ICANN must adapt its governance to these changes to maintain internet security and stability[996].

### Internet Fragmentation and Sovereignty Issues

Concerns are growing that the internet may fracture as more countries establish their own versions, preventing information movement across borders. Iran, Russia, and China's aspirations for a state-controlled internet have sparked digital sovereignty debates. This is a major challenge since ICANN's premise is a multi-stakeholder strategy for a global internet. Growing state efforts to regulate internet resources within their boundaries threaten the open, borderless internet, which ICANN tries to

safeguard[997]. This could test ICANN's global governance stance. ICANN will have to balance national interests with the need for a global internet. ICANN must balance geopolitical tensions with global DNS and IP address allocation.

### The Role of ICANN in Digital Inclusion and Universal Access

Also, ICANN will be very important for digital equality and everyone having access to the internet. Everyone, no matter where they live or how much money they have, needs to be able to connect to the internet because it is so important for communication, schooling, and economic growth. As a way to promote internet access for everyone, especially in places that aren't well served and in developing countries, ICANN is taking action. As a way to make sure that all devices and apps that can connect to the internet can handle domain names and email addresses, ICANN created Universal Acceptance (UA)[998]. This makes sure that all devices and apps can handle non-Latin and new gTLDs. ICANN works to make the internet a more welcoming place for everyone by removing technological barriers to entry. If we want everyone to be able to use the internet, ICANN needs to keep working to close the digital divide.

## 8. Conclusion

Lastly, ICANN has changed how the internet is run by making sure that the Domain Name System (DNS) and other internet systems work well. ICANN is in charge of the root zone, domain names, and IP address assignments that keep the Internet safe and accessible. Its multi-stakeholder plan brings together businesses, civil society, governments, and technical groups to make policymaking more fair. As the number of top-level domains (TLDs), cyber threats, and problems with openness have grown, ICANN has had to change to meet the needs of a digital

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[996] Datysgeld M. Understanding the Role of states in global internet governance: ICANN and the question of legitimacy. InGigaNet: Global Internet Governance Academic Network, Annual Symposium 2017 Aug 20.

[997] Haugen HM. The crucial and contested global public good: principles and goals in global internet governance. Internet Policy Review (2020). 2020;9(1):1-22.

[998] Thapa BE, Opiela N, Tiemann J. Internet Governance as an Arena of International Politics. Key Issues. 2019(Spec. Iss.):1-8.

world that is becoming more complicated. There will be problems and chances for ICANN. With 5G, IoT, and bitcoin coming online, ICANN will have to change the way it runs its business in order to protect the internet's core infrastructure. Parts of the internet could exist, and ICANN might find it hard to balance world management with national freedom. But these problems help ICANN reach its goal of providing everyone with access to the internet and promoting digital inclusion. Even though internet governance is always changing, ICANN will stay important for a stable, safe, and open global internet.