Sovereignty and Property Rights: Conceptualizing the Relationship between ICANN, ccTLDs and National Governments

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1. Introduction

Nations and territories are not recognized in the Internet protocols. Internet Protocol addresses (IP addresses), unlike telephone numbers, are not structured by territory or jurisdiction but are global. Internet routing protocols recognize network operators, not nations. The Domain Name System provides a global standard for assigning unique character strings that function as Internet addresses anywhere in the world.

But some top-level domain names *refer* to countries – in other words, there is a semantic linkage between political territory and virtual resources. Nearly 200 top level domains are based on an international standard (ISO-3166) that assigns two-letter alphabetic codes to internationally recognized geographical territories (e.g., .BR for Brazil or .IN for India). These domains have come to be known as country code top-level domains (ccTLDs).

The existence of country-code domains sets up an interesting interaction between the Internet's global, de-territorialized virtual space, traditional concepts of political territory, and various standards for asserting rights to control territory. By "standards for asserting rights" we refer specifically to property rights claims and sovereignty claims. Can the right to control a ccTLD be considered a property right, owned by a private party and tradeable in a market? Or is control of them an extension of the state's sovereign rights? Or does a third model – a public trustee administered by ICANN – apply?

This paper explores the consequences, for global governance of the Internet, of conceptualizing ccTLDs as property rights, sovereignty rights, or trusts administered by ICANN. It asks: Which of these models provides for the most efficient and equitable form of governance? By engaging with these questions, the paper attempts to provide useful insights into the nature of sovereignty in cyberspace, and practical insights into the best way to handle conflicting claims over ccTLD delegations.

This is not a purely theoretical issue. In recent litigation involving the top level domain for Iran (.IR), plaintiffs sought to garnish a country code domain in order to compensate victims of terrorist acts allegedly backed by the Iranian state. The plaintiffs characterized the ccTLD as a

form of property that could be confiscated under civil law. Similar cases seeking to garnish ccTLDs have affected Syria (.SY), North Korea (.KP) and the Congo (.CG).[1]

A view of ccTLDs as property subject to garnishment has been reinforced by the fact that the global authority for domain names is not an intergovernmental treaty organization organized around principles of sovereignty, but a private nonprofit corporation organized under California law: the Internet Corporation for Assigned Names and Numbers (ICANN). As the global coordinator of the domain name system's root zone, ICANN must recognize or accept the delegation of a top level domain name to a specific party. Unless ICANN implements this recognition by entering the appropriate data into the DNS root zone, the delegee does not have control over the management of and registration within the TLD. As a nonprofit under U.S. federal and California jurisdiction, ICANN's role seemingly subjects ccTLD delegees to civil law claims of the sort seen in the Iran and Congo cases.

On the other hand, governments have been keen to assert sovereignty rights over ccTLDs. Seizing on the semantic reference between ccTLDs and their territory, states began to intervene in the ICANN environment after 1999 to claim exclusive authority over delegation and public policy for ccTLDs.[2] Sovereignty claims are especially important to countries that have geopolitical conflicts with the US (such as Iran, Russia and China); they are thought to immunize them from external claims of authority or control.[3] Complicating the picture both politically and legally, ICANN has held its status as the editor of the authoritative root zone by virtue of a contract with a single sovereign: the government of the United States of America.[4] This sets up an internal contradiction within the putatively sovereignty-free governance regime of ICANN.

While property is a private right and sovereignty is a public right, international relations theorists have argued that they have some commonalities.[5] Both, for example, involve claims of exclusive control. Both are also invoked in allocating rights over other international resources, such as the sea and outer space.

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[1] C. Itoh v. Congo, SY and KP cases

[2] See the discussion in section 3b below.

[3] The World Summit on Information Society (WSIS) Declaration, issued in 2003 states that "policy authority for Internet-related public policy issues is the sovereign right of States. They have rights and responsibilities for international Internet-related public policy issues.", A later document, which replaced the former principles, also mentions and acknowledges the sovereign rights of the states over their ccTLDs, Principles and Guidelines For The Delegation And Administration Of Country Code Top Level Domains, Presented By The Governmental Advisory Committee, 2005. Iran contribution to NetMundial NCC report indicates their desire to assert sovereignty rights. European commission also supports the efforts for asserting state property rights over ccTLDs., http://www.internetgovernance.org/2011/09/21/european-commission-paper-5-cctlds-and-yet-another-power-grab/

[4] IANA functions contract. Note that USA is currently trying to "transition" its "stewardship" role and fully privatize it.

[5] See generally Ruggie, J. (1983a) Continuity and Transformation in the World Polity: Toward a Neorealist Synthesis. *World Politics* 35:261-285.

In the theory and practice of Internet governance, there is a tendency to resist recognizing ccTLD delegations as a property right. These arguments view ccTLDs as trustee relationships and argue that recognizing private property rights will undermine the rights of the domain registrants within the ccTLDs.[6] Further, the courts have been divided on the question of top level domains' status as property. Some court cases have found that second-level domains are not property, but services. Other decisions have upheld their status as a property right.[7]

What, then, is the best way to shape the relationship between existing or prospective ccTLD delegees, ICANN and the government of the territory referenced by a ccTLD string? What role should sovereignty or property rights claims play in those delegations? The scholarly literature has left these questions unsettled, even unexamined. It has studied mainly the relationship between states and ICANN, or between the state and the ccTLD delegee.[8] Studies that consider the triangular relationship among ICANN, ccTLD delegees and states are rare, and those that exist have not applied property rights and sovereignty theories. Insofar as it deals with sovereignty, most literature merely *assumes* that states have sovereignty rights over their ccTLDs,[9] or does not directly deal with the applicability of the theories of sovereignty and property rights to this relationship.

This paper uses a law and economics framework to analyze the relationship between ccTLD delegation, theories of sovereignty and theories of property rights. After a providing some basic definitions and background in Section 2, it traces the historical evolution of policy regarding ccTLD delegation and re-delegation rights in the ICANN process in Section 3. Section 4 then reviews basic definitions and concepts of sovereignty, and critically examines the basis for governments' sovereignty claims to ccTLDs in that light. Section 5 applies economic theories of property rights to domain names and analyzes the legal precedents and legal arguments made in cases contesting domain names' status as a property right. The last Section assesses the impact of different approaches to sovereignty and property rights on global Internet governance. The paper concludes that while governments can claim sovereign control over the operation of any business in their territory, their claims to sovereignty over ccTLD delegations *per se* at the global level are unjustified and would result in huge, arbitrary and unjustified expansions of state authority over the names of regions and territories. The paper also proves that domain names have many of the features of a property right, and argues that treating them more as property rights would have salutary effects on global trade in information services.

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[6] See the arguments of ICANN in *Seth Charles Ben Haim, et al v. The Islamic Republic of Iran, et al.*, https://www.icann.org/en/system/files/files/ben-haim-motion-to-quash-writs-1-29jul14-en.pdf p. 20.

[7] See section 5 for discussion and analysis of these cases.

[8] See Park, Y.J. *The Political Economy of Country Code Top Level Domains*, Dissertation, Syracuse University School of Information Studies, 2008 and Geist, M. Governments and ccTLDs: A Global Survey (Version Two) Survey conducted in cooperation with the International Telecommunications Union, 2004 (23 pp.)

[9] Kim G. von Arx and Gregory R. Hagen, Sovereign Domains: A Declaration of Independence of ccTLDs from Foreign Control, *The Richmond Journal of Law and Technology*, 2002.

2. Technical and Institutional Background

ICANN is currently the manager of the Internet Assigned Numbers Authority (IANA). As such, it is in charge of coordinating the root of the Internet Domain Name System's (DNS). The DNS refers to both a name space from which unique names can be assigned to users, and a protocol for matching assigned names to specific Internet protocol addresses in response to queries from Internet users' computers.[10] The DNS is a hierarchical name space, and ICANN/IANA only coordinates the top level of the hierarchy. IANA's job, in less technical terms, is to ensure that each assigned top level domain name in the root (for example, the ccTLD .US) is globally unique and has a distinct manager with known and published contact details. For each top level name assignment, the IANA must enter technical data into the root zone file that ensures that queries from global internet users seeking to communicate with the .US domain are directed only to the name servers operated by the recognized ccTLD manager. IANA's role as central coordinator of top level domain name assignments is critical to the functioning of the global internet. A single, coordinated root zone is one of the most secure ways of ensuring that all domain names are globally unique and can be used as an Internet address by anyone in the world, regardless of jurisdiction, domain registrar, or Internet service provider.

The assignment of a top level domain to a specific operator is called *delegation*; the party that receives the delegation is called a *delegee*. Re-delegation is the process of changing the delegee; i.e., moving the delegation from one party to another. For generic top level domains, the delegation process involves a contractual relationship between two parties: ICANN and the delegee. For ccTLDs, however, the delegation process is less institutionalized and less hierarchical. It involves not legally binding contracts, but mostly consensual relationships between ICANN and the delegee.

a. Origins of ccTLDs

The DNS was first implemented around 1982. In the initial phases of its implementation, the Internet's designers defined a small set of 'generic' categories, such as .COM, .EDU, .ORG and .GOV, to serve as top level domains. After someone in Great Britain made a request for the .UK top level domain, the Internet's developers made a fateful decision to incorporate country names into the DNS's top level naming conventions.[11] In order to relieve themselves of some of the risks and burdens of deciding who or what qualified as a country, they found an international standard (ISO-3166-1) that assigned two-letter alphabetic codes to recognized geographical territories. From 1984 on, this standard was used as the basis for creating top level domains that corresponded to countries.

[10] For a more extensive explanation of DNS targeted at non-technical, non-expert audience, see Daniel Karrenberg, The Internet Domain Name System Explained for Non-Experts, Internet Society Briefing Paper #16. http://www.internetsociety.org/sites/default/files/The%20Internet%20Domain%20Name%20System%20Explained%20for%20Non-Experts%20(ENGLISH).pdf

[11] Mueller (2002) p.

The ISO-3166 list was intended to provide the early Internet pioneers with a rule-based, non-discretionary and thus non-political way of responding to the demand for country-name top-level domains. For the most part, this worked. But the match between political territory, the domains Postel assigned and the ISO-3166 list was never perfect, and this eventually allowed politics to seep in. For example, the ISO-3166-1 code for Great Britain was actually GB, not UK, yet .UK became established as the ccTLD simply because that is what the early requesters preferred. Moreover, there were a number of ISO-3166 lists.[12] A decade later, when the demand for new top-level domains became even more intense because of their money-making potential, certain politically influential entities were able to demand, and get, 2-letter top-level domains that were not on the primary ISO-3166 list but only on the reserved list.[13] Moreover, the ISO-3166 lists were not exactly a list of sovereign political territories. They had been developed for the purposes of coding postal communications, and thus were focused on distinct geographical areas associated with economies.[14] Thus, island territories that were politically related to larger sovereign states but were not geographically conjoined to them, such as Wallis and Futuna (.WF), Isle of Man (.IM), Northern Mariana Islands (.MP), or Guernsey (.GG), had their own country code. These island territories provided an avenue for alert, entrepreneurial individuals to get ccTLD delegations and run them as a business, sometimes with the active support of the people or government in the referenced territory, but sometimes with little or no relationship to the local territory. The country code for the Indian Ocean territory (.IO) is an example of the latter case. The registry, which charges $35/year for a second-level name, makes about $9 million/year for a UK businessman who happened to obtain the delegation from Jon Postel in 1997. Taiwan and Hong Kong, distinct politico-economic entities whose sovereignty was either disputed or transitional, also had their own country codes, .TW and .HK

b. ccTLDs as valuable assets

Collectively, there are now over 134 million second-level domains registered under ccTLDs.[15] Registrations under ccTLDs constitute about one third of the multi-billion dollar annual market for domain name registrations. For each registration, the ccTLD registry operator usually collects a yearly fee. Thus, the operation of a ccTLD registry can be a big business, and possession of a ccTLD delegation a valuable asset. The annual revenue of Nominet, the operator of the .UK

[12] The most comprehensive is the ISO 3166-1. This includes a primary list of the officially assigned alpha-2 country codes. But there are also sublists for user assigned 2-letter codes; exceptionally reserved 2-letter codes; transitionally reserved 2-letter codes: deleted but reserved transitionally 2-letter codes; indeterminately reserved 2-letter: used in coding systems; not used: not due to intellectual property; unassigned.

[13] The most notable example is the European Union, which used its pull with ICANN and the US government to be assigned EU as a ccTLD.

[14] Source for this claim – history of ISO-3166 pre-Internet. Look up.

[15] Total country-code TLD (ccTLD) registrations were 134.0 million domain names, a 1.5 percent increase quarter over quarter, and an 8.7 percent increase year over year. Verisign, The Domain Name Industry Brief, Volume 12, Issue 1, March 2015

ccTLD, was 28 million Pounds (about $42 million) in 2014.[16] The individual domains under .UK, such as hsbc.co.uk, are worth billions more in value as identifiers of web sites or services associated with Internet-based commerce and expression.

c. ccTLDs and gTLDs

Though many ccTLD operators are keen to differentiate themselves from their (usually) more commercial 'generic' top level domain (gTLD) counterparts such as .COM, .NET or .INFO, in fact there is no technical or economic difference between the two. The technical function provided by a ccTLD is exactly the same as the technical function provided by .COM or any other TLD. Moreover, consumers of domains often treat ccTLD registrations and generic TLD registrations as economic substitutes.[17] When for example, the Chinese government imposed harsher restrictions on registrations within its ccTLD .CN, the number of .COM registrations in China reversed its decline and began to increase. Whether the ccTLD is run as a private sector nonprofit (.DE, .UK); as a government enterprise (.CN, KR); or outsourced and run in an overtly commercial manner (.TV, .ME), ccTLDs and gTLDs are in the same business. The only differences are the legal and political distinctions in the way they are delegated and regulated; and these differences, as we shall see, are rooted only in the semantics of the name and not in anything else. (E.g., gTLD registries are heavily regulated by ICANN contracts and subject to its policy making process, and are contractually bound to pay fees to ICANN. CcTLDs, on the other hand, do not (for the most part) have contracts with ICANN and make only voluntary contributions to the support of the IANA functions.

3. ICANN and the delegation of ccTLDs

This section traces the historical evolution of ccTLD delegation policy. The narrative is intended to set the stage for the more theoretical discussions of sovereignty and property rights in the following sections, so that the reader can better appreciate the complex institutional, economic and technical environment in which the concepts will be applied. The delegation of ccTLDs went through three phases. In the early phase, decisions were made by the developers of Internet standards and protocols, notably Jon Postel, the computer scientist at the University of Southern California's Information Sciences Institute who ran the IANA. Governments were not involved and Postel's informational RFC 1591 served as the primary policy document guiding delegations. In the second phase (1998-2014), ICANN was created and tried to step into the role of Postel, but its authority over ccTLD delegations and regulation was challenged by governments and existing ccTLD delegees. By 2015, however, the three parties (ICANN, governments and ccTLD operators) seem to have reached an equilibrium around a "framework of interpretation", ushering in the third phase. This has occurred as the U.S. moved to end its unilateral authority over the DNS root.

0[16] Nominet Annual Reports and Accounts in 2014
http://www.nominet.org.uk/sites/default/files/nominet_report_and_accounts_2014.pdf

[17] Cite data showing how higher prices or restrictive regulations in a country domain's local market leads to a higher percentage of gTLD registrations in that market

a. Phase 1: RFC 1591

RFC 1591 is the first document that attempts to articulate a policy to govern TLD delegations. It was written in 1994 in response to the need for more formal, written policy guidance due to the widespread adoption of the Internet protocols and growing the number of requests for delegations based on the ISO-3166 standard.

RFC 1591 articulates neither a private property model nor a sovereignty model of ccTLD delegation, but rather a *global public trustee* model. In Postel's own words:

> These designated authorities [ccTLD delegees] are trustees for the delegated domain, and have a duty to serve the community. The designated manager is the trustee of the top-level domain for both the nation, in the case of a country code, and the global Internet community.

A notable feature of RFC 1591 is that the ccTLD delegee is considered a trustee not just for the nation, but for "the global internet community" as well. In other words, the relevant 'public' or 'community' in this model is not exclusively a national one. This deviates significantly from a sovereignty-based delegation model.

In any public trustee model, the delegee does not have a simple property right, but a conditional license to hold and operate a resource based on meeting some kind of standard of service to the parties for whom the resource is held in trust. Implicit in such a model is the existence of a higher-level authority, and/or some kind of procedure, to determine whether a particular delegee is meeting the needs of the relevant community. In RFC 1591 that authority was, tacitly, the IANA (i.e., Postel himself).

U.S. broadcast licenses provide another example of a public trustee licensing regime. Broadcast licenses were awarded to U.S. private companies based on a public trustee model from the late 1920s on.[18] The channels were not owned by the private broadcasters but given to them by the national government for a limited, renewable period. Broadcast firms were expected to meet certain public interest requirements in order to retain their license(s). The role of selecting the appropriate trustee rested with the Federal Communications Commission – a national level regulator – even though broadcasters were meant to serve as trustees for *local* publics corresponding to the service region of the broadcaster.

Unlike U.S. broadcast regulation, RFC 1591 did not require periodic reviews and renewals of ccTLD delegees by IANA. It did, however, say that the IANA could revoke a delegation if there were "persistent problems with the proper operation of a domain" or if the "designated manager

[18] Thomas G. Krattenmaker and Lucas A. Powe, Jr. 1994. *Regulating Broadcast Programming*. Washington, DC: American Enterprise Institute.

has substantially mis-behaved." Of requests to transfer the delegation from one organization to another, RFC 1591 basically assumes a non-conflictual process and says that the IANA:

> "…must receive communications from both the old organization and the new organization that assure the IANA that the transfer is mutually agreed, and that the new organization understands its responsibilities."

This implied that a re-delegation process would not involve an active determination by the IANA as to which applicant would be a better trustee; IANA would merely ascertain that the local parties involved all agreed to the transfer and that the new organization understood the requirements of operating a TLD registry. However, RFC 1591 also stated that "It is also very helpful for the IANA to receive communications from other parties that may be concerned or affected by the transfer." This implied (weakly) that IANA might refuse to change the delegation if there was significant opposition from the local or global Internet community.

On the whole, Postel's global public trustee model for top level domain delegation implied that the IANA, which later became part of ICANN, was the ultimate delegation authority. In this model, the state (which is not mentioned in RFC 1591 at all in connection with delegation) would merely be one of the "significantly interested parties" that "should agree that the designated manager is the appropriate party."[19]

b. Phase 2: The Contentious Period

As part of a process initiated by the U.S. government, ICANN was formed in 1998 to institutionalize the IANA and the domain name policy making process. The newly-formed ICANN viewed itself as carrying on Postel's legacy as a global governing authority based on private contracts, contracts that were supposed to encompass gTLDs and ccTLDs alike. ICANN thought it would be able to leverage its control of the DNS root to subject all TLD registries to contractual arrangements with itself.

But Postel's halo failed to rub off on ICANN. Incumbent ccTLD delegees, especially those that were independent of state authority, viewed their delegations as *de facto* property rights and resisted any arrangement that would give ICANN (or the local government) the ability to expropriate or regulate them. Conversely, governments – who were now beginning to pay attention – viewed themselves and not ICANN as the appropriate governance authority for ccTLDs. In effect, each of the three interdependent entities were seeking a form of sovereignty or exclusive authority. ICANN was asserting exclusive control of the DNS root zone and attempting to leverage that control to impose contracts upon TLD registries; some incumbent ccTLD operators considered their delegation to be a *de facto* property right that neither ICANN nor the local government could take away without their consent; governments wanted exclusive authority over delegation and public policy.

[19] RFC 1591, p. 4

Neither of the three parties, however, could unilaterally impose a solution on the others. Although they did have the power to pass legislation or executive orders to control ccTLD operataors in their territory, states needed ICANN to recognize and implement their preferred ccTLD delegations in the DNS root. ICANN could not credibly threaten to eliminate established ccTLD delegees from the root zone if they failed to comply with its wishes, because that would disable service for thousands if not millions of people and undermine if not destroy the fledgling institution's legitimacy and support. CcTLD delegees needed ICANN to maintain and update their data entry in the DNS root zone, and could ill afford to ignore or alienate their local political authority. As a result, governance arrangements had to rely on non-binding negotiated agreements, and ccTLD delegation policy went into a contentious period that was not fully resolved for 15 years.

One of the key documents in this period was a proposed modification of RFC 1591 called ICP-1 (May 1999).[20] Written by ICANN staff and approved by its initial board, ICP-1 mirrored RFC 1591's structure and much of its content, but modified it in ways ICANN thought reflected the new circumstances. Due to growing political pressure from governments, for example, ICP-1 added to the discussion of "significantly interested parties" the statement:

> "The desires of the government of a country with regard to delegation of a ccTLD are taken very seriously. The IANA will make them a major consideration in any TLD delegation/transfer discussions."

ICP-1 also contained a much more direct statement that ICANN had the authority to revoke delegations:

> (f) Revocation of TLD Delegation. In cases where there is misconduct, or violation of the policies set forth in this document and RFC 1591, or persistent, recurring problems with the proper operation of a domain, the IANA reserves the right to revoke and to redelegate a Top Level Domain to another manager.

Although the same claim was made (less forcefully) in RFC 1591, governments and ccTLD managers did not trust ICANN with this authority and rejected ICP-1.

The voice of governments was articulated in ICANN's new Governmental Advisory Committee (GAC). Although the ICANN regime for Internet governance was meant to be 'private sector-led' and to keep governments at arms-length, the GAC was created in order to provide states with a role that would make the regime more acceptable to them. From the beginning, GAC took a keen interest in ccTLDs. At the Berlin ICANN meeting of May 1999, the GAC started

[20] ICP-1: Internet Domain Name System Structure and Delegation (ccTLD Administration and Delegation) https://www.icann.org/resources/pages/delegation-2012-02-25-en

mobilizing the governments who were participating in ICANN around a set of principles regarding the governance of ccTLDs.

In February 2000 the GAC issued a document called *Principles for the Delegation and Administration of ccTLDs* (hereafter, the GAC Principles).[21] The GAC endorsed the concept that a ccTLD delegee was a public trustee but made it the role of the territorial government "to ensure that the ccTLD is being administered in the public interest..." The principles severely curtailed the private property aspects of the delegation by asserting that the delegation "cannot be sub-contracted, sub-licensed or otherwise traded without the agreement of the relevant government or public authority and ICANN. It went further and asserted that governments should have the ultimate authority in designating the manager of the ccTLD.[22] In effect, the GAC was embracing the public trustee model of RFC 1591, but displacing IANA by proposing that national governments, not ICANN/IANA, determine who the appropriate trustee would be.

Incumbent ccTLD operators were no more enthusiastic about the GAC principles than they were about ICP-1 and contractual regulation by ICANN.[23] Nevertheless, ICANN started citing or applying the Principles in the many new redelegation requests it now had to handle.[24] The .AU redelegation was particularly interesting in this regard. First, it violated the precepts of RFC 1591 by taking the delegation away from the incumbent delegee, Dr. Robert Elz, a University computer scientist, without his approval or consent even though no technical problems or "misbehavior" was involved. But elbowing aside the incumbent was necessary for ICANN and the Australian government to conclude a bargain amongst themselves. Elz's replacement, the new .AU Domain Administration Corporation (auDA) was formally endorsed by the Australian government in December 2000, and was recognized by ICANN in October 2001. As part of the redelegation, AuDA signed one of the controversial contracts with ICANN that almost no other ccTLDs agreed to sign;[25] it also signed instruments committing itself to adhere to certain GAC Principles.[26] This bargain between ICANN, GAC and a national government presaged a division of authority that many other governments would later find acceptable: the national government would dictate to whom the domain would be delegated and the delegee would operate under government oversight, while ICANN would have authority over the global technical coordination interest.[27]

[21] GAC Principles 2000, Section 4. (ROLE OF DELEGEE) https://archive.icann.org/en/committees/gac/gac-cctldprinciples-23feb00.htm
[22] "With respect to future delegations or reassignment of delegations, ICANN should delegate the administration of a ccTLD only to an organisation, enterprise or individual that has been designated by the relevant government or public authority." Clause 7.4, GAC Principles.
[23] Discussion with Martin Boyle, Nominet UK. (25 July 2015, Buenos Aires, Argentina)
[24] .AU, .IQ
[25] Sponsorship Agreement https://www.icann.org/resources/unthemed-pages/sponsorship-agmt-2001-10-25-en
[26] http://www.iana.org/reports/2001/au-redelegation/disspain-to-alston-18jun01.html
[27] http://www.iana.org/reports/2001/au-report-31aug01.html

In another incident typical of this period, ICANN in 2004 re-delegated the .LY domain (Libya) to the General Post and Telecommunication Company (GPTC), a governmental agency that operated and regulated all telecommunications services in Libya. The original delegation of the Libyan ccTLD was shrouded in confusion and dispute among two businessmen. Since 1997 the domain had been run by an expatriate Libyan from the UK using a UK-based nameserver service. A redelegation request in 2002 ushered in a long period of disputation over the delegation, which ICANN seemed unable or unwilling to resolve. Unable to determine which claimant was the authority for the domain, the company providing name service to .LY withdrew, and the entire domain became inoperative for an extended period in April 2004. Under RFC 1591 or ICP-1, IANA would have had the authority to revoke and redelegate it. But the re-delegation finally occurred at the behest of the Libyan government, not IANA. In requesting the re-delegation, the GPTC invoked the GAC Principles. It does not appear that any other stakeholder group other than the government was involved with supporting or approving the re-delegation.[28] The IANA report on the redelegation repeatedly refers to the GAC Principles as "best practice."[29]

In 2005, the GAC issued a revised set of principles which implicitly referred to the sovereign rights of the states in having a role with delegation and administration of the ccTLDs,[30] but included other stakeholders and the Internet community in decision-making about delegation and re-delegation. Clause 7.4 was removed and replaced by clause 7.1 which reads:

> "7.1. Delegation and re-delegation is a national issue and should be resolved nationally and in accordance with national laws, *taking into account the views of all local stakeholders and the rights of the existing ccTLD Registry*.[31] Once a final formal decision has been reached, ICANN should act promptly to initiate the process of delegation or re-delegation in line with authoritative instructions showing the basis for the decision."

Despite the inclusion of other stakeholders in decision-making for delegation and re-delegations of ccTLDs, and despite the fact that GAC principles mentioned the public trustee model,[32] in practice States had the main role in delegation and redelegations. In some instances ICANN's role turned into a merely operational function.[33] The ccTLD of Burkina Faso (.BF), for example, was initially delegated to the University of Ouagadouhou in 1994, prior to establishment of

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[28] IANA Report Redelegation of .LY, October 2004, https://www.iana.org/reports/2005/ly-report-05aug2005.pdf
[29] *Ibid*.
[30] It referred to the WSIS Agenda. GAC Principles, 2005, Clause 1.6
[31] Emphasis added by the author
[32] Clause 5.1 (Principles) says: "The ccTLD Registry is a trustee for the delegated ccTLD, and has a duty to serve the local Internet community as well as the global Internet community. Some governments or public authorities may require their agreement before any sub-contracting or sub-licensing of the delegation. Where this agreement is given, the government or public authority should notify ICANN."
[33] IANA report on the redelegation of the BF (Burkina Faso) domain. http://www.iana.org/reports/2001/au-report-31aug01.html

ICANN. In 2008, however, the Burkina Faso Law 61/AN explicitly appointed the Autorite de Regulation des Communications Electronique as the authority for the domain. While IANA in its method of evaluation stated that it had sought documents for describing the views of Internet local community, it is unlikely that it would have given a negative evaluation to the board and even more unlikely that ICANN board of directors would have ignored a national law in favor of the local Internet community.

Although it has a checklist for the requirements of delegation or redelegation, ICANN/IANA rarely gets involved with or halts a re-delegation even if the resolution made between the government and the private entity is not based on equity and fairness. Some reports, however, do indicate that IANA investigates the level of community support for delegation or re-delegation. For example in case of .AX, (the ccTLD for Aland, an island under the control of Finland) the report states that IANA also sought feedback from representative groups in the community.[34] Whether an IANA investigation could result in a *refusal* to delegate – as opposed to just confirming a requested delegation – is another matter, however.

c. Phase 3: The Framework of Interpretation

It is evident from the above that policy is not clearly formulated and is still ambiguous on key matters. Country code registries still do not formally accept the GAC Principles or ICP-1, and practice has evolved on a case by case basis and can be inconsistent. The third phase started with the establishment of the working group on Framework of Interpretation (FOIWG). FOIWG's mission was to bring the involved parties together around a common interpretation of the rules and procedures for delegating and re-delegating ccTLDs. The Framework of Interpretation is not intended to not replace the 2005 GAC Principles.[35] Instead, it describes and formally validates the approach worked out during the second phase, and recognizes IANA's role as merely an operational role in delegation and redelegation (i.e., implementing the delegation changes in the DNS root zone).

While the council of ccTLD managers agreed to recommend the Framework of Interpretation proposed by the working group to the ICANN board of directors for ratification,[36] the GAC expressed doubts. GAC's concerns were rooted in governments' attempts to limit the power of ICANN/IANA in delegation and re-delegation so as to uphold national sovereignty. In its comments on the interim report, GAC stated that "[the report] seems to suggest that IANA would somehow duplicate the national process, and come to a decision on the validity and weight of the views of the relevant government."[37]

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[34] https://www.iana.org/reports/2006/ax-report-09jun2006.pdf
[35] Framework of Interpretation (FOI) 2014,
[36] https://ccnso.icann.org/workinggroups/foi-final-resolutions-11feb15-en.pdf
[37] GAC, Comments on FOIWG Interim Report on "Significantly Interested Parties", https://ccnso.icann.org/workinggroups/gac-comments-foi-interim-report-sip-26sep12-en.pdf

This was despite the fact that FOI document had given only a strong technical role to IANA. The FOIWG enumerated the situations when IANA can get involved with redelegation. RFC1591 allows the IANA operator to revoke a ccTLD delegation in cases where the manager has substantially misbehaved. FOI document interprets 'misbehaviour' only in terms of technical operation. It divides the misbehavior into: the behavior that poses threat to the stability and security of DNS and the manager failure to perform objective requirements.[38] In the same document, it states that the IANA operator should not step in regarding issues of honesty, justice equity and fairness. It has not gone so far as to state that the IANA operator should refrain from investigating whether the local Internet community consents to redelegation or delegation.

In sum, the triangular relationship of governments, ccTLD managers and ICANN has evolved as follows: in the beginning, ccTLDs did not have the economic potential that they have today. The governments did not get involved with the delegation of the ccTLDs. After the increase in economic value of the ccTLDs, the governments increasingly became involved with the delegation of ccTLDs, disputed such delegations and sought re-delegation of some of the ccTLDs.

4. Theories of Sovereignty and ccTLDs

It is clear from the foregoing that states assert sovereignty over ccTLD delegation. But on what basis do they make this claim, and what are the broader implications of recognizing such a claim? Weber's canonical definition of the state describes it as 'that human community, which within a certain area or territory....successfully lays claim to a monopoly of legitimate physical violence.' It is the combination of legitimatized violence with territorial exclusivity that makes for a sovereign. Krasner has broken down the classic concept of sovereignty into four distinct elements which, he argues fairly convincingly, do not always coincide:

1. International legal sovereignty, involving mutual recognition by other states with formal juridical independence;
2. Westphalian sovereignty, involving the exclusion of external actors from the authority structures in a territory;
3. Domestic sovereignty, meaning the ability of public authorities to exercise effective control within their territory;
4. Interdependence sovereignty, meaning the ability of public authorities to regulate the flow of information, ideas, goods, people, capital, etc. into and out of their borders.[39]

Once it is examined carefully, states' claim of sovereignty over the assignment of country code domain names become shakier and far less 'natural' than is commonly assumed. This becomes evident once one grounds the discussion in the technical realities of the Internet. In computing, a

[38] The FOI doc, page 9- paragraph4.5
[39] The distinction between #3 and #4 is rather hazy in our opinion.

namespace is defined as a set of symbols used to organize objects of various kinds, so that these objects may be referred to by an exact, unique name in software instructions. The Domain Name System (DNS) creates a hierarchical name space. This name space was created by IETF standards, not by states.[40] At the top of the DNS name space hierarchy is the root zone, which contains a list of all the top level domain names. When Internet users connect to a web site, send email, download a file they are (usually) using the root zone to find out which server is associated with which top level domain name so that they can acquire the technical data needed to communicate with the other domain.

A basic understanding of the technology makes it clear that it would be deeply problematic for the root zone of the DNS to be subject to state sovereignty. The DNS root responds to queries by billions of digital devices every day; those devices and the people using them are distributed across all of the world's sovereign territories. Because sovereignty involves supremacy and exclusivity, no single state could claim national sovereignty over the contents of the DNS root zone file without generating equally justified claims from all other states.[41] Thus, any attempt by states to assert sovereignty over the DNS as a whole would lead to multiple, competing, uncoordinated name spaces, and thus interfere with the universal connectivity of the Internet. Hence, the DNS root is a shared resource; it achieves global connectivity by transcending sovereignty.

Similar limits on state sovereignty have been recognized and accepted from the time of Grotius. In his book *Mare Liberum* (The Free Sea), Grotius rejected British claims to sovereignty over the high seas and argued that the right of the sovereign was limited to its own territory and was not extendable.[42] The contemporary UN Convention on the Law of the Sea (UNCLOS) institutionalized this logic; while recognizing sovereign rights over territorial waters it formally defined the high seas as a sovereignty-free zone.

The argument against sovereignty over the DNS root zone *per se* is largely uncontested; even the most assertive states in Internet governance have not pressed for it. Though they have often disagreed on whether that responsible entity should be ICANN, the ITU or something else, most

[40] RFCs for DNS

[41] The special role of the US government, which in October 1998 established the power to approve all root zone changes, requires some comment here. It is noteworthy that the initial claim of US control over root zone changes was based on purely domestic concerns about the antitrust liability of the Network Solutions registry, the original government contractor running the .COM, .NET and .ORG domains. The U.S. never couched its role as a sovereignty claim but as "stewardship" of the global Internet, The ability of the U.S. to assert its national interest by unilaterally dictating changes in the root zone was heavily constrained by the disruptive effect any such move would have had on the acceptance and participation of the Internet by other countries. Notably, the special U.S. role was never accepted by the rest of the world, and explicitly named and criticized by the World Summit on the Information Society's output, the Tunis Agenda.

[42] Kathryn Milun (ed.), *The Political Uncommons: The Cross-cultural Logic of the Global Commons* p. 87. The theory of absolute sovereignty was put forward by the John Selden in Selden, John. "1615. Analecton Anglo-Britannicon. Frankfurt am Main: Prodeunt ex officina Paltheniana. 1652." Of the Dominion, or Ownership of the Sea: 1-46. Richard, Tuck. "Natural Rights Theories: Their Origin and Development." (1979) (cited in The Political Uncommons).

states have recognized the need for a transnational or intergovernmental entity to administer the DNS root zone. ccTLD delegations, on the other hand, are one level below the root zone in the DNS naming hierarchy. ccTLD names carve the DNS name space up into separately administered domains. Further, the ISO-3166 list was used as the basis for defining the available country codes, and all of the entries on that list are based on what Krasner calls international legal sovereignty - i.e., mutual recognition by other states. Why, then, shouldn't the delegation of ccTLDs be subject to sovereignty claims?

While it is *possible* for states to assert sovereignty over ccTLD delegations, it is important to point out that even here, the case for a sovereignty claim is far more tenuous and contingent than most observers have realized.

To begin with, the ISO-3166 codes merely *refer to* political territories, they are not the actual territories. There is a big gap between *referring* to sovereign territories in a name space and giving sovereigns the right to own or control the entities that make use of those names. This should be immediately evident by considering some examples of other name spaces. Libraries routinely create classification schemes for organizing books, periodicals and other media; it is not unusual for these schemes to use the names of countries. If a globalized library classification scheme uses the name of Portugal, would the Portugese government be justified in asserting a right to control what objects got put into the Portugal category, or a right to designate which librarian was responsible for classifying those materials? Most likely not. Similarly, any owner of a computer could create a file structure on it with a distinct folder for each recognized country. If one did this, would the government of Brazil be justified in claiming sovereign control over the 'Brazil' folder simply because the name of a file folder corresponds to the name of their country? Most people would probably answer this question in the negative, too. It is evident, then, that people can create names spaces that refer to states without ceding control or incurring obligations to the real-world referent of the name.

Are ccTLDs any different from these other examples of name spaces? As domain name registries ccTLDs are, or can become, valuable resources, especially to the people in a specific country. But ccTLDs are not "natural monopolies" like a physical infrastructure. There are literally hundreds of other TLDs accessible to any Internet user in a country. CcTLDs are not necessarily even the only TLD that references a given territory or country. Technically, there could be dozens of new TLDs that refer to the same country or territory.[16] Furthermore, the decision to use the ISO-3166 standard to populate the top-level DNS name space was not made by states, but by the IETF's IANA. A semantic reference to a state or its territory by a nonstate actor does not by itself justify state sovereignty over the administration of the semantically related unit of a name space.

Further blurring the link between sovereign territory and country codes, the original domain name standard used a subset of ASCII, an early standard for digital representation of the Roman alphabet, for its character set. The restricted-ASCII character set did not allow representations on

non-Roman scripts, such as Chinese or Cyrillic. Since the early 2000s, the DNS standard was modified and upgraded to allow so-called Internationalized Domain Names (IDNs). IDNs can use non-ASCII characters to represent domain names. But this creates an ever bigger ambiguity: are IDNs that refer to a country name also 'ccTLDs'? They refer to countries but they are not related in any way to the ISO-3166 list. Here we confront another critique of the semantic basis for the sovereignty claim. If merely using a label for a country justifies a sovereignty claim, then states would suddenly gain enormous power over words and expression. Indeed, states have asserted extensive powers over names of geographic regions and countries in the domain name space, regardless of whether they are on the ISO-3166 list and regardless of whether any existing international law supports their claim.

More central to our argument, a state's lack of control over a ccTLD registry does not necessarily undermine or defeat any one of the key features of sovereignty cited in Krasner's taxonomy. Nothing in the criteria for international legal recognition as a state, for example, requires controlling the delegee of the relevant Internet country code. Neither does it inherently violate the second, third, or fourth kinds of sovereignty (Westphalian, domestic and 'interdependence' sovereignty). A domain name registry using the name of a country is not necessarily an 'authority structure' within that country, nor does the state's inability to control the delegation or operation of it inherently undermine the sovereign's ability to effectively exercise control within and across its borders.

One could challenge this by saying that a ccTLD registry not controlled by the government might register internet users and publish online content that undermines the authority of the state. This is true – but it is also true of *all* other top level domains. If a state needs sovereignty over TLD delegations in order to censor Internet content in ways that enable it to maintain control of its territory, it needs to control the delegation of *every* top level domain accessible in its country, not just the ccTLD that refers to it. The purported linkage between information control and sovereignty is completely independent of the semantics of the top level domain. So this argument cannot be used to justify sovereignty claims over ccTLD delegations.

In the final analysis, the perception of a linkage between the ccTLD and sovereignty is based on nothing more substantial than the strong (but still imperfect) isomorphism between the ISO-3166 codes and sovereign territories. This isomorphism became a kind of self-fulfilling prophecy. The ISO-3166 list created a unique and exclusive code for each territory, and most of the territories so referenced corresponded to sovereign political units. Moreover, the early delegation policy followed by Postel encouraged delegation of the ccTLD to someone resident in the referenced country - although here again there were many exceptions. As the Internet grew and control of TLDs became economically and politically significant, this isomorphism interacted with the innate tendency of governments to try to control whatever they can control. In many respects, the Internet had eluded their control. Unable to control the entire functioning of the Internet, or even the entire DNS, it was much more feasible to claim control over a chunk of it with a label referring to the country. The *coup de grace*, however, came from the international politics

associated with the birth and evolution of ICANN. ICANN and the US government had strong incentives to accede to the (arbitrary) sovereignty claims of other states in order to protect and legitimize the ICANN regime. The GAC's desire for a sovereign interest in ccTLDs was made evident from 1999 to 2001. During the World Summit on the Information Society (2002-2005), ICANN's legitimacy as an agent of global internet governance and the unilateral U.S. role in establishing and overseeing ICANN were strongly challenged by the rest of the world's states (Mueller, 2010, Chapter 4). The Tunis Agenda, the politically binding document produced by the World Summit, explicitly stated that countries' decisions regarding their ccTLDs should be upheld and respected, and other countries should not be involved in decisions regarding another country's ccTLD.[43] In order to gain their acceptance of the regime, the U.S. had to reassure other states that its indirect control of the DNS root via ICANN would respect their sovereign sensitivities and aspirations.[44]

In short, governments have succeeded in gaining a large measure of control over ccTLD delegations not because it is a natural or justified extension of their sovereignty, but simply because they wanted it and were able to get it. But that is how sovereignty has been established over any and every form of territory, is it not? Political geographer Philip Steinberg has noted the "historical, ongoing and at times, imaginary projection of social power onto spaces whose geophysical and geographic characteristics make them resistant to state territorialization."[45]

We can summarize the sovereignty arguments as follows: Does the fact that ccTLD strings semantically refer to states mean that states have sovereignty rights over their delegation? No. ccTLDs are merely entries in a name space that was created by private actors, and it is both illogical and potentially threatening to free expression rights to afford states the power to control name spaces simply because they use country and geographic names. Have states nevertheless succeeded in exploiting the isomorphism between the ISO-3166 codes and political geography to successfully assert more authority over ccTLD delegations than they originally had? Yes. Do states have a plausible claim to sovereignty over the regulation of a domain name registry located in their territory? Yes, just as they can plausibly claim sovereignty over any other business located and operating within their territory – but this claim to sovereign control is based

[43] http://www.itu.int/wsis/docs2/tunis/off/6rev1.html, WSIS-05/TUNIS/DOC/6(Rev. 1)-E 18 November 2005, Agenda Item 63 reads as "Countries should not be involved in decisions regarding another country's country-code Top-Level Domain (ccTLD). Their legitimate interests, as expressed and defined by each country, in diverse ways, regarding decisions affecting their ccTLDs, need to be respected, upheld and addressed via a flexible and improved framework and mechanisms."

[44] See the 2005 document "U.S. Principles on the Internet's Domain Name and Addressing System," issued by the US government in the midst of the WSIS negotiations. http://www.ntia.doc.gov/other-publication/2005/us-principles-internets-domain-name-and-addressing-system In this statement, the U.S. "recognizes that governments have legitimate public policy and sovereignty concerns with respect to the management of their ccTLD." The U.S. claims that it "is committed to working with the international community to address these concerns."

[45] Website of political geographer Philip E. Steinberg, https://www.dur.ac.uk/research/directory/staff/?mode=staff&id=11830

on traditional forms of jurisdictional nexus and has nothing to do with the fact that the ccTLD string refers to the country.

5. Property Rights theory and ccTLD domains

We turn now to the issue of private property rights over ccTLDs. Anyone approaching the topic from the standpoint of law and economics theory might initially have trouble understanding why domain names' status as property is controversial at all. Property rights are well-defined and well-understood in economics. A property right has four key characteristics: the right to use something; the right to the benefits or revenues generated by a resource; the right to exclude others from either use or benefit; and the right to transfer or assign it to others.[46]

Each of these aspects of a property right applies to the assignee of a domain name. Domain names are globally unique character strings based on a hierarchical name space defined in IETF standards documents. A domain name registrant acquires the right to use a unique character string as an Internet address and to exclude all others from registering or using the same name. Exclusivity is essential to the performance of the domain name's technical function; domain names must be globally unique to serve as an Internet address. The registrant also acquires an exclusive right to the benefits or revenues associated with the domain. The domain name registrant can, and often does, sell or transfer the name to others at a market price. Registrants of domain names have *possession* according to the legal definition of the term, which requires actual control and the ability to exclude others from control. While it is true that domain names are not physical objects that can be held, all legal regimes recognize the existence of intangible property, such as trademarks or copyrights. Besides, even for physical goods property rights do not necessarily require objects that can be 'held;' rather, they administer the relation between the owner and the other individuals in reference to the property.[47] As Coase states: "We may speak of a person owning land and using it as a factor of production but what the land-owner in fact possesses is the right to carry out a circumscribed list of actions."[48]

a. ICANN arguments against property

In its memorandum to quash the writ of attachment in the .IR case,[49] ICANN's lawyers argue that under the limited definition of the District of Columbia, ccTLDs are not property because:

1. A ccTLD cannot be physically held,

[46] Alchian, Armen, "Some Economics of Property Rights" *Il Politico* 30 (1965) 816-829. Furubotn, Eirik and Richter, Rudolph, *Institutions and Economic Theory* (1998) Ann Arbor: University of Michigan Press) p. 5. Pearce, David W., MIT *Dictionary of Modern Economics* (4th Edition) 1996 (Cambridge, MIT Press), p. 351.
[47] Morris R Cohen, Property and Sovereignty, Cornell Law Review, Volume 13, 1927, p. 12
[48] Coase, The problem of Social Cost, The Journal of Law and Economics, 1960, Vol 3, p.44
[49] Motion to Quash Writ of Attachment, Seth Charles Ben Haim, et al, Plaintiffs, v. The Islamic Republic of Iran et al Defendants. Hearing Request, In the United States District Court of the District of Columbia. (2014) Available at https://www.icann.org/en/system/files/files/ben-haim-motion-to-quash-writs-1-29jul14-en.pdf

2. A ccTLD is not capable of precise definition because it is constantly changing as new domain names are added and deleted,
3. There is no established market within which a ccTLD can be purchased or sold
4. A ccTLD holds no intrinsic value.
5. A ccTLD has no functional utility without all the routing and administrative services provided by the ccTLD manager and members of the Internet technical community.[50]

All of these arguments can be easily dismissed. As noted before, under the bundle of rights theory of property, property rights do not pertain to physical goods *per se* but to the relationship between the owner and other individuals. These rights can involve intangible as well as tangible goods. While it is true that domains change as new names are registered below them in the naming hierarchy, this is also true of other forms of property. A real estate owner can make improvements that increase the number of rental units, for example. The idea that there is no established market for TLDs is plainly false. Top level domains can be and often are bought and sold. In its recent round of adding new top level domains, ICANN held auctions to determine who would receive names for which there were multiple applicants.[51] The .CC country code domain was purchased by commercial firm Verisign through a merger agreement with its original delegee in 2002. In an auction held by the government of Montenegro, the company DoMEN Ltd. won the auction to operate the ccTLD .ME. DoMEN Ltd is a Montenegrin joint venture founded in 2008 by Afilias Limited, GoDaddy.com and ME-net, Ltd that does business as a .ME Registry.[52] CcTLD registry operations do have 'intrinsic value' as that term is understood in investing. Registration and control of a TLD string is an essential part of operating a domain name registry. Without the unique ccTLD registration, the registry's value would disappear. Saying that a ccTLD delegation has no intrinsic value because it requires supporting services such as internet access and servers is like saying a computer has no intrinsic value because it doesn't work without electricity.

b. Property or service? The legal debate

A legal debate on the property status of domain names has been taking place for nearly 20 years. Domain name registries (including ICANN, which as the current IANA functions operator is the registry for the DNS root zone) have typically argued that domain names are a contract for service. In one case, a registry did not want to be responsible for enforcing a court order for garnishing domain names, as this would have imposed burdensome pre-registration screening obligations on it.[53] In another case, a registrar had transferred a valuable domain name by mistake and the registry sought to limit its liability for the error by claiming that domain names do not constitute property susceptible to the tort of conversion.[54]

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[50] *Ibid*, p. 10
[51] Citation to ICANN auction for contested domains
[52] ME as a company, HYPERLINK "http://domain.me/me-as-a-company/"http://domain.me/me-as-a-company/
[53] NSI vs. Umbro,
[54] Kremen vs Cohen

The arguments for domain names as property, on the other hand, have been advanced by litigants attempting to protect – or seize – the value that comes with ownership of a domain. Ironically, both trademark/copyright owners who want to seize allegedly infringing domains when the registrant was outside their jurisdiction,[55] and individual registrants resisting attempts to take away their domains, have argued that domains are property.[56] In an extreme example of this, a state government in the U.S., the Commonwealth of Kentucky, tried to seize 141 domain names associated with gambling websites. It argued that the domain names were 'gambling devices' that are banned under Kentucky law, even though the sites were owned and operated by individuals outside of its jurisdiction.[57] Creditors have sought to treat domain names as property because they wanted to garnish the benefit of the domain name to satisfy a judgement against a debtor.

In *NSI v. Umbro,* the court held that whatever contractual rights the registrant has (even if it involves property) do not come into existence without the NSI service, and a contract of service cannot be garnished. Garnishment is a creature of statute, not common law, and the *Umbro* court seemed to be especially concerned that its ruling should strictly satisfy the criteria of the statute. The court concluded that "a domain name registration is the product of a contract for services between the registrar and registrant. Dorer, 60 F.Supp.2d at 561." [58] It then argued that if it allows the garnishment of NSI service, any contract for service would be garnishable. This the court was not willing to allow without statutory change.[59]

Other court decisions have explicitly classified domain name registrations as a property right. In a case involving a trademark - domain name conflict in Germany, the European Court of Human Rights asserted that the concept of 'possession' is not only limited to ownership of physical goods but also applies to intangible goods such as domains. The court stated the contract between the registrar and the registrant gave an open ended right to the domain name holder to benefit from its profit, sell the right to others and exclude others to use the domain name. "The exclusive right to use the domains in question thus had an economic value. Having regard to the above criteria, this right therefore constituted a 'possession.'[60] The same argument was put forward by the Circuit Court in *NSI vs. Umbro* before the judgment was reversed by the court of appeal.

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[55] Honourable Nicholas Augustine Plant v. Service Direct UK, and Dorer v. Arel, 60 F. Supp. 2d 558 (E.D. Va. 1999)
[56] Gewinn case, Swedish case
[57] Commonwealth Kentucky vs. 101 Internet Domain Names
[58] 529 S.E.2d 86
[59] 529 S.E.2d 87
[60] *Paeffgen GmbH v. Germany,* p. 8-9 http://hudoc.echr.coe.int/sites/eng/pages/search.aspx?i=001-82671#{"itemid":["001-82671"]}

Thus, the debate over whether domains are service or property has not been conclusively resolved in law. When it has been addressed, courts are more inclined to consider domain names as property, especially in recent years. Even in the past, courts did not directly classify domain names as services; they usually found that the question of whether domain names are property or service is immaterial to the outcome of the case. This is what actually happened in *Network Solutions, Inc. v. Umbro International,* one of the cases most commonly cited to prove that domain names are services.[61] While the court discussed property rights vs. service aspect of the domain name, in the end it concluded that ascertaining whether domain names are an intellectual property right would not affect the outcome of the case.[62] Hence it did not make an affirmative judgment on the property status of domain names. In *Dorer vs. Arel*, the court provided reasons to *doubt* whether domain names can be treated as personal property subject to lien. But in the end, without making any conclusion on the legal classification of domain names, the court decided that the dispute should be resolved based on the dispute resolution policy of the .COM registry.[63]

In *Lockheed Martin Corp. v. Network Solutions,*[64] when asked to decide whether the .COM TLD provides a service or a product, the court decided that the manager of .COM provided a service:

> "NSI's role [as the manager of .COM] differs little from that of the United States Postal Service: when an Internet user enters a domain-name combination, NSI translates the domain-name combination to the registrant's IP address and routes the information or command to the corresponding computer... NSI does not supply the domain-name combination any more than the Postal Service supplies a street address."[65]

While this answer classifies the operation of the .COM registry as a service, it does not directly address whether .COM itself, or a FOO.COM domain registered under it, is property or not. The court's argument that NSI "does not supply the domain name combination" is factually incorrect. A TLD registry is without question the source and supplier of the second level/top level character-string combination that users register. NSI is more than a post office that delivers traffic to a domain – it does indeed supply the street address. The registration of a new TLD creates a new supply of second-level globally unique domain names under it, and one of a TLD registry's chief technical functions is to keep track of what names have been registered and which are available. The court's ignorance of the technical functioning of DNS seems to have contributed to its conclusion in *Lockheed*.

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[61] 529 S.E.2d 80 (Va. 2000)
[62] *Ibid* at 85
[63] The court wrote: "In any event, the knotty issue of whether a domain name is personal property subject to the lien of *fieri facias* ultimately need not be resolved because there is a more readily available, practical solution to the problem to be found in NSI's policies." 561
[64] Inc., 194 F.3d 980 (9th Cir. 1999)
[65] *Ibid* at 984–85.

In the UK, the court of first instance ruled that domain names were not goods, but the court of appeal adjourned an application for permission to appeal and it did not decide whether an internet domain name constituted 'goods' or not.[66] The same lack of resolution was found in the ruling on quashing the motion for writ of attachment of .IR. The court concluded that ccTLDs are not property subject to attachment under District of Columbia law.[67] It did not, however, explicitly reject the proposition that ccTLDs are property. According to the court ruling "the conclusion that ccTLDs may not be attached in satisfaction of a judgment under DC law does not mean that they cannot be property."[68]

To summarize the property rights argument: domain name registrations are indeed a form of property. They can be possessed; the possessor can and does exclude others from use and benefit; they can be purchased or sold in a market or re-assigned by their owner. Country code and generic TLDs are no different in this regard. With respect to the property/service debate, we conclude that domain name registries supply a contracted service to users, but the possession of a unique top level domain name is an essential input to the provision of a registry service. Thus, while it is true that a TLD registration needs to be supported by ancillary services such as Internet access and name resolution servers to fulfill its function as an Internet address, it is also true that the ancillary services would be completely worthless unless they are tied to and anchored in a globally unique and exclusive domain name registration. Many forms of property require supporting services to realize their value; this does not overthrow their status as property. Because domain name functionality involves both a property and a service, court decisions denying a plaintiff's right to garnish a service could be correct without necessarily undermining the property status of the domain name registration itself.

6. Scenario analysis

Our conclusions indicate that there is no inherent basis for a sovereignty claim over ccTLD delegations. Nevetheless, we have shown empirically that governments have succeeded in gaining a major degree of influence over delegations of ccTLDs that refer to their country. Similarly, we have refuted claims that TLD registrations cannot be a form of property, or function economically as property rights. Nevertheless, we have shown empirically that governments and regulatory institutions such as ICANN can and do impose limits on the exercise of property rights; e.g., by imposing trustee obligations on the delegees.

This means that the choices we face in our treatment of ccTLD governance are not pre-determined by the laws of physics, engineering or economics but are *policy* choices. In other words, we can, if we wish, choose to make ccTLD delegations more or less subject to

[66] Need a citation to the UK case here.
[67] https://www.icann.org/en/system/files/files/order-memo-granting-motion-to-quash-writs-10nov14-en.pdf, P.8
[68] Stern vs. Islamic Republic of Iran, Page 8 footnote 2

sovereignty claims, and we can, if we wish, strengthen or limit the property rights of ccTLD delegees. Ideally, these choices would be based on an understanding of what kind of consequences the choices would bring; i.e., how would the choices affect the efficiency and equity of global internet governance. Of course, these policy choices are not unconstrained, as different options would have different levels of political feasibility. But it is worthwhile to consider first the merits and drawbacks of the options based on an abstract assessment of their likely consequences, looking at their desirability first and worrying about their political feasibility later.

For analytical purposes, we can reduce the basic options available for ccTLD governance to the simple 2 by 2 matrix below. On one dimension, sovereignty over delegations can be recognized, or it can be rejected; on the other dimension, the ccTLD delegation can be considered a property right of the delegee, or it can be conceived as a public trustee.

Sovereignty here means sovereignty over delegations/redelegations by IANA; i.e., whether governments have the unalloyed right to dictate who possesses the ccTLD string semantically associated with their territory. It is *assumed* that states can and will regulate the conduct of domain name registries and their users when they reside in their own territory, as part of their normal domestic sovereignty. Domestic sovereignty would not, however, necessarily give states the right to compel ICANN to give the delegation to a particular individual or organization.[69]

Table 1: Governance Scenarios

	Property right	Public Trustee
Sovereignty over delegation	A (Mercantilist)	B (PTT model)
No sovereignty over delegation	C (Free trade)	D (RFC 1591)

The other dimension in the matrix refers to the extent to which the delegee has unrestricted property rights over the ccTLD string. The property rights column means that the delegee has the right to develop the TLD in any way that benefits itself, and a great deal of freedom to subcontract, re-assign or sell the delegation. The public trustee column means that the delegee's

[69] The line could blur: if a state deems a particular undesirable (e.g., due to criminal or politically unacceptable behavior) they might be able to eliminate a particular delegee from eligibility, force a re-delegation, and then strongly influence the options available in the re-delegation process.

claim on the delegation is contingent upon some external authority's determination that it is the appropriate holder, and usually involves obligations to a community and major restrictions on transferability. We have given names to each of the four options created by this matrix, which may help to clarify what they mean.

In **Option A**, both state sovereignty over delegation and the holder's private property right over the ccTLD are recognized. This we call the *Mercantilist* option. The state controls the delegation but awards it as a private property right to privileged operator to exploit at will, in a fashion analogous to the letters patent or trading monopolies awarded to private actors in mercantilist economies.

In **Option B**, sovereignty is recognized but the state treats the delegation as a public trustee and instrument of national policy. We call this the PTT model because of its similarity to the institutional arrangements surrounding the Post, Telephone and Telegraph monopolies of the 20th century. In this model the ccTLD can be owned and operated by the state as most PTTs were, or delegated to a highly regulated and supervised private or quasi-public actor, as is done in the US and Australia.

In **Option C**, sovereignty is not recognized and delegation involves the grant of a property right. The ccTLD (like commercial gTLDs) can be managed according to the preferences and profit of the delegee, and the delegee has a great deal of freedom to trade or transfer the delegation. We call this the *Free Trade* option. It does not put ccTLDs in a special category distinct from the global domain name market as a whole, but recognizes them as suppliers of registry services that, in principle, compete with any and every other TLD registry.

In **Option D**, sovereignty is not recognized, but delegees are considered public trustees. This would mean that a non-state actor ICANN/IANA (or some other global authority or institution) decides on delegations, and enforces the public trustee obligations through contracts. We call this the *RFC 1591* option, because it corresponds to the policy framework articulated by Jon Postel in RFC 1591.

a. Sovereignty

Pure sovereignty over the ccTLD means that whoever is the recognized government has, at any given moment, the power to re-delegate the domain to whoever it wishes, and the global root zone administrator passively complies with those wishes. One potentially beneficial aspect of a sovereigntist approach is that it decentralizes authority. A transnational regulatory authority such as ICANN would be in a position to impose more uniformity. In a sovereigntist model, the criteria for delegation and the policies adopted by ccTLDs would reflect the diversity of the world's political regimes. But diversity cuts both ways. In states with stable societies and rule of law, the downsides of this variability will be limited by due process constraints and democratic

accountability. If the local government is unstable, dictatorial or corrupt, however, the country's domain's connection to the global Internet may reflect those political pathologies. Recognizing sovereignty could easily devolve into a mercantilist or clientelist model, in which the delegation is, despite nominal public control over who gets the delegation, a de facto property right for government cronies. Instability in delegations caused by shifting political winds would tend to undermine investment, quality of service and freedom of information. Recognizing sovereignty allows the state to ignore the wishes of other domestic stakeholders in delegating or re-delegating the domain. In undemocratic societies this can have extremely negative consequences. It also significantly increases the power of the state to exert political pressure on an incumbent ccTLD operator, by creating an open-ended threat of expropriation should its policies and operations not conform to the wishes of the state. Even in democratic countries, a sovereigntist approach to ccTLD delegation encourages making the domain an instrument of national policy, like the classical PTT. Yet a PTT model seems inappropriate for Internet domains, because, unlike the physical telecom infrastructure, top level domains are virtual resources that are not are not exclusive to one territory but can easily be made available in all territories. That points to another problem with both the Mercantilist and PTT models: it encourages tendencies for the local delegee or government to restrict competition from global or external TLDs, as such restrictions might help them increase monopoly rents and/or the amount of control the national government exerts over local Internet users. Pure sovereignty would also pose greater risks for the global compatibility of the DNS, as a supranational authority such as IANA would no longer be in a position to revoke or redelegate based on technical problems caused by a delegee.

A more subtle but in some ways longer term issue related to ccTLD sovereignty is the question: what will count as the sovereign part of the name space? Do only ISO-3166 codes count? Or do *any* names and IDNs that reference country names or geographic regions also be considered subject to sovereign rights? If the latter, the number of top level domain names subject to sovereignty claims could become very large. Indeed, the success of states in asserting a linkage between sovereign control and a semantic reference seems to have already led to claims to control a very broad categories of names: country names, names of geographic regions, acronyms of international organizations, etc. The GAC pushed for reservations of geographic names in all new top level domains authorized by ICANN, for example. The successful attempt by some Latin America countries to prevent a private company (AMAZON) from registering its lawfully recognized trademark as a top level domain is a sobering example of this phenomenon.[70] This tendency threatens to curtail freedom of expression and freedom of commerce, not only in the domain name space but on the Internet as a whole.

If sovereignty is not recognized in ccTLD delegation, then the model could go towards option C, the property rights-based, Free Trade model, or option D, the RFC 1591 global public trustee model.

[70] News articles,

b. **Global Public Trustee**

Due to its early problems with legitimacy, ICANN has backed far away from Postel's and ICP-1's global public trustee concept. As noted in our empirical analysis, ICANN does little to independently assess the level of stakeholder support in countries seeking a redelegation, and what little evidence it collects is used to confirm what the authorities want rather than to challenge or negate it. Insofar as ICANN has a role in delegations or redelegations, it has been confined to an interest in technical compatibility. However, it is not impossible for ICANN to resume taking a stronger role, and it is worth assessing the merits and demerits of such a course.

The advantages of making ICANN the administrator of the global public trustee concept is that the Internet community does constitute a globalized public sphere, a community constituted through communication. A key part of the obligations of any ccTLD operator is to safeguard a local community's connectivity and compatibility with the rest of the world's internet users. More ambitiously, an active, independent and honest global trustee administrator would be in a position to ascertain the views of the various stakeholders in a country, independently of local power structures, and to impose standards regarding good service and policy. A global administrator would also be in a position to bypass dysfunctional or corrupt local delegees by re-delegating to better operators. In failed or authoritarian states, or states lacking in infrastructure needed to provide good service it could even delegate the ccTLD to an external operator in order to improve the service received by users of the domain. Such an approach would require a mahor expansion of ICANN/IANA's institutional capacity, as it would have to be engaged in monitoring the performance of delegees, and would significantly increase its legal exposure, as it would be bestowing or removing valuable assets from local actors. This would constitute a significant power shift, away from traditional states and towards transnational institutions, and this would be strongly resisted by governments. But governments would inevitably retain some ability to regulate the ccTLD registry if it was located in its jurisdiction, even if it did not have much authority over the delegee. Many incumbent ccTLD operators would also be uncomfortable with a more empowered ICANN, as it might put their control of the delegation at risk. The flip side of the ability of a global trustee administrator to be independent of local power structures is that it might also become arbitrary or willing to put its own interests ahead of local preferences and needs in the selection of a delegee. The legal and bylaw accountability mechanisms to which ICANN is subject would become much more important.

c. **Free Trade**

The last option, Free Trade, would assign firmer property rights to ccTLD delegees and not recognize a role for the sovereign in delegation. Delegations would come from two basic sources: 1) the original delegations made by Postel and later by ICANN, and 2) voluntary transfers of the delegation, either by market transactions or by mutually agreed re-delegations. Neither ICANN nor the state would have the ability to dictate a change in the delegee, though presumably a delegation, like any other form of property, could be lost due to criminal behavior

or civil liability. The free trade model conceives of ccTLDs as registry services in a global marketplace, and would not require delegations to have any special obligations to the nation, residency or location requirements in the referenced territory.

A potential drawback of this model, in the minds of some, is that the ccTLD would no longer be a putative expression of national identity or national policy but more like an ordinary service provided in a (global) competitive market. The so-called 'quasi-generic' ccTLDs such as .IO (for British Indian Ocean Territory),[71] .CC (for the Cocos and Keeling Islands), .TV (for the island Tuvalu), and .ME come to mind as extreme examples of treating ccTLDs as assets detached from their original territorial reference. But this approach does not *require* or even necessaraily *encourage* ccTLD operators to turn away from their national market and bend their two letter codes into some other, more marketable meaning. Many if not most ccTLD delegees would continue to focus on their country market, as that is where they have established share and where the semantics of their TLD name gives them an advantage. There is room for nonprofit and cooperative business models, just as there is room for noncommercial activity in any other part of a market economy. Nominet (.UK), InternetNZ (.NZ) and the German ccTLD operator DENIC (.DE), for example, could all be considered exemplars of the Free Trade category. Although they are organized as nonprofit cooperatives, they are run by private foundations and received their original delegations from Postel rather than via their government. All three are extremely protective of the security and autonomy of their delegation, viewing it as a valuable asset that belongs to the corporation rather than as a contingent trust granted to them by ICANN or a public authority. All three focus primarily on their national market, though tend to have liberal policies regarding registration by people outside the territory.

The Free Trade model also neatly resolves the slippery slope problem created by making semantic references a basis for sovereignty claims. It essentially eliminates the distinction between generic and territorial names (although it would not subject ccTLDs to the same kind of contractual regulation by ICANN as gTLDs). Governments would have no special authority over the delegation of names so it would not matter whether a particular string was classified as a ccTLD or not.

It is important to add that nothing about holding the delegation as a property right exempts the delegee from normal forms of business regulation within its jurisdiction. If, for example, a national regulatory authority determined that a ccTLD registry was dominating the local market for domain name registration using illegal methods of competition, it could invoke remedies

[71] The Senior Minister of State, Department of Communities and Local Government & Foreign and Commonwealth Office testified that "the .io domain has always been carried out by a private sector organisation – this is currently the Internet Computer Bureau. As with the .uk domain, the Government receives no revenues from the sales or administration of this domain, and there are therefore no plans to share these with Chagossians."Administrative Scheme for the "On the Runs" Independent Review, Thursday 10 July 2014, http://www.publications.parliament.uk/pa/ld201415/ldhansrd/text/140710w0001.htm

from competition law. The difference is that this model does not let the local government control to whom it is delegated, nor impose public trustee obligations on the delegee.

Based on some of the cases brought before courts, one might fear that a property rights based model would lead to instability by facilitating litigation to confiscate domains. This fear is, we think, unfounded. The craziest confiscation cases (e.g., the Kentucky gambling case) amounted to bald attempts to assert extra-territorial jurisdiction and foundered on that basis. Even though domains can be considered property, the registry operators who hold the domains are located in specific jurisdictions and need only respond to lawsuits As noted before, there are statutory obstacles to attempts to apply garnishment claims to service contracts. If ICANN was not legally responsible for the award of the property right (as it would be if it were the administrator of a global public trustee arrangement) ICANN could not be sued to take away the right.

This model does not prevent repressive governments from controlling local ccTLD registries, especially if such governments already hold the delegation. But it does make it more difficult for them to change delegations at their whim.

7. Conclusions

Based on the assessment above, the Free Trade model seems to have the most desirable characteristics. Linking ccTLD delegation to sovereignty, whether in the form of the Mercantilist option or the PTT model, brings few benefits to anyone but the national government itself. The global public trustee model could be better but is likely to be far worse, as it substitutes a single centralized global authority for many national authorities. The ability of ICANN to reassert its role as the key authority in delegation seems unlikely in any event. Recognizing property rights in delegations, on the other hand, paves the way for a more stable and open global market in domain name registry services.