

COMPETITION, CONSUMER TRUST, AND CONSUMER CHOICE REVIEW

Final Report

Competition, Consumer Trust, and Consumer Choice Review
Team
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1 Executive Summary

ICANN's Affirmation of Commitments (AoC) called for a regular review of the degree to which the New Generic Top-Level Domain (gTLD) Program promoted consumer trust, choice and increased competition in the Domain Name System (DNS) market. This review is called the Competition, Consumer Trust, and Consumer Choice Review (CCT).¹ The AoC further called on the CCT reviews to evaluate the effectiveness of the application and evaluation process for new gTLD applicants and the safeguards put in place to mitigate the risks associated with the expansion of generic top-level domains. These reviews are important because they provide ICANN with an assessment of how the new gTLD round performed in these areas and guidance on key issues (including competition, consumer protection, security, malicious abuse, and rights protection issues) as it contemplates further increase in the number of top-level domains (TLDs). The CCT was asked to weigh the advantages and disadvantages of the New gTLD Program in these key areas and assess whether the Program resulted in net benefits to users of the DNS.

The review team endeavored to be as objective as possible and to base its findings on available data. The more objective the findings, the more likely the impact of implemented recommendations can be measured. The idea of using metrics to evaluate the performance of the DNS began six years ago with an ICANN Board resolution² that called on the community to identify quantitative targets to assess the impact of the New gTLD Program on consumer trust, choice, and competition in the DNS marketplace. Although the particular metrics developed at that time aided the review team's analysis, they ultimately did not form the basis for the majority of the review. However, the CCT Review Team did strive to employ quantitative analysis wherever possible.

The CCT Review Team found that while the New gTLD Program is quite new and the data are incomplete, on balance the expansion of the DNS marketplace has demonstrated increased competition and consumer choice and has been somewhat successful in mitigating its impact on consumer trust and rights (particularly trademark) protection. That said, the review team concluded that the New gTLD Program should be regarded only as a "good start," and that a number of policy issues should be addressed before any further expansion of gTLDs.

In particular, the review team found that critical data were in short supply for the analysis of competition, the effectiveness of safeguards, and the promotion of consumer trust and geographic representation of applicants. Even the definition of the DNS market itself is problematic without additional information about whether consumers view new gTLDs as substitutes for other domain names, such as country code top-level domains (ccTLDs). Some gTLDs compete in narrow markets that serve specialized groups of registrants, and alternative online identities such as Facebook and Yelp pages and third-level domains may serve as substitutes for registrations in gTLDs. Consequently, the CCT Review Team recommends that ICANN enhance its capabilities to gather and analyze data, in particular those used by ICANN's Contractual Compliance Department, prior to further increasing the number of gTLDs. We also identify certain policy issues that the community should resolve prior to the

¹ On 30 September 2009, ICANN and the United States Department of Commerce signed the AoC, which—among other things—committed ICANN to periodically organizing Community-led review teams to assess the impact of the New gTLD Program on the domain name marketplace. In January 2017, the AoC expired following the IANA transition in October 2016. However, many of the provisions contained in the AoC—including Community-led reviews of competition, choice, and trust in the domain name marketplace—have been incorporated into ICANN's revised bylaws (see ICANN, "Bylaws for Internet Corporation for Assigned Names and Numbers: Section 4.6: Specific Reviews," amended 1 October 2016, <https://www.icann.org/resources/pages/governance/bylaws-en/#article4>).

² ICANN Board Resolution 2010.12.10.30, "Consumer Choice, Competition and Innovation," (2010), accessed 20 January 2017, <https://www.icann.org/resources/board-material/resolutions-2010-12-10-en#6>

further expansion of the gTLD space. Finally, we recommend a number of specific research projects that should be completed prior to a future CCT, and in many cases, even sooner.

Background

Prior to the start of the CCT Review Team's work in January 2016, ICANN, together with the community, had begun preparatory work to identify metrics to inform the forthcoming review. Data collection on these metrics began in 2014 and continued into 2016.³ In addition, ICANN commissioned two major research projects in 2015 in anticipation of the review team's work: a global consumer end-user and registrant survey, and an economic study of the Program's competitive effects.⁴ These surveys were repeated in 2016 to compare against those conducted in 2015 as newer gTLDs came into operation, and took into consideration, where applicable, additional questions and requirements raised by the review team.⁵

In conducting its analysis, the review team was mindful of the fact that the New gTLD Program had only been in place for a short period of time, that new domain names are continuously entering the marketplace, and thus the full effects of the Program may have not yet have been fully realized. The Team used data that had previously been collected—and commissioned new research where it felt important data were missing—to help inform its analysis. The Team divided its work into four subteams:

- ③ **Competition and Consumer Choice.** This subteam examined the effects of the entry of new gTLDs on price and non-price competition in the expanded domain name marketplace, as well as whether consumer choice in the marketplace was effectively enhanced with the introduction of new gTLDs.
- ③ **Consumer Trust and Safeguards.** This subteam focused on the extent to which the expansion of new gTLDs has promoted consumer trust and the impact of the safeguards adopted to mitigate any problems that might have arisen as a result of the program.
- ③ **Application and Evaluation Process.** The review team explored issues related to the effectiveness of the application process to operate a new gTLD, with a particular focus on the applicant experience, the paucity of applications from underserved regions, and the objection processes.

³ This work was carried out by the Implementation Advisory Group for Competition, Consumer Trust, and Consumer Choice (IAG-CCT). See ICANN Board Resolution 2015.02.12.07 – 2015.02.12.09 “Recommendations for the Collection of Metrics for the New gTLD Program to Support the future AoC Review on Competition, Consumer Trust and Consumer Choice,” (12 February 2015), accessed 3 August 2018, <https://www.icann.org/resources/board-material/resolutions-2015-02-12-en#1.e>

⁴ Nielsen, *ICANN Global Consumer Research* (April 2015), accessed 26 April 2017, <https://www.icann.org/news/announcement-2015-05-29-en>; Nielsen, *ICANN Global Registrant Survey* (September 2015), accessed 26 April 2017, <https://www.icann.org/news/announcement-2015-09-25-en>; Analysis Group, *Phase I Assessment of the Competitive Effects Associated with the New gTLD Program* (September 2015), accessed 3 August 2018, <https://www.icann.org/news/announcement-2-2015-09-28-en>

⁵ Nielsen, *ICANN Global Consumer Research: Wave 2* (June 2016), accessed 26 April 2017, <https://www.icann.org/news/announcement-2-2016-06-23-en>; Nielsen, *ICANN Global Registrant Survey: Wave 2* (August 2016), accessed 26 April 2017, <https://www.icann.org/news/announcement-2-2016-09-15-en>; Analysis Group, *Phase II Assessment of the Competitive Effects Associated with the New gTLD Program* (October 2016), accessed 3 August 2018, <https://www.icann.org/news/announcement-2016-10-11-en>

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- ④ **International Trademark Association (INTA) Impact Study.** The subteam was limited in time as it was formed to analyze and draw conclusions on the INTA Impact Study results.⁶

Competition and Consumer Choice

Although it is still too early to evaluate fully the competitive effects of the introduction of 741 delegated new gTLDs as of May 2017 (excluding those that are considered “.brands”),⁷ some preliminary findings suggest that the potential for healthy competition exists and some important indicators are consistent with increased competition. Of particular note, as of December 2016, registrations in new gTLDs accounted for about three-fifths of new registrations in all gTLDs, about 45 percent of new registrations in all TLDs (including open ccTLDs) since the new gTLDs were introduced, and about 58 percent of new registrations in gTLDs and “open” ccTLDs. We also found that, in the same month, new gTLDs accounted for about 14 percent of registrations among new and legacy gTLDs (see Table 2 below).

It is also interesting to note that in 92 percent of the cases in which a second-level domain was available in .com, the registrant nonetheless chose a second-level string in a new gTLD. For example, even if bigshotphotography.com was available, registrants often chose bigshots.photography instead, and in many cases were willing to spend more money to do so.⁸

The structure of the domain name industry itself provides a partial explanation of the potential for sustained competition. In particular, the availability of independent back-end service providers and retailers (registrars) decreases barriers to entry because new registries do not need to invest in supplying their own in-house back-end infrastructure or developing their own sales channels. Consequently, smaller niche registries have a higher likelihood of achieving minimum viable scale.

Early indications are that right holders are less inclined to rely on defensive registrations (i.e., registering a domain simply to prevent others from doing so) than in the past. It’s not clear whether this is the result of the new rights protection mechanisms or simply the sheer volume of new gTLDs. Instead rights holders are engaging in increased monitoring and case by case resolution mechanisms. Further analysis of the distribution of defensive costs (including “blocking,” which entails an agreement with a registry not to sell a domain), direct communication (such as cease and desist correspondence and URS) is currently underway, but preliminary indications are that increases in defensive investment by trademark holders were less than anticipated prior to the launch of the Program.

One caveat to this analysis stems from the existence of a large number of “parked” domains (domains that have been registered but are not yet being used) in new gTLDs. Although not dispositive, the fact that the average parking rate for new gTLDs is higher than for legacy gTLDs may suggest that competition from new gTLDs may not be as significant as indicated

⁶ Nielsen, *INTA New gTLD Cost Impact Study* (April 2017) and INTA, *New gTLD Impact Study Status Report II* (August 2017), accessed 3 August 2018,

<https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials>

⁷ gTLDs considered .brands for the purpose of this review are those which include Specification 13 in their Registry Agreements, or are exempt from the Registry Operator Code of Conduct. See

<https://www.icann.org/resources/pages/registries/registries-agreements-en> and

<https://www.icann.org/news/blog/new-gtld-registry-operator-code-of-conduct>

⁸ This reporting is derived from an analysis of two data sets produced by ICANN organization for the Review Team. See “New gTLD Registrations Available in .com,” (2016 and 2018), and “Existing Registrations in .com Against New gTLDs,” (2016 and 2018), accessed 3 August 2018, available at

<https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials>

by the registration data reported above.⁹ We hope that parking data will be part of the analysis in future reviews.

Consumer Trust and Safeguards

An international survey commissioned by the CCT indicates the domain industry is one of the most trusted in the tech sector and that the dramatic expansion of the DNS has done little thus far to undermine that trust.¹⁰ A key component of this trust seems grounded in familiarity, with legacy gTLDs still more trusted than new gTLDs, and strings with recognized terms more trusted than strings with less familiar terms. In addition, there are indications of a desire among end-users for a more semantic Web in which the domain name is an indicator of the type of content contained within a TLD.

Similarly, consumers reported that restrictions on who could purchase certain gTLDs would engender greater trust, particularly if the domain name itself suggests that the registrant might need to possess a certain license or credentials. These tendencies represent both an opportunity and a danger if the connection between names and content proves to be less direct.

Given the difficulty of defining and measuring “trust,” the review team explored the notion of “trustworthiness” as a proxy for consumer trust. For example, the review team fielded a study on DNS Security Abuse to determine if the rates of abuse were higher or lower in new gTLDs.¹¹ These findings were used to analyze whether or not new gTLDs were inherently less trustworthy than legacy gTLDs, as well as to determine the effectiveness of safeguards implemented as part of the New gTLD Program.¹² The results were mixed, indicating that despite new safeguards, some new gTLD registries and registrars may in fact be less trustworthy than those associated with legacy gTLDs, even if new gTLDs as a whole are not.

Other notable findings on the impact of the new gTLD safeguards include the following:

- ⊙ Ninety-nine percent of registries have implemented safeguards regarding the prevention of abusive activities in their gTLDs as required in their registry-registrar agreements; however, the downstream impact is unclear.¹³
- ⊙ ICANN reports that abuse complaint volumes are typically higher for registrars than registries, but it is difficult to determine if safeguards are affecting rates of abuse.¹⁴

⁹ See ntlidstats, “Parking in New gTLDs Overview,” accessed 3 August 2018, <https://ntlidstats.com/parking/tld>

¹⁰ Nielsen, *Consumer Research Wave 2* (2016), pp. 63-69.

¹¹ SIDN Labs and the Delft University of Technology (August 2017), *Statistical Analysis of DNS Abuse in gTLDs Final Report*, accessed 3 August 2018, <https://www.icann.org/en/system/files/files/sadag-final-09aug17-en.pdf>.

“DNS Abuse” is a term used by the Review Team that refers to “intentionally deceptive, conniving, or unsolicited activities that actively make use of the DNS and/or the procedures used to register domain names” (see p. 3 of the “New gTLD Program Safeguards Against DNS Abuse: Revised Report” referenced below). “DNS Security Abuse” in the context of this report refers to specific, technical forms of abusive behavior: malware distribution, phishing, pharming, botnet command-and-control, and spam in the DNS. For more on how abuse has been characterized by the ICANN Community, see the *Registration Abuse Policies Working Group’s Final Report* (29 May 2010), accessed 3 August 2018, https://gnso.icann.org/sites/default/files/filefield_12530/rap-wg-final-report-29may10-en.pdf

¹² ICANN Operations and Policy Research, *New gTLD Program Safeguards Against DNS Abuse: Revised Report* (July 2016), accessed 3 August 2018, <https://www.icann.org/news/announcement-2016-07-18-en>

¹³ ICANN (2015), *ICANN Contractual Compliance 2014 Annual Report*, accessed 7 February 2017, <https://www.icann.org/en/system/files/files/annual-2014-13feb15-en.pdf>, p. 13.

¹⁴ ICANN (2016), *ICANN Contractual Compliance 2015 Annual Report*, accessed 7 February 2017, <https://www.icann.org/en/system/files/files/annual-2015-27jan16-en.pdf>

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- ⦿ WHOIS accuracy complaints remain the largest category of complaints to ICANN Contractual Compliance.¹⁵
 - ⦿ ICANN Contractual Compliance has reported that 96 percent of the 264 registries that were reviewed in 2014 are performing the analysis that is required to determine if they are being used to perpetrate security threats.¹⁶
 - ⦿ The review team examined the rates of UDRP and URS case filings and found an overall decrease in the number of cases filed since 2012, although URS cases in new gTLDs have driven an approximately 10 percent increase in disputes since the recent low point in cases filed in 2013. The review team needs more information on costs related to trademark enforcement before it will be able to reach more specific conclusions in this area.¹⁷

The review team also identified several challenges to its assessment of the extent to which safeguards mitigated risks involved in the expansion of the gTLD space. Ultimately, the safeguards put in place as part of the Program were too narrow in scope to prevent some of the malicious abuse issues identified prior to the introduction of the new gTLDs.¹⁸ Instead, as in legacy gTLDs, DNS Security Abuse still remains a significant issue. Although abuse does not universally persist in all new gTLDs, it is endemic to many. More troubling, at present there is little recourse for the community to stop new gTLD registries and registrars associated with high levels of abuse. This in turn creates incentives for network operators to unilaterally block all traffic from specific TLDs or registrars, running counter to community goals for Universal Acceptance of new gTLDs.¹⁹

The failure to prevent the spread of certain abusive activities to new gTLDs previously identified by the community is significant. The CCT Review Team recognizes the infrastructure role played by domain names in enabling abusive activities that impact the security, stability, and resiliency of the DNS, undermine consumer trust, and, ultimately, impact end-users around the globe. Accordingly, this is a high-priority topic that must be addressed before any further expansion of the DNS, and the review team offers several recommendations to remedy the deficiencies of the status quo and improve the security of the DNS.

As previously mentioned, one challenge to evaluating the impact of safeguards on trustworthiness is the lack of granularity in ICANN Contractual Compliance data. It is unclear what the impact of safeguards imposed on sensitive, regulated, and highly-regulated strings has been since complaints to registrants are difficult to track, as is the lack of detail publicly reported by ICANN Contractual Compliance regarding complaints that it receives. Moreover, provisions related to inherent government functions and cyberbullying that were incorporated into the Registry Agreements were difficult to measure as there were no consequences identified for a failure to comply with these provisions. Finally, the Public Interest Commitments

¹⁵ ICANN, “Contractual Compliance Reports,” accessed 8 August 2018, <https://www.icann.org/resources/pages/compliance-reports-2016-04-15-en>.

¹⁶ ICANN (2015), *ICANN Contractual Compliance 2014 Annual Report*, accessed 10 August 2018, <https://www.icann.org/en/system/files/files/annual-2014-13feb15-en.pdf>.

¹⁷ ICANN, “CCT Metrics Reporting Page: Rights Protection Mechanisms,” accessed 3 August 2018, <https://www.icann.org/resources/pages/cct-metrics-rpm-2016-06-27-en>.

¹⁸ ICANN (3 October 2009), *Exploratory Memorandum: Mitigating Malicious Conduct*, accessed 9 November 2016, <https://archive.icann.org/en/topics/new-gtlds/mitigating-malicious-conduct-04oct09-en.pdf>

¹⁹ “Universal Acceptance” refers to an effort to encourage “Internet applications and systems [to] treat all TLDs in a consistent manner, including new gTLDs and internationalized TLDs. Specifically, they must accept, validate, store, process and display all domain names.” See ICANN, “Universal Acceptance,” accessed 3 August 2018, <https://www.icann.org/resources/pages/universal-acceptance-2012-02-25-en>

(PICs) incorporated into Registry Agreements were particularly challenging to assess because they varied greatly.²⁰ It remains unclear how effective enforcement of the PICs has been.

Application and Evaluation

Here the review team chose to focus less on the complexity and any inefficiencies of the application and evaluation process and more on the potential inequities of the program as implemented. Of particular concern to the review team was the relatively low application rate from entities in the “Global South.”²¹

The CCT Review Team commissioned two focused efforts to explore applicant experiences and barriers to entry for those who did not apply to operate a new gTLD.²² Although more than half of the applicants to the New gTLD Program indicated they would go through the process again (even with no changes), a large majority indicated the Program was overly complex and bureaucratic, and that the assistance of outside consultants was necessary. Therefore, it should come as no surprise that a focus group of potential applicant cohorts (similar entities to those who applied) in the Global South indicated not only a lack of awareness of the Program as a whole, but also concerns over the complexity of the application process and a lack of available assistance in applying. Although not the most frequently expressed concern, nearly every cohort expressed concerns about the return on investment from operating a new gTLD. Programs that were put in place to facilitate and encourage applications from the Global South were thought to be both poorly monitored and largely ineffective. The ICANN community needs to make a decision about the importance of applications from the Global South (and by extension, from other underrepresented regions) and, if appropriate, to take further steps to encourage those applications. It is clear that if the community wants more applications from underrepresented regions, more needs to be done.

Further analysis of the application process revealed that the implementation of policies around issues such as string confusion was inconsistent and unpredictable. More clarity is needed in the Applicant Guidebook (AGB) to reduce this inconsistency going forward.²³

Finally, the CCT Review Team found that Governmental Advisory Committee (GAC) participation in the application and evaluation process was largely beneficial and led directly to modifications of applications and applicants more successfully navigating the process.

Rights Protection Mechanisms

An important aspect of the safeguards available in new gTLDs are the Rights Protection Mechanisms (RPMs) which were specifically developed in connection with the introduction of the New gTLD Program. The RPM's were meant to stand alongside existing rights protection mechanisms such as the Uniform Dispute Resolution Process (UDRP). The CCT Review

²⁰ See ICANN Wiki, “Public Interest Commitments,” accessed 3 August 2018, https://icannwiki.org/Public_Interest_Commitments.

²¹ “Global South” is a fluid and sometimes contested term used by social scientists to refer broadly to regions in Latin America, Asia, Africa, and Oceania. For an overview of the term's origins and use, see Nour Dados and Raewyn Connell, “The Global South,” *Contexts: Journal of the American Sociological Association* [11, 1] (2012): <http://journals.sagepub.com/doi/pdf/10.1177/1536504212436479>

²² AMGlobal Consulting, *New gTLDs and the Global South: Understanding Limited Global South Demand in the Most Recent New gTLD Round and Options Going Forward* (October 2016), accessed 3 August 2018, <https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials>

²³ ICANN, *gTLD Applicant Guidebook* (June 2012), accessed 3 August 2018, <https://newgtlds.icann.org/en/applicants/agb>

Team examined whether these RPMs help encourage a safe environment and promote consumer trust in the DNS. The CCT Review Team also sought to measure the cost impact of the New gTLD Program on intellectual property owners. The early indicators are that there is proportionately more trademark infringement in new gTLDs than in legacy TLDs.

The data available indicated that the number of domain name disputes had increased since the introduction of new gTLDs, with disputes rising year-on-year after their introduction. Of course, a rising number of domain name disputes is not in itself surprising, given the expansion of the DNS and increased number of domain name registrations worldwide. Thus, the CCT Review Team sought an answer to the more pertinent question of whether there is proportionately more trademark infringement in new gTLDs than in legacy TLDs. This is a more difficult issue, as there are many factors involved in assessing trademark infringement, and minimal data is available. For example, in addition to the UDRP and URS, trademark owners also use a variety of other means to deal with abusive domain name registrations, such as court actions and demand letters, which are not tracked centrally. Nor are the costs associated with such actions available. It is also not within ICANN's remit to track or attempt to track such data. The International Trademark Association (INTA) conducted a study of its membership to begin to explore the experience of trademark holders that reveals some of the complexities in obtaining such information. The INTA study was directed to the 1,096 corporations, nonprofits and other entities that own trademark portfolios and are considered "regular" members under INTA's membership structure. Outside counsel and other categories of trademark service providers were not the targets of the survey. This decision was made in order to avoid overlap with brand owners whose outside counsel may also be receiving the survey. Ninety-three respondents entered the survey and 33 completed it. Subsequent feedback suggests that the complexity of the questions, the length of the survey, and the survey methodology, generally, discouraged completion.

The CCT Review Team examined the survey results and supplemented these with its own analysis. While the survey received a low number of respondents, the INTA survey offers some interesting findings with respect to the costs of trademark enforcement in the new gTLDs to brand owners. The survey found that "new TLD registrations [by brand owners] primarily duplicate legacy TLD or ccTLD registrations." In particular, only 17% of respondents had registered names in the new gTLDs for the first time versus duplicating existing domains in legacy gTLDs or ccTLDs. This suggests that defensive registrations may remain an issue in the New gTLD Program. While one of the stated purposes of the New gTLD Program was to create greater choice, the primary consideration for domain registration by brand owners who participated in the survey appears to be defensive.

However, the survey also indicates that for the respondents the expansion of the New gTLD Program has made defensive registrations a less efficient means of protection. Accordingly, it appears that trademark holders are shifting their protection spending to alternatives and expanded monitoring. Furthermore, the survey suggests that as many as 75% of domain name dispute cases involve entities that have registered their domain names using privacy and proxy services making it difficult to assess whether this abuse is tied to common actors. These results suggest the need for further research in these systems. Finally, there is an indication that enforcement costs have increased in the new domains, which suggests that at least for respondents, there is greater infringement in those new domains than in legacy gTLDs and ccTLDs. The INTA survey suggests that, at the very least, further research is necessary, perhaps with a simplified methodology to encourage a higher completion rate. Nonetheless, the exercise did provide useful information in terms of indicating trends. It is clear that the brand owners that participated in this survey have experienced some frustration with the New gTLD Program and the rights protection mechanisms that have been put in place.

The CCT Review Team also looked to data collected by ICANN as well as data from the World Intellectual Property Organization ("WIPO"). ICANN's metrics data shows that domain name disputes are rising alongside total domain name registrations but does not show a breakdown of the relative use of UDRPs, i.e. the use of UDRPs in new gTLDs as opposed to legacy TLDs. WIPO data for 2017 however does give a strong indication that there is proportionately more trademark infringement in new gTLDs than in legacy TLDs.

The CCT Review Team could not definitively conclude whether the URS is a valuable RPM given its low usage compared to the UDRP. The fact that the TM-PDDRP and RRDRP have not been invoked to date may on the one hand bring into question their effectiveness but may equally suggest that their mere existence is acting as a successful deterrent. Conclusions from the RPM review currently underway may shed some more light on the issue in the near future.

Recommendations

In light of the studies and analyses carried out for this review, the CCT Review Team has developed recommendations that fall into three main categories:

- ⦿ Requests for more and better data collection
- ⦿ Policy issues to be addressed by the community
- ⦿ Suggested reforms relating to transparency and data collection within ICANN Contractual Compliance

The review team has assigned a priority level to each recommendation, which reflects the timeframe in which each should be implemented and the extent to which any particular recommendation should be a prerequisite to further expansion of the DNS.

Data Gathering

In general, the review team's work was hampered by insufficient data on pricing of domain names, including wholesale, retail, and secondary market prices. In addition, collection of data about a country at a regional level would make it possible to assess competition in narrower geographic areas. Furthermore, the lack of data regarding DNS abuse and lack of more granular information about the subject matter of complaints received by ICANN Contractual Compliance also created obstacles to assessing the effectiveness of the safeguards and the trustworthiness of the new gTLDs. Some of this additional data collection will require changes to registry and registrar contracts, which will take some time, but the review team believes that it is necessary for proper evaluation of reforms to the New gTLD Program. Other data are collected by third parties, and also could be used by ICANN. To the extent possible, relevant data should be made available in an easily accessible and non-confidential form to researchers both within and outside the ICANN community. The CCT Review Team recommends that data gathering become a priority inside ICANN, with an emphasis on data-driven analysis and programmatic success measurement.

ICANN Contractual Compliance

The CCT Review Team found that current data available from ICANN Contractual Compliance are insufficient to measure the enforcement of various contract provisions and the success of safeguards in mitigating downstream consequences to DNS expansion. Part of the problem

is transparency, in part due to the lack of granularity of the data that are being collected. The CCT make several recommendations for practical reform within ICANN Contractual Compliance.²⁴

Conclusion

Initial indications are that the New gTLD Program has led to a dramatic increase in consumer choice, a modest, but important, increase in competition, and has had a minimal impact on consumer trust. However, there are several TLDs with a disproportionate level of DNS security abuse and the review team recommends enhancements to various enforcement mechanisms prior to any further additions to the DNS. The review team believes that there is a substantial need for more and better data on both competition and pricing, and on the impact of safeguards on consumer protection.

²⁴ Since the publication of the CCT Review Team’s draft recommendations for public comment, ICANN Contractual Compliance has considered the review team recommendations in implementing certain changes described in the blogs of October 2017, “Enhancing Transparency in Contractual Compliance Reporting,” <https://www.icann.org/news/blog/enhancing-transparency-in-contractual-compliance-reporting>, and March 2018, “Enhancing Transparency in Contractual Compliance Reporting,” <https://www.icann.org/news/blog/enhancing-transparency-in-contractual-compliance-reporting-en>.

2 CCT Review Team Recommendations

The review team's recommendations are summarized in the table below. The full recommendations, with related findings and rationale, may be found in the cited chapters.

Prerequisite or priority level: Per the ICANN Bylaws, the CCT Review Team indicated whether each recommendation must be implemented prior to the launch of subsequent procedures for new gTLDs.²⁵ The review team agreed that those recommendations that were not categorized as prerequisites would be given a time-bound priority level:

- ⦿ **High priority:** Must be implemented within 18 months of the issuance of a final report
- ⦿ **Medium priority:** Must be implemented with 36 months of the issuance of a final report
- ⦿ **Low priority:** Must be implemented prior to the start of the next CCT Review

²⁵ See ICANN, "Bylaws for Internet Corporation for Assigned Names and Numbers," amended 18 June 2018, <https://www.icann.org/resources/pages/governance/bylaws-en/>, Section 4.6.d.iv: "For each of its recommendations, the CCT Review Team should indicate whether the recommendation, if accepted by the Board, must be implemented before opening subsequent rounds of new generic top-level domain applications periods."

#	Recommendation	To	Prerequisite or priority level	Con sens us
Chapter 5. Data-Driven Analysis: Recommendations for Additional Data Collection and Analysis				
1	Formalize and promote ongoing data collection.	ICANN organization	High	Yes
Chapter 6. Competition				
2	Collect wholesale pricing for legacy gTLDs.	ICANN organization	Low	Yes
3	Collect transactional pricing for the gTLD marketplace.	ICANN organization	Medium	Yes
4	Collect retail pricing for the domain marketplace.	ICANN organization	Low	Yes
5	Collect secondary market data.	ICANN organization	High	Yes
6	Partner with mechanisms and entities involved with the collection of TLD data. As feasible, collect TLD registration number data per TLD and registrar at a country-by-country level in order to perform analysis based on the same methods used in the Latin American and Caribbean DNS Marketplace (LAC) Study. ²⁶	ICANN organization	Low	Yes
7	Collect domain usage data to better understand the implications of parked domains.	ICANN organization	High	Yes
Chapter 7. Consumer Choice				
8	Conduct periodic surveys of registrants that gathers both objective and subjective information with a goal of creating more concrete and actionable information.	ICANN organization	Low	Yes
9	The ICANN community should consider whether the costs related to defensive registration for the small number of brands registering a large number of domains can be reduced.	New gTLD Subsequent Procedures PDP Working Group and/or Rights Protection Mechanisms (RPM) PDP Working Group	Prerequisite	Yes
10	The GNSO should initiate a new Policy Development Process (PDP) to create a consistent privacy baseline across all registries, including to explicitly cover cases of privacy infringements such as sharing or selling personal data without a lawful basis, such as the consent of that person. The GNSO PDP should consider limiting the collection and processing of personal data within rules which are mandatory for all gTLD registries. It should also consider not allowing registries to share personal data with third parties without a lawful basis, such as the consent of that person or under circumstances defined by applicable law (e.g. upon requests of government agencies, IP lawyers, etc.). Also, it is necessary to be aware of emerging, applicable regulations related to the processing of the personal data. For	Generic Names Supporting Organization	Medium	Yes

²⁶ Oxford Information Labs, EURid, InterConnect Communications (22 September 2016), Latin American and Caribbean DNS Marketplace Study (hereafter LAC Study), accessed 6 August 2018, <https://www.icann.org/en/system/files/files/lac-dns-marketplace-study-22sep16-en.pdf>.

#	Recommendation	To	Prerequisite or priority level	Consensus
	clarification, this recommendation does not relate to issues involving WHOIS or registration directory services data.			
Chapter 8. Consumer Trust				
11	Conduct periodic end-user consumer surveys. Future review teams should work with survey experts to conceive more behavioral measures of consumer trust that gather both objective and subjective data with a goal toward generating more concrete and actionable information.	ICANN organization and future CCT Review Teams	Prerequisite	Yes
12	Create incentives and/or eliminate current disincentives that encourage gTLD registries to meet user expectations regarding: (1) the relationship of content of a gTLD to its name; (2) restrictions as to who can register a domain name in certain gTLDs based upon implied messages of trust conveyed by the name of its gTLDs (particularly in sensitive or regulated industries) and (3) the safety and security of users' personal and sensitive information (including health and financial information). These incentives could relate to applicants who choose to make public interest commitments in their applications that relate to these expectations. Ensure that applicants for any subsequent rounds are aware of these public expectations by inserting information about the results of the ICANN surveys in the Applicant Guide Books.	New gTLD Subsequent Procedures PDP Working Group	Prerequisite (incentives could be implemented as part of application process)	Yes
13	ICANN should collect data in conjunction with its related data collection activities on the impact of restrictions on who can buy domains within certain new gTLDs (registration restrictions) to help regularly determine and report: <ol style="list-style-type: none"> Whether consumers and registrants are aware that certain new gTLDs have registration restrictions; Compare consumer trust levels between new gTLDs with varying degrees of registration restrictions; Determine whether the lower abuse rates associated with gTLDs that impose stricter registration policies identified in the Statistical Analysis of DNS Abuse in gTLDs Study continue to be present within new gTLDs that impose registration restrictions as compared with new gTLDs that do not;²⁷ 	ICANN organization	Low	Yes

²⁷ SIDN Labs and the Delft University of Technology, "DNS Abuse in gTLDs".

#	Recommendation	To	Prerequisite or priority level	Consensus
	<p>4. Assess the costs and benefits of registration restrictions to contracted parties and the public (to include impacts on competition and consumer choice) and;</p> <p>5. Determine whether and how such registration restrictions are enforced or challenged.</p>			
Chapter 9. Safeguards				
14	Consider directing ICANN organization, in its discussions with registries, to negotiate amendments to existing Registry Agreements, or in consideration of new Registry Agreements associated with subsequent rounds of new gTLDs, to include provisions in the agreements to provide incentives, including financial incentives for registries, especially open registries, to adopt proactive anti-abuse measures. ²⁸	The ICANN Board, the Registry Stakeholders Group, the Registrar Stakeholders Group, the Generic Names Supporting Organization, and the Subsequent Procedures PDP WG.	High	Yes
15	ICANN Org should, in its discussions with registrars and registries, negotiate amendments to the Registrar Accreditation Agreement and Registry Agreements to include provisions aimed at preventing systemic use of specific registrars or registries for DNS Security Abuse. With a view to implementing this recommendation as early as possible, and provided this can be done, then this could be brought into effect by a contractual amendment through the bilateral review of the Agreements. In particular, ICANN should establish thresholds of abuse at which compliance inquiries are automatically triggered, with a higher threshold at which registrars and registries are presumed to be in default of their agreements. If the community determines that ICANN org itself is	The ICANN Board, the Registry Stakeholders Group, the Registrar Stakeholders Group, the Generic Names Supporting Organization and the Subsequent Procedures PDP WG	Prerequisite (provisions to address systemic DNS Security Abuse should be included in the baseline contract for any future new gTLDs)	Yes

²⁸ The review team looked for examples of practices that could assist in proactively minimizing abuse. One such example has been proposed by EURid, the operator of the .EU registry, which will soon test a delayed delegation system. See EURid, “EURid Set to Launch First of its Kind Domain Name Abuse Prevention Tool,” 2017, accessed 8 August 2018, <https://eurid.eu/en/news/eurid-set-to-launch-first-of-its-kind-domain-name-abuse-prevention-tool/> and Vissers T. et al. (2017), “Exploring the Ecosystem of Malicious Domain Registrations in the .eu TLD” In: Dacier M., Bailey M., Polychronakis M., Antonakakis M. (eds) Research in Attacks, Intrusions, and Defenses. RAID 2017. Lecture Notes in Computer Science, vol 10453. Springer, Cham, accessed 8 August 2018, https://link.springer.com/chapter/10.1007/978-3-319-66332-6_21. https://eurid.eu/media/filer_public/9e/d1/9ed12346-562d-423d-a3a4-bcf89a59f9b4/eutldecosystem.pdf. This process will not prevent registrations, but instead delay activation of a registration if a domain name is identified as being potentially abusive by machine learning algorithms. Future review teams could study this effort to consider its effectiveness and whether it could serve as a potential innovative model to help foster trust and a secure online environment. In addition, the .xyz registry may provide another example of proactive measures to combat abuse. The .xyz registry purports to have a zero-tolerance policy toward abuse-related activities on .xyz or any of their other domain extensions using a sophisticated abuse monitoring tool enabling proactive monitoring and detection in near real-time, suspending domains engaging in any of the abusive activities set out. Future review teams could explore the effectiveness of this approach by examining abuse rates over time and comparing the levels of abuse both before and after this policy.

#	Recommendation	To	Prerequisite or priority level	Con sensus
	ill-suited or unable to enforce such provisions, a DNS Abuse Dispute Resolution Policy (DADRP) should be considered as an additional means to enforce policies and deter against DNS Security Abuse. Furthermore, defining and identifying DNS Security Abuse is inherently complex and would benefit from analysis by the community, and thus we specifically recommend that the ICANN Board prioritize and support community work in this area to enhance safeguards and trust due to the negative impact of DNS Security Abuse on consumers and other users of the Internet.			
16	Further study the relationship between specific registry operators, registrars, and DNS Security Abuse by commissioning ongoing data collection, including but not limited to, ICANN Domain Abuse Activity Reporting (DAAR) initiatives. ²⁹ For transparency purposes, this information should be regularly published, ideally quarterly and no less than annually, in order to be able to identify registries and registrars that need to come under greater scrutiny, investigation, and potential enforcement action by ICANN organization. Upon identifying abuse phenomena, ICANN should put in place an action plan to respond to such studies, remedy problems identified, and define future ongoing data collection.	The ICANN Board, the Registry Stakeholders Group, the Registrar Stakeholders Group, the Generic Names Supporting Organization, and the Subsequent Procedures PDP WG, SSR2 Review Team.	High	Yes
17	ICANN should collect data about and publicize the chain of parties responsible for gTLD domain name registrations.	The ICANN Board, the GNSO Expedited PDP, the Registry Stakeholders Group, the Registrar Stakeholders Group, the Generic Names Supporting Organization, the Subsequent Procedures PDP WG, SSAC	High	Yes
18	In order for the upcoming WHOIS Review Team to determine whether additional steps are needed to improve WHOIS accuracy, and whether to proceed with the identity phase of the Accuracy Reporting System (ARS) project, ICANN should gather data to assess whether a significant percentage of WHOIS-related	ICANN organization to gather required data, and to provide data to relevant review teams to consider the results and, if warranted, to assess feasibility and	Medium	Yes

²⁹ ICANN, "Domain Abuse Activity Reporting (DAAR)," accessed 6 August 2018, <https://www.icann.org/octo-ssr/daar>

#	Recommendation	To	Prerequisite or priority level	Consensus
	<p>complaints applicable to new gTLDs relate to the accuracy of the identity of the registrant.³⁰ This should include analysis of WHOIS accuracy complaints received by ICANN Contractual Compliance to identify the subject matter of the complaints (e.g., complaints about syntax, operability, or identity). The volume of these complaints between legacy gTLDs and new gTLDs should also be compared. ICANN should also identify other potential data sources of WHOIS complaints beyond those that are contractually required (including but not limited to complaints received directly by registrars, registries, ISPs, etc.) and attempt to obtain anonymized data from these sources.</p> <p>Future CCT Reviews may then also use these data.</p>	desirability of moving to identity validation phase of WHOIS ARS project.		
19	The next CCT should review the "Framework for Registry Operator to Respond to Security Threats" and assess whether the framework is a sufficiently clear and effective mechanism to mitigate abuse by providing for systemic and specified actions in response to security threats. ³¹	Future CCT Review Teams	Medium	Yes
20	Assess whether mechanisms to report and handle complaints have led to more focused efforts to combat abuse by determining: (1) the volume of reports of illegal conduct in connection with the use of the TLD that registries receive from governmental and quasi-governmental agencies; (2) the volume of inquiries that registries receive from the public related to malicious conduct in the TLD; (3) whether more efforts are needed to publicize contact points to report complaints that involve abuse or illegal behavior within a TLD; and (4) what actions registries have taken to respond to complaints of illegal or malicious conduct in connection with the use of the TLD. Such efforts could include surveys, focus groups, or community discussions. If these methods proved ineffective, consideration could be given to amending future standard Registry Agreements to require registries to more prominently disclose their abuse points of contact and provide more granular information	ICANN organization and future CCT Review Teams	Medium	Yes

³⁰ ICANN, "WHOIS Accuracy Reporting System (ARS) Project Information," accessed 6 August 2018, <https://whois.icann.org/en/whoisars>

³¹ ICANN, "Framework for Registry Operator to Respond to Security Threats," accessed 6 August 2018, <https://www.icann.org/resources/pages/framework-registry-operator-respond-security-threats-2017-10-20-en>

#	Recommendation	To	Prerequisite or priority level	Consensus
	to ICANN. Once this information is gathered, future review teams should consider recommendations for appropriate follow up measures.			
21 ³²	Include more detailed information on the subject matter of complaints in ICANN publicly available compliance reports. Specifically, more precise data on the subject matter of complaints, particularly: (1) the class/type of abuse; (2) the gTLD that is target of the abuse; (3) the safeguard that is at risk; (4) an indication of whether complaints relate to the protection of sensitive health or financial information; (5) what type of contractual breach is being complained of; and (6) resolution status of the complaints, including action details. These details would assist future review teams in their assessment of these safeguards. ³³	ICANN organization	High	Yes
22	Initiate engagement with relevant stakeholders to determine what best practices are being implemented to offer reasonable and appropriate security measures commensurate with the offering of services that involve the gathering of sensitive health and financial information. Such a discussion could include identifying what falls within the categories of “sensitive health and financial information” and what metrics could be used to measure compliance with this safeguard.	ICANN organization	High	Yes

³² Since the publication of the CCT Review Team’s draft recommendations for public comment, ICANN Contractual Compliance has considered the review team recommendations in implementing certain changes. In October 2017, ICANN Contractual Compliance, began collecting and reporting on the granularity of registrar-related DNS Abuse complaints by identifying the type of abuse including spam, pharming, phishing, malware, botnets, counterfeiting, pharmaceutical, fraudulent and deceptive practices, trademark or copyright infringement, and missing or invalid registrar abuse contact information. This information is reported on ICANN.org in the monthly dashboard at this link <https://features.icann.org/compliance/dashboard/report-list>. The quarterly and annual metrics reports provide information about enforcement reasons, reporter categories, closure reasons and details of the complaints inclusive of DNS Abuse by legacy and new gTLDs as they evolve through the compliance process, from ticket receipt to closure. They also reporting on any complaint type if it concerns a GAC Cat 1 gTLD. They also report on granularity of type of Transfer complaints (choices are Transfer, Unauthorized Transfer, COR, Unauthorized COR and TEAC).

In light of the ICANN community concerns regarding DNS infrastructure abuse, Compliance updated the audit plans with expanded questions and testing to address DNS abuse and also includes concerns about DNS infrastructure abuse when determining which contracted parties to audit. This information will be reported via the Audit Report and published under Reports & Blogs at this link <https://www.icann.org/resources/compliance-reporting-performance>.

³³ Since the publication of the CCT Review Team’s draft recommendations for public comment, ICANN Contractual Compliance has considered the review team recommendations in implementing certain changes described in the blogs of October 2017, “Enhancing Transparency in Contractual Compliance Reporting,” <https://www.icann.org/news/blog/enhancing-transparency-in-contractual-compliance-reporting>, and March 2018, “Enhancing Transparency in Contractual Compliance Reporting,” <https://www.icann.org/news/blog/enhancing-transparency-in-contractual-compliance-reporting-en>.

#	Recommendation	To	Prerequisite or priority level	Consensus
23	<p>ICANN should gather data on new gTLDs operating in highly-regulated sectors to include the following elements:³⁴</p> <ul style="list-style-type: none"> ⦿ A survey to determine: 1) the steps registry operators are taking to establish working relationships with relevant government or industry bodies; and 2) the volume of complaints received by registrants from government and regulatory bodies and their standard practices to respond to those complaints. ⦿ A review of a sample of domain websites within the highly-regulated sector category to assess whether contact information to file complaints is sufficiently easy to find. ⦿ An inquiry to ICANN Contractual Compliance and registrars/resellers of highly regulated domains seeking sufficiently detailed information to determine the volume and the subject matter of complaints regarding domains in highly regulated industries. ⦿ An inquiry to registry operators to obtain data to compare rates of abuse between those highly-regulated gTLDs that have voluntarily agreed to verify and validate credentials to those highly-regulated gTLDs that have not. ⦿ An audit to assess whether restrictions regarding possessing necessary credentials are being enforced by auditing registrars and resellers offering the highly-regulated TLDs (i.e., can an individual or entity without the proper credentials buy a highly-regulated domain?). <p>To the extent that current ICANN data collection initiatives and compliance audits could contribute to these efforts, we recommend that ICANN assess the most efficient way to proceed to avoid duplication of effort and leverage current work.</p>	ICANN organization, New gTLD Subsequent Procedures PDP Working Group	High	Yes
24	a. Determine whether ICANN Contractual Compliance should report on a quarterly basis whether it has received complaints for a registry operator's failure to comply with either the	ICANN organization	Low	Yes

³⁴ For materials illustrating the safeguards related to highly-regulated sectors, see ICANN CCT Review Wiki, "Studies, Research, and Background Materials: Safeguards and Public Interest Commitments," accessed 6 August 2018, <https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials>

#	Recommendation	To	Prerequisite or priority level	Consensus
	<p>safeguard related to gTLDs with inherent governmental functions or the safeguard related to cyberbullying.³⁵</p> <p>b. Survey registries to determine: 1) whether they receive complaints related to cyberbullying and misrepresenting a governmental affiliation; and 2) how they enforce these safeguards.</p>			
25	<p>To the extent voluntary commitments are permitted in future gTLD application processes, all such commitments made by a gTLD applicant must state their intended goal and be submitted during the application process so that there is sufficient opportunity for community review and time to meet the deadlines for community and Limited Public Interest objections.³⁶ Furthermore, such requirements should apply to the extent that voluntary commitments may be made after delegation. Such voluntary commitments, including existing voluntary PICs, should be made accessible in an organized, searchable online database to enhance data-driven policy development, community transparency, ICANN compliance, and the awareness of variables relevant to DNS abuse trends.</p>	ICANN organization, New gTLD Subsequent Procedures PDP Working Group	Prerequisite	Yes
26	<p>A study to ascertain the impact of the New gTLD Program on the costs required to protect trademarks in the expanded DNS space should be repeated at regular intervals to see the evolution over time of those costs. The CCT Review Team recommends that the next study be completed within 18 months after issuance of the CCT Final Report, and that subsequent studies be repeated every 18 to 24 months.</p> <p>The CCT Review Team acknowledges that the Nielsen survey of INTA members in 2017 intended to provide such guidance yielded a lower response rate than anticipated.³⁷ We recommend a more user friendly and perhaps shorter survey to help ensure a higher and more statistically significant response rate.</p>	ICANN organization	High	Yes
27	<p>Since the review team's initial draft recommendation, the PDP "Review of All Rights Protection Mechanisms in All gTLDs (RPM</p>	Generic Names Supporting Organization	Prerequisite	Yes

³⁵ ICANN Governmental Advisory Committee (GAC), *Beijing Communiqué*, accessed 6 August 2018, <https://www.icann.org/en/system/files/correspondence/gac-to-board-18apr13-en.pdf>

³⁶ ICANN, "Objection and Dispute Resolution," accessed 6 August 2018, <https://newgtlds.icann.org/en/program-status/odr>

³⁷ Nielsen, *INTA New gTLD Cost Impact Study* (April 2017) and INTA, *New gTLD Impact Study*, (August 2017).

#	Recommendation	To	Prerequisite or priority level	Consensus
	<p>WG)” has started reviewing the Uniform Rapid Suspension system in detail and this is currently ongoing.³⁸ Given this ongoing review, the CCT Review Team recommends that the RPM WG continues its review of the URS and also looks into the interoperability of the URS with the Uniform Domain Name Dispute Resolution Policy (UDRP).³⁹ Given the current timeline, it would appear that the appropriate time to do so will be when the UDRP review is carried out by the PDP WG and at this time consideration be given to how it should interoperate with the UDRP.</p> <p>The review team has encountered a lack of data for complete analysis in many respects. The RPM PDP WG appears to also be encountering this issue and this may well prevent it drawing firm conclusions. If modifications are not easily identified, then the review team recommends continued monitoring until more data is collected and made available for a review at a later date.</p>			
28	<p>A cost-benefit analysis and review of the Trademark Clearinghouse (TMCH) and its scope should be carried out to provide quantifiable information on the costs and benefits associated with the present state of the TMCH services and thus to allow for an effective policy review.⁴⁰ Since our initial draft recommendation, the RPM PDP has started reviewing the TMCH in detail and ICANN has appointed Analysis Group to develop and conduct the survey(s) to assess the use and effectiveness of the Sunrise and Trademark Claims RPMs. Provided that the RPM PDP has sufficient data from this survey or other surveys and is able to draw firm conclusions, the CCT Review Team does not consider that an additional review is necessary. However, the CCT Review Team reiterates its recommendation for a cost-benefit analysis to be carried out if such analysis can enable objective conclusions to be drawn. Such cost-benefit analysis should include but not</p>	Generic Names Supporting Organization	Prerequisite	Yes

³⁸ ICANN GNSO, “PDP Review of All Rights Protection Mechanisms in All gTLDs,” accessed 6 August 2018, <https://gns0.icann.org/en/group-activities/active/rpm> and ICANN “Uniform Rapid Suspension (URS),” accessed 6 August 2018, <https://www.icann.org/resources/pages/urs-2014-01-09-en>

³⁹ ICANN, “Uniform Domain Name Dispute Resolution Policy,” accessed 6 August 2018, <https://www.icann.org/resources/pages/help/dndr/udrp-en>

⁴⁰ ICANN, “Trademark Clearinghouse (TMCH),” accessed 6 August 2018, <https://newgtlds.icann.org/en/about/trademark-clearinghouse>

#	Recommendation	To	Prerequisite or priority level	Consensus
	necessarily be limited to looking at cost to brand owners, cost to registries, and cost to registrars of operating with the TMCH now and going forward and look at the interplay with premium pricing.			
Chapter 10. Application and Evaluation Process of the New gTLD Program				
29	Set objectives/metrics for applications from the Global South.	New gTLD Subsequent Procedures PDP Working Group/Generic Supporting Names Organization	Prerequisite—objectives must be set	Yes
30	Expand and improve outreach into the Global South.	ICANN organization	Prerequisite	Yes
31	The ICANN organization to coordinate the <i>pro bono</i> assistance program.	ICANN organization	Prerequisite	Yes
32	Revisit the Applicant Support Program. ⁴¹	New gTLD Subsequent Procedures Working Group	Prerequisite	Yes
33	As required by the October 2016 Bylaws, Governmental Advisory Committee (GAC) consensus advice to the Board regarding gTLDs should also be clearly enunciated, actionable, and accompanied by a rationale, permitting the Board to determine how to apply that advice. ⁴² ICANN should provide a template to the GAC for advice related to specific TLDs, in order to provide a structure that includes all of these elements. In addition to providing a template, the Applicant Guidebook (AGB) should clarify the process and timelines by which GAC advice is expected for individual TLDs.	New gTLD Subsequent Procedures PDP Working Group, GAC, ICANN organization	Prerequisite	Yes
34	A thorough review of the procedures and objectives for community-based applications should be carried out and improvements made to address and correct the concerns raised before a new gTLD application process is launched. Revisions or adjustments should be clearly reflected in an updated version of the 2012 AGB.	New gTLD Subsequent Procedures PDP Working Group	Prerequisite	Yes
35	The New gTLD Subsequent Procedures PDP should consider adopting new policies to avoid the potential for inconsistent results in string confusion objections. ⁴³ In particular, the PDP should consider the following possibilities:	New gTLD Subsequent Procedures PDP Working Group	Prerequisite	Yes

⁴¹ ICANN, “Applicant Support Program (ASR),” accessed 6 August 2018, <https://newgtlds.icann.org/en/applicants/candidate-support>

⁴² ICANN, “GAC Advice,” accessed 6 August 2018, <https://newgtlds.icann.org/en/applicants/gac-advice>. See also ICANN, “Bylaws,” Section 2.1, Article 3, Section 3.6: <https://www.icann.org/resources/pages/governance/bylaws-en/#article2>

⁴³ ICANN GNSO, “PDP New gTLD Subsequent Procedures,” accessed 6 August 2018, <https://gns0.icann.org/en/group-activities/active/new-gtld-subsequent-procedures>

#	Recommendation	To	Prerequisite or priority level	Consen sus
	<ol style="list-style-type: none"> 1. Determining through the initial string similarity review process that singular and plural versions of the same gTLD string should not be delegated.⁴⁴ 2. Avoiding disparities in similar disputes by ensuring that all similar cases of plural versus singular strings are examined by the same expert panelist. 3. Introducing a post-dispute resolution panel review mechanism. 			

⁴⁴ New gTLD Subsequent Procedures Wiki, "String Similarity," accessed 6 August 2018, <https://community.icann.org/display/NGSPP/4.4.2+String+Similarity>

3 Background on the Competition, Consumer Trust, and Consumer Choice Review

The Competition, Consumer Trust and Consumer Choice Review Team (CCT) was convened under the Affirmation of Commitments (AoC) Section 9.3.⁴⁵ The AoC prescribes that “when new gTLDs (whether in ASCII or other language character sets) have been in operation for one year, ICANN will organize a review that will examine the extent to which the introduction or expansion of gTLDs has promoted competition, consumer trust and consumer choice, as well as effectiveness of (a) the application and evaluation process, and (b) safeguards put in place to mitigate issues involved in the introduction or expansion.”⁴⁶

The CCT was assembled in January 2016 and was comprised of 17 community representatives and volunteer subject matter experts representing a diverse array of global Internet stakeholders.⁴⁷ Since the review team was convened, ICANN has adopted new Bylaws as part of the Internet Assigned Numbers Authority (IANA) stewardship transition that incorporated the AoC provisions into the ICANN Bylaws as “Specific Reviews” under Section 4.6.⁴⁸ Similar to the AoC, the Bylaws describe the scope of this review as:

“The review team for the CCT Review will examine (A) the extent to which the expansion of gTLDs has promoted competition, consumer trust and consumer choice and (B) the effectiveness of the New gTLD Round’s application and evaluation process and safeguards put in place to mitigate issues arising from the New gTLD Round.”

The new Bylaws also specify that, for each of its recommendations, the CCT Review Team should indicate whether the recommendation, if accepted by the Board, should be implemented before opening subsequent rounds of new gTLD applications periods. The recommendations contained in this report identify those that should be implemented before the opening of future application periods for new gTLDs.

Producing recommendations that are as data- and fact-driven as possible is a fundamental goal of the review, and the CCT Review Team has endeavored to support its recommendations with data received prior to and throughout the review process. A number of initiatives were undertaken prior to the CCT Review’s launch and during deliberations to inform its work.⁴⁹

⁴⁵ US Department of Commerce and ICANN, *Memorandum of Understanding Between the Department of Commerce and the Internet Corporation for Assigned Names and Numbers*, 31 December 1999, <https://www.icann.org/resources/unthemed-pages/icann-mou-1998-11-25-en>. The Affirmation of Commitments, signed on 30 September 2009 between ICANN and the U.S. Department of Commerce (the “AoC”), calls for periodic review of four key ICANN objectives: (1) ensure that decisions made related to the global technical coordination of the DNS are made in the public interest and are accountable and transparent; (2) preserve the security, stability and resiliency of the DNS; (3) promote competition, consumer trust, and consumer choice in the DNS marketplace and (4) facilitate international participation in DNS technical coordination.

⁴⁶ ICANN, “Bylaws for Internet Corporation for Assigned Names and Numbers,” (October 2016), accessed 20 January 2017, <https://www.icann.org/resources/pages/governance/bylaws-en> This aspect has now been incorporated to the new ICANN Bylaws, <https://www.icann.org/en/system/files/files/adopted-bylaws-27may16-en.pdf>.

⁴⁷ The composition of the CCT Review Team can be viewed here: <https://community.icann.org/display/CCT/Composition+of+Review+Team>

⁴⁸ ICANN, “Bylaws,” (2016).

⁴⁹ For details, see [Appendix E: Terms of Reference](#).

In December 2010, the Board requested advice from the At-Large Advisory Committee (ALAC), Governmental Advisory Committee (GAC), Generic Names Supporting Organization (GNSO), and Country Codes Names Supporting Organization (ccNSO) on establishing the definition, measures, and three-year targets for competition, consumer trust and consumer choice in the context of the Domain Name System (DNS). This advice was requested to support ICANN's obligations under the AoC to review the extent to which the introduction or expansion of gTLDs has promoted competition, consumer trust and consumer choice.⁵⁰

The ICANN Board formed an Implementation Advisory Group for Competition, Consumer Trust and Consumer Choice (IAG-CCT) in September 2013 to review 70 metrics recommended by a GNSO-ALAC working group in December 2012. The IAG-CCT was tasked to make recommendations to the review team based on an evaluation of the feasibility, utility and cost-effectiveness of each of the proposed metrics. In September 2014, the IAG-CCT submitted its final recommendations⁵¹ to the ICANN Board, which adopted them in February 2015.⁵² The recommendations included 66 metrics related to competition, consumer trust and consumer choice. The ICANN organization has been continuously gathering and publishing data related to most of these metrics on the ICANN website.⁵³

These efforts led the ICANN organization to commission surveys of Internet users and registrants to gauge their sense of trust and choice of gTLDs, and an economic study of gTLD pricing and marketplace competition. Nielsen was retained to perform the registrant⁵⁴ and consumer⁵⁵ studies. The Analysis Group was retained to perform the economic studies.⁵⁶ Each served as important resources for the review team in building its draft recommendations.

The AoC mandates an examination of the effectiveness of the application and evaluation processes used in the 2012 round of gTLD applications, including ICANN organization's implementation of the policy recommendations made for the New gTLD Program. To help inform the CCT, ICANN organization compiled and published the Program Implementation Review,⁵⁷ which incorporated feedback from stakeholders, including applicants, service providers, and other community members, in order to provide the community (and the organization itself) with perspective on the execution of the New gTLD Program. The review team was also interested in understanding why more firms from the developing world did not apply to the program. To inform this aspect of its work, AMGlobal produced a report on its research and interviews conducted with firms, organizations and other institutions that did not apply for new gTLDs, but who may have been considered good candidates for the program because they were similar to entities from the developed world that did apply.⁵⁸

⁵⁰ ICANN Board Resolution 2010.12.10.30, "Consumer Choice, Competition and Innovation," (2010), accessed 20 January 2017, <https://www.icann.org/resources/board-material/resolutions-2010-12-10-en#6>

⁵¹ Implementation Advisory Group for Competition Consumer Trust and Consumer Choice (26 September 2014), *Final Recommendations on Metrics for CCT Review*, accessed 20 January 2017, <https://community.icann.org/display/IAG/IAG-CCT+report>

⁵² ICANN Board Resolution 2015.02.12.07-2015.02.12.09, "Recommendations for the Collection of Metrics for the New gTLD Program to Support the future AoC Review on Competition, Consumer Trust and Consumer Choice," (2012), accessed 20 January 2017, <https://www.icann.org/resources/board-material/resolutions-2015-02-12-en#1.e>

⁵³ ICANN, "Competition, Consumer Trust and Consumer Choice (CCT) Metrics Reporting," (2017), accessed 20 January 2017, <https://www.icann.org/resources/reviews/cct/metrics>

⁵⁴ Nielsen, Registrant Survey (2015) and Nielsen, Registrant Survey Wave 2 (2016).

⁵⁵ Nielsen, Consumer Research (2015) and Nielsen, Consumer Research Wave 2 (2016).

⁵⁶ Analysis Group, *Phase I Assessment* (2015) and Analysis Group, *Phase II Assessment*, (October 2016).

⁵⁷ ICANN, *Program Implementation Review* (January 2016), accessed 13 January 2017, <https://newgtlds.icann.org/en/reviews/implementation/program-review-29jan16-en.pdf>

⁵⁸ AMGlobal, *New gTLDs and the Global South* (October 2016).

The AoC also mandates that the review assess the effectiveness of safeguards enacted to mitigate abuse of new gTLDs. To inform CCT's work, the ICANN organization worked with the community to create the New gTLD Program Safeguards Against DNS Abuse report,⁵⁹ which explored methods for measuring the effectiveness of safeguards to mitigate DNS abuse that were implemented as part of the New gTLD Program. The ICANN organization also drafted the Rights Protection Mechanisms Review (RPM),⁶⁰ which focused on key rights protection mechanisms such as the Trademark Clearinghouse, the Uniform Rapid Suspension System and Post-Delegation Dispute Resolution Procedures.⁶¹

⁵⁹ ICANN Operations and Policy Research, *New gTLD Program Safeguards* (2016).

⁶⁰ ICANN (11 September 2015), Rights Protection Mechanisms Review, accessed 20 January 2017, <https://newgtlds.icann.org/en/reviews/rpm/rpm-review-11sep15-en.pdf>

⁶¹ For more details, see [Appendix C: Surveys and Studies](#).

4 History of the New gTLD Program⁶²

In the 1990s, management of the Domain Name System (DNS) was revised periodically to encourage more competition in the domain name marketplace. The number of available gTLDs, however, remained fixed and small. Beginning in 2000, ICANN expanded the available set of gTLDs to encourage more competition in the market for domain names.

History of the Expansion of the DNS Prior to 2000

The DNS was developed in the early 1980s as a means of organizing and easing Internet navigation by establishing unique, easier-to-remember addresses for different locations on the Internet. Initially, eight gTLDs were established, within which eligible entities could register second-level domain names. Three of these gTLDs (.com, .org, and .net) were unrestricted, meaning that anyone could register a second-level domain name within them. Five (.edu, .gov, .arpa, .int, and .mil) were in restricted use, meaning that only particular types of users were allowed to register a second-level domain within them. In addition to gTLDs, two-letter country code TLDs (ccTLDs) were introduced over time, beginning with .us in 1985.

Initially, the task of registering second-level domain names in the various gTLDs fell to SRI International, a not-for-profit research institute operating under a contract with the Department of Defense (DOD). In the early 1990s, the responsibility for registering names for .com, .org, .net, .edu and .gov was transferred to a private corporation, Network Solutions Inc. (NSI), under a contract with the National Science Foundation, which had taken over from DOD as the funding source. NSI operated the registry and acted as the sole registrar for .com, .org and .net.

In the early 1990s, .com replaced .edu as the most-used gTLD as the commercial possibilities of the Internet became apparent following the development of the World Wide Web. As the .com registry operator and its sole registrar, NSI had a monopoly on the registration of second-level domain names in .com. In 1995 NSI began charging \$100 to register a .com domain name for a two-year period.

The late 1990s saw a rapid series of steps designed to increase competition in the DNS marketplace. In 1997, the U.S. Government issued a policy directive stating that the management of the DNS should be privatized⁶³. In a policy statement issued in 1998, the U.S. Department of Commerce (“Commerce”) declared its intent to transfer management of the DNS from the U.S. government to a private corporation.⁶⁴ ICANN was established in 1998 as a private, not-for-profit corporation to manage the DNS. A Memorandum of Understanding (MOU) signed by Commerce and ICANN established ICANN’s authority to manage the DNS and reiterated Commerce’s intent that the management of the DNS would be “based on the principles of stability, competition, bottom-up coordination, and representation.”⁶⁵ The MOU also described one of ICANN’s main responsibilities as “oversight of the policy for determining

⁶² Michael L. Katz, Gregory L. Rosston, and Theresa Sullivan (June 2010), *An Economic Framework for the Analysis of the Expansion of Generic Top-Level Domains*, prepared for ICANN, <https://archive.icann.org/en/topics/new-gtlds/economic-analysis-of-new-gtlds-16jun10-en.pdf>

⁶³ President William J. Clinton (1 July 1997), *Memorandum on Electronic Commerce*, <https://www.gpo.gov/fdsys/pkg/WCPD-1997-07-07/pdf/WCPD-1997-07-07-Pg1006-2.pdf>

⁶⁴ National Telecommunications and Information Administration, US Dept of Commerce (5 June 1998), *Statement of Policy on the Management of Internet Names and Addresses*, <https://www.ntia.doc.gov/federal-register-notice/1998/statement-policy-management-internet-names-and-addresses>

⁶⁵ US Department of Commerce and ICANN (31 December 1999), *Memorandum of Understanding between the US Department of Commerce and the Internet Corporation for Assigned Names and Numbers, Section II.A*, accessed 6 August 2018, <https://www.icann.org/resources/unthemed-pages/icann-mou-1998-11-25-en>

the circumstances under which new TLDs are added to the root system,”⁶⁶ including “development of policies for the addition, allocation, and management of gTLDs and the establishment of domain name registries and domain name registrars to host gTLDs.”⁶⁷ Thus, as described in the Applicant Guidebook (AGB), “one of [ICANN’s] key mandates has been to promote competition in the domain name market.”⁶⁸

In late 1998, the National Telecommunications and Information Administration (NTIA), an agency within the U.S. Department of Commerce, required NSI to separate the registry functions from the registrar functions and to facilitate the entry of competitive registrars by establishing a shared registration system that would allow registrars other than NSI to interact with the .com, .org and .net registry databases. This led to the entry of hundreds of registrars, but the set of gTLDs remained fixed at a small number.

Previous gTLD Expansions⁶⁹

Including the most recent in 2012, ICANN has held three rounds of gTLD expansion since its founding. The first began in 2000 as a “proof-of-concept” round.⁷⁰ In that round, ICANN announced that it would create a maximum of seven new gTLDs, for which it received approximately 50 applications. After evaluating the applications, ICANN added four unsponsored gTLDs (.biz, .info, .name and .pro) and three sponsored gTLDs (.aero, .coop and .museum). The second round of gTLD expansion began in 2004. In that round, ICANN accepted applications only for sponsored gTLDs but announced that it would not limit the number of new gTLDs and would approve all qualified applications. ICANN received ten applications for nine different sponsored gTLDs and ultimately approved eight of the applications (.asia, .cat, .jobs, .mobi, .post, .tel, .travel and .xxx). Thus, prior to the 2012 New gTLD Program, there were 23 gTLDs.

Background of the 2012 New gTLD Program⁷¹

In 2005, ICANN’s Generic Names Supporting Organization (GNSO)—the main policy-making body for generic top-level domains—initiated a Policy Development Process (PDP) to consider the introduction of new gTLDs into the DNS based on the results of previous rounds conducted in 2000 and 2004. The two-year PDP included detailed and lengthy consultations with the many constituencies of ICANN’s global Internet community, including governments, civil society, business and intellectual property stakeholders, and technologists. In 2008, the ICANN Board adopted 19 specific GNSO policy recommendations for implementing new gTLDs, which included elements such as allocation criteria and contractual conditions for operating a gTLD.⁷²

After approval of the PDP’s recommendations, ICANN undertook an open, inclusive and transparent implementation process to address stakeholder concerns, such as the protection

⁶⁶ Ibid., Section 2.B.c

⁶⁷ US Government Publishing Office, *Federal Register 31741: Management of Internet Names and Addresses* [Vol. 63, 1], (10 June 1998): <https://www.gpo.gov/fdsys/pkg/FR-1998-06-10/pdf/98-15392.pdf>

⁶⁸ ICANN, *gTLD Applicant Guidebook* (June 2012), p. A-1.

⁶⁹ Katz et. al (2010), *An Economic Framework*

⁷⁰ ICANN, “Registry Proof of Concept Reports,” accessed 19 January 2017, <https://www.icann.org/resources/pages/poc-2012-02-25-en>.

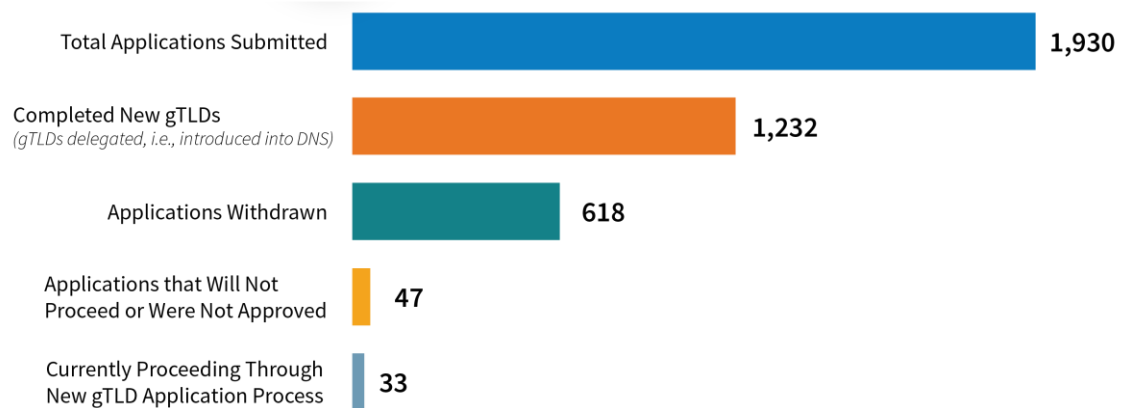
⁷¹ ICANN, “New Generic Top-Level Domains: About the Program,” accessed 19 January 2017, <https://newgtlds.icann.org/en/about/program>.

⁷² ICANN Generic Names Supporting Organization (8 August 2007), *Final Report: Introduction of New Generic Top-Level Domains*, <https://gns0.icann.org/en/issues/new-gtlds/pdp-dec05-fr-part08aug07.html>.

of intellectual property and community interests, consumer protection and DNS stability. This work included public consultations, review and input on multiple draft versions of the Applicant Guidebook. In June 2011, ICANN's Board of Directors approved the Guidebook and authorized the launch of the New gTLD Program. The program's goals included enhancing competition and consumer choice, and enabling the benefits of innovation via the introduction of new gTLDs, including both new ASCII and Internationalized Domain Name (IDN) top-level domains.

The application window opened on 12 January 2012, and ICANN received 1,930 applications for new gTLDs. As reported on ICANN's New gTLD website:

Table 1: New gTLD Applications' Status⁷³



⁷³ Figures current to 6 August 2018. See ICANN, "New Generic Top-Level Domains: Program Statistics," accessed 6 August 2018, <https://newgtlds.icann.org/en/program-status/statistics>.

5 Data-Driven Analysis: Recommendations for Additional Data Collection and Analysis

As called for in its terms of reference, the CCT Review Team endeavored to engage in objective research, to determine its findings and to provide a framework to evaluate the effectiveness of its recommendations.⁷⁴ To this end, the review team assembled data that had been collected as a result of the IAG-CCT recommendations, purchased additional data, and commissioned the collection of more.⁷⁵ The timeframe for the review, beginning while new strings were still being delegated, necessarily limited the conclusions that could be reached. Furthermore, the effort to conceive data-driven evaluation models was hampered by the difficulty in defining abstract concepts such as “Consumer Trust.” However, the primary challenge was insufficient data.

At the core of any competitive analysis is pricing, both in wholesale and retail markets. The data available to analyze both markets were often insufficient for the task. In particular, it would have been useful to have better price data, which would have allowed us to measure the impact of new gTLD entry and to define market(s) in which gTLDs compete more precisely. Anecdotal data suggest that the market in which new gTLDs participate also includes legacy gTLDs, certain “generic” ccTLDs (such as .co), other ccTLDs in their respective countries, and even alternative online identities such as social media accounts and third-level domains. More and better data on pricing, wholesale, retail, and the secondary market, both global and regional, are necessary to fully understand the behavior of participants within these markets. Finally, the role of parking (i.e., domains that have been registered, but are not yet being used as primary identifiers of typical websites. Instead, these domains are forwarded to other domains (including sub-domains), used only for email, monetized via advertising, or simply do not resolve, perhaps held in reserve by speculators or as premium domains by registries.

When evaluating the effectiveness of Rights Protection Mechanisms (RPMs) and safeguards, far more granular data on individual safeguards, as well as greater transparency on complaints from ICANN’s Contract Compliance Department is necessary.

Additional surveys of end-users would be helpful for competition analysis, to explore substitution behavior, and to evaluate consumer trust. Although user surveys were fielded by the IAG-CCT and the CCT, it is the review team’s view that future analyses would benefit greatly from surveys that take a more refined approach to analyzing registrant behavior. We describe our suggested approach to future surveys in Recommendations 8.

Finally, even the evaluation of the effectiveness of the application and evaluation process would have benefited from additional data. For example, programs put in place to encourage and facilitate applications from the Global South were not sufficiently tracked to allow for comprehensive evaluation.

As the issue of data has come up in the past and will inevitably come up in the future, the CCT would like to make a general recommendation about data collection to ICANN in addition to making suggestions particular to CCT research.

⁷⁴ Competition, Consumer Trust, and Consumer Choice Review Team (2016), *Terms of Reference*, accessed 6 August 2018, <https://community.icann.org/pages/viewpage.action?pageId=58727456>.

⁷⁵ Implementation Advisory Group for Competition Consumer Trust and Consumer Choice (26 September 2014), *Final Recommendations*.

Recommendation

Recommendation 1: Formalize and promote ongoing data collection.

Rationale/related findings: The lack of data has handicapped attempts both internally and externally to evaluate market trends and the success of policy recommendations.

To: ICANN organization

Prerequisite or priority level:⁷⁶ High

Consensus within team: Yes

Details: In an effort to promote more objective policy development inside ICANN, the ICANN organization should establish a formal initiative, perhaps including a dedicated data scientist, to facilitate quantitative analysis of policy initiatives and reviews by staff, contractors, and the community. Specifically, where possible, the ICANN organization should proactively collect data needed to validate or invalidate policy initiatives (whether ICANN organization- or community-driven), identify and collect data necessary to measure program success, both incrementally and in retrospect. On a case-by-case basis, this initiative would help to ascertain the cost/benefit and security requirements for the data in question.

Success measures: The ability for the community to determine, through review process, if policy initiatives had well-defined issue measurement to justify reform and facilitate review.

Below are some of the CCT-specific data requests for future review teams.

Competition and Consumer Choice

At various points in this report, we identify analyses that we were unable to conduct because we lacked the needed information. Some of these shortcomings can be overcome in the future if ICANN obtains these data directly from industry participants or if ICANN enters into contractual relationships with parties that collect the data. Others will require improved analyses of the behavior of industry participants, especially analyses that enhance our understanding of the way in which registrants substitute among TLDs. This section discusses these issues in greater detail. In addition, we believe that ICANN can make better use of publicly available data and that it should develop the capability to analyze both proprietary and public data on an ongoing basis.

The most significant data limitation that we faced was the almost total lack of information about the wholesale prices charged by legacy TLDs. Analysis Group requested wholesale price data directly from both legacy and new gTLD registries as part of its research, with the understanding that the data would never be provided to ICANN or made public. In addition, Analysis Group provided assurances that the data published in its report would be aggregated and anonymized so as not to compromise confidentiality. Although Analysis Group obtained

⁷⁶ Prerequisite or priority level: Per the ICANN Bylaws, the CCT Review Team indicated whether each recommendation must be implemented prior to the launch of subsequent procedures for new gTLDs. The team agreed that those recommendations which were not categorized as prerequisites would be given a time-bound priority level:

High priority: Must be implemented within 18 months of the issuance of a final report.

Medium priority: Must be implemented with 36 months of the issuance of a final report.

Low priority: Must be implemented prior to the start of the next CCT Review.

some data from most of the new gTLD registries from which it requested them, there were extremely few responses from legacy gTLDs and incomplete data from new gTLDs. We believe that ICANN should acquire this information from all registries on a regular basis and provide assurances that the data would be treated on a confidential basis. The data could then be analyzed by the ICANN organization and by others that execute non-disclosure agreements.

Very high parking rates are observed for some gTLDs, raising questions as to the competitive effects of parking. If prospecting rates are different between new and legacy gTLDs, we may be observing something different from competitive behavior and an analysis of registration renewal rates would be helpful in improving our understanding of this phenomenon. Although nTLDstats.com provides this information on an ongoing basis for new gTLDs, ICANN has had to enter into a contract with them to obtain similar information for legacy gTLDs. We report the results of our analysis of these data below. We recommend that ICANN arrange to obtain this information on an ongoing basis in the future.

A third limitation involved our inability to conduct analyses on a regional or country basis. However, during the course of our work, we learned that some of the data required to conduct this analysis had been compiled in connection with the Latin American and Caribbean DNS Marketplace Study.⁷⁷ We subsequently obtained those data, and we report the results of using the data to analyze concentration in a number of Latin American countries below.⁷⁸ We recommend that ICANN collect information on regional market shares between relevant ccTLDs and legacy TLDs, as well as pricing data for all countries on an ongoing basis in the future. In this regard, it is important to note that country-specific analysis would allow assessment of the extent to which gTLDs and ccTLDs compete. Some of these data may already be collected, for example by the Council for European National Top-Level Domain Registries (CENTR), and we recommend that ICANN explore the possibility of obtaining the needed data from these sources.⁷⁹

Fourth, it appears that ICANN does not currently make use of retail price data that can be obtained directly from public sources such as <https://tld-list.com/> and <https://namestat.org>. We recommend that ICANN develop the capability of analyzing these data on an ongoing basis. ICANN may also wish to explore the possibility of obtaining data on prices that prevail in secondary market transactions.

Finally, we note that our ability to define relevant markets has been severely handicapped by the lack of information about how registrants make choices among TLDs. [Appendix G: Possible Questions for a Future Consumer Survey](#) contains suggestions for questions that might be included in a future end-user survey.

Consumer Trust/Safeguards

The review team also faced challenges related to its assessment of the extent to which the expansion of gTLDs promoted consumer trust and the effectiveness of safeguards adopted by new TLD operators in mitigating certain risks involved in such expansion.

⁷⁷ Oxford Information Labs, EURid, InterConnect Communications, *LAC Study*.

⁷⁸ ICANN CCT Review Wiki, "Studies, Research, and Background Materials: LAC concentration ratios and HHIs" accessed 6 August 2018, <https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials>.

⁷⁹ centr.org, accessed 6 August 2018.

Two surveys were made available that contained data regarding the extent to which consumer end-user and registrants trusted new gTLDs.⁸⁰ However, the review team noted that the surveys did not define consumer trust (and other key terms) and contained few questions that explored the objective behavior of the survey respondents that could serve as a proxy for consumer trust. Moreover, certain responses that identified factors relevant to consumer trust—such as reputation and familiarity—were broad concepts that did not lend themselves to providing precise guidance for either future applicants, ICANN, or other community stakeholders. As a result, we recommend that future review teams work with survey experts to conceive more behavioral measures of consumer trust that gather both objective and subjective data, with a goal toward generating more concrete and actionable information, as described in recommendation 8.

The review team also lacked sufficient data on how effective safeguards adopted by new gTLD operators were in mitigating certain risks.⁸¹ For example, although many safeguards for new gTLDs aimed at mitigating DNS Security Abuse, little information was available to the review team that directly addressed this issue. In response, the review team commissioned a study to establish baseline measures of DNS Security Abuse rates in new and legacy gTLDs that will enable further inquiry into the effectiveness of these safeguards.⁸² We hope that future review teams will build on this study and consider how additional studies may shed further light on assessing the effectiveness of new gTLD safeguards.

An important and related issue is information about the costs of implementing these safeguards. At the time this review took place, the review team lacked data regarding the costs to registries and registrars of implementing the safeguards required under the New gTLD Program. Such data would be useful to future review teams who may wish to engage in a cost-benefit analysis.

Another challenge faced by the review team was a lack of transparency in the subject matter of complaints submitted to ICANN Contractual Compliance. Although ICANN makes available information about the general subject matter of the complaints it receives, such as WHOIS accuracy or DNS Security Abuse, ICANN does not disclose more specific information about the subject matter of these complaints. For example, regarding complaints about registrars, ICANN Compliance reports do not disclose what type of WHOIS accuracy is being complained about (i.e. address, email, or identity verification). Similarly, ICANN Compliance reports do not identify what types of DNS Security Abuse are the subjects of complaints, nor the nature of complaints made regarding implementation of UDRP and URS decisions (rather Compliance reports provide just the number of such complaints). Such information would permit review teams to identify more precisely which subject areas generate the most complaints and would enable a better assessment of the effectiveness of current safeguards.⁸³

⁸⁰ Nielsen, Consumer Research (2015); Nielsen, Consumer Research Wave 2 (2016); Nielsen, Registrant Survey (2015); and Nielsen, Registrant Survey Wave 2 (2016).

⁸¹ ICANN, New gTLD Program Safeguards (2016).

⁸² SIDN Labs and the Delft University of Technology (August 2017), “DNS Abuse in gTLDs”.

⁸³ Since the publication of the CCT Review Team’s draft recommendations for public comment, ICANN Contractual Compliance has considered the review team recommendations in implementing certain changes described in the blogs of October 2017, “Enhancing Transparency in Contractual Compliance Reporting,” <https://www.icann.org/news/blog/enhancing-transparency-in-contractual-compliance-reporting>, and March 2018, “Enhancing Transparency in Contractual Compliance Reporting,” <https://www.icann.org/news/blog/enhancing-transparency-in-contractual-compliance-reporting-en>.

6 Competition

In announcing the opening of the latest round of the introduction of new gTLDs, ICANN stated that:

The [New gTLD Program] aims to enhance innovation, competition, and consumer choice...The [Program] has enabled hundreds of new top-level domains in ASCII characters and in different scripts...to enter into the Internet's root zone since the first delegations occurred in October 2013.⁸⁴

This section describes the review team's analysis of the effects of the recent new gTLD round on competition. Before reporting the findings, however, it is important to emphasize that there were significant limitations in conducting the analysis. First, it is still "early innings" and the full effects of the New gTLD Program are unlikely to be felt for some time. TLDs continue to be introduced and many new gTLDs are still in the early stages of their development. Together, these factors make it difficult to reach definitive conclusions about the Program's impact at this time. Therefore, this should be regarded as an interim report and it is possible that the DNS marketplace will look quite different in the future than it does at present.

Second, the review team's analysis has been hampered significantly by the lack of relevant data, including, but not limited to, information about the wholesale prices charged for gTLD registrations. Consequently, among the conclusions reached are recommendations concerning additional information that ICANN should collect on an ongoing basis in order to improve its ability to carry out future analyses.⁸⁵

Finally, although registrants are likely to view different types of TLDs as substitutes for one another—for example, ccTLDs, legacy, and new gTLDs may all offer the same kind of string ending a registrant may value—the review team does not currently have enough information to permit definition of markets definitively for the purpose of analyzing competition. For that reason, the review team has analyzed competition in a number of alternative markets, including all gTLDs, all gTLDs plus "open" ccTLDs,⁸⁶ and all TLDs.⁸⁷ The hope is that future analyses will be better able to define the relevant markets in which gTLDs compete. To that end, a draft of a registrant survey that ICANN could undertake that would improve our understanding of registrant behavior, and thus permit relevant markets to be defined more precisely, is included in Appendix G.

⁸⁴ ICANN, "New Generic Top-Level Domains: About the Program," accessed 6 August 2018, <https://newgtlds.icann.org/en/about/program>

⁸⁵ Katz et. al (2010), *An Economic Framework*. In paragraph 118, the authors make a similar point: "...in order to derive the greatest informational benefits from the next round of gTLD introductions, ICANN should adopt practices that will facilitate the assessment of the net benefits from the initial rollout of additional gTLDs. Specifically, ICANN should require registries, registrars, and domain names registrants to provide information sufficient to allow the estimation of the costs and benefits of new gTLDs."

⁸⁶ Ben Edelman, "Registrations in Open ccTLDs," last modified 22 July 2002, https://cyber.harvard.edu/archived_content/people/edelman/open-cctlds/. Edelman notes: "Seeing the growth of COM, NET, and ORG, certain country-code top-level domains (ccTLDs) have decided to open their name spaces to all interested registrants, regardless of country. These domains are often referred to as 'open ccTLDs' as distinguished from those 'closed' ccTLDs that limit restriction to citizens or firms of their respective countries."

⁸⁷ There is also some indication that alternative online identities, including social media and third level domains, may be substitutes for registrations in TLDs. For example, Nielsen's Wave 2 Registrant Survey, conducted on behalf of ICANN for this report, found that these alternatives are often easier to use and may affect decisions on whether to register a domain name. See Nielsen, *Consumer Research Wave 2* (2016).

Economic Framework for Competition Analysis

In order to analyze the competitive effects of the entry of new gTLDs into the DNS, the review team first attempted to define the relevant markets in which participants in the DNS operate. This required an understanding of, among other factors, the extent to which new TLDs serve as substitutes for the legacy domains, substitutions among new TLDs, and the geographic dimension of the market in which TLDs operate. Because the review team did not have sufficient information to define markets definitively, we conducted our analysis using a number of alternative market definitions. After defining markets, the review team then calculated the market shares of TLD operators, registrars, and back-end providers, and calculated measures of market concentration based on those shares. In order to assess the likely effect of new gTLD entry on competition in the DNS marketplace, these measures were compared in late 2013—just before the introduction of the new gTLDs—to their levels in December 2016, giving the review team an observation window of approximately three years.

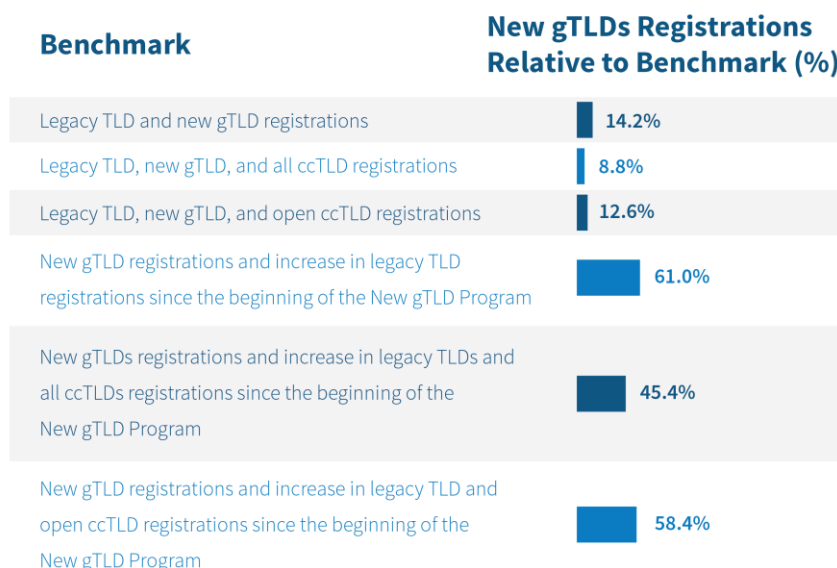
Penetration by New gTLDs in the Domain Name System

The New gTLD Program not only vastly increased the number of registries from which registrants can choose—an increase of more than 60-fold—but it has also vastly increased their variety. This increase in non-price competition among gTLDs is reflected in domains in new languages (e.g., .immobilien), new character sets (e.g., .网址 [xn--ses554g] and .ㄩㄨ [xn-tckwe]), new geographic identities (e.g., .london and .tokyo), and new specialized domains (e.g., .racing, .realtor, and .pub). The review team found that, as of December 2016 new gTLDs had acquired approximately 61 percent of the increase in the number of registrations in all gTLDs; approximately 45 percent of the increase in the number of registrations in all TLDs, gTLDs, and ccTLDs; and about 58 percent of the increase in the number of registrations in all gTLDs and all “open” ccTLDs, since the introduction of new gTLDs began in October 2013. The review team also found that, as of December 2016, new gTLDs accounted for about 14 percent of the total number of registrations in all gTLDs, about 9 percent of the total number of registrations in all TLDs, and about 13 percent of the total number of registrants in all gTLDs and “open” ccTLDs.⁸⁸ Table 2 reports these results:⁸⁹

⁸⁸ Google, “International Targeting,” accessed 19 January 2017, <https://support.google.com/webmasters/answer/62399?hl=en> is the source of the list of “open” ccTLDs, which Google refers to as “generic” TLDs.

⁸⁹ Since the review team’s primary focus is on gTLDs that are, or will be, generally available for registration by members of the public, the analysis excludes gTLDs that are subject to Specification 13 of the base registry agreement and/or are exempt from the “Registry Operator Code of Conduct” (ROCC). For this reason, the review team requested that Analysis Group exclude ROCC-exempt as well as “Brand” TLDs subject to Specification 13 from the analysis. For details on Specification 13 and a list of “Brand” TLDs, see ICANN, “Applications to Qualify for Specification 13 of the Registry Agreement,” accessed 20 January 2017, <https://newgtlds.icann.org/en/applicants/agb/base-agreement-contracting/specification-13-applications>. For details on ROCC-exempt TLDs, see ICANN, “Registry Operator Code of Conduct Exemption Requests,” accessed 20 January 2017, <https://newgtlds.icann.org/en/applicants/agb/base-agreement-contracting/ccer>.

Table 2: New gTLD Registrations Relative to Various Benchmarks as of December 2016⁹⁰



A question that naturally arises is how to interpret the observed share of registrations currently captured by new gTLDs. There are at least three reasons why one might expect that share initially to be smaller than the level that it will eventually reach. First, there are costs to registrants for switching from a legacy to a new gTLD that impart inertia to the process. These costs can be fairly mundane, such as the costs of repainting trucks or issuing new business cards. But they can be significant—for example, the costs of assuring that customers and others are made aware of the change—and may well exceed any direct costs related to the registration of a domain name. Second, there are what might be called “network” effects. Here, a potential registrant might be reluctant to register in a new domain because the domain has a small subscriber base and thus users are generally unaware of its existence. Although a “bandwagon effect”—where a new gTLD’s increased popularity may motivate more users to register names after it has reached a given size—is unlikely to occur during the early part of its operations.⁹¹ Third, a registrant might wait for the expiration of its registration term with a legacy gTLD before switching to a new gTLD or, at least for a time, register in a new gTLD

⁹⁰ These and other calculations in this section were performed by Analysis Group at the request of the review team. Registration data for legacy and new gTLDs were derived from monthly transaction reports as of December 2016 and October 2013, which are available at <https://www.icann.org/resources/pages/registry-reports>. Registration data for ccTLDs were based on Zooknic map data. Where Zooknic data were not available, ccTLD registration data were based on Nominet data as of December 2016. Registration data for ccTLDs at the beginning of the New gTLD Program were based on Nominet data as of December 2013. All calculations were based on the total number of registrations as of December 2016 with the exception of the change in legacy TLD and ccTLD registrations since the entry of new gTLDs (October 2013). Brand and ROCC-exempt TLDs were excluded from the analysis. The list of Brand TLDs is available at <https://newgtlds.icann.org/en/applicants/agb/base-agreement-contracting/specification-13-applications>. The list of ROCC-exempt TLDs is available at <https://newgtlds.icann.org/en/applicants/agb/base-agreement-contracting/ccer>

⁹¹ Michael L. Katz and Carl Shapiro, “Systems Competition and Network Effects,” *The Journal of Economic Perspectives* 8(2), (1994): 93-115, http://www.jstor.org/stable/2138538?origin=JSTOR-pdf&seq=1#page_scan_tab_contents. Katz and Shapiro discuss network effects, where the value of a product to a user depends not only on its intrinsic characteristics but also on the number of other users of that product. See also: H. Liebenstein, “Bandwagon, Snob, and Veblen Effects in the Theory of Consumers’ Demand,” *Quarterly Journal of Economics* 64(2), (1950), 183-207, <http://qje.oxfordjournals.org/content/64/2/183.short>. Liebenstein calls this type of behavior a “bandwagon effect,” which reflects “the desire of people to wear, buy, do, consume, and behave like their fellows...” (p. 184).

while maintaining its registration in a legacy domain. Given the low cost of renewal and the high likelihood of remnant links and traffic, there may be very little incentive to drop an old domain registration immediately. Future surveys of gTLD registrants may provide evidence of this type of behavior.

Together, these factors suggest that new gTLDs are unlikely to reach their full potential immediately. In fact, a study performed by KPMG for ICANN found that the new gTLDs that had been introduced after 2001 had, on average, reached 40 percent of their “most recently observed peak registration” at the end of 12 months of operation, 60 percent of the peak at the end of 24 months of operation, and 70 percent of the peak at the end of 36 months of operation.⁹² For these reasons, the share of registrations currently captured by the new gTLDs likely understates the level that it will eventually reach.⁹³

It is important to note that the share of registrations accounted for by new gTLDs depends both on their share of the increase in the number of registrations and on the rate at which the total number of all registrations increased over the period.⁹⁴ For example, given the approximately 61 percent share of the increase in gTLD registrations accounted for by new gTLDs, their share of total gTLD registrations would have been approximately 30 percent if the number of gTLD registrations had doubled between October 2013 and December 2016. In fact, the rate of increase was about 30 percent.⁹⁵ Interestingly, however, this rate of increase is greater than the rates observed before the introduction of the new gTLDs.⁹⁶

It is also possible to use these results to project the share of total registrations that would be captured in the future by the new gTLDs if the rate of increase in the total remains unchanged at about 30 percent every three years and if the new gTLDs continue to capture about 61 percent of the increase. Under these assumptions, the share captured by the new gTLDs would be approximately one-quarter after six years and approximately one-third after nine years.

Substitution Analysis

One question typically asked when evaluating a competitive market is whether a new entrant is a reasonable economic substitute for an existing product. Substitute goods are those goods, to varying degrees that can satisfy the same necessity, they can be used for the same end. Some examples of substitute goods are:

- ⊙ Coca-Cola and Pepsi
- ⊙ Car, motorbike, bike and public transport
- ⊙ Butter and margarine
- ⊙ Tea and coffee
- ⊙ Bananas and Apples

Generally, this “substitutability” is expressed a relationship between price and demand for the substitute good. Basically, if the price of Coke goes up, more people will switch to Pepsi. This

⁹² KPMG, *Benchmarking of Registry Operations* (February 2010), accessed 19 January 2017, <https://www.icann.org/resources/pages/benchmarking-2010-02-15-en>, p. 17.

⁹³ A possible offsetting factor that we discuss below is the fact that a significant percentage of registrations in new gTLDs are currently “parked” and therefore may not be renewed when they expire.

⁹⁴ Note that the increase in the number of registrations equals new registrations minus registrations that are not renewed.

⁹⁵ Over the same period, the rate of increase of registrations in all TLDs was about 24 percent and the rate of increase of registrations in gTLDs and “open” ccTLDs combined was about 28 percent. This suggests that the number of registrations in gTLDs grew faster than that of all ccTLDs and of all “open” ccTLDs.

⁹⁶ Analysis Group, *Phase I Assessment* (2015), p. 33, Fig. 8.

is distinguished from “complementary” products such as hot dogs and mustard. In this case, more sales of hot dogs lead to an increase in sales in mustard, while an increase in the price of hot dogs leads to a decrease in sales of both hot dogs and mustard.

Applied to the gTLD market, assessing whether the new gTLDs represent economic substitutes for legacy gTLDs, one would ask: as the price of legacy gTLDs increases, does demand for the new gTLDs increase? Analysis of this sort in the gTLD marketplace involves three challenges.

First, as noted earlier, the existence of price caps on legacy gTLDs masks what might be the true market price for legacy gTLDs, and any tipping price that would directly increase demand for alternatives. It is possible that these price caps actually suppress competition by keeping prices below market value and discouraging substitution and other competitive effects. As Debra Aron and David Burnstein note:

The regulatory constraints on the market would, in some circumstances, impede the normal functioning of competitive forces, resulting in a market that appears to fail competitive criteria, which in turn leads regulators to perpetuate the regulatory constraints.⁹⁷

Ideally, an evaluation of the pricing in the secondary market is desirable to determine if there are any direct price impacts, but even those will not likely be directly substitutions.

Second, the typical price point of a gTLD is such that “substitution” is not economically mandatory and, in certain cases, counter-indicated. For example, if a registrant has done business at VertigoSoftware.com for a number of years, but eventually buys Vertigo.software, perhaps even at a premium, they are unlikely to immediately drop VertigoSoftware.com because of its presence in bookmarks, emails, blog posts, 3rd party reports, etc. When the price to maintain VertigoSoftware.com is relatively low, the registrant will be inclined to simply keep both registrations, at least for a time. The “substitution” takes place on letterhead, websites, business cards and marketing materials, not directly in the marketplace. Studying the use of a gTLD would be complex but perhaps necessary to fully understand what substitution has taken place.

The third challenge with a substitution analysis is that not every second-level domain of a new gTLD is a substitute for the corresponding domain in a legacy gTLD (see “Previous Studies” in the Consumer Choice section below). With the exception of a few new strings such as .xyz, .online, .site and .space, the new gTLDs are meant to be more semantic and specific than the legacy generic TLDs. So while *bridal.photography* is a reasonable substitute for *bridalphotography.com*, *plumbing.photography* is not a substitute for *plumbing.com*. Instead, it’s important to take the new gTLDs as a whole and treat the group of them as alternatives for the legacy gTLDs (and ccTLDs). For example, SHOP might be a substitute for online shopping websites, PHOTOGRAPHY might be an alternative for photographers, NEWS might be an alternative for news websites, etc... It’s here that one can see a competitive trend while observing that half of new registrations (or a third if you include ccTLDs) are new gTLDs. While the demand for second-level domains has remained somewhat constant at roughly 5% growth per year, these new registration figures suggest that substitution is taking place in the overall market.

⁹⁷ Debra Aron and David Burnstein, “Regulatory Policy and the Reverse Cellophane Fallacy”, *Journal of Competition Law & Economics* [Volume 6, Issue 4] (December 2010), <https://doi.org/10.1093/joclec/nhp033> pp. 973–994.

As Jonathan Parker and Adrian Majumdar argue:

In some cases, the dynamics of future competition are much better captured by the share of new business won than shares based on total revenues from installed base customers. For example, where a firm has a large installed base of customers locked-in to long term contracts, it may be of greater interest to access its success in relation to business opportunities.⁹⁸

While ongoing study is certainly needed, the trends suggest the initial formation of a competitive marketplace for second-level domains that will only grow with time and eventually reveal more explicit substitution behavior.

The Structure of the TLD Industry

Registrar Services

One factor that has facilitated the entry of new gTLDs is the availability of important “inputs,” specifically registrar and back-end services, that can be acquired through market transactions rather than be “produced” internally.⁹⁹ This has the effect of reducing the minimum viable scale—the smallest scale of output at which an entrant would expect to cover its complete entry and operating costs at current levels of prices¹⁰⁰—of gTLDs.

According to ICANN, “An individual or legal entity wishing to register a domain name under a generic top-level domain (“gTLD”) ... may do so by using an ICANN-accredited registrar.... Any entity that wants to offer domain name registration services under gTLDs with a direct access to the gTLD registries is required to obtain an accreditation from ICANN. To that end, the interested entity must apply for accreditation and demonstrate that it meets all the technical, operational and financial criteria necessary to qualify as a registrar business.”¹⁰¹ At the end of August 2016, 2,084 registrars operated under the 2013 Registrar Accreditation Agreement, and 51 operated under the 2009 Registrar Accreditation Agreement.¹⁰² Only registrars that operate under the 2013 Registrar Accreditation Agreement can register domain names in the new gTLDs.

Three hundred thirty-four (334) registrars currently register domain names in new gTLDs and a significant number of new gTLDs are represented by a relatively large number of

⁹⁸ Jonathan Parker and Adrian Majumdar, *UK Merger Control*, (Oxford: Hart Publishing, 2016), p. 432.

⁹⁹ Of course, this does not mean that registries should be prevented from vertically integrating into either back-end or registrar functions, especially as doing so is unlikely to result in foreclosing other registries from obtaining needed services from third parties.




¹⁰⁰ Robert D. Willig, “Merger Analysis, Industrial Organization Theory, and Merger Guidelines,” in *Brookings Papers on Economic Activity (Microeconomics)*, eds. M.N. Bailey and C. Winston, 1991, p. 310. See also US Department of Justice and the Federal Trade Commission (2010), *Horizontal Merger Guidelines*, <https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf>, section 3.3.

¹⁰¹ ICANN, “Information for Registrars and Registrants,” accessed 20 January 2017, <https://www.icann.org/resources/pages/registrars-0d-2012-02-25-en>.

¹⁰² ICANN, “2013 Registrar Accreditation Agreement,” accessed 20 January 2017, <https://www.icann.org/resources/pages/approved-with-specs-2013-09-17-en>. ICANN, “2009 Registrar Accreditation Agreement,” accessed 20 January 2017, <https://www.icann.org/resources/pages/ra-agreement-2009-05-21-en>.

registrars.¹⁰³ The following table reports the distribution of new gTLDs as measured by the number of registrars that register names in their domains:

Table 3: Number of Registrars Registering Each New gTLD as of December 2016¹⁰⁴

 Number of Registrars	 Number of New gTLDs	 % of New gTLDs
Fewer than 10	29	7%
11-20	25	6%
21-30	14	3%
31-40	31	7%
41-50	25	5%
51-75	54	11%
More than 75	305	61%

Note that more than three-fifths of new gTLDs have their names offered by more than 75 registrars, about three-quarters have their names offered by more than 50 registrars, and 89 percent have their names offered by more than 20 registrars.¹⁰⁵

Not only is it common for TLDs to be represented by multiple registrars, it is also usually the case that registrars represent multiple TLDs. The following table reports the number of new gTLDs that are represented by each of the top 20 registrars, which collectively have registered almost 87 percent of all domains that have been registered in the new gTLDs. The mean number of new gTLDs that are represented by these registrars is approximately 287; 18 have registered domains in more than 50 new gTLDs and 12 have registered domains in well over 300 new gTLDs.¹⁰⁶

¹⁰³ These registrars report active registrations in new gTLDs or were included in the March 2016 ICANN Monthly Transaction Reports of new gTLDs, despite having zero active registrations in those domains. The list of registrars was obtained from: [iana.org, "Registrar IDs,"](http://www.iana.org/assignments/registrar-ids/registrar-ids.xhtml) accessed 20 January 2017,

<http://www.iana.org/assignments/registrar-ids/registrar-ids.xhtml> (brand and ROCC-exempt TLDs excluded from the review team analysis). As a point of reference, 2042 registrars provide registrations for the legacy gTLDs.

¹⁰⁴ Calculations performed by Analysis Group at the request of the review team. All calculations were based on the total number of registrars and registrations as of December 2016. Registrar and registration data for legacy gTLDs and new gTLDs were derived from monthly transaction reports provided to ICANN by operating registries as of December 2016, available at <https://www.icann.org/resources/pages/registry-reports>. Only ICANN-accredited registrars and new gTLDs were included in the analysis. ICANN-accredited registrars were identified based on registrars listed at: [iana.org, "Registrar IDs,"](http://www.iana.org/assignments/registrar-ids/registrar-ids.xhtml) accessed 20 January 2017,

<http://www.iana.org/assignments/registrar-ids/registrar-ids.xhtml>. Brand and ROCC-exempt TLDs were excluded.

¹⁰⁵ As a point of reference, of the five ccTLDs in the Latin American and Caribbean region that do not employ a direct registration model in which "domains are acquired directly from the registry's platform and/or website," the number of registrars employed were 17, 19, 80, 92, and 200, respectively. See ICANN (2016), Latin American and Caribbean DNS Marketplace Study, p. 50. Although at least some of these ccTLDs have apparently been able to attract the interest of a significant number of registrars, the report notes that "one of the challenges that many ccTLDs in the region face once they have decided to implement the registry-registrar model is more [sic] how to attract the larger international registrars to their business..." (Ibid. p. 51). This suggests that the availability of registrars to registries may differ across regions, but further research is needed to assess this issue.

¹⁰⁶ The mean is 318 if eName Technology, which represents only four registries, and Knet Registrar, which represents a single registry, are eliminated from the calculation.

Table 4: Number of New gTLDs Represented by Top 20 Registrars by Registration Volume¹⁰⁷

Registrar	Rank	% Of New gTLDs Registrations	# Of New gTLDs Offered
Alibaba Cloud Holding Ltd.	1	25.46	81
NameCheap Inc	2	14.03	373
GoDaddy Group	3	9.70	365
GMO Internet Inc	4	6.67	352
Chengdu West Dimension Digital Tech	5	5.23	162
Tucows	6	3.75	427
West263 International Ltd	7	5.25	64
United Internet AG	8	3.04	428
PublicDomainRegistry Ltd	9	2.91	387
Alpnames Ltd	10	1.46	262
Rightside	11	1.14	409
Uniregistrar Corp	12	1.10	379
eName Technology Co Ltd	13	1.03	7
Web.com	14	0.99	391
Xin Net Technology Corp	15	0.93	107
KeyDrive Group	16	0.92	509
Gandi SAS	17	0.89	472
Knet Registrar Co Ltd	18	0.85	1
Google LLC	19	0.74	208
NameSilo LLC	20	0.73	346
Total		86.82	N/A

Back-End Registry Operators

ICANN defines a back-end registry operator as “an organization contracted by a registry to run one or more of the Critical Functions of a gTLD registry.”¹⁰⁸ The Critical Functions are:

- ⦿ DNS resolution
- ⦿ DNSSEC properly signed zone (if DNSSEC is offered by the registry)
- ⦿ Shared Registration System (SRS), usually by means of the Extensible Provisioning Protocol (EPP)
- ⦿ Registration Data Directory Services (RDDS), e.g., WHOIS provided over both port 43 and through a Web-based service.
- ⦿ Registry Data Escrow

Back-end providers may also offer additional services such as billing, reporting, account management tools, and other technical services related to the TLD’s registration database.

¹⁰⁷ nTLDStats, “Registrar Overview,” accessed 12 July 2018, <https://ntldstats.com/>.

¹⁰⁸ ICANN, “Registry Transition Processes,” accessed 20 January 2017, <https://www.icann.org/resources/pages/transition-processes-2013-04-22-en>.

Although there are far fewer back-end providers than there are registrars, six different back-end providers each provide services to new gTLD registries that collectively have more than one million registrations.

Of the 944 new gTLDs that had begun operation as of 6 May 2016, 495 (52 percent) were using back-end providers that were located in their respective jurisdictions and 627 (66 percent) were using back-end providers located in their respective ICANN regions.¹⁰⁹ Thus, although well over half of all new gTLDs employed back-end providers that were located in relatively close proximity, a significant number did not. This suggests that back-end providers at more distant locations can nonetheless provide service to a registry.

For each of the six largest back-end providers as measured by the number of registrations in the gTLDs that they serve, we also compiled data on the size distribution of the gTLDs that they serve. Table 5 reports the results of this analysis.

Table 5: Back-End Registry Service Providers (RSPs) Servicing the Most New gTLD Registrations as of December 2016¹¹⁰

Back-End RSPs servicing the most New gTLD registrations	Number of TLDs serviced, by number of domain name registrations								
	1 – 2,500	2,501 – 5,000	5,001 – 10,000	10,001 – 50,000	50,001 – 100,000	100,001 – 250,000	250,001 – 500,000	500,001 – 1 Million	> 1 Million
CentralNic	3	10	3	8	4	2	1	2	1
ZDNS	0	3	1	0	0	1	0	0	1
Neustar, Inc.	193	3	3	8	5	4	0	3	1
Rightside Registry	46	57	69	56	9	0	0	0	0
Uniregistrar Inc.	11	2	3	6	2	1	1	0	0
Afilias Limited	164	9	3	14	0	1	2	0	0

There are several observations that can be made about these results. First, about 94 percent of the new gTLDs that obtain back-end services from one of these providers have fewer than 50,000 registrants. Second, three of these back-end providers—Rightside, Neustar, and Afilias—collectively serve about 90 percent of the new gTLDs with fewer than 50,000 registrants. Third, whereas neither Rightside nor Afilias serves any new gTLDs with more than 500,000 registrants and, indeed, none of the new gTLDs that are served by Rightside has more than 100,000 registrants, three of these back-end providers—Neustar, CentralNic, and ZDNS—together serve all of the eight new gTLDs with more than 500,000 registrants.

¹⁰⁹ “ICANN Geographic Regions,” accessed 20 January 2017, <https://meetings.icann.org/en/regions> and Eleeza Agopian to CCT-Review mailing list, “Ry-RSP geographic location comparison,” (19 May 2016), <http://mm.icann.org/pipermail/cct-review/2016-May/000461.html>. In Africa, three gTLDs (out of a total of 10) are using back-end providers in their respective jurisdictions and these three are therefore also using back-end providers in their regions; in Latin America and the Caribbean, five gTLDs (out of a total of 17) are using back-end providers in their respective jurisdictions with one additional gTLD using a back-end provider in the region; in Asia Pacific, 81 gTLDs (out of a total of 163) are using back-end providers in their respective jurisdictions and a total of 102 are using back-end providers in their regions, in North America, 357 gTLDs (out of a total of 441) are using back-end providers in their respective jurisdictions and 409 are using back-end providers in their regions, and in Europe: 49 gTLDs (out of a total of 352) are using back-end providers in their respective jurisdictions and 107 are using back-end providers in their regions.

¹¹⁰ Registration data derived from ICANN Monthly Transaction Reports, available at <https://www.icann.org/resources/pages/registry-reports>.

It is also important to note that the incremental cost incurred by a back-end operator to serve a registry operator varies with the number of domains served by the registry¹¹¹ and that back-end providers employ a number of pricing models that take these cost differences into account. For example, some charge registries a fixed fee per registered domain. Others charge a per-domain fee that varies with the number of domains in the registry. Still others provide service in return for a share of registry revenues, among other models. As a result, small TLDs tend to pay lower total prices to back-end operators than do large ones.

Size Distribution of gTLDs

Another aspect of the structure of the TLD industry is the wide variation in the sizes of different gTLDs. The table below reports the size distribution of new gTLDs, where size is measured by number of registrations. In reviewing the data in the table, it is important to recognize that some new gTLDs have only recently become available for registrations by the public and others may still not be available.

We find that about three-quarters of the new gTLDs that we have analyzed currently have fewer than 10,000 registrants and more than 90 percent have fewer than 50,000 registrants.¹¹² This raises the question of whether these gTLDs will be viable in the long run. There are, at least, the following five possibilities for “small” gTLDs: (1) they may succeed economically despite their size by serving niche markets, for example small geographic areas or specialized products and services, and may be viable even if they do not serve large numbers of registrants because their registrants are willing to pay relatively high prices;¹¹³ (2) they may lower their prices in the hope that the resulting increase in registrations will more than offset the reduction in price; (3) they may grow over time and eventually achieve economic viability;¹¹⁴ (4) they may change their target markets;¹¹⁵ (5) they may be acquired by larger

¹¹¹ This also varies with the registry’s policies. For example, the incremental cost incurred by a back-end operator to serve a gTLD that does non-standard manual vetting is higher than the incremental cost of serving one that does not.

¹¹² The ICANN (2016), Latin American and Caribbean DNS Marketplace Study, p. 91 refers to “the typical long tail seen in domain names worldwide...”




¹¹³ Uniregistry recently announced price increases of up to 3,000 percent for its new gTLDs. Frank Schilling, CEO of Uniregistry argued that “If you have a space with only 5,000 registrations, you need to have a higher price point to justify its existence...” (See Kevin Murphy, “Schilling, big price increases needed to keep new gTLDs alive,” Domain Incite, March 7, 2017, <http://domainincite.com/21603-schilling-big-price-increases-needed-to-keep-new-gtlds-alive>.)

¹¹⁴ Boston Ivy recently announced substantial price decreases for four new gTLDs. See A. Allemann, “A TLD registry just slashed its wholesale prices up to 97%,” Domain Name Wire, March 15, 2017, <http://domainnamewire.com/2017/03/15/tld-registry-just-slashed-wholesale-prices-97/>.

¹¹⁵ For example, .whoswho recently eliminated its requirement that registrants show that their names had appeared in a print Who’s Who book. See Kevin Murphy, “Relaunch and slashed prices for .whoswho after terrible sales,” Domain Incite, 1 September 2017, accessed 20 January 2017, <http://domainincite.com/20930-relaunch-and-slashed-prices-for-whoswho-after-terrible-sales>.

operators that achieve economic viability by owning several TLDs;¹¹⁶ or (6) they may eventually exit the market.¹¹⁷

Table 6: Size Distribution of New gTLDs as of May 2017¹¹⁸

 Number of Registrars	 Number of New gTLDs	 % of New gTLDs
0 – 1,000	300	40.49
1,001 – 10,000	263	35.49
10,001 – 50,000	120	16.19
50,001 – 100,000	29	3.91
100,001 – 250,000	13	1.27
250,001 – 500,000	6	0.47
500,001 – 1,000,000	7	0.50
>1,000,000	3	0.21
Total	741	

Nonetheless, it is important to note that, according to publicly available monthly transaction reports, some small legacy TLDs continue to operate despite a small number of registrations in their domains.

¹¹⁶ For examples of such acquisitions, see: ICANN (2015), Assignment Transfer and Assumption of the top-level domain .promo registry agreement, accessed 20 January 2017, <https://www.icann.org/sites/default/files/tlds/promo/promo-assign-pdf-14dec15-en.pdf>; ICANN (2015), Assignment and Assumption Agreement [of .hiv by Uniregistry Corp], accessed 20 January 2017, <https://www.icann.org/sites/default/files/tlds/hiv/hiv-assign-pdf-20nov15-en.pdf>; ICANN (2015), Assignment and Assumption Agreement [of .reise by Foggy Way LLC (Donuts): Dot-REISE Registry Agreement, accessed 20 January 2017, <https://www.icann.org/sites/default/files/tlds/reise/reise-assign-pdf-04may15-en.pdf>. Note, however, that most acquisitions that have occurred to date involved transfers from one holder of a large number of domains to another, for example the transfer of 24 domains from Donuts to Rightside (UnitedTLDHoldco). See Kevin Murphy, “You might be surprised how many new gTLDs have changed hands already,” Domain Incite, 1 July 2015, accessed 20 January 2017, <http://domainincite.com/18849-you-might-be-surprised-how-many-new-gtlds-have-changed-hands-already>. More recently, Donuts and Rightside agreed to merge. See Rightside, “Rightside and Donuts Announce Definitive Merger Agreement,” 14 June 2017, <http://investors.rightside.co/releasedetail.cfm?releaseid=1030175>. Under that agreement, Donuts would acquire 40 top-level domains as well as Rightside’s technical registry (i.e., backend) system. See also A. Allemann, “First take: Donuts to buy Rightside for \$213 million,” 14 June 2017, <http://domainnamewire.com/2017/06/14/first-take-donuts-buy-rightside-213-million/>.

¹¹⁷ See ICANN, “Registry Agreement Termination Information Page,” accessed 6 August 2018, <https://www.icann.org/resources/pages/gtld-registry-agreement-termination-2015-10-09-en#status>

¹¹⁸ Data current to May 2017. Since the review team’s primary focus is on gTLDs that are, or will be, generally available for registration by members of the public, the analysis excludes gTLDs that are subject to Specification 13 of the base registry agreement. For details on Specification 13 and a list of “Brand” TLDs, see ICANN, “Applications to Qualify for Specification 13 of the Registry Agreement,” accessed 20 January 2017, <https://newgtlds.icann.org/en/applicants/agb/base-agreement-contracting/specification-13-applications>. For details on ROCC-exempt TLDs, see ICANN, “Registry Operator Code of Conduct Exemption Requests,” accessed 20 January 2017, <https://newgtlds.icann.org/en/applicants/agb/base-agreement-contracting/ccer>.

Table 7: Small (Under 20,000 Registrations) Legacy gTLDs Still in Operation¹¹⁹

TLD	Number of Domains (March 2018)
.aero	10,900
.coop	8,122
.museum	678
.post	410
.travel	17,700

At the other end of the distribution are the new gTLDs in which the largest numbers of domains have been registered. As the following table shows, about 39 percent of the domains that have been registered in new gTLDs have been registered in the five largest new gTLDs, about 52 percent have been registered in the 10 largest, and about 76 percent have been registered in the 20 largest.¹²⁰ Thus, although a very large number of gTLDs have entered in recent years, a relatively small number account for a very large proportion of the domains that have been registered.

Table 8: Percentage of gTLD Registrations in Top 20 New gTLDs¹²¹

New gTLD	Rank	% of New gTLD Registrations	% of New gTLD Registrations in Top 5, 10, and 20 New gTLDs
.top	1	12.11	
.loan	2	9.27	
.xyz	3	8.49	
.club	4	5.46	
.vip	5	3.70	Top 5 = 39.03%
.online	6	3.48	
.win	7	2.70	
.shop	8	2.62	
.site	9	2.05	
.ltd	10	1.96	Top 10 = 51.84%
.men	11	1.89	
.wang	12	1.48	
.bid	13	1.46	
.work	14	1.45	
.stream	15	1.30	
.app	16	1.18	
.review	17	1.08	
.space	18	1.07	
.xin	19	0.99	
.website	20	0.98	Top 20 = 64.72%

¹¹⁹ ICANN, “Monthly Registry Reports,” accessed 12 July 2018, <https://www.icann.org/resources/pages/registry-reports/#a>. Note that, for contractual reasons, data from these monthly reports are withheld from public view until three months after the end of the month to which the report relates..

¹²⁰ nTLDStats, “New gTLD Overview,” accessed 12 July 2018, <https://ntldstats.com/tld>. According to nTLDStats, 37 new gTLDs currently have more than 100,000 registered domains, 63 have more than 50,000 registered domains, and 198 have more than 10,000 registered domains.

¹²¹ Ibid.

Effect of New gTLD Entry on Industry Concentration

Above, we described our analysis of the extent to which new gTLDs together have captured a share of overall TLD registrations. In this section, we analyze whether, and the extent to which, the entry of new gTLDs has affected concentration among registry operators, registrars, and back-end providers using three standard measures of concentration: the 4-firm concentration ratio (the share of registrants served by the four largest firms), the 8-firm concentration ratio (the share of registrants served by the eight largest firms), and the Herfindahl-Hirschman Index (HHI)—the sum of the squared shares of each firm.¹²² In doing so, we are implicitly defining the markets in which registries, registrars, and back-end providers compete. Market definition, which is a central component of all antitrust analyses, and which has both product and geographic dimensions, is an attempt to identify the suppliers among which competition determines prices and other indicia of market performance.¹²³

The United States antitrust agencies define markets using a “hypothetical monopolist test.”¹²⁴ Under this test, the agencies begin by defining a relatively narrow market and ask whether a hypothetical monopolist in that market could impose “a small but significant and non-transitory increase in price, (‘SSNIP’).” If they conclude that the hypothetical monopolist cannot do so, this means that some significant competitors have been excluded from the market, and the antitrust agencies would expand the market to include more suppliers. This process would continue until the SSNIP test is satisfied (i.e., until it is concluded that a hypothetical monopolist in the defined market could raise prices). The agencies would then calculate the shares held by each of the firms in the defined market. The Horizontal Merger Guidelines state that “the Agencies normally consider measures of market shares and market concentration as part of their evaluation of competitive effects.”¹²⁵

Under many economic theories, higher measures of concentration are associated with lower levels of competition. Moreover, a substantial body of empirical work in, and across, varying industries confirms that high concentration often lead to higher prices and markups.¹²⁶ In particular, the preponderance of evidence is that markets with a small number of firms, or

¹²² The HHI reflects the market shares of all firms, but, because it is calculated by squaring market shares, it gives proportionately greater weight to firms with large shares.

¹²³ As noted above, because we have not been able to reach a definitive conclusion about the appropriate market definition, we have conducted our analysis using a number of alternative definitions.

¹²⁴ United States Department of Justice and Federal Trade Commission (2010), “Merger Guidelines,” Section 4.1.1. A similar approach is employed in other jurisdictions. See, for example, [Article 102](#) of the Treaty on the Functioning of the European Union (TFEU), which prohibits abusive conduct by companies that have a dominant position on a particular market. Defining the relevant market is essential for assessing dominance, because a dominant position can only exist on a particular market.

¹²⁵ *Ibid.*, p. 15.

¹²⁶ For example, Pautler notes: “Several studies of price/concentration relationships indicate that prices are higher where concentration is higher, or the number of sellers is lower.” (Paul A. Pautler, Bureau of Economics, Federal Trade Commission (2003), *Evidence on Mergers and Acquisitions*, accessed 20 January 2017, https://www.ftc.gov/sites/default/files/documents/reports/evidence-mergers-and-acquisitions/wp243_0.pdf, p. 42). Sutton states “...that a fall in concentration will lead to a fall in prices and price-cost margins is well supported both theoretically and empirically” (John Sutton (2006), *Market Structure: Theory and Evidence*, accessed 20 January 2017, http://personal.lse.ac.uk/sutton/market_structure_theory_evidence.pdf, p. 7). Timothy Bresnahan reviews a number of studies that “...confirm the existence of a relationship between price and concentration...” (T.F. Bresnahan, “Empirical Studies of Industries with Market Power,” in *Handbook of Industrial Organization*, Vol. II, eds. R. Schmalensee and R.D. Willig, North-Holland, 1989, pp. 1011 - 1057). Coates and Hubbard find that “Empirical studies of auction markets and various industries, such as airlines, railroads, books, and pharmaceuticals, show prices declining as the number of bidders or rivals increases and as concentration of sales in a few firms declines” (John C. Coates IV and Glenn R. Hubbard, “Competition in the Mutual Fund Industry: Evidence and Implications for Policy,” *The Journal of Corporation Law* 33(1) (August 2007), 151-222, p. 164).

markets in which a few firms have very large market shares, tend to have higher prices than markets where concentration is lower.¹²⁷

Our analysis, which, as noted previously, was limited to gTLDs and excluded brand and Registry Operator Code of Conduct (ROCC)-exempt gTLDs, measured the change in each of the concentration measures among registries, registrars, and back-end providers between September 2013, which was before the first new gTLDs entered, and December 2016.¹²⁸ Tables 9 reports the results of our analysis.

¹²⁷ The review team would have preferred to analyze the effects of new gTLD entry on competition directly but, as noted elsewhere in this Report, they were unable to obtain data on changes in the wholesale prices actually charged by legacy gTLDs after new gTLD entry occurred. For examples of this approach see: Phillip M. Parker and Lars-Hendrik Roller, "Collusive Conduct in Duopolies: Multimarket Contact and Cross-ownership in the Mobile Telephone Industry," *The RAND Journal of Economics* 28(2), (1997) https://www.jstor.org/stable/2555807?seq=1#page_scan_tab_contents, pp. 304 - 322. Jerry Hausman, "Mobile Telephone," in *Handbook of Telecommunications Economics: Volume I*, eds. M.E. Cave, S.K. Majumdar, and I. Vogelsang, (Elsevier: 2002), <http://economics.mit.edu/files/1031>, 563 - 604; and Thierry Penard, "Competition and Strategy on the Mobile Telephone Market: A Look at the GSM Business Model in France," *Communications and Strategies* 45, (2002), http://www.comstrat.org/fic/revue_telech/426/CS45_PENARD.pdf, 49 - 79, who examines the effect of mobile carrier entry on the prices charged by incumbent firms.

¹²⁸ Note that measures of concentration among registries would have been substantially lower if the review team had defined the market to include both gTLDs and ccTLDs, and somewhat lower if it had defined the market to include gTLDs and "open" ccTLDs.

Table 9: Comparison of Registry, Registrar, Back End Concentration Ratios and HHIs and Rates of Change from September 2013 to December 2016 in New and Legacy gTLDs ^{129,130}

	4-Firm Conc. Ratio	8-Firm Conc. Ratio	
Registries	Legacy gTLDs (Sept. 2013)	99.3	99.9
	New gTLDs (Dec. 2013)	57.6	72.3
	New and Legacy gTLDs (Dec. 2016)	87.9	93.8
	Total Market Change (New and Legacy Sept. 2013 - Dec. 2016)	-11.4	-6.1
Registrars	Legacy gTLDs (Sept. 2013)	50.3	61.7
	New gTLDs (Dec. 2013)	46.9	68.1
	New and Legacy gTLDs (Dec. 2016)	42.2	54.1
	Total Market Change (New and Legacy Sept. 2013 - Dec. 2016)	-8.1	-7.6
Backend Provider	Legacy gTLDs (Sept. 2013)	95.7	99.5
	New gTLDs (Dec. 2013)	74.2	93.8
	New and Legacy gTLDs (Dec. 2016)	92.5	98.6
	Total Market Change (New and Legacy Sept. 2013 - Dec. 2016)	-3.3	-0.9

Concentration Among Registry Operators

In 2004, Summit Strategies International (SSI) prepared a study for ICANN that analyzed the effect of the introduction of seven new gTLDs on, among other things, concentration in “the domain name market,” a market consisting of both gTLDs and ccTLDs.¹³¹ It found that, as of the first quarter of 2004, .com had about a 45 percent share, .de had about a 12 percent share, .uk had about an 8 percent share, .net had about an 8 percent share, .org had about a 5 percent share, and .info, .nl, .biz, and .it each had about a 2 percent share.¹³² At that time, the

¹²⁹ All calculations were based on the total number of registrations in September 2013 and December 2016. Registration data were derived from monthly transaction reports as of December 2016 and October 2013. Brand and ROCC-exempt TLDs were excluded from the analysis. The list of Brand TLDs is available at <https://newgtlds.icann.org/en/applicants/agb/base-agreement-contracting/specification-13-applications>. The list of ROCC-exempt TLDs is available at <https://newgtlds.icann.org/en/applicants/agb/base-agreement-contracting/ccer>. Backend provider data were supplied by ICANN. Concentration ratios were calculated by summing the market shares of the largest n number of firms. The Herfindahl-Hirschman Index (HHI) was calculated by taking the market share of each firm in the industry, where the share is expressed as a whole number, squaring the respective shares, and summing the result.

¹³⁰ Registries, registrars, and back-end providers are included in the September 2013 analyses if there are registrations associated with that registry, registrar, or back-end provider as of September 2013. Registries, registrars, and back-end providers are included in the December 2016 analyses if there are registrations of legacy TLDs associated with that registry, registrar, or back-end provider as of December 2016. The 8-firm ratio for back-end providers is not available, as there are only four and five providers in September 2013 and December 2016, respectively.

¹³¹ Summit Strategies International and ICANN (2004), *Evaluation of the New gTLDs: Policy and Legal Issues*, accessed 20 January 2017, <https://archive.icann.org/en/tlds/new-gtld-eval-31aug04.pdf>.

¹³² Ibid. pp. 95-96. .biz was the only new gTLD among this group.

combined share of new gTLDs in this market was only about 4 percent. When it focused on a market that consisted only of gTLDs, SSI found that .com had a share of about 73 percent, .net had a share of about 12 percent, .org had a share of about 8 percent, and the combined share of the seven new gTLDs was less than 7 percent.¹³³ Although SSI noted that the introduction of the new gTLDs had doubled their number, it also remarked on “the relatively small impact that the new gTLDs have had on overall market share.”¹³⁴

In a later study that was also performed for ICANN, Katz, Rosston and Sullivan found that .com’s share was about 75 percent throughout the period from July 2001 through July 2009, about the same as SSI had found for early 2004.¹³⁵ In a later paper, the same authors concluded that “the finding that undifferentiated gTLDs introduced in the past have been unable to provide significant competition for the well-established .com is not surprising; because they are undifferentiated, these gTLDs lack unique features that offer value to users that might (at least partially) offset user familiarity with and perception of .com as the primary gTLD location for commercial (and even non-commercial) websites.”¹³⁶

SSI also found significant concentration among the operators of gTLDs. In particular, it found that gTLDs operated by Verisign had a combined share of 85 percent of the gTLD market, Afiliias had an 11.5 percent share, and NeuLevel had a 2.7 percent share in 2004.¹³⁷ In their Phase 1 Competition Study using data for November 2014 after the introduction of new gTLDs that began in late 2013, Analysis Group found that Verisign’s share was 85 percent, Public Interest Registry’s share was 6.6 percent, Afiliias’ share was 4 percent, and the share of Neustar, Inc., which had acquired NeuLevel in 2006, was 1.6 percent.¹³⁸ Thus, although concentration among operators was somewhat lower than in 2004, a market that consisted of operators of gTLDs was still highly concentrated and Verisign’s share was essentially unchanged.

The review team found that, although measured concentration among registry operators remains high, new gTLD entry has reduced overall concentration.¹³⁹ In particular, the share of registrations served by the four largest operators declined by about 11 percentage points, the share of registrations served by the eight largest operators declined by about 6 percentage points, and the HHI declined by almost 1,700 points between September 2013 and December 2016. These differences can be explained largely by the fact that concentration among new gTLD registry operators is substantially lower than that among all gTLD operators. For example, where the HHI for all gTLD operators was 5,728 at the end of 2016, the HHI for new gTLD operators was only 1,116.

¹³³ Ibid. p. 96

¹³⁴ Ibid. p. 96.

¹³⁵ Katz et. al (2010), *An Economic Framework*, pp. 47-48.

¹³⁶ Ibid. p. 7.

¹³⁷ Ibid. p. 96, Table 3.

¹³⁸ Analysis Group, *Phase I Assessment* (2015), p. 15, Table 2.

¹³⁹ In calculating market shares, the shares of registries with the same parent company were combined. For example, Donuts, Inc. was treated as a single firm whose market share was calculated as the aggregation of the shares of all registry LLCs that are owned by Donuts. In characterizing concentration as high or low, we are employing the standards based on HHIs that are described in United States Department of Justice and Federal Trade Commission (2010), “Merger Guidelines,” pp. 18-19. The Guidelines note that “Based on their experience, the Agencies generally classify markets into three types: [1] Unconcentrated Markets: HHI below 1500; [2] Moderately Concentrated Markets: HHI between 1500 and 2500; [3] Highly Concentrated Markets: HHI above 2500” (p. 19). The agencies note: “The purpose of these thresholds is not to provide a rigid screen to separate competitively benign mergers from anticompetitive ones, although high levels of concentration do raise concerns. Rather, they provide one way to identify some mergers unlikely to raise competitive concerns and some others for which it is particularly important to examine whether other competitive factors confirm, reinforce, or counteract the potentially harmful effects of increased concentration. The higher the post-merger HHI and the increase in the HHI, the greater are the Agencies’ potential competitive concerns and the greater is the likelihood that the Agencies will request additional information to conduct their analysis” (p. 19).

Defining the market to include only all gTLDs implicitly assumes that all gTLDs compete at least some degree with one another. An alternative approach might, therefore, be to analyze competition among the members of groups of gTLDs, each of which could be expected to compete for the patronage of a particular group of potential registrants. For example, one would not expect .beer to compete with .photography for registrants.

To consider this possibility, one might calculate concentration within “families” of gTLDs, where the “families” are constructed on the basis of domain names that suggest that they compete for the same registrants. However, doing so raises two issues. First, groupings based on the names of gTLDs may be either under- or over-inclusive because the names may be poor indicators of substitution by registrants. Second, they may result in markets that are too narrowly defined because they fail to account for competition for registrants between the members of the “families” and legacy gTLDs. To pursue the previous example, although .pub, .bar and .beer might be regarded as substitutes by bar owners, defining a market to include only those entities ignores the possibility that bar owners might also consider .com, .biz and .xyz as substitutes. Unfortunately, the review team did not have access to data that would permit it to address these issues, and therefore did not pursue this approach. If ICANN wishes to consider competition in more narrowly defined markets in the future, it will need to obtain additional information about substitution by registrants, perhaps through additional surveys.¹⁴⁰

Recommendations

These results suggest that measures of the impact of the entry of new gTLDs may be sensitive to whether or not they take registration parking into account. As a result, the review Team recommends that ICANN consider undertaking research into whether registration renewal rates are correlated with parking rates and to use the results of that research to improve its analysis of developments in the DNS marketplace. In addition, the review team recommends that ICANN consider using data on upcoming registration deletes, which nTLDstats routinely collects for new gTLDs, for the same purpose.

A Prototype Country-Specific Analysis

The previous analyses implicitly treated the geographic market in which gTLDs compete as worldwide and did not take competition between gTLDs and ccTLDs into account. However, because competition may occur in narrower geographic markets and because the ccTLD in a particular country may compete with gTLDs for registrations in that country, the review team decided to undertake an analysis of market concentration within individual countries. Although the analysis was limited to a small number of countries in a particular region, the review team believes that ICANN can use this analysis as a prototype to carry out similar analyses for other countries and regions.

In order to carry out the analysis, the review team utilized registration data for a number of countries in the Latin America and Caribbean region that had been developed in connection with a previous ICANN-commissioned study (“LAC” Study).¹⁴¹ That study employed gTLD registrant data that were “based on analysis of WHOIS data (based on the country of registrant)”.¹⁴² We supplemented these data using ccTLD registration data that were derived

¹⁴⁰ Such a survey is described in Appendix G.

¹⁴¹ Oxford Information Labs, EURid, InterConnect Communications (2016), *Latin American and Caribbean DNS Marketplace (“LAC”) Study*. We chose these countries because the LAC Study provided country-specific market shares, not because these countries were necessarily representative.

¹⁴² *Ibid.*, p. 82.

from Zooknic.¹⁴³ Those data were not based on WHOIS lookups and thus may include some registrations of users located in other countries. The authors of the LAC Study provided the ccTLD registration data that they employed.¹⁴⁴ We note, however, that those data were also based on self-reporting by ccTLDs and were not based on WHOIS lookups.

The review team carried out two types of analysis. First, it compared the shares of registrations held by ccTLD, legacy gTLD, and new gTLD operators, respectively, in the LAC countries analyzed to the worldwide shares reported by CENTR for March 2016, the same month for which the LAC data had been collected.¹⁴⁵ Second, the review team compared worldwide measures of concentration among gTLD registry operators to the same measures of concentration among all TLD operators in these countries in the same month.

ccTLD, Legacy gTLD, and New gTLD Shares Worldwide and in the LAC Region

CENTR reported that, in the first quarter of 2016, ccTLDs accounted for about 45 percent, legacy gTLDs accounted for about 50 percent, and new gTLDs accounted for about 5 percent of worldwide registrations.¹⁴⁶ The following table reports the same measures for each of the LAC countries that we analyzed.

Table 10: LAC Country-based Market Shares of ccTLDs & gTLDs (Legacy vs. New)

	ccTLD	Legacy gTLDs	New gTLDs	All gTLDs
Argentina	67.75%	29.44%	2.80%	32.25%
Brazil	80.85%	18.41%	0.74%	19.15%
Chile	83.01%	14.04%	2.95%	16.99%
Costa Rica	93.16%	0.14%	6.70%	6.84%
Dominican Republic	30.03%	66.12%	3.85%	69.97%
Peru	31.74%	67.22%	1.04%	68.26%

Two things are notable about these results. First, the share of registrations accounted for by the ccTLD in four of the countries—Argentina, Brazil, Chile, and Costa Rica—is substantially above the share accounted for by ccTLDs worldwide. Indeed, in three of these countries the ccTLD share exceeds 80 percent and it exceeds 67 percent in Argentina, all substantially above the 45 percent ccTLD share worldwide. Second, in all but one of these countries, the share of registrations accounted for by new gTLDs is less than the share accounted for by new gTLDs worldwide.

¹⁴³ ICANN, “Zooknic ccTLD data,” accessed 6 August 2018,

<https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials>

¹⁴⁴ CCT Wiki, “LAC TLD market shares, concentration ratios, and HHIs (March 2017),” accessed 6 August 2018, <https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials>

¹⁴⁵ The authors of the LAC study excluded Panama and the Cayman Islands from much of their analysis because of “the high proportion of proxy registrations” in those countries (LAC Study, p. 82), and we followed that approach. In addition, we excluded Colombia from our analysis because, as its website indicates, “.CO is used all over the world, and recognized by Google as a global domain extension,” <http://www.go.co/about/>, viewed on March 29, 2017.

¹⁴⁶ CENTR (2016), DomainWire Edition 15 – Q1 2016, Global TLD Stat Report, accessed 28 March 2017, <https://www.centr.org/library/library/statistics-report/domainwire-global-tld-report-2016-1.html?filter=Statistics%20report>.

Measures of Concentration Worldwide and in the LAC Region

In March 2016 for all gTLD registry operators worldwide, the 4-firm concentration ratio was 90.9 percent, the 8-firm concentration ratio was 95.7 percent, and the HHI was 6,364.¹⁴⁷ The following table reports the same measures for each of the LAC countries that we analyzed using data for the same month for all TLDs.

Table 11: LAC Country-based Concentration Ratios and HHIs

	4-Firm	8-Firm	HHI
Argentina	99.27%	99.75%	5,460
Brazil	99.45%	99.74%	6,845
Chile	99.15%	99.76%	7,065
Costa Rica	97.30%	98.75%	8,687
Dominican Republic	99.15%	99.76%	7,065
Peru	99.22%	99.73%	5,104

It is notable that the HHI in four of these six countries exceeds the worldwide HHI and that in three of these countries—the exception being the Dominican Republic—the share of registrations accounted for by the ccTLD exceeds 80 percent.

Concentration Among Registrar Owners

Concentration among registrar owners, which was relatively low prior to new gTLD entry, declined somewhat between September 2013 and December 2016.¹⁴⁸ In particular, the 4-firm and 8-firm concentration ratios both declined by about eight percentage points and the HHI declined by about 300 points.¹⁴⁹ These declines are largely the result of the slightly lower concentration among registrar owners for new gTLDs—for example the HHI is 751—as compared to the HHI for registrar owners for all gTLDs, which is 919.

Concentration Among Back-End Providers

Although the supply of back-end services to all gTLDs is highly concentrated, with a 4-firm concentration ratio of 92.5 percent and an HHI of 5,812, the supply of back-end services to new gTLDs is considerably less concentrated, with a 4-firm concentration ratio of 74.2 percent

¹⁴⁷ The Review Team employed March 2016 data here because they are for the same time period as that covered in the LAC report.

¹⁴⁸ As in the case of registry owners, the market shares of registrars with the same parent company were combined in the calculations. Market share and HHI calculations for registrars were based on registrar entities identified by Globally Unique Registrar ID (i.e., IANA ID).

¹⁴⁹ We also found that, although concentration among registrars for a given gTLD was high for some gTLDs, for most it was generally quite low. Moreover, even where concentration was relatively high, there were often a large number of registrars for a gTLD. For example, among legacy gTLDs, the HHI among registrars for .pro was 3,666 but there were 90 registrars and the HHI among registrars for .job was 7,155, but there were 63 registrars. Among new gTLDs, the HHI among registrars for .bar was 5,864, but there were 95 registrars and the HHI for .casa was 5,191, but there were 62 registrars.

and an HHI of only 1,645.¹⁵⁰ This disparity largely reflects the fact that both the largest legacy gTLD, .com, and the second-largest legacy gTLD, .net, both obtain their back-end services from a single supplier¹⁵¹. In fact, measured concentration among back-end providers to new gTLDs is not much greater than it would be if there were eight providers each with an equal share.¹⁵² Although measured concentration among all back-end providers remains high, it has declined significantly since new gTLD entry. In particular, the 4-firm concentration ratio declined by about three percentage points and the HHI declined by about 1,700 points between September 2013 and December 2016.

Price Analysis

The review team was unable to determine whether the prices charged by legacy gTLD registrars have declined since the introduction of new gTLDs because legacy gTLDs are not required to provide this information under their agreements with ICANN, and only two legacy gTLDs provided this information in response to Analysis Group’s data requests.¹⁵³ Moreover, if, as seems likely, the legacy gTLDs that are subject to price caps, set their wholesale prices at their respective caps during the period under review, we would still not be able to observe any effect.¹⁵⁴ However, in an attempt to determine whether the new gTLDs have provided price competition to the legacy gTLDs, Analysis Group compared simple and weighted averages of the wholesale prices charged by a sample of new gTLDs to simple and weighted averages of the legacy gTLDs price caps, where the weights are the number of registrations served by a TLD, as of March 2016. The following table reports the results of these calculations:

Table 12: Simple and Weighted Average Prices of Legacy and New gTLDs (USD)¹⁵⁵

	Legacy gTLDs	New gTLDs
Simple Average Wholesale Price	\$16.72	\$21.46
Weighted Average Wholesale Price	\$7.92	\$15.38

On average, the wholesale prices charged by new gTLDs are at or above the wholesale prices that legacy gTLDs are permitted to charge under their price caps, although the differences are

¹⁵⁰ As in the cases of registry and registrar owners, the market shares of back-end providers with the same parent company were combined in the calculations.

¹⁵¹ In fact, Verisign, which operates both .com and .net, provides its own back-end services.

¹⁵² In that case, the HHI would be 1,250.

¹⁵³ The only legacy gTLD wholesale price data that were available to Analysis Group came from correspondence between registry operators and ICANN, which contained information on price caps, the maximum prices that legacy gTLDs were permitted to charge, which are not necessarily the same as the price that they actually charged. Although Analysis Group also obtained actual wholesale price information as of April 2016 for 12 legacy gTLDs that responded to a data request, those data were provided on a confidential basis to Analysis Group and thus cannot be publicly reported or analyzed at the individual gTLD level. Below, the Review Team explains why it believes that all gTLDs should be required to provide this information in conjunction with future economic studies in their agreements with ICANN.

¹⁵⁴ Even if we could observe the wholesale prices that registries actually charged, if the wholesale price caps were binding throughout the period, i.e., if prices were always at the caps, we would still be unable to observe the effect of new gTLD entry on the prices that legacy gTLDs *would have wanted to pay* because we would not observe those prices. It is possible that legacy gTLDs reduced their wholesale prices *below* their respective price caps in response to new gTLD entry although we have no evidence that this was the case.

¹⁵⁵ Analysis Group, *Phase II Assessment* (2016), p.45. Table 9 of their assessment shows the full results of these calculations as compared with the results of their *Phase I Assessment* (2015). Section III provides a description of the manner in which the new gTLD sample was constructed.

not statistically significant.¹⁵⁶ Although the new gTLDs have set wholesale prices somewhat above the price caps, their presence might nonetheless have provided a constraint on the ability of legacy gTLDs to increase their prices significantly if the caps were removed, although we cannot be certain that this was the case.

The review team was unable to reach a definitive conclusion on this issue in the absence of adequate data and until more time has passed for the effect of new gTLD entry to be fully felt. The review team views this issue should be addressed in more detail in the future.¹⁵⁷

In 2006, well before the beginning of the recent round that substantially increased the number of gTLDs, a majority of the ICANN Board expressed the view that regulation of the prices charged by TLDs might no longer be needed:

...we appreciate the community's concerns regarding the price of .COM names. However, we firmly believe that ICANN is not equipped to be a price regulator, and we also believe that the rationale for such provisions in registry agreements is much weaker now than it was at the time the Verisign agreement was originally made in 1998. At that time, Verisign was the only gTLD registry operator, and .COM was, as a practical matter, the only commercially focused gTLD. Today, there are a number of gTLD alternatives to .COM, and several ccTLDs that have become much stronger alternatives than they were in years past. In addition, the incredibly competitive registrar market means that the opportunities for new gTLDs, both in existence and undoubtedly to come in the future, are greater than they have ever been. It may well be that .COM offers to at least some domain name registrants some value that other registries cannot offer, and thus the competitive price for a .COM registration may well be higher than for some alternatives. But price is only one metric in a competitive marketplace, and relative prices will affect consumer choices at the margin, so over time, we expect the registry market to become increasingly competitive. One way to hasten that evolution is to loosen the artificial constraints that have existed on the pricing of .COM and other registries. We began this process with the .NET agreement, and we now continue it with the .COM agreement, and we expect to continue along this path as we renegotiate agreements with other registries.¹⁵⁸

This view was apparently not universally held, however. The following year, some members of the GNSO Council in a report to the ICANN Board stated that:

When a registry contract is up for renewal, there should be a determination whether that registry is market dominant. That determination should be made by a panel of competition experts including competition lawyers and economists...If the panel determines that there is a situation of market power, then the registry

¹⁵⁶ An important caveat to this finding is that we do not have access to transactional, premium or promotional pricing data for either new or legacy gTLDs. Thus, it is likely that the actual sales prices for many of the domains registered may be significantly different from the reported wholesale prices.

¹⁵⁷ Another possible source of price data are the prices that prevail in secondary market transactions. Although we have been unable to pursue this alternative, ICANN may wish to do so in the future.

¹⁵⁸ ICANN, *Joint Statement from Affirmative Voting Board Members* (28 February 2006), accessed 20 January 2017, <http://archive.icann.org/en/topics/vrsn-settlement/board-statements-section1.html>.

agreement must include a pricing provision for new registrations, as currently is included in all of the largest gTLD registry agreements...Regardless of whether there is market dominance, consumers should be protected with regard to renewals due to the high switching costs associated with domain names...The price for new registrations and renewals for market dominant registries and for renewals for non-market dominant registries should be set at the time of the renewal of the registry agreement. Such a price should act as a ceiling and should not prohibit or discourage registries from providing promotions or market incentives to sell more names...The pricing provision should include the ability for an increase if there is cost justification for such an increase...non-dominant registries may differentially price for new registrations, but not for renewals. Dominant registries may not differentially price for new registrations or renewals...all registries should provide equitable pricing opportunities for all registrars...¹⁵⁹

In any event, legacy gTLDs remain subject to price caps, although some have been permitted to increase their prices over time. In principle, the current substantial increase in the number of gTLDs provides an opportunity for ICANN to evaluate the claim of some that legacy gTLDs remain “market dominant” and for ICANN to re-examine its earlier claim that the entry of new gTLDs, in much greater numbers than had occurred earlier, has weakened the rationale for price regulation. However, in the absence of adequate data on the wholesale prices actually charged by both legacy and new gTLDs, the review team has been unable to address this issue. In recommendation 2, the review team suggests that ICANN collect additional data to remedy this shortcoming in the future.

The review team also notes that wholesale prices may vary among gTLDs even if competition among them is intense. For example, if the market for gTLDs is characterized by monopolistic competition, where products are differentiated and consumers choose on the basis both of product characteristics and price but there is free entry of suppliers, prices might vary because of differences in product characteristics.¹⁶⁰ For example, gTLDs with a small number of customers that have an intense demand for them because there are few close substitutes might charge higher prices than ones with many customers for which customers regard other gTLDs as particularly close substitutes. Thus, even if we were to observe that new gTLDs charge, on average, higher prices than do legacy gTLDs, that could reflect differences in the products that they offer and the number of consumers that they serve rather than the absence of competition among them. Of course, we do not have data on the prices charged by most legacy gTLDs and, even if we did, those prices are as likely to reflect the effects of price regulation as of outcomes produced by competitive market forces.

Finally, even if monopolistic competition is a reasonably accurate description of the DNS “market,” it is unlikely to be a complete description because of both inertia and network effects. Some registries may be able to earn excess profits in the long run because consumers incur costs when they switch to new entrants and/or because some consumers prefer to employ large, established domains.

¹⁵⁹ ICANN Board Report (4 October 2007), *Council Report to the Board: Policies for Contractual Conditions, Existing Registries, PDP Feb 06*, <https://gnso.icann.org/en/issues/gtld-policies/council-report-to-board-PDP-feb-06-04oct07.pdf>, pp. 29-30. Other recommendations “received some support from either constituencies of NomCom members.”

¹⁶⁰ JBDON, “Pricing under monopolistic and oligopolistic competition,” accessed 20 January 2017, <http://www.jbdon.com/pricing-under-monopolistic-and-oligopolistic-competition.html>. As defined by economist Joe S. Bain, “Monopolistic competition is found in the industry where there are a large number of sellers, selling differentiated but close substitute products.”

Recommendations

Recommendation 2: Collect wholesale pricing for legacy gTLDs.

Rationale/related findings: The lack of data from legacy gTLDs and transactional data will continue to hinder future CCT Review Teams' efforts to analyze competition between registries in the domain marketplace. In particular, the review team was unable to determine whether wholesale prices charged by legacy gTLDs had declined as a result of increased competition due to the introduction of new gTLDs.

To: ICANN organization

Prerequisite or priority level: Low

Consensus within team: Yes

Details: ICANN could work with an appropriate contractor and registry operators to acquire wholesale price information from both legacy and new gTLD registries on a regular basis, including at least a sample of transactional data. Transactional data is essential to allow analysis of the cost of similar strings across TLDs, and to understand the role of promotional pricing by registries. Due to the sensitive nature of this data, ICANN should provide strong assurances that the data would be treated on a confidential basis, including collecting the data under a nondisclosure agreement. In the event that ICANN is unable to establish a voluntary framework for sharing this information, this may require amendment to the Base Registry Agreement for legacy gTLDs.

Success measures: The ability for a third-party economic study to establish a meaningful understanding of (1) wholesale pricing in legacy gTLDs; (2) the role of promotional pricing in the marketplace; and (3) the value of individual second-level labels across various TLDs.

Recommendation 3: Collect transactional pricing for the gTLD marketplace.

Rationale/related findings: The lack of transactional data will continue to hinder future CCT Review Teams' efforts to analyze competition between registries in the domain marketplace. Although ICANN was able to obtain base wholesale prices from registries, individual domain transactions are often sold at either a significant discount as part of promotional campaigns, or at a significantly higher price than the baseline price for certain premium domains. For some TLDs, the review team believes that a large fraction (even a substantial majority) of domains were sold at discounted prices. Therefore, any pricing analysis based solely on the base wholesale price is unlikely to correctly capture the competitive dynamics in the marketplace.

To: ICANN organization

Prerequisite or priority level: Medium

Consensus within team: Yes

Details: ICANN or an outside contractor should attempt to acquire at least some samples of wholesale price information from registries on a regular basis and provide necessary assurances that the data would be treated on a confidential basis. The data could then be

used for analytic purposes by the ICANN organization and by others that execute non-disclosure agreements.

Success measures: The availability of relevant data for use by the ICANN organization, contractors, and the ICANN community for its work in evaluating competition in the DNS marketplace.

Recommendation 4: Collect retail pricing for the domain marketplace.

Rationale/related findings: The lack of retail data will continue to hinder future CCT Review Teams' efforts to analyze competition between registries and TLDs in the domain marketplace. One of the anticipated benefits of increased competition from the introduction of new gTLDs would be lower prices for registrants of domain names. Prices charged by registrars to registrants are the best indicator of this potential consumer benefit. In addition, retail prices offered to the public will generally be accessible through registrars' public websites and will not require additional disclosures to ICANN by contracted parties. (Note that some registrars, such as those providing corporate/brand protection services, do not publish their prices and therefore would not be represented in a survey of publicly available prices.)

To: ICANN organization

Prerequisite or priority level: Low

Consensus within team: Yes

Details: ICANN does not currently make use of retail price data that can be obtained directly from public sources such as <https://tld-list.com/> and <https://namestat.org>. We recommend that ICANN develop the capability to analyze these data on an ongoing basis. Alternatively, an amendment to the Registrar Accreditation Agreement would ensure the availability of this data with all due diligence to protect competitive information.

Success measures: The availability of relevant data for use by the ICANN organization, contractors, and the ICANN community for its work in evaluating competition in the DNS space.

Recommendation 5: Collect secondary market data.

Rationale/related findings: The presence of price caps in certain TLDs hinders efforts to comprehensively analyze competitive effects. The true market price may very well be above the caps. Accordingly, the secondary market is the best place to see price movement.

To: ICANN organization

Prerequisite or priority level: High

Consensus within team: Yes

Details: ICANN should engage with the secondary market community to better understand pricing trends. Ideally, ICANN would be able to obtain long-term transactional data that would allow it to evaluate whether the price of similar domain names was increase or decreasing over time, and whether there was any relationship to the introduction of new gTLDs. Given that it may be difficult to obtain such data, aggregated data that show per-TLD

trends or overall trends in market pricing that take into consideration the introduction of new gTLDs would still be an improvement over the current limited data on pricing dynamics in legacy gTLDs.

Success measures: The availability of relevant data for use by the ICANN organization, contractors, and the ICANN community for its work in evaluating competition in the DNS space.

Recommendation 6: Partner with mechanisms and entities involved with the collection of TLD data. As feasible, collect TLD registration number data per TLD and registrar at a country-by-country level in order to perform analysis based on the same methods used in the LAC study.¹⁶¹

Rationale/related findings: The lack of country-level data will continue to frustrate future CCT Review Teams' efforts to analyze competition between registries and TLDs in the domain marketplace. In particular, the lack of country-specific data hinders efforts to understand the competition between gTLDs and ccTLDs. ccTLD data, which is useful in understanding the overall TLD marketplace, is particularly hard to come by.

To: ICANN organization

Prerequisite or priority level: Low

Consensus within team: Yes

Details: Some of this data is collected by third parties such as CENTR, so it is possible that ICANN can arrange to acquire the data.

Success measures: The availability of relevant data for use by the ICANN organization, contractors, and the ICANN community for its work in evaluating competition in the DNS space.

Potential Impact of “Parked” Domains on Measures of Competition

Overall, in its discussion of the impact of new gTLDs on competition, the review team treated all domains as equal. However, it is worth noting that the majority of domains in both legacy and new gTLDs are not the primary identifiers of typical websites. Instead, these domains are forwarded to other domains (including sub-domains), used only for email, monetized via advertising, or simply do not resolve, perhaps held in reserve by speculators or as premium domains by registries. For a high-level impact assessment, the review team, for lack of a better term, considered these domains “parked.” The review team attempted to consider if rates of these activities differed between legacy and new gTLDs and, if so, whether the difference suggests the need for further research. The review team's conclusion is that, while further research is ideal, this phenomenon is common across all types of TLDs and a study from outside the narrow lens of the New gTLD Program may be most appropriate. Using an expansive definition of parking, according to data compiled by nTLDstats, about 68 percent of registrations in new gTLDs were parked at the time of this analysis.¹⁶² For comparison, 56

¹⁶¹ ICANN (2016), Latin American and Caribbean DNS Marketplace Study.

¹⁶² “Parking in new gTLDs Overview,” viewed 21 March 2017, <https://ntldstats.com/parking/tld>.

percent of registrations in legacy gTLDs were parked. Halvorsen et al ascribe parking to: (1) speculation in order to sell the domain later at a profit; (2) plans to develop the domain at a later date; or (3) unsuccessful development.¹⁶³

Examples of behaviors that could be considered parking include:

- The domain name does not resolve.
- The domain name resolves, but attempts to connect via HTTP return an error message.
- HTTP connections are successful, but the result is a page that displays advertisements, offers the domain for sale, or both. These pages may also be used as a vector to distribute malware.
- The page that is returned is empty or otherwise indicates that the registrant is not providing any content.
- The page that is returned is a template provided by the registry with no customization offered by the registrant.
- The domain was registered by an affiliate of the registry operator and uses a standard template with no unique content.
- The domain redirects to another domain in a different TLD.

Of course, this represents a broad view of “parking”; the implications for competition as they relate to each of these scenarios are likely different. Future research will require analyzing each of these categories individually to determine their impact on competition.¹⁶⁴

However, because the percentage of “parked” registrations in new gTLDs is so large, the review team sought to understand whether this phenomenon would affect its conclusions regarding the impact of the introduction of new gTLDs on the marketplace and thereby justify further research. Hypotheses could be advanced to suggest counting certain types of parked domains differently when computing market share and concentration. For example, one possible reason for taking parking rates into account is that registration renewal rates may be negatively correlated with rates of certain types of parking. If so, the current market shares of TLDs with relatively high parking rates may overstate their long run competitive significance. For example, some early registrations in a new gTLD are the result of “land rush” behavior by speculators.¹⁶⁵ Furthermore, there was an initial spike in registrations from China in both legacy and new gTLDs, some of which is the result of speculation and some the result of regulations that allow the registration, but not the use of domain names. Finally, a large number of parked domains in a particular gTLD may be related to heavily discounted promotions in that TLD. Significant differences in pricing between initial registration and renewal could have a significant impact on renewals.¹⁶⁶ In such an instance, these new

¹⁶³ T. Halvorsen, M.F. Der, I. Foster, S. Savage, L.K. Saul, and G.M. Voelker, “From .academy to .zone: An Analysis of the New TLD Land Rush,” Proceedings of the 2015 ACM Conference on Internet Measurement, accessed 8 August 2018, <http://conferences2.sigcomm.org/imc/2015/papers/p381.pdf>

¹⁶⁴ The DNS Abuse Study commissioned by the Review Team for this report (SIDN Labs and the Delft University of Technology, “DNS Abuse in gTLDs”) found a small but positive statistically significant relationship between the amount of parked domains and level of abusive behavior in TLDs. In other words, the more parked domains in a TLD, the more likely that TLD is to have higher levels of abuse relative to others. See the “DNS Abuse” section later in this report for more detailed analysis of the study’s findings.

¹⁶⁵ Ibid.

¹⁶⁶ For example, initial pricing for .xyz was free in many instances, but renewal was full price.

domains should be discounted at a rate commensurate to the correlation. In other words, if speculative registrations are isolated and determined to be half as likely to be renewed, their numbers should be discounted 50 percent in any calculation of market share and market concentration.

Of course, one must leave room for the possibility that speculative behavior is fundamentally different between new and legacy gTLDs with established market expectations. Another hypothesis posits that domains used as pointers imply a transition away from an existing domain. In other words, a pointer could be an indication of provisional acceptance of a new gTLD by the market and the old domain is being maintained in the near term purely to smooth a transition. In this case, the domains to which others are pointed should be discounted at some rate. Of course, there are instances when redirects simply represent “over registration” either to capture typos and guesses, or protect brand identity. Future analysis of redirects would require determining which domain is being used to promote the site. Finally, it’s possible that speculation has a pro-competitive effect, not captured directly by market share and concentration calculations, by bridging new entrants to maturity, which can take years. Unfortunately, the review team lacked sufficient data to substantially test any of these hypotheses.

As discussed later in this report, the incidence of parking in new gTLDs may also be a reflection that some registrations in new gTLDs are defensive in nature. Respondents to the INTA Impact Study indicated that in most cases, trademark holders register domains in order to protect their brands and prevent cybersquatting.¹⁶⁷ These domains are generally parked. However, the review team does not believe defensive registrations by trademark holders constitutes a large enough fraction of overall registrations in new gTLDs to significantly alter our approach to measuring effects on competition.

In order to better understand this topic, the review team used existing parking data for new gTLDs that nTLDstats routinely calculates. The review team also requested that ICANN contract with nTLDstats to develop parking data for legacy gTLDs especially for this project.¹⁶⁸ The review team used registration data for December 2016, the same month for which other statistics in this report are based, and the most comprehensive parking measure provided by nTLDstats, the aggregate of the seven separate sources of parking that it identifies.¹⁶⁹

Using this data, the review team made an initial comparison of overall parking rates between legacy and new gTLDs. nTLDstats estimated that the weighted average parking rate for legacy gTLDs in that month was approximately 56 percent and that the weighted average parking rate for new gTLDs in the same month was approximately 68 percent, a rate that is almost 20 percent higher than the parking rate for legacy gTLDs.¹⁷⁰ Again, the review team is not certain of the impact of parked domains on market rivalry, but if (as hypothesized above) TLDs with

¹⁶⁷ Nielsen, *INTA Cost Impact Study* (April 2017) and INTA, *gTLD Impact Study Status Report II* (August 2017).

¹⁶⁸ nTLDstats.com, “Parking Analysis of Legacy gTLDs (3 March 2017),” accessed 6 August 2018, <https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials>. nTLDstats applied its parking analysis method to each legacy gTLD based on the number of names in its zone file. For TLDs with 10,000 names or fewer, nTLDstats analyzed all registered names, for TLDs with 10,001-100,000 names, nTLDstats analyzed 10 percent of registered names, and for TLDs with more than 100,000 names, nTLDstats analyzed 1 percent of registered names. nTLDstats also conducted a manual review of 10 percent of the total sample to check for false positives.

¹⁶⁹ Specifically, the Review Team adjusted the number of registrations for each gTLD to reflect the number of registrations that were not parked, i.e., (1 minus the parking rate) multiplied by the number of registrations for each gTLD.

¹⁷⁰ 20 percent of 55.6 = 11.2 and 55.6 + 11.2 = 66.72 (nearly 68 percent).

large number of parked domains are somehow less vibrant competitors, this is a substantial difference that could affect the computation of our competition-related indicators.¹⁷¹

Taking a cursory stab at understanding the potential significance of parking rates on future market shares, the review team attempted to determine whether there was a relationship between parking and renewal rates. In order to perform this analysis, the review team compared parking rates in each TLD as of December 2016 with a renewal rate computed based on registries' monthly transaction reports¹⁷² for the period of July – December 2016.¹⁷³ Using a Pearson correlation analysis (which measures the correlation between two sets of variables), the review team was unable to find a statistically significant correlation between renewal rates and parking rates in either new or legacy gTLDs.¹⁷⁴ While the identification of a relationship would have been interesting, the results of this test are by no means dispositive of a potential correlation. The review team recommends more robust studies of this topic to better understand whether such a relationship exists. Such studies could include, among other things, a closer examination of the following factors: 1) what parking measures best measure market rivalry; 2) what renewal rates should be used; 3) what factors other than parking are likely to affect renewal rates; 4) a description of the functional form (e.g., linear, logarithmic, etc.) of the relationship between parking and renewals; and 5) the “lag” between parking and non-renewals (i.e., how much time is there between the time that a domain name is parked and the time at which it is not renewed?).

Geographic Differences in Parking Behavior

The review team also sought to determine whether the quantity of parked domains varied based on region. For example, the Latin American and Caribbean DNS Marketplace Study (LAC Study) reports that “across the entire region, 78% of the gTLD domain names are active, and 22% are not in use (either timing out, or no active services).”¹⁷⁵ By comparison, according to nTLDstats, across all new gTLDs approximately 33% of domains had no valid DNS or returned invalid HTTP responses.

Although the review team did not have the ability to directly correlate registrant addresses with parked domains, it did identify six of the top 50 largest new gTLDs, including TLDs operated by registries based in China, showing markedly higher parking rates than the average across all new gTLDs, with parking rates ranging from 85 percent for .wang to 98 percent for .xin. Table 13 below shows the parking rate for each of the six.

¹⁷¹ At one extreme, if parked registrations were excluded from the market share analysis entirely, the Review Team found a “non-parked” market share of new gTLD registrations as a portion of all gTLDs of 10.9 percent, approximately 23 percent lower than the 14.2 percent share when parked domains are included. Making a similar adjustment in market concentration calculations did not make a meaningful difference between including or excluding parked domains.



¹⁷² Registries do not submit a renewal rate calculation to ICANN. Nevertheless, given that second-level domains auto-renew, the Review Team computed a renewal rate for each TLD by dividing the number of renewal transactions by the sum of the deletion transactions (outside of the add grace period) plus renewal transactions.

¹⁷³ Monthly renewal rates can be quite volatile and represent only the portion of domains eligible for renewal that month, whereas parking rates are calculated across all domains in a TLD. Therefore, the Review Team used a six-month period to calculate renewal rates in order to minimize sample errors in the analysis.

¹⁷⁴ CCT Wiki, “Parking, Renewal, and Correlation Analysis: Pearson Linear Correlation Analysis of Parking and Renewal Rates,” August 2017, <https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials>.

¹⁷⁵ Oxford Information Labs, LACTLD, EURid and InterConnect Communications, *Latin America and Caribbean DNS Marketplace Study*, p. 107.

Table 13: Parking Rates of Six of the Top 50 Largest New gTLDs

 Number of Registrars	 Parking Rate (%)
All New gTLDs	68.0%
.XIN	97.77%
.WANG	85.08%
.TOP	85.08%
网址 (xn--ses554g)	83.22%
.REN	82.82%

According to data from nTLDstats, there were over 9 million registrations made in new gTLD strings that have their origin in China.¹⁷⁶ One possible reason for the higher levels of parking rates seen in new gTLDs that cater to Chinese registrants may be speculative domain registrations out of China, particularly with regard to short domain names (i.e., names containing five or less letters or numbers). In 2015, Chinese investors purchased a large number of short domain names as these were seen as especially interesting to Chinese investors.¹⁷⁷ Furthermore, it seems that Chinese buyers are also purchasing names with actual end-uses in mind that they think will go up in value. As a result, the increase in awareness of domain investment in China may have contributed to higher parking rates of China-based new gTLDs. This trend may also be indicative of a speculative bubble in the Chinese market as well as expected value of these domains.

These initial analyses of geographically based parking rates are quite cursory and based on limited data, but they do seem to indicate that regional variations in parking rates exist and can be quite significant. Again, these figures represent a gross measurement of parking, and future analysis will require a more granular exploration of behavior across geographic regions.

Relationship Between Parking and DNS Abuse

While the review team was not able to identify a direct relationship between parking rates and either competition or consumer choice, it considered the possibility that parked domains may be linked to consumer trust, and in particular to the possibility that parking is associated with DNS Abuse. Previously, Vissers et al¹⁷⁸ studied over eight million parked domains and found that “users who land on parked websites are exposed to malware, inappropriate content, and elaborate scams.”¹⁷⁹

¹⁷⁶ NTLStats.com, “Parking Analysis of Legacy gTLDs.”

¹⁷⁷ Echo Huang, “China’s newest investment craze is short domain names,” Quartz, 10 January 2016, accessed 30 October 2017, <https://qz.com/581248/chinas-latest-investment-craze-is-short-domain-names/>.

¹⁷⁸ Vissers, Joosen, and Nikiforakis, “Parking Sensors: Analyzing and Detecting Parked Domains,” (paper presented at NDSS, San Diego, USA, 8-11 February 2015). <http://dx.doi.org/10.14722/ndss.2015.23053.p.1>.

¹⁷⁹ It is not entirely clear to the review team whether malware propagation is intentional by the parked sites or parking services, or the result of compromised ad networks. Vissers et al raise this possibility in their paper: “Possibly, these complex chains are the consequence of a process similar to ad arbitration, a widely adopted practice performed by most ad syndicators [p. 33]. During this process, the syndicator bids on available ad slots of other publishers or syndicators, allowing them to resell these slots to the next bidder. Often, ad slots are subjected to multiple iterations of this reselling process. As a consequence, ad slots are no longer under control of the syndicator that the original publisher partnered with. All these interactions and intermediate parties have

In conjunction with this Review, the “Statistical Analysis of DNS Abuse in gTLDs” study conducted for this report found that, in general, in new gTLDs, the total number of registrations associated with malware is lower than in legacy gTLDs,¹⁸⁰ whereas the rate of malware associated domain names per volume in new gTLDs is occasionally higher than that of legacy gTLDs. However, if one examines parking rates in the new gTLDs, the malware propagation that is occurring is marginally more likely to occur in zones with higher parking rates. There may be some correlation between parking and malware, but that is not as strong and indicative as the overall trend of lower malware distribution rates than those of legacy gTLDs. Nonetheless, the malware distribution rate gap between legacy and new gTLDs appears to be shrinking. Therefore, the review team believes the community should further explore the correlation between parking and malware distribution.

Recommendations

While the review team observes that new gTLDs have higher parking (using the broadest possible definition) rates than legacy gTLDs and that there are regional variations in parking rates, it is so far unclear if parking has a meaningful effect on either competition or consumer choice. As a result, the review team recommends that ICANN consider undertaking further research into the potential competitive impact of domain parking and to use the results of that research to improve its analysis of developments in the DNS marketplace. In addition, the review team recommends that ICANN consider using data on upcoming registration renewals for the same purpose.

Recommendation 7: Collect domain usage data to better understand the implications of parked domains.

Rationale/related findings: The high incidence of parked domains suggests an impact on the competitive landscape, but insufficient data hinders efforts to analyze this impact.

To: ICANN organization

Prerequisite or priority level: High

Consensus within team: Yes

Details: The review team uses the term “domain usage” rather than “parking” in the recommendation because the term “parking” is associated with a wide variety of behaviors, and different members of the community may define “parking” differently. It is also likely that different types of “parking” behaviors reflect different intentions by registrants and will have different implications on the competitive dynamics in the marketplace. ICANN should regularly track the proportion of domains in gTLDs that are parked with sufficient granularity to identify trends on a regional and global basis. Ideally, data would allow analysis to occur on a per-domain basis rather than being aggregated on a TLD level. Future reviews should conduct further analyses of whether there is a correlation between parked domains and renewal rates or other factors that may affect competition. Further analysis should be performed on the relationship between parking and DNS abuse. The community may also wish to take this issue up for further study outside of the periodic CCT Review process, as the phenomenon is also

the potential to blur the direct involvement of the parking service in serving malware. In some cases, however, we also see malware being delivered more directly, for example, by the parent company of Parking Service 8.”

¹⁸⁰ SIDN Labs and the Delft University of Technology, “DNS Abuse in gTLDs”.

prevalent within legacy gTLDs, and there does not seem to be significant study of the topic with ICANN.

Success measures: The availability of relevant data for use by the ICANN organization, contractors, and the ICANN community for its work in evaluating competition in the DNS space.

7 Consumer Choice

The review team also considered the question of whether the introduction of new gTLDs increased the choices available to registrants. The expansion of the Program gives registrants new options in terms of new languages, character sets, geographic identities, and new specialized categories. However, the review team sought to establish whether registrations in the new gTLDs represented a positive choice available to registrants or if a significant number felt obliged to register defensively in new gTLDs to protect their brand or identity. In particular, there has been considerable discussion of whether trademark holders would find it necessary to register those trademarks as domain names in new gTLDs in order to prevent others from doing so.

There have been a number of studies (see below) of the extent to which registrants have engaged in such “defensive” registrations. In anticipation of this review, ICANN commissioned Nielsen to perform the Global Registrant Survey to gain insights from registrants. More recently, INTA conducted a study of its membership, which reflects the experience of trademark holders.¹⁸¹ The review team examined each of these studies and supplemented them with its own analysis. The review team initially addressed the general topic of consumer choice and then performed a specific analysis related to trademark holders below.¹⁸²

In evaluating these results, it is important to note that not all instances of duplicate registrations are necessarily “defensive” in nature. For example, a trademark holder might register the same mark in multiple domains in order to increase the probability that it will be found through user searches, a consideration that has become increasingly important as the number of domains has grown.¹⁸³ In fact, a total of 52 percent of registrants interviewed by Nielsen indicated that one of the reasons for registering duplicate domain names was “to help ensure my site gets found in searches.”¹⁸⁴ However, 51 percent of the respondents indicated that they engaged in duplicate registrations “to protect my brand or organization name” and the same percentage did so “to keep someone else from having a similar name.”¹⁸⁵ The INTA Survey found that amongst trademark holders, “new TLD registrations primarily duplicate legacy TLD or ccTLD registrations”¹⁸⁶ and, in particular, that only 17 percent of respondents had registered names in the new gTLDs for the first time versus duplicating existing domains in legacy gTLDs or ccTLDs. Thus, it appears that “defensive” registrations are a real phenomenon, apparently because the costs of challenging registrations by others can be considerably greater than the costs of registering their marks in multiple domains.¹⁸⁷

¹⁸¹ Nielsen, *Consumer Research* (2015); Nielsen, *Consumer Research Wave 2* (2016); Nielsen, *INTA New gTLD Cost Impact Study* (April 2017) and INTA, *New gTLD Impact Study Status Report II* (August 2017),

¹⁸² In this chapter, the term “consumers” is used primarily to refer to domain name registrants and not consumer end-users, whose behavior and beliefs are largely covered in the Consumer Trust chapter.

¹⁸³ Consider users that search for websites by guessing Internet addresses. As the number of TLDs increases, finding the “correct” website by guessing becomes more difficult and, on average, the number of required guesses is substantially increased. Faced with this fact, one would expect that some “guessers” would use search engines more frequently than in the past. However, some registrants may still choose to register in several TLDs in order to reduce the number of guesses that a user must make in order to find them.

¹⁸⁴ Nielsen, *Registrant Survey Wave 2* (2016), p. 13.

¹⁸⁵ *Ibid.* Many registrants chose both responses; a total of 60 percent of registrants of new gTLDs selected one of the two responses.

¹⁸⁶ Nielsen, *INTA New gTLD Cost Impact Study* (April 2017), Slide 19

¹⁸⁷ [Appendix G: Possible Questions for a Future Consumer Survey](#) includes a series of questions that may be included in future surveys of domain name registrants to better understand the choices they make when registering domain names.

Previous Studies

Krueger and Van Couvering surveyed 1,043 brand names of *Fortune* 100 companies and found the following registration percentages in different TLDs: 100 percent in .com, 76 percent in .org, 84 percent in .net, 69 percent in .info, 65 percent in .biz, and 57 percent in .mobi.¹⁸⁸ Zittrain and Edelman found that, six months after open registration in .biz began, 91 percent of a sample of .biz domain names were also registered in .com, 63 percent were also registered in .net, and 49 percent were also registered in .org.¹⁸⁹ Summit Strategies International analyzed the extent of duplicate name registrations and the presence of the same registered name holder between four of the then-new and three legacy TLDs, [finding](#) that: “The statistics for .info indicate that only 11% of registrants hold the same name in .com, which suggests that .info has created significant new opportunities. With .biz, 42% of duplicate registrations appear to be registered to the same party, thereby suggesting that they are protective in nature.”¹⁹⁰ Katz, Rosston, and Sullivan analyzed the overlap in domain registrations for 200 of the top 500 global brands as ranked by Brand Finance and found “that a very high percentage of them were registered in the different TLDs” that they examined.¹⁹¹ However, they also found “a big range in the share of registered domains with content” and that the percentage of active sites “was quite low”, except for .com. Finally, Halvorson et al, who employ a variety of measures to identify matches of registrants between .com and .biz, found “at least some degree of a match for around 40% of the [biz-com] pairs [they] could assess.”¹⁹² Using what they describe as “stronger indicators” they classified 11.6 percent of biz domains as “defensive.”¹⁹³

CCT Analysis

The Global Registrant Survey, Wave 2, found that 35 percent of all surveyed registrants had registered at least one name in a new gTLD.¹⁹⁴ Of those, 60 percent indicated that they had registered to “protect existing domain(s) and ensure no one else got a domain similar” while 34 percent indicated that they registered to “appeal to new Internet users or new types of customers”, and 6 percent registered because the “name I wanted was not available using older gTLDs.”

The review team also performed an analysis of strings registered as second-level domains in new gTLDs and comparable strings registered in .com, which is currently by far the most popular of the legacy gTLDs. The review team’s analysis focused on two potential patterns. In the first case, the review team looked to see if the identical string registered as a second-level domain in a new gTLD was registered as a second-level domain in .com (e.g., if example.tld

¹⁸⁸ F. Krueger and A. Van Couvering, “An Analysis of Trademark Registration Data in New gTLDs,” *Minds + Machines Working Paper*, (February 2010): 51.

¹⁸⁹ Jonathan Zittrain and Benjamin Edelman, Berkman Center for Internet and Society Harvard Law School, “Survey of Usage of the .biz TLD” (June 2002), accessed 6 August 2017, <https://cyber.law.harvard.edu/tlds/001/>.

¹⁹⁰ Summit Strategies International (July 2004), *Evaluation of the New gTLDs: Policy and Legal Issues*, accessed 6 August 2018, p. 102. The authors note that “The data...is based on an extremely small sample of only 100 names for .biz and .info.” This study was prepared for ICANN.

¹⁹¹ M.L. Katz, G.L. Rosston, and T. Sullivan, *Economic Considerations in the Expansion of Generic Top-Level Domain Names, Phase II Report: Case Studies* (December 2011), accessed 25 January 2017, <https://archive.icann.org/en/topics/new-gtlds/phase-two-economic-considerations-03dec10-en.pdf>. These domains were .com, .net, .org, .biz, .info, .mobi, and .us. This study was prepared for ICANN.

¹⁹² T. Halvorson, J. Szurdi, G. Maier, M. Felegyhazi, C. Kreibich, N. Weaver, K. Levchenko, and V. Paxon, “The BIZ Top-Level Domain: Ten Years Later” in *Passive and Active Measurement*, eds N. Taft and F. Ricciato. (Germany: Springer Berlin Heidelberg, 2012), 221-230, 228. <http://www.icir.org/vern/papers/dot-biz.pam12.pdf>

¹⁹³ See Substitution Analysis section earlier.

¹⁹⁴ Nielsen, *Registrant Survey Wave 2* (2016), p. 164.

was registered, was example.com also registered?).¹⁹⁵ The review team found that 82 percent of registrations in new gTLDs had identical matches in .com. However, there was considerable variation in the percentages of identical matches across gTLDs. For example, among 414 gTLDs with at least 1,000 registrations, 32 had at least 99 percent of their second-level domains as exact matches in .com, including both .wang and .xin, which are the third- and eleventh-largest new gTLDs by registration volume as of November 2016; and nearly two-thirds (271) had at least 95 percent of their second-level domains as exact matches in .com. At the other extreme, 10 gTLDs had fewer than 50 percent of their second-level domains as exact matches in .com. Of these, half were IDNs. In general, IDN gTLDs contained fewer identical matches to .com, with only about 70 percent of registrations in IDN gTLDs being identical matches to domains in .com. Unfortunately, because the analysis did not include WHOIS data, the review team was unable to determine whether the same registrant had registered both domains.

In a second analysis, the review team examined whether the combined string representing both the TLD and the second-level domain was registered as a second-level domain in .com (e.g., if example.tld was registered, was example.tld.com also registered?).¹⁹⁶ If this combined string were available in .com, it meant that the registrant had chosen a new gTLD even though they could have registered a roughly equivalent name in the most popular existing gTLD. In this analysis, the review team found that only 13 percent of registrations in the new gTLDs were also registered in .com in the combined form, meaning that 87 percent of registrants could have registered a very similar string in .com. Of course, in many cases the combined string is nonsense—for example, registrants in the popular .xyz TLD probably did not consider something like examplexyz.com as an alternative. Registrants in these TLDs would likely be looking for the exact match equivalent in other generic TLDs such as .com.

While the review team was unable to systematically differentiate between “generic” (such as .xyz or .com) and “specific” TLDs (such as .photography or .bank), a manual review did reveal a substantial difference in the patterns of availability across these types of TLDs. Unsurprisingly, only .1 percent of the registrations in .xyz were registered in their combined form in .com. On the other hand, many of the combined strings registered in specific TLDs such as .capital (only 30 percent available in .com), .movie (35 percent), .cafe (47 percent), and .properties (49 percent) were also registered in .com, meaning that many of these registrants would have been unable to pick an equivalent string in .com. Overall, approximately 65 new gTLDs representing half a million registrations saw more than 50 percent of their combined strings registered in .com. The vast majority of registrants, including those in popular gTLDs such as .club (95 percent), .review (99 percent), and .shop (89 percent) could have registered the combined form in .com and chose a new gTLD instead.

Overall, the review team concluded that while some registrants are motivated by defensive objectives in the new gTLDs, many registrants choose to register in new gTLDs to broaden the appeal or reach of their offerings even when similar options remain available in legacy gTLDs. As noted in Recommendation 8, the review team suggests that ICANN continue to conduct periodic registrant surveys in order to better understand the value of the increased choice offered by new gTLDs and to observe any changes in their sentiments and motivations over time.

¹⁹⁵ Analysis Group, *Summary of Trademark Strings Registered in Legacy gTLDs Trademark Strings that are also Brand TLDs* (October 2016), accessed 6 August 2018, <https://community.icann.org/download/attachments/56135378/New%20gTLD%20Registrations%20of%20Brand%20TLD%20TM%20Strings%2010-18-16.pdf?version=1&modificationDate=1481305785167&api=v2>.

¹⁹⁶ This reporting was derived from an analysis of two data sets produced by ICANN organization for the Review Team. See “New gTLD Registrations Available in .com,” (2016 and 2018), and “Existing Registrations in .com Against New gTLDs,” (2016 and 2018), accessed 3 August 2018, available at <https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials>.

CCT Analysis: Trademarks and Defensive registrations

The INTA Survey indicated that amongst its respondents of trademark holders, “nearly all of the new domains registered as duplicates to a Legacy or ccTLD were intended primarily to prevent the name from being used by another registrant.”¹⁹⁷ In order to better understand the prevalence of these defensive registrations by trademark holders, the review team, together with Analysis Group, used data from the most recent round of new gTLD expansion to analyze the same issue. Specifically, the review team began by identifying a number of trademarks for which one might expect some degree of “defensive” registrations together with the identity of the registrant. Analysis Group collected a random sample of data from the TMCH database that represented 25% of trademark holders within the database. Identities of registrants were obtained using WHOIS data.¹⁹⁸ The trademark strings analyzed were limited to verified or corrected Latin text strings in the Trademark Clearinghouse. Matches were identified as those involving an exact match in accordance with ICANN’s matching criteria, where the registrant was identified as the trademark holder associated with the registered string based on an approximate text comparison between registrant and trademark holder names.

Using these data, the review team determined: (1) whether each of the trademarks in the data was registered by the trademark holder in at least one legacy gTLD; (2) whether the same string was registered by the trademark holder in at least one new gTLD; and (3) for those strings that were registered by the trademark holder in at least one new gTLD, the number of new gTLDs in which the trademark holder had registered the string. The team found that 54 percent of the strings that were registered in a legacy gTLD were also registered in at least one a new gTLD. The review team also found that, of these strings, three was the median number of registrations in new gTLDs. That is, half of the trademarks that were analyzed were registered in three or fewer new gTLDs.¹⁹⁹ The review team also found that three-quarters of these strings were registered in seven or fewer new gTLDs, and that 90 percent of these strings were registered in 17 or fewer new gTLDs.²⁰⁰ At the same time, a small number of trademarked strings were registered in a large number of TLDs: 4 percent of trademarks were registered in at least 100 new gTLDs, and one was registered in 406 new gTLDs. Extrapolating the sample across all marks, one would expect that trademark holders would have made approximately 80,000 total registrations of their trademarks in new gTLDs as of September 2016, which represents 0.3 percent of all registrations within new gTLDs²⁰¹. The review team concluded from this analysis that, although the direct cost of the New gTLD Program for most trademark holders related to defensive registrations appears to be lower than some had feared prior to the inception of the program,²⁰² a small fraction of trademark holders are likely incurring significant costs associated with defensive registrations.

¹⁹⁷ Nielsen, *INTA New gTLD Cost Impact Study* (April 2017), slide 22.

¹⁹⁸ Analysis Group, *Independent Review of Trademark Clearinghouse (TMCH) Services Draft Report* (July 2016), accessed 7 August 2018, <https://newgtlds.icann.org/en/reviews/tmch/draft-services-review-25jul16-en.pdf>.

¹⁹⁹ The mean number of duplicate registrations was eight, but the statistic is strongly influenced by a small number of trademarks that were registered in a very large number of domains. For example, one trademark was registered in 406 domains.

²⁰⁰ In assessing these findings, it is important to emphasize that the extent of duplicate registrations that we observe may have been influenced, to some degree at least, by the use by trademark holders of the blocking services described above. That is, to the extent that trademark holders obtained protection through blocking, they may have had less need to register their trademarks “defensively.”

²⁰¹ The TMCH review found a total of 19,642 registrations by trademark holders of their mark using a 25 percent sample. Extrapolating this to 100 percent gives us an expected total of 78,568 total registrations. In comparison, as of September 2016, there were a total of 24,814,734 registrations across all new gTLDs.

²⁰² Dan Jaffe of the Association of National Advertisers (ANA) stated in his prepared testimony before the House Subcommittee on Communications and Technology: “This cost [of defensive registrations] alone could be in the hundreds of thousands of dollars per brand name, creating a multi-million dollar liability for major corporations and a multi-billion dollar cost to the industry.” See Testimony of Daniel L. Jaffe (14 December 2011), *Hearing on ICANN’s Top-Level Domain Program*, accessed 7 August 2018, https://www.ana.net/getfile/17073_p.6; 2) The Coalition Against Domain Name Abuse (CADNA) claimed that defensive registrations would cost \$2.4

In addition to defensive registrations, some registries offer a service through which a trademark owner can block others from using its marks without the need to purchase the domain name itself. For example, the Donuts registry offers a “Domain Protected Marks List,” which “protects trademark holders against cybersquatting at a fraction of the cost of defensively and individually registering the terms across all Donuts domains.”²⁰³ Unfortunately, the Review Team was not able to locate any data related to the costs incurred by trademark holders making use of these blocking services, and thus is unable to draw any conclusions as to the efficacy of such services.

Recommendations

Recommendation 8: Conduct periodic surveys of registrants that gathers both objective and subjective information with a goal of creating more concrete and actionable information.

Rationale/related findings: Although Nielsen conducted two surveys of registrants in conjunction with the CCT, the set of questions posed did not allow for a full analysis of consumer motivations or to understand how valuable they found the expanded choice offered by the new gTLDs. At the same time, as the review team observed additional registrations and more familiarity with new gTLDs, it is likely that consumer attitudes will change over time as well. A periodic survey will allow the community to observe those changes.

To: ICANN organization

Prerequisite or priority level: Low

Consensus within team: Yes

Details: Because the survey supports further analysis of both consumer choice and consumer trust, it must pose questions relating to both topics. In both cases, it is important to know which TLDs consumers are familiar with and which they actually visit.

To better understand issues of consumer trust, it is also important to understand why they choose to register in some TLDs but not others, and whether the TLD’s registration policies and perception of trustworthiness influence the choice of whether or not to register.

billion. See Michael Berkens (21 September 2013), “CADNA: Costs of Defensive New gTLD Registrations To Be Double The Total Cost of Cost of All .Com Registrations,” accessed 7 August 2018, <https://www.thedomains.com/2013/09/21/cadna-costs-of-defensive-new-gtld-registrations-to-be-double-the-total-cost-of-all-com-registrations/>. As the article points out, that was double the cost of all .COM and .NET registrations combined at the time.

²⁰³ Donuts Registry, “Brand Protection,” accessed 7 August 2018, <http://www.donuts.domains/services/dpml>. According to domainname.com: “Three of the largest new top-level domain registries has [sic] created a new domain name blocking tool. Many clients prefer to avoid defensive registrations but these services offer some economies of scales and are worth considering for key brands. The service is offered by three new gTLD providers; Donuts (covering 172 TLDs) Rightside (covering 36 TLDs) and Minds + Machines (covering 16 TLDs). [NB: Donuts acquired the Rightside registry in 2017]. The blocking tool allows trademark owners to block their marks and related terms, at the second-level, in all supported new gTLDs, for one fee per registry. The service is designed to be an economical way for trademark owners to protect their rights from cybersquatters. With the block it is not necessary for trademark owners to take out defensive registrations in each of the three providers TLDs In order to obtain a block, the term you want to block must be based on a trademark validated by the Trademark Clearinghouse.” In 2016, Donuts announced a new version of its blocking service that will allow brand owners the opportunity to obtain blocking in return for a fee of \$10,000. See Jack Ellis, “Donuts unveils enhanced trademark protection offering; expert urges lower cost options in next gTLD round,” *World Trademark Review*, 29 September 2016, accessed 7 August 2018, <http://www.worldtrademarkreview.com/blog/Detail.aspx?g=fa934d21-cfa7-459c-9b1f-f9aa61287908>

For consumer choice, the survey should allow a relative weighting of the potential contributions to consumer choice with respect to geographic name gTLDs, specific sector gTLDs, and IDN gTLDs. The survey should help determine whether there is a clear preference by registrants for different types of gTLDs and whether there are regional differences or similarities in their preferences. It will be also be important to gather further data on the geographic distribution of gTLD registrants and the services provided to them by registrars, particularly in different regions, including languages offered for service interactions and locations beyond the primary offices.

The survey should be designed to repeat portions of previous surveys while continuously striving to improve the data available on registrant behavior and attitudes. Some potential questions are included in Appendix G: Possible Questions for a Future Consumer Survey. The survey should allow an analysis of: (1) what factors matter most to users in determining which gTLDs to visit; (2) whether perceived trustworthiness of TLDs influences registration behavior; (3) the the perception of new gTLDs with restrictions on registration compared to new gTLDs with few or no restrictions; and (4) whether registrants view the expanded name space as beneficial or confusing.

Success measures: The availability of relevant data for use by the ICANN organization, contractors, and the ICANN community for its work in evaluating competition in the DNS space.

Recommendation 9: The ICANN community should consider whether the costs related to defensive registration for the small number of brands registering a large number of domains can be reduced.

Rationale/related findings: The review team found that while most trademarks were either not registered in new gTLDs or in only a handful of new gTLDs, a small number of trademarks were responsible for a large number of registrations across many new gTLDs and were likely bearing most of the cost of registrations. This bimodal distribution suggests that RPMs tailored to certain of these trademarks may be appropriate.

To: New gTLD Subsequent Procedures PDP Working Group and/or Rights Protection Mechanisms (RPM) PDP Working Group

Prerequisite or priority level: Prerequisite

Consensus within team: Yes

Details: The review team does not suggest a specific mechanism. However, the review team believes the uneven distribution of costs of defensive registrations to a small number of trademark holders may be an unanticipated effect of the current RPM regime and that the relevant PDP(s) should consider whether those costs can be lowered without impacting the benefits of the New gTLD Program, thereby improving the cost-benefit ratio of the overall Program.

Success measures: A reduction in the number of defensive registrations overall and, in particular, a reduction in the number of defensive registrations per trademark by the registrants with the most defensive registrations without causing an increase in the number of UDRP and URS cases.

Benefits vs. Confusion to End-users

The CCT attempted to consider the benefits of the expanded number of gTLDs weighed against the risks that such expansion could create confusion, particularly for consumer end-users navigating to domain names. Although there was some data available about the benefits of the expansion for consumer end-users and registrants, the review team lacked specific data about the risks of confusion. As a result, the analysis on this topic is incomplete.

Using the data available, the review team looked at whether the New gTLD Program benefitted consumer end-users and registrants. In the case of consumer end-users, the review team examined benefits from increased choice and variety. In particular, the review team looked at the benefits consumer end-users would gain in having a broader and more diverse source of domain names to access. For registrants, the review team considered the benefits of having a broader and more diverse source of domain names for registration. This includes geographic TLDs, TLDs using non-Latin scripts and written in languages other than English, and new service models.

Benefits to consumer end-users include greater choice in the number of generic top-level domain names (given the increase from some 22 in 2013 to over 1000 in 2016, which does not include the ccTLDs).²⁰⁴ Another benefit is greater "specificity" of identification regarding the domain names (i.e., a consumer end-user can search within a narrower range of gTLDs depending upon their interests, for example by searching for local florists within .berlin or banks within .bank), as well as increased availability of non-Latin scripts at the top- and second-level (IDNs).²⁰⁵

When comparing the 2013 environment to that of 2016-2017, registrants have benefited from a broader and more diverse source of domain names for registration (e.g., geographic TLDs, new scripts).²⁰⁶ Registrants indicated that having an extension that was relevant to their needs was one of the most important factors in determining which gTLD to purchase compared to the previous situation in which the most important factor was price.²⁰⁷ There has also been a clear increase in the number of jurisdictions governing the registrations, with growth from only 6 jurisdictions having at least one gTLD registry operator in 2013 up to 50 jurisdictions in the second half of 2017.²⁰⁸ The number of registrars has not increased at the same pace, but there were already a large number of registrars prior to the inception of the New gTLD Program. The total number of second-level domain name registrations increased by roughly 59 percent from 2010 to 2017, and, notably, the number of second-level registrations in IDNs has increased by over 3 million percent, from 19 in the second half of 2013 to over 590,000 by the second half of 2017.²⁰⁹

²⁰⁴ When the New gTLD Program was launched, there were 22 gTLDs and over 250 ccTLDs that could be used.

²⁰⁵ Nielsen, *Consumer Research Wave 2* (2016), pp. 7-9, 33, 35. While awareness and visitation of new gTLDs has not increased at the rate of the legacy TLDs, the rise has been greatest in Africa, Asia/Pacific, and Latin America (see pp. 7 – 8). It is also clear that trust in new gTLDs is high for IDNs and that expectations on restrictions on same add to consumer confidence (see p. 9).

²⁰⁶ Nielsen, *Registrant Survey Wave 2* (2016) indicates that awareness of new gTLDs is increasing compared to relative stagnation or decrease in legacy gTLDs. See also ICANN, *gTLD Marketplace Health Index* (July 2016), accessed 25 January 2017, <https://www.icann.org/en/system/files/files/gtld-marketplace-health-index-beta-19jul16-en.pdf>, pp. 5 – 7.

²⁰⁷ Nielsen, *Consumer Research Wave 2* (2016), p. 33 states: "Having a well-known extension and one that seems most relevant are the main factors across the board in determining **which gTLD to purchase**" [emphasis added], which must be a reference to registrants as they are the only ones purchasing gTLD domain names.

²⁰⁸ ICANN, *gTLD Marketplace Health Index* (June 2018), accessed 7 August 2018, <https://www.icann.org/en/system/files/files/gtld-marketplace-health-index-beta-20jun18-en.pdf>, p. 3.

²⁰⁹ ICANN, *gTLD Marketplace Health Index* (December 2017), p. 5.

In addition to understanding these benefits, the review team attempted to see if there was evidence that an increased number and type of gTLDs (geographic, new internationalized scripts) might create confusion for consumers and, if such confusion existed, whether it would reduce the value to registrants of the new type and number of gTLDs. This effort was hampered by a lack of data relevant to this topic. In particular, the Nielsen surveys of consumer end-users did not include specific questions on this issue.

Nevertheless, there is evidence from the Nielsen surveys that over half of end-users search for websites via search engines rather than via specific names of gTLDs.²¹⁰ The use of search engines to find websites might reduce the risk of confusion as to specific searches depending upon the sophistication of the search engines, but more research would need to be conducted to confirm this hypothesis. Also, in order to accurately assess whether the increase in gTLDs increased the risk of confusion for consumer end-users and/or registrants, more research would need to be gathered.

Greater specificity and "sectoralization" of the new gTLDs has permitted consumer end-users to have greater choice in identifying the domains from which they wish to find goods and services. This increased specificity is also reflected in the greater number of geographic gTLDs, potentially permitting narrower searches and search parameters at the second-level. The expansion of availability of IDNs has also increased consumer choice, although the review team did not have sufficient evidence of whether any confusion has arisen as a result.²¹¹ Again, if search engines are a primary source for finding domain names, the use of non-Latin scripts would help to narrow the search and in theory, reduce confusion. But there is no clear insight on this that can be derived from the current surveys.²¹²

Registry Policies

As a part of a new gTLD's attractiveness to consumers as a product, its registration policies and rights protection mechanisms can be used as a point of comparison. The review team analyzed the registry policies of the top 30 new gTLDs that related to protection of privacy, registration rules and rights protection mechanisms (See also section "Background to the RPMs).²¹³ For comparison purposes, the top five ccTLDs (by registration numbers) were included.²¹⁴

²¹⁰ Nielsen, *Registrant Survey Wave 2* (2016), p. 102 shows that 59 percent of respondents (in both 2016 and 2015) indicated that using a search engine is their preferred method for finding a website. Second to search engines was typing the domain name directly into the browser; 22 percent in 2016 of respondents indicated they did this, down very slightly from 23 percent from 2015. Nielsen, *Consumer Research Wave 2* (2016), p. 22 indicates that over 70 percent of consumers use search engines to find information about domain name extensions. This may mean that the specific names themselves are less relevant to consumers (and to a certain extent registrants) when searching for a domain so long as they arrive at the gTLD(s) or the content that they are searching for.

²¹¹ However, there are examples of IDNs being used to purposely confuse victims in furtherance of DNS abuse. See PBS (18 January 2018), "Hackers are flooding the internet with more fake domain names. Here's how you can protect yourself," accessed 7 August 2018, <https://www.pbs.org/newshour/nation/hackers-are-flooding-the-internet-with-more-fake-domain-names-heres-how-you-can-protect-yourself>.

²¹² Nielsen, *Registrant Survey Wave 2* (2016), p. 46.

²¹³ Registries of the top 30 strings by registration number were analysed: .xyz, .top, .wang, .win, .club, .link, .site, .science, .bid, .xin, .red, .ren, .party, .online, .click, .loan, .xn--ses554g (网址), .date, .website, .space, .kim, .work, .tech, .lol, .webcam, .nyc, .realtor, .review, .news, .guru. Listed strings are managed by following companies: .XYZ, Jiangsu Bangning Science & Technology Co., Ltd, Zodiac Leo Limited, First Registry Limited, .Club Domains LLC, Uniregistry, Corp., Radix, Famous Four Media, Elegant Leader Limited, Afilias, Beijing Qianxiang Wangjing Technology Development Co., Ltd, Hu Yi Global Information Resources (Holding) Company, (Minds + Machines) Top Level Domain Holdings Limited, Neustar + (The City of New York, a municipal corporation under the laws of the State of New York, by and through the New York City Department of Information Technology & Telecommunications), Real Estate Domains LLC, Rightside, Donuts.

²¹⁴ .cn, .de, .uk, .nl and .ru

The vast majority (90 percent) of the top 30 new gTLD registries have a published privacy policy. Two-thirds of these registries would not share personal data with third parties except in cases required by law and in compliance with relevant ICANN contract requirements. Many (30 percent) strictly underline that they will not sell personal data to third parties. Of these registries, 6.6 percent share personal data of its registrants with third parties, and 13.3 percent will ask for registrant consent before sharing the registrant's personal data. With regard to registries with personal data protection policies, many of them—43.3 percent—have strict obligations to take reasonable measures to provide the security of personal data, and 33.3 percent of those registries have information in their policies regarding collecting of cookies.²¹⁵

Of the five compared ccTLDs, all have rules that do not permit sharing personal data with third parties. On the other hand, there are differences among them regarding data that they are publishing through WHOIS (ccTLDs do not have the same WHOIS policies, which accounts for those differences). Three of those ccTLDs have information on collecting cookies. Regarding content, three have no applicable rules. The remaining two have certain rules for dealing with illegal content. Three of the ccTLDs are open to registration by anyone. The remaining two require at least a local address within the jurisdiction of the ccTLD.

For the top 30 new gTLDs considered, there are no requirements to reside within a particular jurisdiction, except for .nyc (only businesses and organizations with an New York City address and individuals with a primary residence in New York City can register a .nyc domain name). Regarding eligibility to register, 20 percent of registries refer to the Trademark Clearinghouse for registration priority. All of these registries have compliance procedures for abusive behavior or other violations of their policies. Registries have provided online forms for filing the complaint or a specific address for this purpose. Also, all registries have the right to act in case of abusive usage of a domain name. None of these registries have policies that regulate parked domain names.

For the analyzed ccTLDs, three have registrations that are open to anyone, and the remaining two require at least a local address. All five of the ccTLDs for which information has been collected have compliance procedures for abusive behavior or other violations of policy. In relation to abusive usage of domain names, all refer to relevant policy or law. Besides that, one has a “blacklist” database: domains on that list are not allowed to be repeatedly registered or utilized. The five ccTLDs do not have any concrete policies regarding parked domains.

Most of the top 30 gTLD registries (73 percent) have different voluntary PICs, such as those that involve security issues, abuse prevention, and additional rights protection mechanisms. Besides voluntary PICs, there are mandatory PICs for all new gTLDs as a part of the Registry Agreement. All new gTLD registry operators are required to work with ICANN-accredited registrars and include GAC safeguards.²¹⁶

With the inclusion of the PICs for new gTLDs, non-price related competition was potentially improved for new gTLDs when compared to legacy gTLDs. To that extent, expectations of consumer end-users for gTLD restrictions are increasing. While both consumer end-users and registrants felt that more restrictions could be protective, registrants were slightly more opposed to restrictions relative to consumers.²¹⁷ Users at a global level generally believe that

²¹⁵ The recent implementation of the European Union’s General Data Protection Regulation (GDPR) on 25 May 2018 has had a major impact on how data is collected and processed in all sectors.

²¹⁶ ICANN Board Resolution 2013.07.02.NG07–2013.07.02.NG08, “Category 1 Safeguard Advice from GAC,” (2013), accessed 7 August 2018, <https://www.icann.org/resources/board-material/resolutions-new-gtld-2013-07-02-en#1.c>.

²¹⁷ Nielsen, Registrant Survey Wave 2 (2016); Nielsen, Consumer Research Wave 2 (2016).

restrictions increased trust.²¹⁸ Regarding specific restrictions, there are wide differences among regions. For example, registrants in North America are more likely to want local presence restrictions while those in Asia are more likely to want credential validation.²¹⁹ A clear majority of consumer end-users feel that there should be at least some level of restrictions on who can register a domain name, such as those related to credentials, location, and consistent use.²²⁰

On the other hand, there are many similarities among the policies of legacy gTLDs. Most of the legacy gTLD registries were already involved in the domain name industry, so they had developed policies based on their previous experience and background. Besides that, for some issues, rules were already set by ICANN or they were part of accreditation processes. In those cases there was no need or incentive for further developments by registries.

The URS is a rights protection mechanism developed in order to provide protection to trademark holders under the New gTLD Program (see section below on “Background to the RPMs”).²²¹ Compared to the existing UDRP, which was the primary process established by ICANN for the resolution of disputes regarding the registration of domain names that infringe trademark rights, the URS is much faster in taking down websites that are found to infringe on intellectual property rights as well as in fighting cybersquatting. Compared to the UDRP, fees are lower for the URS, ranging from USD \$300 – 500.²²² By comparison, the World Intellectual Property Organization (WIPO), one of the main UDRP arbitration providers, charges USD \$1500 – 2000 for a single panelist and USD \$2000 – 4000 for three panelists.²²³

The URS was designed to be used for obvious cases of infringement.²²⁴ Although the URS is faster and cheaper than the UDRP, the remedy available is limited to a suspension of domain name registrations. Thus, the same domain name could be registered by another potential infringer once it is released following the expiration of the registration (which can be extended by the Complainant). Some rights holders prefer having the remedy of transfer not available under the URS. For such cases, the UDRP is the more appropriate mechanism.

Recommendation

Recommendation 10: The GNSO should initiate a new Policy Development Process (PDP) to create a consistent privacy baseline across all registries, including to explicitly cover cases

²¹⁸ Nielsen, Registrant Survey Wave 2 (2016), p. 31.

²¹⁹ Ibid. p. 30.

²²⁰ Nielsen, Consumer Research Wave 2 (2016), p. 9.

²²¹ ICANN, *Uniform Rapid Suspension System (URS) Rules* (June 2013), accessed 1 December 2016, <https://newgtlds.icann.org/en/applicants/urs/rules-28jun13-en.pdf>.

²²² Currently, there are three providers who arbitrate URS disputes: the Asian Domain Name Dispute Resolution Center (ADNDRC), the National Arbitration Forum (NAF), and the MFSD Intellectual Property Dispute Resolution Center. See ICANN, “Uniform Rapid Suspension (URS),” accessed 7 August 2018, <https://www.icann.org/resources/pages/urs-2014-01-09-en>. For an example of fees charged, see ADNDRC,

“Procedure, Rules, and Supplemental Rules,” accessed 7 August 2018, <https://www.adndrc.org/urs>

²²³ WIPO, “Schedule of Fees under the UDRP,” last modified 1 December 2002, <http://www.wipo.int/amc/en/domains/fees/>

²²⁴ See D. S. Prah and E. Null, “The New Generic Top-Level Domain Program: A New Era Of Risk For Trademark Owners And The Internet,” *The Law Journal of the International Trademark Association* 101, (2011): 1784.

http://www.inta.org/TMR/Documents/Volume%20101/vol101_no6_a4.pdf: “...the URS is designed to be used for obvious cases of infringement and requires the complainant to prove bad faith and meet the clear and convincing evidentiary standard. In United States jurisprudence, there are generally three standards of proof from least to most onerous: (1) “preponderance of the evidence,” (2) “clear and convincing,” and (3) “beyond a reasonable doubt. Because ICANN requires the clear and convincing standard for a URS, the URS panelist will take a more exacting look at the facts and evidence than is required in a UDRP proceeding, where the preponderance of the evidence standard applies.”

of privacy infringements such as sharing or selling personal data without a lawful basis, such as the consent of that person. The GNSO PDP should consider limiting the collection and processing of personal data within rules which are mandatory for all gTLD registries. It should also consider not allowing registries to share personal data with third parties without a lawful basis, such as the consent of that person or under circumstances defined by applicable law (e.g. upon requests of government agencies, IP lawyers, etc.). Also, it is necessary to be aware of emerging, applicable regulations related to the processing of the personal data. For clarification, this recommendation does not relate to issues involving WHOIS or registration directory services data.

Rationale/related findings: As mentioned above, the policies of the top 30 new gTLDs have rules regarding sharing of personal data of its registrants with third parties. Furthermore, some of those policies have very clear statements that registries have the right to share or sell personal data.

To: Generic Names Supporting Organization

Prerequisite or priority level: Medium

Consensus within team: Yes

Details: Despite the fact that the Base Registry Agreement has references to privacy laws and policies, some of the registries are explicit that they have right to share personal data with third parties without consent of that person or under circumstances defined by applicable law.

Success measures: The development of relevant policy and update of the Base Registry Agreement.

8 Consumer Trust

Background

The review team sought to determine the extent to which the increase in the number of gTLDs has promoted consumer trust.²²⁵ As with the review team's findings about competition and consumer choice issues, the New gTLD Program is still in its early stages and hence the data reflects an early look, rather than a long-term assessment of the Program. To examine the impact of the New gTLD Program on consumer trust, among other issues, ICANN commissioned the Nielsen company to survey global online consumers and global domain name registrants.²²⁶ To avoid confusion between the review team's broad definition of "consumer" and the narrower segment of Internet users surveyed in ICANN's Global Consumer Surveys, the review team refers to the latter group as "consumer end-users." These surveys were conducted approximately one year apart between 2015 and 2016, and were aimed at assessing the current TLD landscape, as well as measuring factors such as consumer awareness, experience, choice, and trust in new TLDs and the Domain Name System in general. Reports on the results of the consumer end-user survey were published in April 2015 and June 2016, and reports on the results of the registrant surveys were published in September 2015 and August 2016. Nielsen directed its "consumer" survey at global Internet users who spent more than five hours per week on the Internet and its "registrant" survey at the primary decision makers that registered a domain name.²²⁷

Based on this data, the review team identified two primary factors relevant to the public's trust of gTLDs: familiarity and security. The concept of "familiarity" includes the awareness and reputation of the gTLD. The concept of "security" includes concerns about DNS abuse and expectations about restrictions concerning who can register a domain name within a particular gTLD.

Typically, awareness is the most basic knowledge of a domain name extension. Familiarity can be considered a higher level of awareness; it entails more experience and understanding about a particular domain name extension. In addition to providing data on aspects of awareness of gTLDs, the global consumer end-user and registrant surveys also asked consumers about the level of their trust in new gTLDs as compared to that of legacy gTLDs, and their comfort levels with providing certain types of sensitive information to new gTLDs as compared to legacy gTLDs. The following discussion sets forth the most pertinent findings from those studies.

Awareness and Visitation

²²⁵ For the purposes of this review, the review team recognized that "consumers" (typically, a natural person, acting primarily for personal, family or household purposes) generally fall into two categories: 1) Internet Users and other market participants who make use of domains through DNS resolution, such as by navigating to a URL or sending an e-mail; and 2) registrants (and potential registrants), which may, depending on the context, include individuals, businesses, and government agencies.

²²⁶ Nielsen, *Consumer Research* (2015); Nielsen, *Consumer Research Wave 2* (2016); Nielsen, *Registrant Survey* (2015); Nielsen, *Registrant Survey Wave 2* (2016). Statistical significance test results in the Nielsen surveys are reported at a 95 percent confidence interval. Although differences in the results of the surveys between 2015 and 2016 reported below are small in many cases and not all are statistically significant, the Review Team nonetheless views the survey data as useful information for its analysis of consumer trust in new gTLDs (results of the significance tests can be found in the respective Nielsen reports). The Review Team recognizes that further study of consumer trust will be required to compare these early measures with the results of future surveys.

²²⁷ Nielsen, *Consumer Research Wave 2* (2016), p.3; Nielsen, *Registrant Survey Wave 2* (2016), p. 4.

In terms of awareness, the logical predecessor to familiarity, the ICANN Global Consumer Survey found that consumer end-user “total awareness” of new gTLDs increased from 46 percent to 52 percent between 2015 and 2016.²²⁸ Total awareness of new gTLDs by registrants was higher than awareness for consumer end-users and remained stable, showing no statistically significant change between 2015 (66 percent) and 2016 (64 percent).²²⁹ Interestingly, consumer end-user and registrant awareness of any new gTLDs specified in the survey was higher in the Asian, African, and South American regions than it was in North America and Europe.²³⁰ As one might expect, total awareness of new gTLDs is lower than that of legacy gTLDs. Legacy gTLDs have total consumer end-user and registrant awareness levels of 98 percent or more in both 2015 and 2016.²³¹

Nielsen also found that consumer end-users do not visit new gTLDs as often as they do legacy gTLDs. Comparing visitation rates between well-known legacy gTLDs (.com, .net, .org) and specified new gTLDs (.email, .photography, .link, .guru, .realtor, .club, .xyz), the data showed that in 2015, 71 percent of consumer end-users indicated a “high” visitation rate for legacy gTLDs versus 15 percent of consumer end-users reporting a “high” visitation rate for specified new gTLDs (.email, .photography, .link, .guru, .realtor, .club).²³² In 2016, an even higher percentage of consumer end-users reported visiting these same legacy gTLDs (81 percent), while the number of consumer end-users visiting the specified new gTLDs was down slightly (12 percent).²³³ When additional new gTLDs were added to the survey questions in 2016 (.news, online, .website, .site, .space, .pics, .top), the reported visitation rate was 15 percent.²³⁴ Generally speaking, the average visitation rates for new gTLDs were closest to the rates reported for legacy gTLDs in the moderately known categories (.info, .biz): 22 percent in 2015 and 27 percent in 2016.²³⁵

Expectations about Relationship of gTLD Name to Websites Using that gTLD

The surveys indicated that the sample population expected a connection between the name of a gTLD and the websites associated with that gTLD. Fifty-five percent of consumer end-users surveyed expected “a very clear relationship” between domain names and websites registered under those domain names.²³⁶ In addition, 79 percent of consumer end-users also expect that the actual use of the domain name to be consistent with the meaning of the gTLD.²³⁷ This issue relates to another question posed in the surveys: “Why do websites have different extensions?” A majority of registrants believed that websites have different

²²⁸ Nielsen, Consumer Research Wave 2 (2016), p. 42 (for “consistent” gTLDs listed in both 2015 and 2016 surveys).

²²⁹ Nielsen, Registrant Survey Wave 2 (2016), p. 12.

²³⁰ Nielsen, Consumer Research Wave 2 (2016), p. 42; Nielsen, Registrant Survey Wave 2 (2016), p. 42.

²³¹ Nielsen, Consumer Research Wave 2 (2016), p. 8; Nielsen, Registrant Survey Wave 2 (2016), p. 12.

²³² Nielsen, Consumer Research Wave 2 (2016), p. 7.

²³³ Ibid, p.7. Note these are averages of regional responses. Statistical significance of regional results in 2015 and 2016 can be found on p. 15 for legacy gTLD visitation and pp. 46-47 for new gTLD visitation.

²³⁴ Ibid, p.7.

²³⁵ Ibid, p.7.

²³⁶ Nielsen, Consumer Research Wave 2 (2016), pp. 9, 50. The survey asked the following question: “Think about accessing a website with one of the newer domain extensions (the part after the “dot”). If the domain name extension in question is descriptive of a service or item, would you expect that all websites using that domain extension have a direct relationship to it? For example, if you go to .bank, would you expect to see registrations by banks across the globe? If you go to .paris do you expect to see domain names connected to the city of Paris? If you go to .film do you expect to see content related to films?” Id. at appended survey question Q890, p. 20.

²³⁷ Ibid, p.27. In relation to legacy gTLDs, the survey asked respondents to answer “yes” or “no” as to whether they felt that certain restrictions on registration of a gTLD should be enforced. The reported result relates to the following restriction: “[r]equirements for use of the name to be consistent with the meaning of the gTLD (e.g., use of a .net name must be for network operations purposes).” See appended survey question Q767, p. 16.

extensions to “properly identify the purpose or owner or to give an indication of content or function.”²³⁸

Nevertheless, when asked about how much attention consumer end-users pay to a domain extension, the survey reported that 29 percent reported “they don’t pay much attention,” 34 percent only visit sites with “familiar” domains, and 37 percent base their visitation upon search engine results.²³⁹ This finding is consistent with another reported result, that the public’s preferred way of finding a website is with search engines.²⁴⁰ The consumer end-user survey indicated that in 2016, 67 percent of consumer end-users preferred to use a search engine to find a website as compared to 20 percent that indicated that they preferred to type the domain name directly into a browser.²⁴¹ Registrants also reported a preference for using search engines to find websites and also identified search engines as the leading method that they use to find out more information about gTLDs.²⁴²

When asked what makes domain extensions trustworthy, consumer end-users reported that reputation and familiarity played key roles.²⁴³ In the related topic of why consumer end-users visit gTLDs, Nielsen found that consumer end-users choose to visit sites based upon relevance of the gTLD to the information they seek. Consumer end-users also tend to visit sites with which they are already familiar.²⁴⁴ Interestingly, registrants may presume familiarity and trust of certain domains based on the name (such as a reference to a prominent city) regardless of whether the gTLD has actually been delegated.²⁴⁵ Conversely, the public may experience discomfort visiting sites with unfamiliar gTLDs.²⁴⁶ When deciding whether to visit a website with an unfamiliar gTLD, consumer end-users look to usage (their own prior usage or the popularity of the website), site appeal or interest, and reputation (good reviews, recommendations, etc.).²⁴⁷

Public Trusts Legacy gTLDs More Than New gTLDs

The survey data show that both consumer end-users and registrants trust new gTLDs less than they do legacy gTLDs. In both 2015 and 2016, consumer end-users reported trusting specified new gTLDs approximately only half as much as specified legacy gTLDs.²⁴⁸ For example, in 2015, consumer end-users found 90 percent of specified legacy gTLDs to be

²³⁸ Nielsen, *Registrant Survey Wave 2* (2016), pp. 25-26.

²³⁹ Nielsen, *Consumer Research Wave 2* (2016), p.54.

²⁴⁰ *Ibid*, p.77.

²⁴¹ *Ibid*, p.77.

²⁴² Nielsen, *Registrant Survey Wave 2* (2016), pp.102, 32.

²⁴³ Nielsen, *Consumer Research Wave 2* (2016), pp.19-20. See also pp. 56-57. Survey respondents indicated that relevance and appeal of information are significant factors in determining whether an unfamiliar domain extension feels trustworthy. The respondents inserted these results in a text box. See also: NCC Group (2016), *Trust in the Internet Survey*, accessed 7 February 2017, <https://www.nccgroup.trust/uk/about-us/resources/trust-in-the-new-internet-survey-2016-discussion-paper/>, p. 5. More than 50 percent of those surveyed identify the following as a factor that would increase their confidence in new domains: “Brand/company clearly communicates the steps to take to secure your personal information within the website.” The review team notes that it appears this study was commissioned by an entity that has a business interest in marketing both cyber-security products and the .trust domain.

²⁴⁴ Nielsen, *Consumer Research* (2015), pp. 8, 18, 36.

²⁴⁵ Nielsen, *Registrant Survey Wave 2* (2016), p. 39.

²⁴⁶ NCC Group, *Trust in the Internet Survey* (2016), p. 3. In 2016, 52 percent of those surveyed reported feeling “not very or not at all comfortable” visiting websites with new domains.

²⁴⁷ Nielsen, *Consumer Research Wave 2* (2016), pp. 38.

²⁴⁸ Nielsen, *Consumer Research* (2015), pp. 9, 40; Nielsen, *Consumer Research Wave 2* (2016), p. 9. Note the referenced figures are based on averages of regional responses. Statistical significance for changes in trustworthiness from 2015 to 2016 for selected gTLDs can be found on p. 55 of the Wave 2 Study.

“very” or “somewhat” trustworthy, but only 49 percent of specified new gTLDs were found to be “very” or “somewhat” trustworthy.²⁴⁹

Results were similar in 2016, with consumer end-users reporting that 91 percent found specified legacy gTLDs to be “very” or “somewhat” trustworthy, whereas 45 percent found new gTLDs to be “very” or “somewhat” trustworthy. When Nielsen added certain specified new gTLDs to its survey question in Wave 2 of the consumer end-user survey, the percentage of new gTLDs that consumer end-users found to be “very” or “somewhat” trustworthy rose to 52 percent.²⁵⁰ When surveyed about specific new gTLDs, consumer end-user responses varied depending upon the particular gTLD and the consumer’s region.²⁵¹ For example, approximately half the consumer end-users surveyed reported high levels of trust for .news, .photography, .email, and .realtor, with .news seen as the most trustworthy across all regions.²⁵² When asked similar questions about specified legacy gTLDs, over 70 percent of consumer end-users across all regions rated .com, .org, and .net as “very” or “somewhat” trustworthy.²⁵³

Compared to consumer end-users, registrants consistently reported higher levels of trust for specified gTLDs, but still reported lower levels of trust for new gTLDs when compared to legacy gTLDs.²⁵⁴ Registrants associated the term “trustworthy” with legacy gTLDs more than with new gTLDs. For example, in 2015, 83 percent of registrants associated the term “trustworthy” with legacy gTLDs compared to a rate of 58 percent for new gTLDs.²⁵⁵ In 2016, 79 percent of registrants viewed legacy gTLDs as “trustworthy” compared to 60 percent for new gTLDs.²⁵⁶

This increase in the rates of trust for new gTLDs by registrants is also reflected in data regarding individual new gTLDs. For example, for the most trusted new gTLD surveyed over both waves—.email—68 percent of registrants viewed this domain as “very” or “somewhat” trustworthy compared to approximately 62 percent of consumer end-users who viewed it similarly.²⁵⁷

Consumer Behavior That Indicates Trust

In addition to surveying the public about their subjective views on trust, Nielsen also gathered data about behavior that could indicate trust, such as willingness to provide sensitive information to websites associated with new gTLDs. To a certain extent, these results were similar to differences between consumer end-users’ trust of new gTLDs and legacy gTLDs. For example, when asked whether they felt “very” or “somewhat” comfortable providing financial information to websites in the .com legacy gTLDs, 62 percent of consumer end-users responded affirmatively compared to only 36 percent when asked this same question regarding new gTLDs.²⁵⁸

²⁴⁹ Nielsen, Consumer Research (2015), pp. 9, 40. Specified legacy gTLDs: .com, .net, .org; specified new gTLDs: .email, .photography, .link, .guru, .realtor, .club; .xyz.

²⁵⁰ Nielsen, Consumer Research Wave 2 (2016), p. 9. Added new gTLDs (.news, online, .website, .site, .space, .pics, .top).

²⁵¹ Ibid, p. 55.

²⁵² Ibid, p. 55.

²⁵³ Ibid, p. 18.

²⁵⁴ Nielsen, Registrant Survey Wave 2 (2016), p. 64. Compare trustworthiness percentages for legacy gTLDs reported on p. 27 to legacy gTLDs p. 66.

²⁵⁵ Ibid, pp.27 and 66 show trustworthiness percentages.

²⁵⁶ Ibid, pp.27 and 66 show trustworthiness percentages.

²⁵⁷ Nielsen, Registrant Survey Wave 2 (2016), p.64.

²⁵⁸ Nielsen, Consumer Research Wave 2 (2016), p. 90. The survey did not specify which new gTLD and asked “Please think about two websites. One has a .com domain extension and one has one of the new gTLDs like

Results for other types of personal information showed lower comfort levels when consumer end-users were asked about providing sensitive information to new, versus legacy, gTLDs.²⁵⁹ In fact, consumer end-users tended to respond that they were “not very comfortable” with providing sensitive information to new gTLDs.²⁶⁰ Related to these findings, a survey by the NCC Group on “trust in the Internet” reflected the public’s increasing concerns about stolen credit card/financial information, online security, and protection and security of credit card and personal information.²⁶¹

Registration Restrictions Contribute to Trust

The ICANN Global Surveys indicated that the sample population expects certain restrictions about who can purchase domain names and trusts that these restrictions will be enforced.²⁶² The survey results also indicated that the presence of such restrictions contributed to consumer trust.²⁶³ These results applied to all gTLDs and the percentage of the consumer end-users who reported that restrictions contributed to consumer trust increased from 56 percent in 2015 to 70 percent in 2016.²⁶⁴ For example, the consumer end-user surveys indicated that over 70 percent of those surveyed not only trusted entities that offer domain names to take precautions about who gets a domain name, but they also trusted entities that offer domain names to screen individuals or companies who register for certain special domain names.²⁶⁵ In addition, over 80 percent of consumer end-users expected the enforcement of restrictions, such as requiring validation that the person or company registering a website in a given gTLD has valid credentials related to the gTLD.²⁶⁶

Focusing on new gTLDs, an increasing percentage of consumer end-users (73 percent) expected at least some level of restriction on registrations in specified new gTLDs.²⁶⁷ Registrants also favored restrictions, but were generally more opposed to restrictions than consumer end-users.²⁶⁸ However, when put in context of validating certain characteristics that are in keeping with the intended or implied use of the gTLD (such as a contractor’s license for .builder), three out of four registrants approved of such restrictions.²⁶⁹ For context, both consumer end-users and registrants also expected restrictions on registrations in legacy gTLDs.²⁷⁰

Consumer Trust in the Domain Name System Overall Since the Introduction of New gTLDs

Wave 1 of the Global Survey found that about half of consumer end-users trusted the domain name industry just as much as they did other tech industries (e.g., Internet Service Providers,

.club or .bank. How comfortable would you be doing each of these activities on each website?” See appended survey question Q1145, p. 31.

²⁵⁹ Ibid, p. 90.

²⁶⁰ Ibid, p. 90.

²⁶¹ NCC Group, Trust in the Internet Survey (2016), p. 2. The Review Team notes that it appears this study was commissioned by an entity that has a business interest in marketing both cyber-security products and the .trust domain.

²⁶² Nielsen, Consumer Research Wave 2 (2016), pp. 9, 13, 26-27, 65; Nielsen, Registrant Survey Wave 2 (2016), pp. 14, 18, 30, 68.

²⁶³ Nielsen, Consumer Research (2015), pp. 9, 26; Nielsen, Consumer Research Wave 2 (2016), pp. 9, 13, 26.

²⁶⁴ Nielsen, Consumer Research Wave 2 (2016), p. 9.

²⁶⁵ Nielsen, Consumer Research (2015), p. 49.

²⁶⁶ Nielsen, Consumer Research Wave 2 (2016), p. 27.

²⁶⁷ Nielsen, Consumer Research Wave 2 (2016), p. 9. This figure is up from 67 percent in 2015.

²⁶⁸ Nielsen, Registrant Survey Wave 2 (2016), p. 67.

²⁶⁹ Ibid, p. 14.

²⁷⁰ Nielsen, Consumer Research Wave 2 (2016), p. 9; Nielsen, Registrant Survey Wave 2 (2016), p. 29.

software companies, computer/hardware companies, e-commerce, and Web-based marketing companies), and the rest are more inclined to trust it more as opposed to less.²⁷¹ Consumer end-users in Africa, Asia, and South America had higher levels of trust than consumer end-users in other regions.²⁷² Reputation was the factor cited most as the reason some consumer end-users trusted the domain name industry more than they did other tech industries. However, it was also cited as the reason some consumer end-users trusted the domain name industry less than other industries²⁷³. Wave 2 of the survey found that trust levels had at least remained the same since 2015.²⁷⁴ The global total seemed to improve against all of the five reference industries, wave over wave, by an average of just over four percentage points.²⁷⁵ At this point, with only a year between the two reports on a nascent market, it is not possible to conclude with certainty that these levels had in fact improved. Therefore, the review team recommends periodically conducting further registrant surveys as discussed in Recommendation 13 in order to better understand why some TLDs are trusted more than others and how trust in new gTLDs and the domain name industry in general evolves over time.

The survey of registrants found positive results similar to those found in the consumer segment when it comes to trust in the domain name industry relative to other industries.²⁷⁶ General reputation and self-interest drive trust.²⁷⁷ Registrants expected the industry to adhere to practices that protect their own interests and commonly note security protocols, as well as just a general positive reputation, as factors that promote trust.²⁷⁸ Those who trust less cite poor security and regulations, as well as general reputational issues like a lack of transparency regarding business practices.²⁷⁹

Conclusions

The consumer end-user and registrant surveys indicate that the release of hundreds of new gTLDs does not appear to have had a negative impact on overall trust in the DNS. Looking at trust of new gTLDs specifically, the survey found that while consumer end-users do not trust new gTLDs nearly as much as they do legacy gTLDs, the trust levels appear to be stable over both waves of the surveys, with registrants reporting slightly higher trust levels than consumer end-users. Finally, a majority of registrants and consumer end-users expected gTLD registration restrictions, trust that such restrictions would be enforced, and associate such restrictions with an increase in trustworthiness.

Recommendations

Recommendation 11: Conduct periodic end-user consumer surveys. Future review teams should work with survey experts to conceive more behavioral measures of consumer trust that gather both objective and subjective data with a goal toward generating more concrete and actionable information.

²⁷¹ Nielsen, Consumer Research (2015), p. 50.

²⁷² Ibid, p. 50.

²⁷³ Nielsen, Consumer Research Wave 2 (2016), p. 66.

²⁷⁴ Ibid, pp. 63-64.

²⁷⁵ Ibid, pp. 63-64.

²⁷⁶ Nielsen, Registrant Survey (2015), p. 67. In Asia, registrants say they hold comparatively higher trust in the domain name industry compared to other regions.

²⁷⁷ Nielsen, Registrant Survey Wave 2 (2016), pp. 77,79.

²⁷⁸ Ibid, pp. 77,79.

²⁷⁹ Ibid, pp. 77, 81-82.

Rationale/related findings: The New gTLD Program is still in its early days. In order to further analyze consumer choice and trust, surveys of consumer end-users must be continued in order to better understand their behavior and motivations.

To better understand issues of consumer trust, it is also important to understand why consumer end-users choose to visit some TLDs but not others; whether the TLD's registration policies influence the choice of whether or not to visit; and whether consumer end-users' behavior on certain websites indicate varying levels of trust across TLDs.

For consumer choice (discussed above), the survey should allow a relative weighting of the potential contributions to consumer choice with respect to geographic name gTLDs, specific sector gTLDs, brand gTLDs, and IDN gTLDs to help determine whether there is a clear preference among consumer end-users for different types of gTLDs, and whether there are regional differences or similarities in their preferences.

To: ICANN organization and future CCT Review Teams

Prerequisite or priority level: Prerequisite

Consensus Within Team: Yes

Details: Future review teams should work with survey experts to conceive more behavioral measures of consumer trust that gather both objective and subjective data, with a goal toward generating more concrete and actionable information. In addition, the survey should repeat applicable parts of the global surveys for consumer end-users to allow an analysis of (1) which new gTLDs they have visited most; (2) the reasons they give to explain why they visited certain new gTLDs more than others; (3) what factors matter most to them in determining which gTLDs to visit; (4) how their behaviors indicate to what extent they trust new gTLDs; (5) the trustworthiness of new gTLDs with restrictions on registration compared to new gTLDs with few or no restrictions; and (6) whether consumer end-users view the expanded name space as beneficial or confusing.

Success measures: This recommendation would be considered successful if it produces data that enables future review teams and the ICANN organization to see how the levels of trustworthiness correlate with the number of visitations to new gTLDs, and what factors may contribute to the levels of trustworthiness. For example, registration restrictions appear to contribute to higher levels. This information could inform future policy-making on the terms and conditions that should apply for all new gTLD applicants. Another success measure would be information for new gTLD applicants in regard to what factors may lead to increased visitation and trustworthiness for new gTLDs. The last success measure would be data that informs ICANN policy on registration restrictions, especially if the data indicates that certain basic restrictions enhance trustworthiness in the gTLD space, alongside other variables driving gTLD model design and diversity. Those applicants choosing to apply for gTLDs with restrictions would then have a better basis for the decision to do so.

Recommendation 12: Create incentives and/or eliminate current disincentives that encourage gTLD registries to meet user expectations regarding: (1) the relationship of content of a gTLD to its name; (2) restrictions as to who can register a domain name in certain gTLDs based upon implied messages of trust conveyed by the name of its gTLDs (particularly in sensitive or regulated industries) and (3) the safety and security of users' personal and sensitive information (including health and financial information). These incentives could relate to applicants who choose to make Public Interest Commitments in their applications that relate

to these expectations. TLD applicants for any subsequent rounds should be made aware of these public expectations by inserting information about the results of the surveys in an updated Applicant Guidebook.

Rationale/related findings: The Nielsen surveys indicate certain expectations on the part of the public. They indicated the public believes that websites have different extensions to “properly identify the purpose or owner or to give an indication of content or function.”²⁸⁰ The majority of those surveyed expect 1) a connection between the name of a gTLD and the websites associated with that gTLD and 2) a consistency between the meaning of the domain name and its actual use. The Nielsen surveys also indicate that the public expects restrictions on who can purchase domain names, expects that such restrictions will be enforced, and is concerned about the security of their personal and sensitive information. Hence, the Nielsen surveys indicated a positive relationship between registration restrictions and trustworthiness of a domain.

However, in practice, non-brand gTLDs with registration restrictions are extremely rare. Although the review team did not have any specific data sources to explain the general trend away from restricted TLDs, discussions with registries²⁸¹ have indicated that the following factors discourage restricted business models:

- ⦿ ICANN charges each TLD an up-front application fee of \$185,000 and an annual fee of \$25,000 regardless of the number of registrations within the gTLD. These fixed costs mean that smaller TLDs pay a much larger share of total revenue to ICANN than larger TLDs.
- ⦿ The process of verifying compliance with restrictions may qualify as a “Registry Service”, which requires additional approval from ICANN and possibly additional fees to evaluate the service through ICANN’s Registry Service Evaluation Process (RSEP).²⁸²
- ⦿ Registration restrictions reduce the addressable market for the registry operator while increasing costs and adding friction to the registration process. Hence, profit-making registry operators generally tend to shy away from such restrictions. This is mirrored in legacy gTLDs and ccTLDs where many TLDs that initially operated with restrictions have subsequently removed or relaxed them, as with .pro, .travel, .fr and .ie.

Because consumer end-users expect restrictions, and the current market is largely not delivering restricted TLDs, the review team believes that future introductions of new gTLDs should consider examining whether it is possible to reduce existing disincentives to impose restrictions, or even to explicitly incentivize the adoption of restricted models by registry operators.

The fact that so few restricted TLDs exist despite these consumer expectations may also affect consumer trust in new gTLDs. As discussed later in this report in the section on Consumer Trust, consumers are generally less willing to share sensitive information to websites hosted on new gTLDs. Encouraging the protection of user data and/or registration restrictions on

²⁸⁰ Nielsen, Consumer Research Wave 2 (2016), p. 21.

²⁸¹ ICANN CCT Wiki, “Meeting with Registries Stakeholder Group – ICANN 59,” accessed 21 August 2018, <https://community.icann.org/display/CCT/Meeting+with+Registries+Stakeholder+Group+-+ICANN+59> and ICANN CCT Wiki, “Update to Registries Stakeholder Group – ICANN 59,” accessed 21 August 2018, <https://community.icann.org/display/CCT/Update+to+Registries+Stakeholder+Group+-+ICANN+59>

²⁸² ICANN, “Registry Service Evaluation Process,” accessed 7 August 2018, <https://www.icann.org/resources/pages/rsep-2014-02-19-en>.

TLDs related to sensitive data sets (e.g. namespaces related to medical or financial data) may help address the existing gap in consumer trust.

To: New gTLD Subsequent Procedures PDP Working Group

Prerequisite or priority level: Prerequisite (incentives could be implemented as part of application process)

Consensus within team: Yes

Details: In addition to benefits in terms of trust, registration restrictions may also impact competition. Therefore, consideration should be given to both the potential benefits and drawbacks of registration restrictions.

Success measures: Measures of success for these recommendations would include improved public trust and visitation of new gTLDs and reduced fears regarding the misuse of users' personal and sensitive information. They would also include an assessment of whether registration restrictions have had a negative impact on competition.

Further Review

Recommendation 13: ICANN should collect data in conjunction with its related data-collection activities on the impact of restrictions on who can buy domains within certain new gTLDs (registration restrictions) to help regularly determine and report:

- (1). Whether consumers and registrants are aware that certain new gTLDs have registration restrictions;
- (2). Compare consumer trust levels between new gTLDs with varying degrees of registration restrictions;
- (3). Determine whether the lower abuse rates associated with gTLDs that impose stricter registration policies identified in the “Statistical Analysis of DNS Abuse in gTLDs” study continue to be present within new gTLDs that impose registration restrictions as compared with new gTLDs that do not;²⁸³
- (4). Assess the costs and benefits of registration restrictions to contracted parties and the public (to include impacts on competition and consumer choice); and
- (5). Determine whether and how such registration restrictions are enforced or challenged.

Rationale/related findings: The ICANN Consumer Research and Registrant surveys indicate that the public expects certain restrictions about who can purchase domain names and trusts that these restrictions will be enforced. The survey results also indicated that the presence of such restrictions contributed to consumer trust. However, it would be useful for future review teams and those developing future policy to have more data on how aware the public is of registration restrictions and the impact of registration restrictions on consumer trust. In addition, the “Statistical Analysis of DNS Abuse in gTLDs” study indicated that DNS Security Abuse levels correlate with strict registration policies, with bad actors preferring register

²⁸³ SIDN Labs and the Delft University of Technology, “DNS Abuse in gTLDs”, p25.

domains with no registration restrictions.²⁸⁴ It is also important to obtain information on the costs of registration restrictions on the relevant parties so that benefits (in terms of increased trust and decreased DNS abuse) can be weighed against costs (including increased resources needed to implement such restrictions and financial costs) and any restrictions on competition. Future PDPs and review teams can use this data to inform future policy decisions regarding new gTLDs, especially as they relate to the issue of whether restrictions should be encouraged or included within the standard provisions included in ICANN new gTLD contracts.

To: ICANN organization

Prerequisite or priority level: Low

Consensus within team: Yes

Details: ICANN should explore how to incorporate this data collection as part of its existing data collection initiatives, including but not limited to the Domain Abuse Activity Reporting System and the gTLD Marketplace Health Initiative, as well as future ICANN initiatives related to measuring DNS abuse, and the health of the DNS and the DNS marketplace.²⁸⁵ Moreover, ICANN may also explore how to incorporate this data collection through the activities and reporting of ICANN Contractual Compliance, including, but not limited to, its audit functions. Collecting this data would inform future review teams about the impact of registration restrictions and whether and how they can best be utilized for gTLDs, particularly those gTLDs that fall within sensitive or highly-regulated market sectors.

Success measures: This recommendation will be considered successful if it generates data that provides guidance for future review teams and policy development processes on the topic of registration restrictions, particular if the data indicates under what circumstances the benefits of registration restrictions to the public (which may include decreased levels of DNS abuse) outweigh possible costs to contracted parties or possible impacts on competition.

²⁸⁴ Ibid.

²⁸⁵ ICANN, “Domain Abuse Activity Reporting (DAAR)” and “gTLD Marketplace Health Index” (June 2018).

9 Safeguards

DNS Abuse

The widespread availability and relative accessibility of domain names as unique global identifiers have created opportunities for innovative technologies as well as for a multitude of malicious activities. Bad actors have misused these universal identifiers for cybercrime infrastructure and directed users to websites that enable other forms of crime, such as child exploitation, intellectual property infringement, and fraud.²⁸⁶ Each of these activities may constitute a form of DNS abuse. Determinations as to how to characterize these forms of abuse depend largely upon local laws, the roles played by other infrastructure providers, and subjective interpretations. Nonetheless, consensus exists on what constitutes DNS Security Abuse, or DNS Security Abuse of DNS infrastructure, as demonstrated by community findings associated with the development of the New gTLD Program. These forms of abuse include more technical forms of malicious activity, such as malware, phishing, and botnets, as well as spam when used as a delivery method for these forms of abuse.²⁸⁷

Due to the misuse of domain names, the community initially expressed concerns about whether the vast expansion of available gTLDs would result in increased DNS abuse. Consequently, the CCT was tasked with examining issues associated with the expansion of the DNS, including the implementation of safeguards designed to preempt identified risks.²⁸⁸

Prior to the approval of the New gTLD Program, ICANN invited feedback from the cybersecurity community on DNS abuse and the risks posed from the expansion in the DNS name space.²⁸⁹ The identified the following areas of concern:

²⁸⁶ Bursztein et. al., “Framing Dependencies Introduced by Underground Commoditization,” paper presented at the proceedings of the 2015 Workshop on the Economics of Information Security, Delft, Netherlands (22–23 June 2015), accessed 8 August 2018, <https://research.google.com/pubs/pub43798.html>, p. 12.

²⁸⁷ “DNS Abuse” is a term used by the Review Team that refers to “intentionally deceptive, conniving, or unsolicited activities that actively make use of the DNS and/or the procedures used to register domain names” (see p. 3 of the “New gTLD Program Safeguards Against DNS Abuse: Revised Report” (2016)). “DNS Security Abuse” in the context of this report refers to specific, technical forms of abusive behavior : spam, phishing, and malware distribution in the DNS. For more on how abuse has been characterized by the ICANN Community, see the *Registration Abuse Policies Working Group’s Final Report* (29 May 2010), accessed 3 August 2018, https://qnso.icann.org/sites/default/files/filefield_12530/rap-wg-final-report-29may10-en.pdf.

²⁸⁸ ICANN’s Affirmation of Commitments (AoC) with the US Department of Commerce specifies that “malicious abuse issues” need to be analyzed prior to expanding the top-level domain space. Furthermore, the AoC requires the CCT Review Team to analyze the “safeguards put in place to mitigate issues involved in the introduction or expansion” of new gTLDs (see ICANN, “Affirmation of Commitments,” accessed 8 August 2018, <https://www.icann.org/resources/pages/affirmation-of-commitments-2009-09-30-en>, Section 9.3). Consequently, the CCT Review Team Terms of Reference define the work of the team to include a review of the “effectiveness of safeguards” and “other efforts to mitigate DNS abuse” (see Appendix E: Terms of Reference). Furthermore, the GAC’s 2015 Buenos Aires Communiqué requested “that the ICANN Community creates a harmonized methodology to assess the number of abusive domain names within the current exercise of assessment of the New gTLD Program” (see GAC (24 June 2015), *Buenos Aires Communiqué*, accessed 8 August 2018, <https://www.icann.org/en/system/files/correspondence/gac-to-board-24jun15-en.pdf>, p. 5). Likewise, the 2015 Dublin Communiqué requested that the ICANN Board “develop and adopt a harmonized methodology for reporting to the ICANN Community the levels and persistence of abusive conduct...that have occurred in the rollout of the New gTLD Program” (see GAC (21 October 2015), *Dublin Communiqué*, accessed 8 August 2018, <https://www.icann.org/en/system/files/correspondence/gac-to-board-21oct15-en.pdf>, p. 7).

²⁸⁹ “ICANN (3 October 2009), *Mitigating Malicious Conduct*, accessed 9 November 2016, <https://archive.icann.org/en/topics/new-gtlds/mitigating-malicious-conduct-04oct09-en.pdf>. Feedback came from groups such as the Anti-Phishing Working Group (APWG), Registry Internet Safety Group (RISG), the Security and Stability Advisory Community (SSAC), Computer Emergency Response Teams (CERTs), the banking/financial and wider Internet security communities.

- ⦿ How do we ensure that “bad actors” do not run registries?
- ⦿ How do we ensure integrity and utility of registry information?
- ⦿ How do we ensure more focused efforts on combating identified abuse?
- ⦿ How do we provide an enhanced control framework for TLDs with intrinsic potential for malicious conduct?²⁹⁰

Based on the community’s feedback, ICANN identified several recommendations for safeguards aimed at mitigating these risks.²⁹¹ Nine safeguards were identified and recommended:

- ⦿ Vet registry operators
- ⦿ Require Domain Name System Security Extension (DNSSEC) deployment
- ⦿ Prohibit “wildcarding”²⁹²
- ⦿ Encourage removal of “orphaned glue” records²⁹³
- ⦿ Require “Thick” WHOIS records
- ⦿ Centralize Zone File access
- ⦿ Document registry- and registrar-level abuse contacts and policies
- ⦿ Provide an expedited registry security request process
- ⦿ Create a draft framework for a high security zone verification program²⁹⁴

The CCT was tasked with analyzing the effectiveness of these nine recommended safeguards. To the extent possible, the CCT assessed the implementation and effectiveness of each of these safeguards using available implementation and Contractual Compliance data. Additionally, the CCT commissioned a quantitative DNS Security Abuse study to provide insight into the relationship, if any, that may exist between levels of abuse and implemented safeguards in the new gTLD name space.²⁹⁵

The first safeguard, “vet registry operators,” required that all new gTLD applicants provide full descriptions of the technical back-end services that they would use, even where these services were subcontracted, as part of the application process. This was an initial evaluation

²⁹⁰ Ibid.

²⁹¹ Ibid.

²⁹² “Wildcarding” refers to the practice of reserving a special character (commonly an asterisk) within an operating system search operation to mean “return any match in a search.” See Security and Stability Advisory Committee (SSAC), “SAC 015: Why Top Level Domains Should Not Use Wildcard Resource Records,” accessed 8 August 2018, <https://www.icann.org/groups/ssac/documents/sac-015-en>.

²⁹³ The Security Skeptic, “Orphaned Glue Records,” 26 October 2009, accessed 2 February 2017, <http://www.securityskeptic.com/2009/10/orphaned-glue-records.html>. These are records remaining once a domain name has been deleted from a registry.

²⁹⁴ ICANN, “Malicious Conduct.”

²⁹⁵ ICANN (2 August 2016), *Request for Proposal For Study on Rates of DNS Abuse in New and Legacy Top-Level Domains*, accessed 2 February 2017, <https://www.icann.org/en/system/files/files/rfp-dns-abuse-study-02aug16-en.pdf>. The resulting “Statistical Analysis of DNS Abuse in gTLDs” study measured common forms of abuse—such as spam, phishing, and malware distribution—in a large sample of new and legacy gTLDs from 1 January 2014 until December 2016.

to ensure technical competence. These descriptions were evaluated only at the time of application.²⁹⁶ Additionally, all applicants were required to pass Pre-Delegation Testing (PDT).²⁹⁷ PDT included comprehensive technical checks of Extensible Provisioning Protocol (EPP), Name Server setup, Domain Name System Security Extensions (DNSSEC), and other protocols.²⁹⁸ Applicants were required to pass all of these tests before a domain name would be delegated.

Upon delegation, registry operators were required to comply with the technical safeguards through their Registry Agreements with ICANN. The second safeguard mandated that new gTLD registries implement DNSSEC, with active monitoring of compliance and notices sent to non-compliant registries.²⁹⁹ DNSSEC is a set of protocols intended to increase the security of the Internet by adding authentication to DNS resolution to prevent problems such as DNS spoofing³⁰⁰ and DNS cache poisoning.³⁰¹ All new gTLDs are DNSSEC signed at the root level, which is not indicative of second-level domain names in the zone being signed.³⁰²

For the third safeguard, the Registry Agreement for new gTLDs prohibits wildcarding to ensure that domain names only resolve for an exact match and that end-users are not misdirected to another domain name by a synthesized response.³⁰³ Complaints against registry operators for permitting wildcarding may be submitted to ICANN via an online interface.³⁰⁴ A registry's use of wildcarding is easily detectable because every query will receive a response, instead of a "name error," even if the domain name is not valid.³⁰⁵ This means that a user will be redirected to a similar domain name. It appears that all new gTLD operators are in compliance with this safeguard.³⁰⁶

To comply with the fourth safeguard, new gTLD registries are required to remove orphan glue records when presented with evidence that such records have been used in malicious conduct.³⁰⁷ Unmitigated orphan glue records can be used for malicious purposes such as fast-flux hosting botnet attacks.³⁰⁸ This requirement is reactive by design, but registry operators can make it technically impossible for orphan glue records to exist in the first place and some do. Since 2013, there have been no ICANN organization complaints related to orphan glue records.³⁰⁹

²⁹⁶ Technical requirements change over time, which would make continual auditing difficult.

²⁹⁷ ICANN, *Applicant Guidebook* (June 2012), Section 5-4.

²⁹⁸ ICANN, "Pre-Delegation Testing (PDT)," accessed 2 February 2017, <https://newgtlds.icann.org/en/applicants/pdt>.

²⁹⁹ ICANN, "Registry Agreement," accessed 2 February 2017, <https://www.icann.org/resources/pages/registries/registries-agreements-en>, Specification 6, Clause 1.3.

³⁰⁰ SANS Institute (2002), *Global Information Assurance Certification Paper*, accessed 2 February 2017, <https://www.giac.org/paper/gcih/364/dns-spoofing-attack/103863>. DNS spoofing occurs "when a DNS server accepts and uses incorrect information from a host that has no authority giving that information" (p. 16).

³⁰¹ Soeul Son and Vitaly Shmatikov, "The Hitchhiker's Guide to DNS Cache Poisoning" (paper presented at the 6th International ICST Conference on Security and Privacy in Information Networks, Singapore, 7-9 September 2010), https://www.cs.cornell.edu/~shmat/shmat_securecomm10.pdf. DNS cache poisoning occurs when the temporary cached data stored by a DNS resolver is intentionally altered to map DNS resolutions to IP addresses routed to invalid or malicious destinations (p. 1).

³⁰² ICANN, "TLD DNSSEC Report," accessed 26 April 2017, http://stats.research.icann.org/dns/tld_report/. This does not include .aero.

³⁰³ ICANN, "Registry Agreement," Specification 6, Clause 2.2.

³⁰⁴ ICANN, "Wildcard Prohibition (Domain Redirect) Complaint Form," accessed 2 February 2017, <https://forms.icann.org/en/resources/compliance/registries/wildcard-prohibition/form>.

³⁰⁵ SSAC, "SAC 015: Why Top-Level Domains Should Not Use Wildcard Resource Records."

³⁰⁶ As of 1 January 2017, no complaints have been reported via this form. See also "DNSSEC Deployment Report," accessed 1 January 2017, <https://rick.eng.br/dnssecstat/>.

³⁰⁷ ICANN, "Registry Agreement," Specification 6, Clause 4.1.

³⁰⁸ ICANN Security and Stability Advisory Committee (March 2008), *SSAC Advisory on Fast Flux Hosting and DNS*, accessed 2 February 2017, <https://www.icann.org/en/system/files/files/sac-025-en.pdf>.

³⁰⁹ ICANN, "Contractual Compliance Reports," accessed 8 August 2018, <https://www.icann.org/resources/pages/compliance-reports-2016-04-15-en>.

For the fifth safeguard, Registry Agreements require new gTLD operators to create and maintain Thick WHOIS records for domain name registrations. This means that registrant contact information, along with administrative and technical contact information, is collected and displayed in addition to traditional Thin WHOIS data at the registry level.³¹⁰ ICANN Contractual Compliance monitors adherence to the Thick WHOIS requirement on an active basis, for both reachability and format.³¹¹ Syntax and operability accuracy are evaluated by the ICANN WHOIS Accuracy Reporting System (ARS) project.³¹² The “Impact of Safeguards” chapter below further explains the ARS and related compliance issues.

Registry Agreements also require all new gTLD registry operators to post abuse contact details on their websites and to notify ICANN of any changes to contact information.³¹³ ICANN monitors compliance with this requirement and publishes statistics, including remediation measures, in its quarterly reports.³¹⁴ The Registry Agreements require registry operators to respond to well-founded complaints, but do not mandate specific procedures for doing so. Consequently, there is no standard by which the ICANN organization can assess the particular means by which registry operators resolve complaints. There were 55 complaints related to abuse contact data in 2016,³¹⁵ 61 in 2015,³¹⁶ 100 in 2014,³¹⁷ and 386 in 2013.³¹⁸

For the sixth safeguard, new gTLD operators are required via the Registry Agreement to make their zone files available to approved requestors via the Centralized Zone Data Service (CZDS).³¹⁹ Centralizing these data sources enhances the ability of security researchers, IP attorneys, law enforcement agents, and other approved requestors to access the data without the need to enter into a contractual relationship each time. There were 19 complaints related to bulk zone file access in 2016,³²⁰ 27 in 2015,³²¹ and 55 in 2014.³²² No data was available in the ICANN 2013 Contractual Compliance Report.

To enhance the stability of the DNS, ICANN created the Expedited Registry Security Request (ERSR) process, which permits registries “to request a contractual waiver for actions it might take or has taken to mitigate or eliminate” a present or imminent security incident.³²³ As of 5 October 2016, ICANN reports that the ERSR has not been invoked for any new gTLD.³²⁴ In addition to the aforementioned safeguards, ICANN, in response to community input, proposed the creation of the High Security Zone Verification Program whereby gTLD registry operators

³¹⁰ ICANN, “What are thick and thin entries?”, accessed 2 February 2017, <https://whois.icann.org/en/what-are-thick-and-thin-entries>.

³¹¹ ICANN, “Registry Agreement,” Specification 10, Section 4.

³¹² ICANN, “WHOIS Accuracy Reporting System (ARS) Project Information,” accessed 2 February 2017, <https://whois.icann.org/en/whoisars>.

³¹³ ICANN, “Registry Agreement,” Specification 6, Section 4.1.

³¹⁴ ICANN, “Contractual Compliance Reports 2016,” accessed 2 February 2017, <https://www.icann.org/resources/pages/compliance-reports-2016-04-15-en>.

³¹⁵ <https://www.icann.org/en/system/files/files/annual-2016-31jan17-en.pdf>

³¹⁶ ICANN, “Contractual Compliance Reports 2015,” accessed 2 February 2017, <https://www.icann.org/resources/pages/compliance-reports-2015-04-15-en>.

³¹⁷ ICANN, “Contractual Compliance Reports 2014,” accessed 2 February 2017, <https://www.icann.org/resources/pages/compliance-reports-2014-2015-01-30-en>.

³¹⁸ ICANN, “Contractual Compliance Reports 2013,” accessed 2 February 2017, <https://www.icann.org/resources/pages/reports-2013-02-06-en>.

³¹⁹ ICANN, “Registry Agreement,” Specification 4, Section 2.1; ICANN, “Centralized Zone Data Service,” accessed 2 February 2017, <https://czds.icann.org/en>.

³²⁰ ICANN, “Contractual Compliance Reports 2016.”

³²¹ ICANN, “Contractual Compliance Reports 2015.”

³²² ICANN, “Contractual Compliance Reports 2014.”

³²³ ICANN, “Expedited Registry Security Request Process,” accessed 2 February 2017, <https://www.icann.org/resources/pages/ersr-2012-02-25-en>.

³²⁴ ICANN Registry Services, email discussion with Review Team, July 2017.

could voluntarily create high security zones.³²⁵ An advisory group conducted extensive research to determine standards by which registries could create and operate a “high security zone.” However, the proposals never reached the implementation stage due to a lack of consensus.

The technical safeguards, enforced through Contractual Compliance, imposed requirements upon new gTLD registries and registrars that were intended to mitigate risks inherent in the expansion of the DNS. The review team commissioned a DNS abuse study to provide insight as to whether the overall implementation of these safeguards resulted in a decrease in the levels of DNS Security Abuse compared to legacy gTLDs.³²⁶

DNS Abuse Study

In preparation for the CCT’s assessment of the New gTLD Program safeguards discussed above, ICANN issued a report analyzing the history of DNS abuse safeguards tied to the New gTLD Program.³²⁷ The report assessed the various ways to define DNS abuse. Some of the challenges to defining DNS abuse arise because of the various ways that different jurisdictions define and treat DNS abuse. Certain activities are considered to be abusive in some jurisdictions but not others. Some of these activities, such as those solely focused on intellectual property violations, are interpreted differently not only in terms of substance, but also in terms of available remedies depending upon the jurisdiction involved. Another challenge is the lack of data available regarding certain types of abuse. Nonetheless, there are core abusive behaviors for which there is both consensus and significant data available. These include spam, phishing, and malware distribution.

The ICANN report on the history of DNS abuse safeguards acknowledged the absence of a comprehensive comparative study of DNS abuse in new gTLDs versus legacy gTLDs. Nonetheless, some metrics suggest that a high percentage of new gTLDs might suffer from DNS Security Abuse. For example, Spamhaus consistently ranks new gTLDs amongst its list of “The 10 Most Abused Top-Level Domains,” which is based on the ratio of the number of domain names associated with abuse versus the number of domain names seen in a zone.³²⁸ Using a different methodology, previous research from Architelos and the Anti-Phishing Working Group named .com as the TLD with the largest number of domain names associated with abuse.³²⁹ A 2017 report from PhishLabs also concluded that half of all phishing sites are in the .com zone, with new gTLDs comprising 2 percent of all phishing sites.³³⁰ However, the same report concluded that phishing sites in new gTLD zones have increased 1,000 percent

³²⁵ ICANN (18 November 2009), *A Model for a High-Security Zone Verification Program*, accessed 2 February 2017, <https://archive.icann.org/en/topics/new-gtlds/high-security-zone-verification-04oct09-en.pdf>; ICANN, “Public Comment: High Security Zone TLD Final Report,” 11 March 2011, accessed 8 August 2018, <https://www.icann.org/news/announcement-2011-03-11-en>.

³²⁶ SIDN Labs and the Delft University of Technology, “DNS Abuse in gTLDs”. See also ICANN, *Request for Proposal*.

³²⁷ ICANN, *New gTLD Program Safeguards* (2016)

³²⁸ Spamhaus, “The World’s Most Abused TLDs,” accessed 8 August 2018, <https://www.spamhaus.org/statistics/tlds/>

³²⁹ Anti-Phishing Working Group (29 April 2015), *Phishing Activity Trends Report: 4th Quarter 2014*, accessed 8 August 2018, http://docs.apwg.org/reports/apwg_trends_report_q4_2014.pdf; Architelos (June 2015), *The NameSentrySM Abuse Report: New gTLD State of Abuse 2015*, accessed 8 August 2018, <http://domainnamewire.com/wp-content/uploads/Architelos-StateOfAbuseReport2015.pdf>

³³⁰ PhishLabs, *2017 Phishing Trends & Intelligence Report*, accessed 8 August 2018, <https://pages.phishlabs.com/rs/130-BFB-942/images/2017%20PhishLabs%20Phishing%20and%20Threat%20Intelligence%20Report.pdf>, pp. 23-24., New gTLDs comprised 8 percent of the overall TLD market during this time period when .tk is excluded from the data. See also Kevin Murphy, “Phishing in new gTLDs up 1,000 percent but .com still the worst,” Domain Incite, 20 February 2017, accessed 8 August 2018, <http://domainincite.com/21552-phishing-in-new-gtlds-up-1000-but-com-still-the-worst>

since the previous year, which appears to have coincided with an overall significant increase in phishing attacks during 2016.³³¹ By the end of 2017, new gTLDs exclusively filled the list of Symantec's top 20 "Shady Top-Level Domains."³³²

Domain names are often a key component of cybercrimes and enable cybercriminals to quickly adapt their infrastructure.³³³ For example, spam campaigns often correlate with phishing and other cybercrime.³³⁴ Domain names are also used to assist with malware distribution and botnet command-and-control.³³⁵ Troubling statistics and incidents observed by network operators have led to perceptions that many new gTLDs offer little more than abuse.³³⁶ In fact, some Internet security companies have advised customers to block all network traffic from specific TLDs.³³⁷ Such practices run counter to ICANN's Universal Acceptance efforts.³³⁸ Although ICANN's standard contracts for registries and registrars have mandated consistent use of specified safeguards, efforts to combat domain name abuse vary greatly amongst the contracted parties. Some entities do not act until a complaint is received. In contrast, other registrars take proactive steps, such as checking registrant credentials, blocking domain name strings similar to known phishing targets, and scrutinizing domain name resellers. Domain name resellers are not ICANN-contracted parties and hence not directly subject to ICANN's enforcement authority over standard contract requirements, including the safeguards under discussion in this report.³³⁹

In light of the dynamic DNS environment, snapshots of new gTLD abuse do not account for the full variety of registration rules and safeguards in the 1,000+ new gTLDs that have been delegated since 2013. Accordingly, it is difficult to find definitive distinctions between abuse rates in legacy gTLDs compared to new gTLDs without performing a comprehensive assessment. To the extent possible, the CCT has sought to measure the effectiveness of the technical safeguards developed for the New gTLD Program in mitigating various forms of DNS abuse. As part of this process, the CCT commissioned a comprehensive DNS abuse study to analyze levels of DNS Security Abuse in legacy and new gTLDs, both to inform this review and potentially serve as a baseline for future analysis.³⁴⁰ The ICANN-selected vendor, a joint

³³¹ Lindsey Havens, "APWG & Kaspersky Research Confirms Phishing Trends & Intelligence Report Findings," 2 March 2017, accessed 8 August 2018, <https://info.phishlabs.com/blog/apwg-kaspersky-research-confirms-phishing-trends-investigations-report-findings>; Darya Gudkova, et. al., "Spam and phishing in 2016," 20 February 2017, accessed 8 August 2018, <https://securelist.com/kaspersky-security-bulletin-spam-and-phishing-in-2016/77483/>; Anti-Phishing Working Group (23 February 2017), *Phishing Activity Trends Report: 4th Quarter 2016*, accessed 8 August 2018, http://docs.apwg.org/reports/apwg_trends_report_q4_2016.pdf

³³² Chris Larsen, "The 'Top 20': Shady Top-Level Domains," Symantec, 15 March 2018, <https://www.symantec.com/blogs/feature-stories/top-20-shady-top-level-domains>

³³³ Symantec (April 2015), *Internet Security Threat Report*, accessed 2 February 2017, https://its.ny.gov/sites/default/files/documents/symantec-internet-security-threat-report-volume-20-2015-social_v2.pdf

³³⁴ Richard Clayton, Tyler Moore, and Henry Stern, "Temporal Correlations between Spam and Phishing Websites" (paper presented at the LEET'09 Proceedings of the 2nd USENIX Conference on Large-Scale Exploits and Emergent Threats, Boston, MA, 21 April 2009) <https://www.cl.cam.ac.uk/~rnc1/leet09.pdf>.

³³⁵ CrowdStrike, *Global Threat Intel Report*, (2014, pp.14-15, <https://go.crowdstrike.com/rs/281-OBQ-266/images/ReportGlobalThreatIntelligence.pdf>

³³⁶ Tom Henderson, "The new internet domains are a wasteland," Network World 5 July 2018, accessed 8 August 2018, <http://www.networkworld.com/article/3091754/security/the-new-internet-domains-are-a-wasteland.html>.

³³⁷ In a 2015 report, Blue Coat advised network operators to block all traffic to or from ".work, .gg, .science, .kim and .country". See Blue Coat, "DO NOT ENTER: Blue Coat Research Maps the Web's Shadiest Neighborhoods," September 2015, accessed 8 August 2018, http://dc.bluecoat.com/2015_NAM_Shady_TLD_Reg, p. 7.

³³⁸ ICANN, "Universal Acceptance."

³³⁹ Secure Domain Foundation (June 2015), *The Cost of Doing Nothing: The Business Case for Proactive Anti-Abuse*, https://securedomain.org/Documents/SDF_Report1_June_2015.pdf, p. 8. Registrars must impose flow-down contractual requirements onto resellers with whom they contract. However, the resellers are not ICANN-accredited. See ICANN, "2013 RAA: Section 3.12: Obligations Related to Provision of Registrar Services by Third Parties," accessed 8 August 2018, <https://www.icann.org/resources/pages/approved-with-specs-2013-09-17-en>

³⁴⁰ The study ultimately was able to collect data on phishing, malware hosting, and spam. Initially, the Review Team sought to include botnet hosting and command-and-control domains in the analysis. However, discrete

team comprised of researchers from Delft University of Technology in the Netherlands (TU Delft) and the Foundation for Internet Domain Registration in the Netherlands (SIDN), delivered their final report (hereafter, the “DNS Abuse Study”) to the review team on 9 August 2017.³⁴¹

DNS Abuse Study Methodology

The DNS Abuse Study relied upon zone files, WHOIS records, and 11 distinct domain name blacklist feeds to calculate rates of technical DNS Security Abuse from 1 January 2014 through the end of 31 December 2016.³⁴²

The analysis includes:

1. Absolute counts of abusive domains per gTLD and registrar from 1 January 2014 until 31 December 2016, taking into account sunrise periods and dates of general availability for registration;
2. Abuse rates, based on an “abused domains per 10,000” ratio (as a normalization factor to account for different TLD sizes), per gTLD and registrar from 1 January 2014 until 31 December 2016;
3. Abuse rates associated with privacy and proxy services;
4. Identification of geographic locations associated with abusive activities;
5. Abuse levels distinguished by “maliciously registered” versus “compromised” domains;
6. An inferential statistical analysis on the effects of security indicators and the structural properties of new gTLDs, (i.e., number of DNSSEC-signed domains, parked domains, number of domains in each new gTLD, the level of registration restrictiveness, as well as the number of domains resolving to content).

DNS Abuse Study Findings

The DNS Abuse Study makes many significant findings regarding DNS Security Abuse associated with new gTLDs as compared to legacy gTLDs. Generally, the Study indicates that the introduction of new gTLDs did not increase the total amount of abuse for all gTLDs. Nonetheless, the results demonstrate that the nine aforementioned safeguards alone do not guarantee a lower rate of abuse in each new gTLD compared to legacy gTLDs. Instead, factors such as registration restrictions, price, and registrar-specific practices seem more likely to affect abuse rates.³⁴³

DNS Security Abuse is Migrating to New gTLDs

Legacy gTLDs still account for most domain name registrations and, perhaps consequently, the highest volume of phishing and malware associated domain names.³⁴⁴ Nonetheless, the

historical data on botnets was unavailable for the timeframe of the study. However, botnet-associated domain names were included in the malware blacklists used for the study. See ICANN, *Request for Proposal*.

³⁴¹ SIDN Labs and the Delft University of Technology, “DNS Abuse in gTLDs.”

³⁴² The first new gTLD delegations began in October 2013.

³⁴³ SIDN Labs and the Delft University of Technology, “DNS Abuse in gTLDs,” pp.24-25

³⁴⁴ *Ibid.*, p.24.

overall rates of abuse in legacy and new gTLDs were similar by the end of 2016. Moreover, there are distinct trends with regard to specific types of abuse. For example, by the end of 2016, spam registrations in legacy gTLDs had declined while those in new gTLDs saw a significant increase. In the last quarter of 2016, 56.9 of every 10,000 legacy gTLD domain names were on spam blacklists, whereas the rate for new gTLD domain names was 100 times more: 526.6 domain names per 10,000 registrations.³⁴⁵

Some abuse trends showed overlap. The top five legacy gTLDs with the highest rates of phishing also had the highest rates of domain names tied to malware distribution.³⁴⁶ Phishing and malware abuse rates in legacy gTLDs more often resulted from compromised domain names rather than malicious registrations. There are much higher rates of compromised legacy gTLD domain names than new gTLDs.

Specific to malware distribution, the top 5 new gTLDs with the highest rates of abusive domain names were .top, .wang, .win, .loan, and .xyz.³⁴⁷ Since the end of 2015, the .top TLD has had the highest rate of abusive registrations for all legacy and new gTLDs.³⁴⁸ Each of these TLDs offered low-priced registrations, usually at levels lower than those for a .com registration.

The DNS Abuse Study distinguishes between domain names registered specifically for malicious purposes and domain names registered for legitimate purposes that were subsequently compromised.³⁴⁹ The results of the Study indicate that the introduction of new gTLDs has corresponded with a decrease in the number of spam-associated registrations in legacy gTLDs, and an increase in the number of spam-associated registrations in new gTLDs.³⁵⁰ This, along with the fact that the total number of spam registrations remains stable, suggests that perhaps miscreants are shifting from registering domain names in legacy gTLDs to new gTLDs.³⁵¹ Within this trend, there are specific new gTLDs that serve as primary targets of opportunity for abusive registrations, whether due to lax registration policies and abuse enforcement, or low price. In fact, some registrars are almost entirely associated with abusive, rather than legitimate, registrations.³⁵²

DNS Security Abuse is Not Universal in New gTLDs

Even though abuse is growing in new gTLDs, it is by no means rampant across all of them. Instead, by the end of 2016, this phenomenon was highly concentrated. Five new gTLDs, exhibiting the highest concentration of domain names used in phishing attacks,³⁵³ accounted for 58.7 percent of all blacklisted new gTLD domain names,³⁵⁴ whereas Spamhaus blacklisted at least 10 percent of all domain names registered within 15 new gTLDs.³⁵⁵ However, approximately a third of all new gTLDs did not have a single instance of abuse, as reported on blacklists, in the final quarter of 2016.³⁵⁶

³⁴⁵ Ibid., p.24.

³⁴⁶ Ibid., p.12.

³⁴⁷ Findings based on the “StopBadware” data feed.

³⁴⁸ Ibid., p.13.

³⁴⁹ Compromised domain names include domain names for which the domain name registration or the website may have been hacked.

³⁵⁰ SIDN Labs and the Delft University of Technology, “DNS Abuse in gTLDs,” p. 2.

³⁵¹ Ibid. Figures 24, 36, and 38 illustrate the absolute number of spam domains for different spam feeds.

³⁵² Ibid., p. 22.

³⁵³ Anti-Phishing Working Group, *Phishing Activity Trends Report: 4th Quarter 2016*.

³⁵⁴ SIDN Labs and the Delft University of Technology, “DNS Abuse in gTLDs,” p.11.

³⁵⁵ Ibid., p. 1.

³⁵⁶ Ibid., p. 1.

Two registrars highlighted in the study had overwhelming rates of abuse. Alarming, more than 93 percent of the new gTLD registrations sold by Nanjing Imperiosus Technology, based in China, appeared on SURBL's blacklists.³⁵⁷ For much of 2016, abuse rates associated with this registrar grew at significant rates. ICANN eventually suspended Nanjing in January 2017, citing its failure to pay fees in compliance with the RAA.³⁵⁸ However, ICANN did not rely upon the sustained, unabated, high abuse rates as the reason for its suspension of Nanjing, which in and of itself may not have violated the RAA.

Another registrar, Alnames Ltd., based in Gibraltar, was associated with a high volume of abuse from the .science and .top domain names. The Study notes that this registrar used price promotions that offered domain name registrations for USD \$1 or sometimes even free.³⁵⁹ Moreover, Alnames permitted registrants to randomly generate and register 2,000 domain names in 27 new gTLDs in a single registration process. Registering domain names in bulk using domain generation algorithms are commonly associated with cybercrime.³⁶⁰ However, there is currently no contractual prohibition or safeguard against the bulk registration of domains. At the time of this report, Alnames remained ICANN-accredited.

Many factors can play a role in the volume or rate of abuse in a particular TLD. In terms of absolute size, new gTLDs are no different than legacy gTLDs in that the larger the size of the TLD, the higher the total number of domain names associated with abuse.³⁶¹ However, analyzing attributes of cross-TLD registry operators suggests that many of the operators associated with the highest rates of abuse had low-priced domain registration offerings.

The Study concluded that domain names registered for malicious purposes often contained strings related to trademarked terms.³⁶² Specifically, of the 88 top domain names associated with abuse in the fourth quarter of 2015, 75 of them included exact or misspelled versions of Apple, iCloud, or iPhone, implying that the domain names were used in a phishing campaign against users of Apple, Inc. products and services.³⁶³ These registrations should have raised reasonable suspicion at the time of registration, but were nonetheless delegated and later associated with abuse. Furthermore, registrant data matching registrations associated with abuse can be useful for identifying and preventing repeat abuse. In fact, the Study found 150 abusive .work domain name registrations were registered on the "same day using the same registrant information, the same registrar, and the domain names were composed of similar strings."³⁶⁴ In this instance, correlating matching registrant data in advance could identify suspicious registrations before they are used to harm potential victims.

The Study found a statistically weak but positive correlation between the number of parked domains in a new gTLD zone and the rate of abuse.³⁶⁵ Oddly, there was also a weak positive correlation between the number of DNSSEC-signed domain names and abuse in a new gTLD zone.³⁶⁶ The use of privacy/proxy services to mask registrant WHOIS data is more common

³⁵⁷ Ibid., p. 19.

³⁵⁸ ICANN Contractual Compliance (4 January 2017), "Notice of Termination of Registrar Accreditation Agreement," accessed 8 August 2018, https://www.icann.org/uploads/compliance_notice/attachment/895/serad-to-hansmann-4jan17.pdf

³⁵⁹ SIDN Labs and the Delft University of Technology, "DNS Abuse in gTLDs," p.20.

³⁶⁰ Aditya K. Sood, Sherali Zeadally, "A Taxonomy of Domain-Generation Algorithms," *IEEE Security & Privacy*, vol. 14, no. , pp. 46-53, July-Aug. 2016, <https://ieeexplore.ieee.org/document/7535098/>

³⁶¹ SIDN Labs and the Delft University of Technology, "DNS Abuse in gTLDs," p.15.

³⁶² Ibid., p. 12.

³⁶³ Ibid., p. 12.; Other research has shown similar techniques in which trademarked terms are used in IDNs for homograph-based DNS Security Abuse, see Mike Schiffman, *Touched by an IDN: Farsight Security shines a light on the Internet's oft-ignored and undetected security problem*, Jan. 17, 2018, accessed 5 September 2018, <https://www.farsightsecurity.com/2018/01/17/mschiffm-touched-by-an-idn/>

³⁶⁴ Ibid., p. 12.

³⁶⁵ Ibid., p. 16.

³⁶⁶ Ibid., p. 16.

in legacy than new gTLDs. Regardless, the Study did not find any statistically significant relationship between the use of such services and domain name abuse.³⁶⁷ Above all, the Study identified a relatively stronger statistically significant correlation between restrictive registration policies and lower rates of abuse. Nonetheless, even new gTLDs with open registration policies varied greatly in abuse rates, suggesting that other key variables, such as price and differences in registry and registrar anti-abuse practices may also influence abuse rates.

DNS Security Abuse is Not Random

Price and registration restrictions appear to affect which registrars and registries cybercriminals will choose for DNS Security abuse, making low-priced domain names with low barriers to registration attractive attack vectors.³⁶⁸ However, these same qualities may be appealing for registrants with legitimate interests and further the overarching goal of a free and open Internet. High prices and/or onerous registration restrictions would not be compatible with many business models focused on open registration and low prices. However, monetary incentives based on fees paid to ICANN may nevertheless provide an impetus for such contracted parties to better prevent systemic DNS Security Abuse by proactively screening registrations and detecting malfeasance.³⁶⁹ For example, there is precedent for ICANN adjusting its fee structure to address behavior harmful to the DNS, such as abolishing the automatic fee refund for “domain tasters.”³⁷⁰ Similarly, the CCT Review Team proposes the development of mandates as well as incentives to reward best practices that curb or prevent technical DNS Security Abuse and strengthen the consequences for culpable or complacent conduits of technical DNS Security Abuse. These recommendations may be applicable to curb other misuse of domain names to the extent the community reaches consensus on other forms of DNS abuse.

The review team is concerned with the high levels of DNS Security Abuse concentrated in a relatively small number of registries and registrars and geographic regions. Of particular concern, DNS Security Abuse appears to have continued without consequence for an extended amount of time in some cases.

Recommendations 14 to 18 are designed to address the reality that the new gTLD safeguards did not, on their own, prevent technical DNS Security Abuse. In addition to means available today to prevent and mitigate DNS Security Abuse, the review team proposes new incentives and tools to combat abuse that will:

- ⊙ Encourage and incentivize proactive abuse measures as per Recommendation 14;
- ⊙ Introduce measures to prevent technical DNS Security Abuse as per Recommendation 15;
- ⊙ Ensure that the data collection is ongoing and acted upon as per Recommendation 16.

³⁶⁷ Ibid., pp. 16-17.

³⁶⁸ Ibid., p. 25.

³⁶⁹ This is a best practice in other parts of the Internet infrastructure ecosystem. For example, the Messaging, Malware, and Mobile Anti-Abuse Working Group (M3AAWG) has encouraged hosting providers to adopt a “vetting process to proactively identify malicious clients before they undertake abusive activities” and to take measures to “prevent abusers from becoming customers,” M3AAWG (March 2015), *Anti-Abuse Best Common Practices for Hosting and Cloud Service Providers*, accessed 8 August 2018, https://www.m3aawg.org/sites/default/files/document/M3AAWG_Hosting_Abuse_BCPs-2015-03.pdf, p. 4.

³⁷⁰ Brian Krebs, “New Policy Aims to Curb Web Site Name Abuse,” *The Washington Post*, 30 January 2008, accessed 8 August 2018, <http://www.washingtonpost.com/wp-dyn/content/article/2008/01/30/AR2008013002178.html>

- ⦿ Provide an additional mechanism for circumstances where, despite Recommendations 14, 15, and 16, registry operators and/or registrars do not effectively address technical DNS Security Abuse within the domains they offer. A dispute resolution process should be considered to enable injured parties to take action as in Recommendation 15.

Indeed, there should be more consideration by ICANN organization of where further steps are needed to address high levels of DNS Security Abuse. If the level of abuse has not been reduced to acceptable levels, as per the commitment of a registry or registrar, then the failure of the contracted party to implement the plan should constitute a breach of the RAA and/or the RA. If the contracted parties commit to not exceeding a minimum level of DNS Security Abuse, then the proposed dispute resolution process becomes less necessary, and less likely to be used. This translates to positive outcomes for all parties due to decreased levels of DNS Security Abuse.

Recommendation 14: Consider directing ICANN organization, in its discussions with registries, to negotiate amendments to existing Registry Agreements, or in consideration of new Registry Agreements associated with subsequent rounds of new gTLDs, to include provisions in the agreements to provide incentives, including financial incentives for registries, especially open registries, to adopt proactive anti-abuse measures.³⁷¹

Rationale/related findings: ICANN is committed to maintaining “the operational stability, reliability, security, global interoperability, resilience, and openness of the DNS and the Internet.”³⁷² The new gTLD safeguards alone do not prevent DNS Security abuse in the DNS and have consequently failed to meet their intended goal in preventing the abuse phenomenon from spreading to new gTLDs. The review team’s analysis and the DNS Abuse Study indicate that abuse rates are associated with registration restrictions imposed on registrants and registration prices (i.e., abuse rates tend to go down with increased registration restrictions and high domain name prices). Some registries are inherently designed to have strict registration policies and/or high prices. However, a free, open, and accessible Internet will invariably include registries with open registration policies and low prices that must adopt other measures to prevent DNS Security Abuse. Registries that do not impose registration eligibility restrictions can nonetheless reduce technical DNS Security Abuse through proactive means, such as identifying repeat offenders, monitoring suspicious registrations, and actively detecting abuse instead of merely waiting for complaints to be filed. Therefore, ICANN should incentivize and reward operators that adopt and implement proactive anti-abuse measures identified by the community as effective for reducing DNS Security Abuse. Operators that have

³⁷¹ The review team looked for examples of practices that could assist in proactively minimizing abuse. One such example has been proposed by EURid, the operator of the .EU registry, which will soon test a delayed delegation system. See EURid, “EURid Set to Launch First of its Kind Domain Name Abuse Prevention Tool,” 2017, accessed 8 August 2018, <https://eurid.eu/en/news/eurid-set-to-launch-first-of-its-kind-domain-name-abuse-prevention-tool/> and Vissers T. et al. (2017), “Exploring the Ecosystem of Malicious Domain Registrations in the .eu TLD” In: Dacier M., Bailey M., Polychronakis M., Antonakakis M. (eds) Research in Attacks, Intrusions, and Defenses. RAID 2017. Lecture Notes in Computer Science, vol 10453. Springer, Cham, accessed 8 August 2018, https://link.springer.com/chapter/10.1007/978-3-319-66332-6_21. https://eurid.eu/media/filer_public/9e/d1/9ed12346-562d-423d-a3a4-bcf89a59f9b4/eutldecosystem.pdf. This process will not prevent registrations, but instead delay activation of a registration if a domain name is identified as being potentially abusive by machine learning algorithms. Future review teams could study this effort to consider its effectiveness and whether it could serve as a potential innovative model to help foster trust and a secure online environment. In addition, the .xyz registry may provide another example of proactive measures to combat abuse. The .xyz registry purports to have a zero-tolerance policy toward abuse-related activities on .xyz or any of their other domain extensions using a sophisticated abuse monitoring tool enabling proactive monitoring and detection in near real-time, suspending domains engaging in any of the abusive activities set out. Future review teams could explore the effectiveness of this approach by examining abuse rates over time and comparing the levels of abuse both before and after this policy.

³⁷² ICANN, “Bylaws,” Section 1.2(a)(i).

already adopted such measures, prior to the creation of an incentive program, should be rewarded as well.

To: The ICANN Board, the Registry Stakeholders Group, the Registrar Stakeholders Group, the Generic Names Supporting Organization, and the Subsequent Procedures PDP WG.

Prerequisite or priority level: High

Consensus within team: Yes

Details: The ICANN Board should consider urging ICANN organization to negotiate with new and legacy gTLD registries and registrars to include in the registry agreements fee discounts for registry operators with open registration policies and who implement proactive measures to prevent DNS Security Abuse in their zone. ICANN should verify compliance with incentive programs to ensure bad actors are not receiving incentives despite acting in bad faith. The adoption of proactive anti-abuse measures in exchange for incentives should not form the basis for shifting liability for underlying abuse incidents to the registry operator.

Success measures: More registries and registrars, even those with open registration policies, adopting proactive anti-abuse measures that result in measurable decreases in the overall rates of DNS Security Abuse in their zones.

Recommendation 15: ICANN Org should, in its discussions with registrars and registries, negotiate amendments to the Registrar Accreditation Agreement and Registry Agreements to include provisions aimed at preventing systemic use of specific registrars or registries for DNS Security Abuse. With a view to implementing this recommendation as early as possible, and provided this can be done, then this could be brought into effect by a contractual amendment through the bilateral review of the Agreements. In particular, ICANN should establish thresholds of abuse at which compliance inquiries are automatically triggered, with a higher threshold at which registrars and registries are presumed to be in default of their agreements. If the community determines that ICANN org itself is ill-suited or unable to enforce such provisions, a DNS Abuse Dispute Resolution Policy (DADRP) should be considered as an additional means to enforce policies and deter against DNS Security Abuse. Furthermore, defining and identifying DNS Security Abuse is inherently complex and would benefit from analysis by the community, and thus we specifically recommend that the ICANN Board prioritize and support community work in this area to enhance safeguards and trust due to the negative impact of DNS Security Abuse on consumers and other users of the Internet.

Rationale/related findings: Published research, cybersecurity analysis, and DNS Security Abuse monitoring tools highlight concentrated, systemic DNS Security Abuse for which there are no adequate, actionable remedies. The CCT-RT is of the view that the existing powers of ICANN Compliance are too weak in their present form to be as effective as they need to be in abating such DNS Technical Abuse, and ICANN Compliance needs clear authority to address systematic abuse effectively. Whilst abuse can be due, in part, to negligent parties, one of the specific areas of concern identified nearly a decade ago by the community prior to the launch of the New gTLD Program was how to ensure that “bad actors” do not run registries[1]. The anti-abuse safeguards put in place as part of the new gTLD program do not address this problem. Examples from the DNS Abuse Study of new gTLDs registrars with more than 10% of their domain names blacklisted as well as registries, according to Spamhaus for example are .science (51%), .stream (47%), .study (33%), .download (20%), .click (18%), .top (17%), .gdn (16%), .trade (15%), .review (13%), and .accountant (12%). Current policies focus on individual abuse complaints and an ineffective duty to investigate. Such abuse as has been identified by the DNS Abuse Study[2] concentrated in particular in certain registries and registrars and despite such identification it appears that ICANN Compliance are unable to

remedy the situation whereby ICANN may suspend registrars and registry operators found to be associated with unabated, abnormal and extremely high rates of DNS Security Abuse. In this paradigm, certain registrars and registry operators associated with extremely high rates of DNS Security Abuse have continued to operate and face little incentive to prevent such malicious activity. Moreover, there currently exist few enforcement mechanisms to prevent systemic domain name abuse associated with resellers. Systemic use of particular registrars and registries for DNS Security Abuse threatens the security and stability of the DNS, the universal acceptance of TLDs, and consumer trust. Consequently, the imposition of contractual requirements and effective means to enforce them are necessary to remedy this unacceptable phenomenon.

To: The ICANN Board, the Registry Stakeholders Group, the Registrar Stakeholders Group, the Generic Names Supporting Organization and the Subsequent Procedures PDP WG

Prerequisite or priority level: Prerequisite (provisions to address systemic DNS Security Abuse should be included in the baseline contract for any future new gTLDs)

Consensus within team: Yes

Details: The ICANN Board should direct ICANN Org to negotiate amendments to the Registrar Accreditation Agreement and Registry Agreement provisions aimed at preventing DNS Security Abuse. Such language should impose upon registries and registrars, and, through downstream contract requirements their affiliated entities such as resellers, a duty to prevent wide-scale DNS Security Abuse and implement specific measures to reduce malicious conduct whereby ICANN may suspend registrars and registry operators found to be associated with unabated, abnormal and extremely high rates of DNS Security Abuse. It is important for ICANN Org to gather relevant data, conduct analysis, and act on actionable information. Accordingly, ICANN should initiate an investigation into a contracted party's direct or indirect (such as through a reseller) involvement with systemic DNS Security Abuse. ICANN should make use of well-regarded abuse/black lists and establish an initial threshold at which compliance inquiries are automatically generated. We suggest that this initial threshold should be 3% of registrations or 30 total registrations, whichever is higher. Further, ICANN should establish a subsequent threshold at which a contracted party is presumed to be in breach of its agreement. We suggest this subsequent threshold should be 10% of registrations or 100 total registrations, whichever is higher.

Upon making a finding and contacting the contracted party, such findings may be rebutted upon sufficient proof that the findings were materially inaccurate or that the TLD operator is actively mitigating the identified DNS Security Abuse. The following factors may be taken into account when making a determination: whether the registrar or registry operator 1) engages in proactive anti-abuse measures to prevent DNS Security Abuse, 2) was itself a victim in the relevant instance, 3) has since taken necessary and appropriate actions to stop the abuse and prevent future systemic use of its services for DNS Security Abuse.

It is imperative that ICANN Org be empowered to deal with systemic DNS Security Abuse. However, in addition, a specific DADRP should be considered to the extent the community concludes that ICANN Compliance may be unable or ill-suited to deal with certain situations related to such abuse. Where proper, a DADRP could serve as a significant deterrent and help prevent or minimize such high levels of DNS abuse. Analogous to the Trademark PDDRP, this tool would empower the community to address systemic DNS Security Abuse, which plagues the security and stability of Internet infrastructure and undermines safeguards aimed at ensuring consumer trust. Such a procedure would apply if ICANN Compliance were not the right body to resolve a complaint related to DNS Security Abuse, is ill-suited or unable to do so and the registry operators or registrars are identified as having excessive levels of

abuse. It may be useful for Compliance to be able to refer a case to the DADRP. The Community should determine the conditions under which a complainant can invoke a DADRP.

Success measures: 1) Contractual language is adopted which empowers ICANN to investigate and engage in enforcement actions against registries and registrars associated with systemic DNS Security Abuse such that there are no contracted parties serving as enablers of systemic DNS Security Abuse for which ICANN cannot bring an enforcement action. 2) A DADRP is created if there is an area of DNS Security Abuse that ICANN Org is unable to address 3) There exist no gTLD or registrar with systemic high levels of DNS Security Abuse (>3%). 4) The total volume of DNS Security Abuse decreases.

Recommendation 16: Further study the relationship between specific registry operators, registrars, and DNS Security Abuse by commissioning ongoing data collection, including but not limited to, the ICANN Domain Abuse Activity Reporting (DAAR) initiative. For transparency purposes, this information should be regularly published, ideally quarterly and no less than annually, in order to enable identification of registries and registrars that require greater scrutiny, investigation, and potential enforcement action by the ICANN organization. Upon identifying abuse phenomena, ICANN should put in place an action plan to respond to such studies, remedy problems identified, and define future ongoing data collection.

Rationale/related findings: Comprehensive DNS Security Abuse data collection and analysis is necessary for studying the efficacy of safeguards put in place to protect against malicious abuse issues associated with the expansion of the DNS. Furthermore, progress and trends can be identified by repeating studies over time. The DNS Abuse Study commissioned by the CCT Review Team identified extremely high rates of abuse associated with specific registries and registrars as well as registration features, such as bulk registrations, which appear to enable abuse. Moreover, the Study concluded that registration restrictions correlate with abuse, which indicates that there are many factors to consider and analyze in order to extrapolate cross-TLD abuse trends for specific registry operators and registrars. The DNS Abuse Study highlighted certain behaviors that are diametrically opposed to encouraging consumer trust in the DNS. Certain registries and registrars appear to either positively encourage or at the very least willfully ignore DNS Security Abuse. Such behavior needs to be identified and acted upon quickly by the ICANN organization as determined by the facts and evidence presented. The DNS Abuse Study, which provided a benchmark of DNS Security Abuse since the onset of the New gTLD Program, should be followed up with regular studies so that the community is provided current, actionable data on a regular basis to inform policy decisions.

To: The ICANN Board, the Registry Stakeholders Group, the Registrar Stakeholders Group, the Generic Names Supporting Organization, and the Subsequent Procedures PDP WG, SSR2 Review Team.

Prerequisite or priority level: High

Consensus within team: Yes

Details: The additional studies need to be of an ongoing nature, collecting relevant data concerning DNS Security Abuse at both the registrar and registry level. The data should be regularly published, thereby enabling the Community and the ICANN organization in particular to identify registries and registrars that need to come under greater compliance scrutiny and thereby have such behavior eradicated.

Success measures: Comprehensive, up-to-date technical DNS Security Abuse data is readily available to the ICANN Community to promptly identify problems, craft data-driven policy solutions, and measure the efficacy of implemented safeguards and ongoing initiatives. Furthermore, the next CCT Review Team will have a rich dataset on DNS abuse from which to measure safeguard efficacy.

Recommendation 17: ICANN should collect data about and publicize the chain of parties responsible for gTLD domain name registrations.

Rationale/related findings: At present, there is no consistent mechanism for determining all of the ICANN-contracted and non-contracted operators associated with a gTLD domain name registration. WHOIS records often do not distinguish between registrars and resellers. The DNS Abuse Study, for example, was unable to discern resellers from registrars to determine the degree to which DNS Security Abuse rates may be driven by specific-resellers, which in turn affects overall levels of DNS Security abuse. This data should be available to enhance data-driven determinations necessary for recommendations proposed by this and future CCT Review Teams, supplement New gTLD Program safeguards, and improve ICANN Contractual Compliance determinations.

To: The ICANN Board, the GNSO Expedited PDP, the Registry Stakeholders Group, the Registrar Stakeholders Group, the Generic Names Supporting Organization, the Subsequent Procedures PDP WG, SSAC

Prerequisite or priority level: High

Consensus within team: Yes

Details: WHOIS information is an important source of data for DNS Security Abuse analysis. Safeguards, such as the Thick WHOIS requirements, do not mandate that resellers be listed in WHOIS records. Consequently, the full chain of parties to a registration transaction is not readily discernible. Without such information, it is difficult to determine the extent to which DNS Security Abuse is correlated to individual resellers rather than registrars. For example, with such data hidden, it would be possible for a reseller associated with extremely high levels of abuse to remain in operation under a registrar with relatively normal levels of DNS Security Abuse. This would, in effect, permit systemic DNS Security Abuse by a non-contracted party. Although the reseller is theoretically bound by flow-down contract requirements, in practice this systemic DNS Security Abuse often remains difficult to attribute and tends to go unabated. Whereas, collecting and publicizing such information would enable end-users to readily determine the registry, registrar, and reseller associated with malicious domain name registrations. This would allow for more granular DNS abuse analysis as well as transparency for Internet users, thereby enhancing Community accountability efforts and Contractual Compliance enforcement.

Success measures: It is possible for anyone to readily determine the reseller associated with any gTLD registration.

Impact of Safeguards

Background on Safeguards

A key distinguishing feature of the New gTLD Program was the advent of additional safeguards aimed at protecting the integrity of the DNS. The Governmental Advisory Committee (GAC) greatly influenced the development and adoption of many of those safeguards. In its Beijing Communiqué, the GAC advised that the safeguards proposed be subject to contractual oversight by ICANN, and many have been implemented via contract provisions in the standard Registry and Registrar Agreements required for all new gTLDs.³⁷³ However, a 2015 review on the effectiveness of GAC advice observed that certain aspects of GAC advice were implemented differently from the way in which they were initially proposed.³⁷⁴

What follows is a discussion of certain key safeguards, focusing on the ability of the safeguards to be enforced via ICANN Contractual Compliance and/or to withstand challenges to potential enforcement.

Safeguards for All New gTLDs

WHOIS verification

The WHOIS verification requirements of the New gTLD Program sought to enhance abuse prevention and mitigation efforts.³⁷⁵ The 2013 Registrar Agreement, which was mandatory for all new gTLD registrars, required adherence to the obligations specified in the WHOIS Accuracy Program Specification.³⁷⁶ Consequently, new gTLD registrars are required to engage in “reasonable and commercially practicable” WHOIS accuracy verification at the time of registration and periodic reverification thereafter.³⁷⁷

Specifically, registrars are required to verify the syntax accuracy of registrant-provided postal addresses, email addresses, and telephone numbers, and verify the validity of the phone number and email address of the registrant. These provisions limit registrants to seven days for correcting or updating such information and a total of 15 days for responding to inquiries by the registrar.³⁷⁸ The consequences imposed by a registrar for a registrant’s failure to comply include the suspension and/or cancellation of the domain name registration.³⁷⁹

ICANN Contractual Compliance reports indicate that WHOIS-related complaints comprise the largest category of complaints that they receive related to registrars.³⁸⁰ For example, of the 41,790 total complaints received in 2014, 29,857 related to WHOIS (most complained about

³⁷³ ICANN, “Registry Agreement”; ICANN, “2013 RAA.”

³⁷⁴ ICANN GAC (2016), *GAC Advice Effectiveness Review*, accessed 8 August 2018, <https://gacweb.icann.org/display/gacweb/GAC+Correspondence?preview=/27492514/41943089/Advice%20Effectiveness%20Review.pdf>, pp. 14-15, regarding review of the advice contained within the Beijing Communiqué. The review noted that “the more the advice seeks to impose restrictions, safeguards, checks, rules, verification, authentication, other minimum behavioral expectations or ‘standard setting’, the less likely it is that ICANN will accept and implement the advice in the precise way that the GAC have requested” (p. 2).

³⁷⁵ ICANN (2009), *Mitigating Malicious Conduct*.

³⁷⁶ The implementation of the European Union’s GDPR on 25 May 2018 has had a major impact on how data is collected and processed in all sectors. As of the date of publication [verify] ICANN has amended the contract specifications that govern WHOIS collection and publication. See <https://www.icann.org/resources/pages/gtld-registration-data-specs-en>. The temporary specification no longer permits public access to many WHOIS data fields and this change will likely affect the number of complaints received by ICANN contractual compliance. Nevertheless, GDPR Principles require personal information to be “accurate, and where necessary, kept up to date.” GDPR, Art. 5(d).

³⁷⁷ ICANN, “2013 RAA,” Section 3.7.8

³⁷⁸ ICANN, “2013 RAA,” Section 3.7.7.1 and 3.7.7.2

³⁷⁹ ICANN, “2013 RAA,” Section 3.7.7.2

³⁸⁰ ICANN, “Contractual Compliance Reports,” accessed 7 February 2017, <https://www.icann.org/resources/pages/compliance-reports-2016-04-15-en>.

lack of accuracy, about 71 percent).³⁸¹ Of the 48,106 total complaints received in 2015, 36,354 related to WHOIS (again, accuracy with about 75 percent).³⁸² In 2016 and 2017, WHOIS-related complaints continued to comprise the largest category of complaints received related to registrars.³⁸³

These figures indicate that the WHOIS safeguards created contractual obligations that were sufficiently specific, that violations were flagged, and generated complaints subject to the ICANN compliance process.³⁸⁴

Coinciding with the new WHOIS verification requirements to improve the quality of contact data in the WHOIS, ICANN also implemented the WHOIS Accuracy Reporting System (ARS).³⁸⁵ The ARS is an effort to identify and report on WHOIS accuracy in a systematic way. The GAC advised that registry operators be required to maintain statistical reports of inaccurate WHOIS records.³⁸⁶ ARS is an ICANN project taken in part to respond to this GAC-advised safeguard requiring documentation of WHOIS inaccuracies. This implementation shifted the responsibility from registry operators to ICANN.³⁸⁷ Originally, the ARS contemplated three phases: syntax accuracy, operability accuracy, and identity validation.³⁸⁸

To date, the ICANN ARS has only dealt with accuracy of syntax and operability (i.e., is the contact information in the correct format and is it an operating email, address, or telephone number?). The ARS Report issued in June 2016 and contains findings on the accuracy of syntax (proper format) and operability (can it be used to communicate) of telephone numbers, postal address, and email address for a sample of both new and legacy gTLDs.³⁸⁹ These findings indicate that new gTLDs have higher syntax accuracy ratings for email and telephone, but lower syntax accuracy for postal address, when compared to legacy gTLDs.³⁹⁰ The latest ARS Report issued in June 2018 shows that new gTLDs have an overall higher syntax accuracy (88.5% compared to 81.3% for legacy gTLDs), with similar syntax accuracy for email, and higher syntax accuracy for telephone and postal address.³⁹¹ In terms of operability accuracy, in June 2018, new gTLDs had higher accuracy for email addresses, lower accuracy for telephone numbers, and about the same accuracy for postal addresses.³⁹²

³⁸¹ ICANN, “Contractual Compliance Reports 2014,” accessed 7 February 2017, <https://www.icann.org/resources/pages/compliance-reports-2014-2015-01-30-en>.

³⁸² ICANN, “Contractual Compliance Reports 2015,” accessed 7 February 2017, <https://www.icann.org/resources/pages/compliance-reports-2015-04-15-en>.

³⁸³ <https://www.icann.org/en/system/files/files/annual-2016-31jan17-en.pdf> and <https://www.icann.org/en/system/files>.

³⁸⁴ ICANN, “Competition, Consumer Trust, and Consumer Choice Metrics Reporting,” accessed 7 February 2017, <https://www.icann.org/resources/reviews/cct/metrics>.

³⁸⁵ ICANN, “WHOIS Accuracy Reporting System (ARS) Project Information,” accessed 7 February 2017, <https://whois.icann.org/en/whoisars>. The project aims to: proactively identify inaccurate gTLD registration data, explore the use of automated tools, forward potentially inaccurate records to registrars for action, and publicly report on the resulting actions to encourage improvement.

³⁸⁶ ICANN GAC (11 April 2013), *Beijing Communiqué*, accessed 7 February 2017, <https://www.icann.org/en/system/files/correspondence/gac-to-board-18apr13-en.pdf>; ICANN GAC, *GAC Advice Effectiveness Review*.

³⁸⁷ ICANN GAC (11 April 2013), *Beijing Communiqué*; ICANN GAC, *GAC Advice Effectiveness Review*.

³⁸⁸ ICANN, “WHOIS Accuracy Reporting System.”

³⁸⁹ ICANN, “WHOIS Accuracy Reporting System.”

³⁹⁰ *Ibid.*

³⁹¹ ICANN (June 2018), WHOIS ARS Cycle 2 Phase 6 Report: Syntax and Operability Accuracy,” accessed 8 August 2018, <https://whois.icann.org/en/file/whois-ars-phase-2-cycle-6-report-syntax-and-operability-accuracy>

³⁹² *Ibid.*

ICANN has not committed to progressing to the identity validation phase (i.e., is the individual listed responsible for the domain?).³⁹³ Hence, the current documentation effort will only detect syntax and operability issues but will not detect and therefore not document inaccurate identity.³⁹⁴

Ultimately, specific language regarding WHOIS obligations and a detailed WHOIS specification may have promoted more focused efforts on combating abuse by creating clear obligations on registrars to gather specified information, and thus enable the ability to make actionable complaints to ICANN Contractual Compliance.

Recommendations

Recommendation 18³⁹⁵: In order for the upcoming WHOIS Review Team to determine whether additional steps are needed to improve WHOIS accuracy, and whether to proceed with the “identity” phase of the Accuracy Reporting System (ARS) project, ICANN should gather data to assess whether a significant percentage of WHOIS-related complaints applicable to new gTLDs relate to the accuracy of the identity of the registrant. This should include analysis of WHOIS accuracy complaints received by ICANN Contractual Compliance to identify the subject matter of the complaints (e.g., complaints about syntax, operability, or identity). The volume of these complaints between legacy gTLDs and new gTLDs should also be compared. ICANN should also identify other potential data sources of WHOIS complaints beyond those that are contractually required (including, but not limited to, complaints received directly by registrars, registries, ISPs, etc.) and attempt to obtain anonymized data from these sources.

Future CCT Review Teams may then also use these data.

Rationale/related findings: WHOIS-related complaints are the largest category of complaints received by ICANN Contractual Compliance for registrars. However, it is unclear what aspect of WHOIS accuracy forms the basis of these complaints, or if the introduction of new gTLDs has had any effect on the accuracy of WHOIS data. Phase 1 of ICANN’s ARS project analyzes the syntactic accuracy of WHOIS contact information and Phase 2 assesses the operability of the contact data in the WHOIS record. But there is currently no plan to proceed with Phase 3 of the ARS project: identity validation (is the contacted individual responsible for the domain?).

To: ICANN organization to gather required data, and to provide data to relevant review teams to consider the results and, if warranted, to assess feasibility and desirability of moving to identity validation phase of WHOIS ARS project.

Prerequisite or priority level: Medium

Consensus within team: Yes

³⁹³ To carry out this phase of the project, ICANN “requires further consultation with the community as to if and how this phase would be implemented.” See ICANN, “WHOIS ARS Project Information.”

³⁹⁴ Ibid.

³⁹⁵ Since the publication of the CCT Review Team’s draft recommendations for public comment, ICANN Contractual Compliance has considered the review team recommendations in implementing certain changes. Contractual Compliance now codes Whois Inaccuracy tickets by syntax, operability, and identity, and divides complaints based on gTLD type (legacy or new). It also publishes reports with this level of granularity on the performance reporting dashboard. See July data as an example:

<https://features.icann.org/compliance/dashboard/0718/report>

The reports also include some data concerning the reporter (complainant), including whether the reporter was anonymous. See quarterly data as an example:

<https://features.icann.org/compliance/dashboard/2018/q2/complaint-count-reporters> (also part of blog).

Success measures: Availability of data that shows the breakdown of WHOIS accuracy complaints by subject matter (syntax, operability or identity). Availability of data that allows comparison between legacy gTLDs and new gTLDs. Availability of data to inform the upcoming WHOIS Review Team on where further work is needed to improve WHOIS accuracy.

Mitigating Abusive Activity

The Base Registry Agreement required new gTLD registry operators to include provisions in their Registry-Registrar Agreements (RAA) that prohibited registrants from “distributing malware, abusively operating botnets, phishing, piracy, trademark or copyright infringement, fraudulent or deceptive practices, counterfeiting or otherwise engaging in activity contrary to applicable law, and providing (consistent with applicable law and any related procedures) consequences for such activities including suspension of the domain name.”³⁹⁶ By its terms, this safeguard is aimed at mitigating abusive activity. This provision was incorporated into the mandatory Public Interest Commitments (PICs) section of the Registry Agreement.

Notably, the plain language of the safeguard does not obligate the registry operator to monitor and enforce this provision beyond requiring the inclusion of the provision in the downstream Registrar–Registrant agreement. ICANN has concluded that 99 percent of new gTLD registry operators had complied with the obligation to include this language in their Registry-Registrar agreements by the end of 2014.³⁹⁷

Complementing the “prohibited use” provisions, new gTLD registrars were bound by the 2013 RAA, which imposed on registrars a duty to promptly “investigate and respond appropriately to any reports of abuse.”³⁹⁸ Subsequently, ICANN received abuse complaints in 2014, 2015, and 2016.³⁹⁹ Abuse complaints are typically higher for registrars than for registries. In 2015, ICANN received 438 abuse complaints related to registrars.⁴⁰⁰ These complaints included both legacy and new gTLDs. ICANN noted that these complaints involved in part, “registrars not taking reasonable and prompt steps to respond to appropriately to reports of abuse, which at a minimum should be to forward valid complaints to the registrants.”⁴⁰¹ ICANN’s 2015 audit of registrars under the 2013 RAA indicated that 74 percent of the registrars audited had deficiencies related to the RAA contract provisions requiring a Registrar Abuse Contact and a duty to investigate complaints of abuse.⁴⁰² ICANN’s 2016 audit of registrars showed a deficiency rate of 60 percent related to this same contract provision.⁴⁰³ These figures indicate that the “mitigating abuse” safeguard is the subject of complaints and the ICANN compliance process.⁴⁰⁴

³⁹⁶ ICANN, “Registry Agreement,” Specification 11, 3(a).

³⁹⁷ ICANN (2015), *ICANN Contractual Compliance 2014 Annual Report*, accessed 7 February 2017, <https://www.icann.org/en/system/files/files/annual-2014-13feb15-en.pdf>, p. 13.

³⁹⁸ ICANN, “2013 RAA,” 3.18.

³⁹⁹ ICANN, “Contractual Compliance Reports 2014” and ICANN, “Contractual Compliance Reports 2015.” Quarterly reports are available as well on their year’s respective pages.

⁴⁰⁰ ICANN (2016), *ICANN Contractual Compliance 2015 Annual Report*, accessed 7 February 2017, <https://www.icann.org/en/system/files/files/annual-2015-27jan16-en.pdf>

⁴⁰¹ *Ibid.*

⁴⁰² ICANN, *Contractual Compliance September 2015 Round Audit Report*, accessed 7 February 2017, <https://www.icann.org/en/system/files/files/compliance-registrar-audit-report-2015-06jul16-en.pdf>

⁴⁰³ ICANN, *Contractual Compliance May 2016 Round Audit Report*, accessed 7 February 2017, <https://www.icann.org/en/system/files/files/compliance-registrar-audit-report-2016-16nov16-en.pdf>

⁴⁰⁴ The effectiveness of this safeguard as well as ICANN Compliance’s enforcement it has been the topic of Congressional Testimony. See Senate Committee on the Judiciary Subcommittee on Oversight, Agency Action, Federal Rights and Federal Courts (“Protecting Internet Freedom: Implications of Ending U.S. Oversight of the

It is not clear whether these safeguards have had an impact on mitigating abuse. It is also not clear what constitutes “reasonable and prompt steps to respond to appropriately to reports of abuse.”

Security Checks

Another mandatory PIC included in the new gTLD Registry Agreement required that registry operators “periodically conduct a technical analysis to assess whether domains in the TLD are being used to perpetrate security threats, such as pharming, phishing, malware, and botnets.”⁴⁰⁵ Furthermore, this safeguard obligated registry operators to maintain statistical reports on such threats and mitigation efforts, and to make them available to ICANN upon request.⁴⁰⁶ This safeguard was intended to enhance efforts to fight DNS abuse.⁴⁰⁷

GAC advice also contained a proposed enforcement mechanism that called for a registry operator to notify a registrar if the detected threats posed an actual risk of harm and provided for suspension of a domain name until a matter is resolved if the registrar failed to act.⁴⁰⁸ However, ICANN reported Community concerns about the timing, cost, and scope of conducting security checks for threats.⁴⁰⁹ Hence, the safeguard implementation provided “general guidelines for what registry operators must do, but omits the specific details from the contractual language to allow for the future development and evolution of the parameters for conducting security checks.”⁴¹⁰ Nevertheless, as implemented by ICANN, the safeguard lacks obligations on either notification to the registrar or how to respond to security threats.

The obligation to engage in security checks can be enforced, as implemented.⁴¹¹ ICANN Contractual Compliance reports engaging in proactive monitoring of this safeguard and determined, for example, that 96 percent of registries were conducting security checks as per the contract.⁴¹² Additionally, a voluntary “Framework for Registry Operator to Respond to Security Threats” has been released during the writing of this report.⁴¹³

Recommendation 19: The next CCT Review Team should review the “Framework for Registry Operator to Respond to Security Threats” and assess whether the framework is a sufficiently clear and effective mechanism to mitigate abuse by providing for systemic and specified actions in response to security threats.

Rationale/related findings: It is not clear whether the intended goal of the “security checks” safeguard to strengthen efforts to fight DNS abuse has been met. The Community will be better positioned to evaluate the effectiveness of this safeguard once the “Framework for

Internet,” written statement of John C. Horton, President and CEO, Legitscript, 14 September 2016), <https://www.judiciary.senate.gov/imo/media/doc/09-14-16%20Horton%20Testimony.pdf>. Mr. Horton argues that ICANN Compliance efforts regarding registrars that allegedly failed to investigate and respond to complaints that domain names were being used to facilitate illegal activity were ineffective and lacked transparency.

⁴⁰⁵ ICANN, “Registry Agreement,” Specification 11, 3(b).

⁴⁰⁶ Ibid.

⁴⁰⁷ ICANN (2009), *Mitigating Malicious Conduct*.

⁴⁰⁸ ICANN GAC (2013), *Beijing Communiqué*.

⁴⁰⁹ ICANN, “Safeguards Applicable to All gTLDs,” accessed 8 August 2018, <https://features.icann.org/safeguards-applicable-all-new-gtlds>.

⁴¹⁰ Ibid.

⁴¹¹ ICANN GAC, *GAC Advice Effectiveness Review*, pp. 12-13. The Review questioned the effectiveness of this safeguard, noting that “risks may be identified but not necessarily acted on.”

⁴¹² ICANN (2015), *ICANN Contractual Compliance 2014 Annual Report*, p. 1.

⁴¹³ ICANN, “Framework for Registry Operator to Respond to Security Threats,” accessed 8 August 2018, <https://www.icann.org/resources/pages/framework-registry-operator-respond-security-threats-2017-10-20-en>

Registry Operator to Respond to Security Threats” is in place for a sufficient period of time to provide more specific information.

To: Future CCT Review Teams

Prerequisite or priority level: Medium

Consensus within Team: Yes

Details: It is not clear whether the intended goal of the “security checks” safeguard has been met. With the voluntary framework in place as of October 2017, the Community will be better positioned to evaluate the effectiveness of this safeguard.

Success measures: An evaluation of the “Framework for Registry Operator to Respond to Security Threats.”

Making and Handling Complaints

The Base Registry Agreement for new gTLDs required registry operators to “take reasonable steps to investigate and respond to any reports from law enforcement and governmental and quasi-governmental agencies of illegal conduct in connection with the use of the TLD” with the caveat that they would “not be required to take any action in contravention of applicable law.”⁴¹⁴ Furthermore, new gTLD registry operators were obligated to post abuse contact details on their websites and to notify ICANN of any changes to contact information.⁴¹⁵

These safeguards, like others, were aimed at enabling more focused mitigation of DNS abuse⁴¹⁶ and created a duty for registry operators to investigate and respond to complaints from government agencies, but not the public. GAC advice did not propose such a restriction.⁴¹⁷

Data from Nielsen’s Consumer surveys indicate that many consumers remain unaware of to whom to report abuse. Specifically, 31 percent overall “don’t know” to whom to report site abuse, 31 percent overall would report abuse to a consumer protection agency, 30 percent overall would report abuse to local police, 24 percent overall would report abuse to website owner or operator, and 11 percent overall would report abuse to ICANN.⁴¹⁸

The GAC questioned the specifics of implementation, specifically asking “what constitutes reasonable steps” to investigate and respond to complaints and noting that the effectiveness of this safeguard depends on whether registry operators “have a responsibility to respond to complaints from sources other than governments or law enforcement agencies.”⁴¹⁹ ICANN’s 2014 Contractual Compliance report noted that registry operators “not publishing the email address and primary contact for reports by mail” and registry operators “not responding in a

⁴¹⁴ ICANN, “Registry Agreement,” Section 2.8.

⁴¹⁵ ICANN, “Registry Agreement,” Specification 6, Section 4.1.

⁴¹⁶ ICANN, *Mitigating Malicious Conduct*.

⁴¹⁷ ICANN GAC (11 April 2013), *Beijing Communiqué*; ICANN GAC (11 February 2015), *Singapore Communiqué*, accessed 7 February 2017, <https://www.icann.org/en/system/files/correspondence/gac-to-board-11feb15-en.pdf>. The Singapore Communiqué questions what mechanisms could be used by victims (in addition to law enforcement) to report abuse to registry operators and what constitutes “reasonable steps” to investigate and respond to reports from law enforcement or other governmental bodies.

⁴¹⁸ Nielsen, *Consumer Research Wave 2* (2016), pp. 88, 102.

⁴¹⁹ ICANN GAC (11 February 2015), *Singapore Communiqué*, p. 10 regarding safeguard 5.; ICANN GAC, *GAC Advice Effectiveness Review*, p.13.

timely matter” were a common Contractual Compliance issue regarding publishing abuse contact information.⁴²⁰ Hence, this safeguard can be the subject of complaints and the ICANN compliance process.

The obligation to have mechanisms to respond to complaints likely assists registries to investigate and possibly combat abuse and may help protect the public by providing information about harmful practices. However, questions remain about the scope of registry operators’ response under this safeguard, both as to their duty to investigate and respond to complaints from law enforcement and their responsibility to respond to complaints from the public.

Recommendations

Recommendation 20: Assess whether mechanisms to report and handle complaints have led to more focused efforts to combat abuse by determining: (1) the volume of reports of illegal conduct in connection with the use of the TLD that registries receive from governmental and quasi-governmental agencies; (2) the volume of inquires that registries receive from the public related to malicious conduct in the TLD; (3) whether more efforts are needed to publicize contact points to report complaints that involve abuse or illegal behavior within a TLD; and (4) what actions registries have taken to respond to complaints of illegal or malicious conduct in connection with the use of the TLD. Such efforts could include surveys, focus groups, or Community discussions. If these methods prove ineffective, consideration could be given to amending future standard Registry Agreements to require registries to more prominently disclose their abuse points of contact and provide more granular information to ICANN. Once this information is gathered, future review teams should consider recommendations for appropriate follow up measures.

Rationale/related findings: The Consumer Research and Registrant surveys conducted by Nielsen have shown significant consumer concern related to abuse, which may undermine confidence and trust in the DNS. The broad strategic response should be to ensure that there are sufficiently effective mechanisms to report complaints that can be measured and assessed, and hence develop the capacity to manage and mitigate the causes of these complaints.

There is concern from the Community that abuse data is not reported consistently to registries. Other concerns relate to ICANN’s own reporting of the complaints it receives. In particular, those concerns focus on the lack of granularity regarding the subject matter of the complaints and lack of information regarding the response to abuse complaints. Generally speaking, detailed information regarding the subject matter of complaints and responses to those complaints is sparingly captured and shared, missing, or unknown.

Although the safeguards regarding making and handling complaints have been implemented, in light of the concerns noted above, it is unclear: (1) whether either law enforcement or the public is sufficiently aware that these complaint mechanisms exist; (2) how frequently these channels are used by the public and law enforcement to notify registries of illegal or abusive behavior; and (3) what impact these safeguards have had on their intended goal of mitigating DNS abuse. Hence, the review team’s recommendations relate to improved data gathering to inform future efforts to combat abuse within gTLDs.

To: ICANN organization and future CCT Review Teams

⁴²⁰ ICANN (2015)., *Contractual Compliance 2014 Annual Report*, accessed 8 August 2018, <https://www.icann.org/en/system/files/files/annual-2014-13feb15-en.pdf>, p. 14.

Prerequisite or priority level: Medium

Consensus within Team: Yes

Success measures:

- ⦿ More information is gathered to assess whether current complaint reporting mechanisms are effective, and that this information informs policy efforts involving amendment of standard Registry agreements.
- ⦿ ICANN Contractual Compliance routinely records and makes available information about complaints by categories filed from registry and registrars, including responses to reports of abuse to original reporters.

Safeguards for Sensitive and Regulated Strings

The GAC identified a non-exhaustive group of nearly 200 strings—which it dubbed “Category 1” strings—that raised consumer protection concerns, contained sensitive strings, or strings in regulated markets and advised that five safeguards should apply to these strings. The GAC explained that strings linked to “regulated or professional sectors should operate in a way that is consistent with applicable laws” and observed that the identified strings were “likely to invoke a level of implied trust from consumers, and carry higher levels of risk associated with consumer harm.”⁴²¹ During implementation, however, ICANN included only a subset of these GAC-identified strings within the Category 1 safeguard protections.⁴²² In addition, during implementation, ICANN included only three of the five GAC-recommended safeguards to its selected subset of Category 1 strings in regulated markets.⁴²³

As implemented, these safeguards took the form of downstream contract requirements contained in the Public Interest Commitments Specification of the Registry Agreement.⁴²⁴ Specifically, the safeguards required registry operators to obligate registrars via the Registry-Registrar Agreement to include certain provisions in their Registration Agreements with registrants.

The requirements for sensitive strings and those in regulated markets included provisions requiring registrants to comply with all applicable laws.⁴²⁵ Another provision emphasized that this obligation includes “those [laws] that relate to privacy, data collection, consumer protection

⁴²¹ ICANN GAC (11 April 2013), *Beijing Communiqué*, p. 8.

⁴²² Ibid. Compare the Beijing Communiqué with ICANN’s implementation framework for GAC Category 1 implementation advice. See ICANN, “GAC Advice: Category 1 Safeguards,” accessed 8 August 2018, <https://newgtlds.icann.org/en/applicants/gac-advice/cat1-safeguards>; and ICANN New gTLD Program Committee (NGPC) (5 February 2014), *GAC Category 1 Safeguards: Annex 2: ICANN NGPC Resolution No. 2014.02.05.NG01*, accessed 8 August 2018, <https://www.icann.org/en/system/files/files/resolutions-new-gtld-annex-2-05feb14-en.pdf>; Steve Crocker ([former] Chair, ICANN Board of Directors), “NGPC Consideration of GAC Category 1 and Category 2 Safeguard Advice,” letter to GAC Chair, 29 October 2013, <https://www.icann.org/en/system/files/correspondence/crocker-to-dryden-3-29oct13-en.pdf>; Steve Crocker ([former] Chair, ICANN Board of Directors), “Implementation of GAC Safeguard Advice,” letter to GAC Chair, 2 September 2014 <https://www.icann.org/en/system/files/correspondence/crocker-to-dryden-2-02sep14-en.pdf>; Steve Crocker ([former] Chair, ICANN Board of Directors), “GAC Advice re Category 1 Safeguards for New gTLDs,” letter to GAC Chair, 23 June 2015, <https://www.icann.org/en/system/files/correspondence/crocker-to-schneider-23jun15-en.pdf>.

⁴²³ Ibid. See in particular: Crocker, letter to GAC chair, 2 September 2014 and Crocker, letter to GAC Chair, 29 October 2013..

⁴²⁴ ICANN, “Registry Agreement,” Specification 11.

⁴²⁵ ICANN, “Registry Agreement,” Specification 11, 3(f).

(including in relation to misleading and deceptive conduct), fair lending, debt collection, organic farming, disclosure of data, and financial disclosures.”⁴²⁶ Furthermore, specific provisions detailed requirements for registrants handling sensitive information, such as health or financial data, to “implement reasonable and appropriate security measures commensurate with the offering of those services, as defined by applicable law.”⁴²⁷

It is difficult to determine whether these safeguards have been the subject of complaints to ICANN Contractual Compliance because the categories of complaints identified in ICANN’s Compliance reports do not provide this level of detail. That is, the reported ICANN complaint categories for registries and registrars—such as “PIC” (Public Interest Commitments) or “abuse”—do not contain sufficiently specific information to correlate complaints with specific safeguards. However, the ICANN Global Consumer Surveys noted much lower comfort levels when consumer end-users were asked about providing sensitive information (including financial and health information) to new gTLDs as compared to legacy gTLDs.⁴²⁸ Moreover, a separate survey on trust in the internet reflected the public’s increasing concerns regarding stolen credit card and financial information, online security, and protection and security of credit card and personal information.⁴²⁹ ICANN Contractual Compliance does report that it proactively monitored compliance with Specification 11, paragraph 3a, which includes the obligation for downstream contracts to include language requiring compliance with applicable laws, and determined that there was 99 percent compliance with this provision.⁴³⁰

Recommendations

Recommendation 21⁴³¹: Include more detailed information on the subject matter of complaints in ICANN publicly available Contractual Compliance reports. Specifically, more precise data on the subject matter of complaints should be included, particularly: (1) the class/type of abuse; (2) the gTLD that is target of the abuse; (3) the safeguard that is at risk; (4) an indication of whether complaints relate to the protection of sensitive health or financial information; (5) what type of contractual breach is being complained of; and (6) resolution status of the complaints, including action details. These details would assist future review teams in their assessment of these safeguards.⁴³²

⁴²⁶ ICANN, “GAC Advice: Category 1 Safeguards” and ICANN NGPC, *Category 1 Safeguards*.

⁴²⁷ Ibid.

⁴²⁸ Nielsen, *Consumer Research* (2015); Nielsen, *Consumer Research Wave 2* (2016).

⁴²⁹ NCC Group, *Trust in the Internet Survey* (2016), p. 2.

⁴³⁰ ICANN (2015), *ICANN Contractual Compliance 2014 Annual Report*, p.13.

⁴³¹ Since the publication of the CCT Review Team’s draft recommendations for public comment, ICANN Contractual Compliance has considered the review team recommendations in implementing certain changes. In October 2017, ICANN Contractual Compliance, began collecting and reporting on the granularity of registrar-related DNS Abuse complaints by identifying the type of abuse including spam, pharming, phishing, malware, botnets, counterfeiting, pharmaceutical, fraudulent and deceptive practices, trademark or copyright infringement, and missing or invalid registrar abuse contact information. This information is reported on ICANN.org in the monthly dashboard at this link <https://features.icann.org/compliance/dashboard/report-list>. The quarterly and annual metrics reports provide information about enforcement reasons, reporter categories, closure reasons and details of the complaints inclusive of DNS Abuse by legacy and new gTLDs as they evolve through the compliance process, from ticket receipt to closure. They also reporting on any complaint type if it concerns a GAC Cat 1 gTLD. They also report on granularity of type of Transfer complaints (choices are Transfer, Unauthorized Transfer, COR, Unauthorized COR and TEAC).

In light of the ICANN community concerns regarding DNS infrastructure abuse, Compliance updated the audit plans with expanded questions and testing to address DNS abuse and also includes concerns about DNS infrastructure abuse when determining which contracted parties to audit. This information will be reported via the Audit Report and published under Reports & Blogs at this link <https://www.icann.org/resources/compliance-reporting-performance>.

⁴³² Since the publication of the CCT Review Team’s draft recommendations for public comment, ICANN Contractual Compliance has considered the review team recommendations in implementing certain changes described in the blogs of October 2017, “Enhancing Transparency in Contractual Compliance Reporting,” <https://www.icann.org/news/blog/enhancing-transparency-in-contractual-compliance-reporting>, and March 2018,

Rationale/related findings:

(Note: A general recommendation for further transparency regarding the subject matter of complaints received by ICANN Contractual Compliance is set forth in [Chapter 5: Data-Driven Analysis: Recommendations for Additional Data Collection and Analysis](#).)

The lack of publicly available information about whether ICANN Contractual Compliance has received complaints related to the implemented Category 1 safeguards, and lack of a common framework to define sensitive information and identify what constitutes “reasonable and appropriate security measures” make it difficult to assess what impact this safeguard has had on mitigating risks to the public.

The results of the Consumer Research and Registrant Surveys by Nielsen indicate that new gTLDs are not trusted to the same extent as legacy gTLDs, and that the public is concerned about potential misuse of their personal information. Domains catering to interests in highly-regulated sectors such as health and finance are likely to collect more personal and sensitive information. So in that sense, trustworthiness of these domains is even more crucial. There is a further concern that complaints about illegal DNS activities may be under-reported.

Although ICANN has mandated certain safeguards applicable to all new gTLD domains in general and domains for highly-regulated strings in particular, there is scant evidentiary data that the contracted parties have implemented and are complying with these safeguards. The review team lack the evidence to definitively declare whether the defined and implemented safeguards have been effective in mitigating risks associated with domains in the overall new gTLD market, and those in highly-regulated markets in particular. Hence, it is desirable to gather sufficient information to understand whether the existing safeguards mitigate the risks assessed for the new gTLD domains, especially those associated with highly-regulated sectors, and whether there is adequate and effective enforcement. The recommendation therefore proposes that ICANN Contractual Compliance collect and provide reports on the abuse reported to registry and registrars with a granularity that allows identification of origin, type, form, and nature of abuse or alleged illegal use of the DNS.

The ICANN organization acknowledges that data on the several safeguards is not currently being collected in either the detail expected or at all. However, there are ongoing data collection activities and initiatives that may remedy this situation.

To: ICANN organization

Prerequisite or priority level: High

Consensus within team: Yes

Details: This recommendation is tied to the previous one. Together they aim to address whether the New gTLD Program safeguards, the mechanisms developed to implement them, and the outcomes of those implementations allow a reviewer to draw a definitive conclusion on their effectiveness and fitness to purpose.

Success measures: ICANN Contractual Compliance publication of a formatted report on abuse reports received and adjudicated, including, at minimum, all of the specified types and categories noted above.

“Enhancing Transparency in Contractual Compliance Reporting, <https://www.icann.org/news/blog/enhancing-transparency-in-contractual-compliance-reporting-en>.

Recommendation 22: Initiate engagement with relevant stakeholders to determine what best practices are being implemented to offer reasonable and appropriate security measures commensurate with the offering of services that involve the gathering of sensitive health and financial information. Such a discussion could include identifying what falls within the categories of “sensitive health and financial information,” and what metrics could be used to measure compliance with this safeguard.

Rationale/related findings: The lack of publicly available information about whether ICANN Contractual Compliance has received complaints related to the implemented Category 1 safeguards, and lack of a common framework to define sensitive information, makes it difficult to assess what impact this safeguard has had on mitigating risks to the public. However, protection of sensitive information, particularly sensitive financial and health information, is a high priority for Internet users. As a result, this recommendation aims at improving both complaint data regarding these issues and encouraging communications about best practices on how to protect these sensitive categories of information.

To: ICANN organization

Prerequisite or priority level: High

Consensus within Team: Yes

Success measures: This recommendation would be successful if relevant stakeholders, including new gTLD registries and stakeholder groups representing the public interest, discuss what constitutes sensitive information and best practices regarding how to protect sensitive information. Such discussions could inform future policy in this area with a goal of increasing the public’s trust of new gTLDs.

Safeguards for Highly-Regulated Strings

The GAC advised that strings associated with market sectors that have clear and/or regulated entry requirements in multiple jurisdictions (e.g., financial, gambling, professional services, environmental, health and fitness, corporate identifiers, and charity) should also receive protections in the form of three additional safeguards requiring registry operators to verify and validate a registrant’s licenses or credentials, consult with authorities in case of doubt about the credentials, and conduct periodic post-registration checks to ensure the registrant’s compliance.⁴³³ The GAC explained that these strings may require such additional safeguards to address specific risks and to “bring registry policies in line with arrangements in place offline.”⁴³⁴ As implemented by ICANN, the safeguards applied to about 50 strings, but received fewer protections than GAC had originally advised.⁴³⁵

⁴³³ ICANN GAC (11 April 2013), *Beijing Communiqué*, pp. 8-10.

⁴³⁴ *Ibid.*, p. 10.

⁴³⁵ *Ibid.* Compare to ICANN NGPC, *Category 1 Safeguards*. ICANN indicated its rationale for changes to the GAC safeguard advice in its October 29, 2013 letter to the GAC Chair, expressing concerns that implementation could discriminate against registrants from developing countries that lacked regulatory bodies or databases which the registry operators could work with to verify credentials (Crocker, “NGPC Consideration of GAC Category 1 and Category 2 Safeguard Advice,” letter to GAC Chair). See also ICANN GAC, *GAC Advice Effectiveness Review*, Appendix 1 regarding Beijing Advice. See also “Category 1 Consumer Safeguards,” pp. 14-15, which describes ICANN’s implementation of its Category 1 safeguards 6, 7, 8 as “substantially watered down.” Also see the 23 June 2015 letter from Steve Crocker to the GAC Chair (Crocker, “GAC Advice re Category 1 Safeguards for New gTLDs.”)

As with the other safeguards, many of these safeguards imposed downstream contract requirements upon registry operators to obligate registrars vis-à-vis the Registry-Registrar Agreement to include certain provisions in their Registration Agreements with registrants.

ICANN implemented several additional safeguards that applied to strings in highly-regulated markets related to relationships with regulatory and industry bodies, providing contact information to report complaints, and screening for proper credentials for strings in highly-regulated markets.⁴³⁶

Specifically, registry operators were obligated to establish relationships with relevant regulatory and industry bodies to mitigate risks of illegal activity.⁴³⁷ Moreover, the standard contracts needed to include provisions that would require registrants to have a single point of contact for complaint reporting and contact information for these regulatory bodies.⁴³⁸

Regarding the requirement to establish relationships with relevant regulatory and industry bodies, implementation of this provision appears to be satisfied by the mere issuing of an invitation to have a relationship.⁴³⁹ This implementation may reflect the practical challenges involved with mandating a relationship with a third-party organization. In terms of effectiveness, more information is needed on registry efforts to comply with this safeguard. Regarding the requirement for registrants to provide contact information for complaints and information about relevant regulatory bodies, a key question would be how easy it is for the public to find information on a website regarding contact information for communicating complaints both to those responsible for the domain and applicable government agencies or regulatory bodies.

The final three safeguards related to the credentials that registrants possessed in regard to strings in highly-regulated markets. The GAC had recommended that registry operators (1) verify and validate registrants' credentials "at the time of registration"; (2) consult with authorities in case of doubt about the credentials; and (3) conduct periodic post-registration checks to ensure registrants' validity and compliance.⁴⁴⁰ As implemented by ICANN, registry operators were required to ensure that registrars included in their agreement with registrants a provision requiring a representation that the "registrant possesses any necessary authorizations, charters, licenses and/or other related credentials for participation in the sector associated with the TLD."⁴⁴¹ Registry operators were obligated to investigate the authenticity of a registrant's credentials if they received a complaint casting doubt on them.⁴⁴² Finally, registrars, via the Registry-Registrar Agreement, were obligated to require their registrants to report "any material changes to the validity" of their credentials.⁴⁴³

⁴³⁶ The GAC had advised that certain safeguards apply to all Category 1 strings. ICANN's implementation applied the recommended safeguards regarding establishing relationships with regulatory bodies and providing contact information to report complaints only to specified new gTLDs in the "highly-regulated category". See ICANN GAC (11 April 2013), *Beijing Communiqué*, p. pp. 8-10. Compare to ICANN NGPC, *Category 1 Safeguards*.

⁴³⁷ ICANN NGPC, *Category 1 Safeguards*.

⁴³⁸ *Ibid.*

⁴³⁹ "Registry operators will proactively create a clear pathway for the creation of a working relationship with the relevant regulatory or industry self-regulatory bodies by publicizing a point of contact and inviting such bodies to establish a channel of communication...". See ICANN (5 February 2014), *Annex 2 - ICANN NGPC Resolution NO. 2014.02.05.NG01*, accessed 8 August 2018, <https://www.icann.org/en/system/files/files/resolutions-new-gtld-annex-2-05feb14-en.pdf>, p. 3 and the Base Registry Agreement for TLDs working in highly-regulated sectors.

⁴⁴⁰ ICANN NGPC, *Category 1 Safeguards*, paras. 6-8.

⁴⁴¹ *Ibid.*, para. 6.

⁴⁴² *Ibid.*, para. 7.

⁴⁴³ *Ibid.*, para. 8.

These provisions were designed to mitigate the higher levels of risks of abuse associated with strings in highly-regulated industries, which are likely to invoke a higher level of trust to consumers.⁴⁴⁴ The Nielsen Consumer and Registrant Surveys indicated that consumers expect some restrictions on who can purchase domains within new gTLDs and that restrictions on who can purchase new gTLDs contribute to consumer trust.⁴⁴⁵ GAC advice originally required registries to screen registrants for proper credentials or licenses at the time of registration to ensure that they are what they purport to be before they may do business with the public using the name of a regulated sector such as a bank or pharmacy. As implemented by ICANN, registrants themselves were to self-report that they possessed the necessary credentials. The GAC indicated that the looser requirement that registrants provide some “representation” that they possess the appropriate credentials (e.g., as a bank, insurer, pharmacy, etc.) poses the risk of consumer fraud and potential harm because bad actors will not hesitate to make false representations about their credentials.⁴⁴⁶

The ICANN Board indicated that its implementation approach resulted from concerns about the practical ability to implement these safeguards as advised because of challenges involved in verifying credentials of entities in multiple jurisdictions.⁴⁴⁷

Recommendations

Recommendation 23: ICANN should gather data on new gTLDs operating in highly-regulated sectors to include the following elements:

- ⦿ A survey to determine 1) the steps registry operators are taking to establish working relationships with relevant government or industry bodies, and 2) the volume of complaints received by registrants from government and regulatory bodies and their standard practices to respond to those complaints;
- ⦿ A review of a sample of domain websites within the highly-regulated sector category to assess whether contact information to file complaints is sufficiently easy to find;
- ⦿ An inquiry to ICANN Contractual Compliance and registrars/resellers of highly-regulated domains seeking sufficiently detailed information to determine the volume and the subject matter of complaints regarding domains in highly-regulated industries.
- ⦿ An inquiry to registry operators to obtain data to compare rates of abuse between those highly-regulated gTLDs that have voluntarily agreed to verify and validate credentials to those highly-regulated gTLDs that have not.
- ⦿ An audit to assess whether restrictions regarding possessing necessary credentials are being enforced by auditing registrars and resellers offering the highly-regulated TLDs (i.e., can an individual or entity without the proper credentials buy a highly-regulated domain?).

⁴⁴⁴ ICANN GAC (11 April 2013), *Beijing Communiqué*, and GAC (25 June 2014), *London Communiqué*, accessed 8 August 2018, <https://www.icann.org/en/system/files/correspondence/gac-to-board-25jun14-en.pdf>.

⁴⁴⁵ Nielsen, *Consumer Research* (2015), pp. 9, 25-26, 44; Nielsen, *Consumer Research Wave 2* (2016), pp. 9, 13, 24-27, 35, 60-63, 65; Nielsen, *Registrant Survey Wave 2* (2016) pp. 14, 18, 29, 67.

⁴⁴⁶ ICANN GAC (25 June 2014), *London Communiqué*, p. 10; ICANN GAC (11 February 2015), *Singapore Communiqué*, pp. 4, 10; GAC (15 October 2014), *Los Angeles Communiqué*, accessed 8 August 2018, <https://www.icann.org/en/system/files/correspondence/gac-to-board-15oct14-en.pdf>, p.5. The Communiqués all question ICANN’s failure to implement the GAC’s advice regarding verification and validation of credentials for strings in highly-regulated markets.

⁴⁴⁷ See, e.g., Board Chair correspondence to GAC Chair, October 29, 2013 and; Sept. 2, 2014.

To the extent that current ICANN data collection initiatives and Contractual Compliance audits could contribute to these efforts, the review team recommends that ICANN assess the most efficient way to proceed to avoid duplication of effort and leverage current work.

Rationale/related findings: Although ICANN has implemented certain safeguards applicable to domains operating in highly-regulated sectors, it is unclear whether and how contracted parties are complying with these safeguards. It is also not clear whether these safeguards have been effective in mitigating risks associated with domains in highly-regulated markets. The Nielsen consumer end-user survey results indicate that new gTLDs are not trusted to the same extent as legacy gTLDs and that the public is concerned about potential misuse of their sensitive information. Domains working in highly-regulated sectors such as health and finance may be more apt to collect this sensitive information, and hence the trustworthiness of these domains is even more crucial. Accordingly, it is important to understand whether the safeguards put into place to mitigate the risks associated with highly-regulated domains are being enforced and whether they are effective.

To: ICANN organization, New gTLD Subsequent Procedures PDP Working Group

Prerequisite or priority level: High

Consensus within Team: Yes

Details: ICANN is embarking on several data gathering initiatives that may shed light on some of these issues, including the Domain Abuse Activity Reporting Project, the gTLD Marketplace Health Index, and the Identifier Technology Health Indicators project.⁴⁴⁸ Moreover, ICANN Contractual Compliance is expanding its audit functions to include additional examination of compliance with certain safeguards. Hence, consideration should be given to assessing whether ICANN's ongoing data collection and Contractual Compliance initiatives could be leveraged to implement parts of this recommendation.

Success measures: This recommendation will be successful if additional data is generated to inform ongoing policy development processes regarding the effectiveness of ICANN contract provisions intended to safeguard the public, particularly as they relate to new gTLDs operating in highly-regulated sectors, and whether the current contractual safeguards sufficiently protect the public against the higher risks associated with these domains. In particular, it is vital to determine whether the current safeguard requiring that registrants possess appropriate credentials for gTLDs operating in highly-regulated sectors is working as intended. Success in this regard would be to generate an assessment of complaints relating to this safeguard, including information on how this safeguard is enforced, among other factors, in order to determine its effectiveness.

Special Safeguards Related to New gTLDs with Inherent Governmental Functions and Cyberbullying

The Base Registry Agreement included provisions for operators of new gTLDs with inherent governmental functions, such as .army, .navy, and .airforce, to mandate that their registrars ensure that their registrants “take reasonable steps to avoid misrepresenting or falsely

⁴⁴⁸ ICANN, “Domain Abuse Activity Reporting (DAAR)”; ICANN (June 2018), “gTLD Marketplace Health Index”; ICANN, “Identifier Technology Health Indicators (ITHI), accessed 8 August 2018, <https://www.icann.org/ithi>

implying” that the registrant was associated with a governmental authority when such a relationship did not exist.⁴⁴⁹

Another safeguard was related to cyberbullying and harassment and applied to the .fail, .gripe, .sucks, and .wtf gTLDs. This provision required registry operators to “develop and publish registration policies to minimize the risk of cyber bullying and/or harassment.”⁴⁵⁰

It is not clear whether failure to comply with these safeguards has generated complaints. In addition, as advised and implemented, neither safeguard contains consequences for failure to comply, raising questions about their effectiveness.

Recommendations

Recommendation 24:

1. Determine whether ICANN Contractual Compliance should report on a quarterly basis whether it has received complaints for a registry operator’s failure to comply with either the safeguard related to gTLDs with inherent governmental functions or the safeguard related to cyberbullying.
2. Survey registries to determine 1) whether they receive complaints related to cyberbullying and misrepresenting a governmental affiliation, and 2) how they enforce these safeguards.

Rationale/related findings: The lack of information about whether ICANN Contractual Compliance or registries have received complaints related to these safeguards and lack of consequences for failure to comply with these safeguards make it difficult to assess their effectiveness in mitigating the risks they were intended to address. Gathering this information would assist future policy development processes by identifying whether the current safeguards are meeting their intended goal. (Note: A general recommendation for further transparency regarding the subject matter of complaints received by ICANN Contractual Compliance is set forth in [Chapter 5: Data-Driven Analysis: Recommendations for Additional Data Collection and Analysis](#).)

To: ICANN organization

Prerequisite or priority level: Low

Consensus within Team: Yes

Success measures: These recommendations will be successful if they generate data that indicates the magnitude of complaints regarding cyberbullying and misrepresenting governmental affiliations and provide information regarding how registries enforce these safeguards.

Restricted Registration Policies

ICANN implemented safeguards applicable to restricted registration policies. In its Category 2 safeguard advice on restricted registration policies, the GAC noted that restricted access was “an exception to the general rule that the gTLD domain name space is operated in an open

⁴⁴⁹ ICANN NGPC, *Category 1 Safeguards*.

⁴⁵⁰ Ibid.

manner.”⁴⁵¹ ICANN implemented these recommendations by incorporating provisions into the Base Registry Agreement to (1) mandate that registries operate in “a transparent manner consistent with general principles of openness and nondiscrimination by establishing, publishing and adhering to clear registration policies,”⁴⁵² and (2) prevent “Generic String” registry operators from restricting registration eligibility to a “single person or entity and/or that person’s or entity’s ‘Affiliates’.”⁴⁵³ The GAC had originally advised to ensure that registration restrictions were appropriate for risks associated with particular gTLDs.⁴⁵⁴ Subsequent GAC advice reflects ongoing concerns about whether restricted registration policies could lead to undue preferences.⁴⁵⁵

The ICANN Global surveys indicate that the public expects some restrictions about who can purchase domain names and trusts that restrictions will be enforced.⁴⁵⁶ The survey results also indicate that the presence of such restrictions contribute to consumer trust⁴⁵⁷ (in Recommendation 13, the review team suggests that ICANN perform such surveys on a regular basis). This perception of trust was consistent with the findings of the DNS Abuse Study, which found a negative correlation between the use of registration restrictions in a gTLD and the level of DNS Security Abuse (i.e., the presence of restrictions contributed to lower levels of abuse). Those registering domain names for malicious purposes were more likely to use an open new gTLD that did not impose strict registration criteria. The review team’s recommendations and related rationale are set forth in Recommendation 13, which discusses further data gathering related to registration restrictions.

Public Interest Commitments

Background of Public Interest Commitments

One safeguard mechanism unique to the New gTLD Program was the incorporation of mandatory and voluntary Public Interest Commitments (PICs) into registry applications and, ultimately, registry agreements. The advent of these binding and enforceable contractual obligations stemmed from GAC concerns about how commitments contained in new gTLD applications would be enforced by ICANN. Consequently, in its Toronto Communiqué, the GAC advised that all commitments and objectives set forth in new gTLD applications (or amendments thereto) should be “transformed into binding contract obligation subject to compliance oversight by ICANN.”⁴⁵⁸ In the Communiqué, the GAC also signaled that it had a variety of public policy concerns about the new gTLD applications, including issues involving:

⁴⁵¹ ICANN GAC (11 April 2013), *Beijing Communiqué*, Annex 1, pp. 10-11 (Category 2 Safeguards).

⁴⁵² ICANN NGPC Resolutions 2013.06.25.NG04 - 2013.06.25.NG05 - 2013.06.205.NG06, “Category 2 Safeguard Advice re Restricted and Exclusive Registry Access,” accessed 8 August 2018,

<https://features.icann.org/category-2-safeguard-advice-re-restricted-and-exclusive-registry-access> and “Annex I: Proposed PIC Spec Implementation of GAC Category 2 Safeguards,” accessed 8 August 2018,

<https://www.icann.org/en/system/files/files/resolutions-new-gtld-annex-i-agenda-2c-25jun13-en.pdf>

⁴⁵³ *Ibid.*

⁴⁵⁴ ICANN GAC (11 April 2013), *Beijing Communiqué*, Annex 1, pp. 10-11 (Category 2 Safeguards).

⁴⁵⁵ ICANN GAC (11 April 2013), *Beijing Communiqué*; ICANN GAC (25 June 2014), *London Communiqué*; ICANN (GAC) (15 October 2014), *Los Angeles Communiqué*; ICANN Governmental Advisory Committee (GAC) (24 June 2015), *Buenos Aires Communiqué*. These Communiqués address the implementation of the GAC Category 2 safeguard advice: “The NGPC should reconsider its position, particularly since the GAC has clearly advised that it does not believe the current requirements in Specification 11 actually meet either the spirit or the intent of the GAC’s advice” (*London Communiqué*, p.11).

⁴⁵⁶ Nielsen, Consumer Research Wave 2 (2016), pp.9, 13, 26-27, 65; Nielsen, Registrant Survey Wave 2 (2016), pp. 14, 18, 30, 68.

⁴⁵⁷ Nielsen, Consumer Research (2015), pp. .9, 26; Nielsen, Consumer Research Wave 2 (2016), pp. 9, 13, 26.

⁴⁵⁸ ICANN Governmental Advisory Committee (GAC) (17 October 2012), *Toronto Communiqué*, accessed 8 August 2018, <https://gac.icann.org/advice/Communiqués/public/gac-45-toronto-Communiqué.pdf>

consumer protection; strings related to regulated market sectors such as financial, health, and charities; intellectual property issues; and the relationship between new gTLDs and applicable legislation.

On 5 February 2013, ICANN released a revised draft registry agreement that incorporated PICs for new gTLD applicants.⁴⁵⁹ The draft proposed some mandatory requirements, but also allowed for the adoption of voluntary commitments by applicants. The timing of the announcement effectively gave applicants less than 30 days to decide whether to include voluntary PICs in their applications.

Later in 2013, the GAC followed up in Beijing by issuing safeguard advice with mandatory proposals specific to all new gTLDs, regulated gTLDs, and highly-regulated gTLDs.⁴⁶⁰ Other stakeholders, such as the Business Constituency and At-Large Advisory Committee, also weighed in on the proposals.⁴⁶¹ Thereafter, ICANN modified the GAC safeguard advice and elected to implement the modified safeguards in the PICs of the Base Registry Agreement for new gTLDs.⁴⁶²

On 5 February 2014, the New gTLD Program Committee adopted GAC Category 1 Safeguard Advice, mandating that new registry operators include four mandatory PICs in their registry agreements and additional mandatory PICs for regulated and highly-regulated gTLD operators.⁴⁶³ Moreover, the Applicant Guidebook included provisions requiring that Community applicants create enforceable provisions designed to ensure conformity to the stated purpose of the TLD.⁴⁶⁴

Adoption Rate of Voluntary PICs

Out of 1,930 new gTLD applications, 513 included voluntary PICs.⁴⁶⁵ Seventeen of the 29 highly-regulated gTLD applications included voluntary PICs, which were ultimately included in

⁴⁵⁹ ICANN (5 February 2013), Revised New gTLD Registry Agreement Including Additional Public Interest Commitments Specification, accessed 8 August 2018, <https://www.icann.org/resources/pages/base-agreement-2013-02-05-en>.

⁴⁶⁰ ICANN GAC, *Beijing Communiqué*.

⁴⁶¹ For a brief summary of BC and ALAC correspondence, see ICANN (16 October 2014), *At-Large Advisory Committee ALAC Statement on the Public Interest Commitments*, accessed 8 August 2018, <http://atlarge.icann.org/correspondence/correspondence-16oct14-en.htm> and

ICANN (9 December 2014), *Business Constituency Comment on Safeguards for Category 1 gTLDs*, accessed 8 August 2018, <http://www.bizconst.org/assets/docs/positions-statements/bc-comment-on-safeguards-for-category-1-gtlds.pdf>.

⁴⁶² Crocker, "NGPC Consideration of GAC Category 1 and Category 2 Safeguard Advice," letter to GAC Chair.

⁴⁶³ Specifically, all new gTLDs had to incorporate four specific safeguards involving: WHOIS verification and documentation and checks and of same; mitigating abusive activity; security checks; and making and handling complaints. See ICANN (25 June 2013), *Annex I NGPC Proposal for Implementation of GAC Safeguards Applicable to All New gTLDs*, accessed 8 August 2018, <https://www.icann.org/en/system/files/files/resolutions-new-gtld-annex-i-agenda-2b-25jun13-en.pdf>. In addition, regulated new gTLDs had to also incorporate three safeguards regarding compliance with applicable laws and reasonable/appropriate security measures for collection of sensitive financial/health information. Furthermore, highly-regulated new gTLDs had to also incorporate five safeguards regarding (1) establishing relationship with relevant regulatory/industry bodies to mitigate risks of illegal activity, (2) requiring registrants to have a single point of contact for complaint reporting and contact info for relevant regulatory bodies, and (3) verification and validation of credentials. (see ICANN (5 February 2014), *Annex 2 - ICANN NGPC Resolution NO. 2014.02.05.NG01*).

⁴⁶⁴ See Section 2.18 of the Applicant Handbook. Commitments made under this provision later became part of Specification 12 of the Registry Agreement.

⁴⁶⁵ ICANN, "New gTLD Current Application Status," accessed 3 February 2017, <https://gtldresult.icann.org/application-result/applicationstatus/viewstatus>

their registry agreements.⁴⁶⁶ Seventy of the 116 registry agreements⁴⁶⁷ for regulated gTLDs included voluntary PICs.⁴⁶⁸

Eleven of the regulated new gTLD registry operators, representing 69 regulated registries, incorporated voluntary PICs related to abuse or acceptable use into their registry agreements.⁴⁶⁹ Five of the highly-regulated new gTLD registry operators, representing 17 highly-regulated registries, incorporated voluntary PICs related to abuse into their registry agreements.⁴⁷⁰ Each of the top 30 new gTLDs registries that committed to voluntary PICs incorporated anti-abuse provisions.⁴⁷¹

Implementation of PICs

New gTLD applicants were permitted to incorporate voluntary PICs into Specification 11, Sections 2 and 3 of their applications.⁴⁷² Commitments made in Section 2 were incorporated into Specification 11, Section 2 of the registry agreements, whereas those commitments made in Section 3 became part of Section 4 of the registry agreements. Other voluntary commitments took the form of Specification 12: “Community Registration Policies”, which predated the advent of voluntary PICs. Section 2.18 of the Base Registry Agreement included in the Applicant Guidebook was intended to incorporate by reference portions of new gTLD applications that related to Community-based policies and procedures as proposed by Community applicants. Later, it was decided to incorporate the full text of those policies and procedures into the Registry Agreement as Specification 12 for transparency and clarity.

⁴⁶⁶ Donuts (.surgery, .dentist, .creditcard, .attorney, .lawyer, .doctor, .ltd, .sarl, .gmbh, .bingo, .university, .casino), Minds+Machines (.dds, .abogado), CUNA Performance Resources, LLC (.creditunion), Excellent First Limited (慈善 (xn--30rr7y) – Chinese for “charity”), mySSL GmbH (.srl).

⁴⁶⁷ Based on data provided by ICANN organization on 21 October 2016. These included Donuts (.games, .clinic, .dental, .healthcare, .claims, .finance, .fund, .investments, .loans, .credit, .insure, .tax, .mortgage, .movie, .software, .video, .accountants, .gratis, .legal, .school, .schule, .toys, .care, .fitness, .capital, .cash, .exchange, .financial, .lease, .market, .money, .degree, .mba, .band, .digital, .associates, .fan, .discount, .sale, .media, .news, .pictures, .show, .theater, .tours, .vet, .engineering, .limited, .capital, .town, .city, .reisen), Big Room, Inc. (.eco), Afiliias (.organic), DotHealth (.health), DotHIV gemeinnuetziger e.V. (.hiv), Stable Tone Limited (健康 (xn--nyqy26a) – Chinese for “healthy”), Medistry LLC (.med), Celebrate Broadway, Inc. (.broadway), Famous Four Media (.download, .loan, .accountant), Rightside (.gives, .engineer, .rip, .rehab), Minds+Machines (.law, .fit, .fashion), Foggy Way, LLC (.reise). The National Association of Real Estate Investment Trusts, Inc. (.reit) and European Broadcasting Union (EBU) (.radio) adopted Specification 12 Community Registration Policies.

⁴⁶⁸ The National Association of Boards of Pharmacy (.Pharmacy) adopted Specification 12 Community Registration Policies.

⁴⁶⁹ Based on data provided by ICANN organization on 21 October 2016. These included Donuts (.games, .clinic, .dental, .healthcare, .claims, .finance, .fund, .investments, .loans, .credit, .insure, .tax, .mortgage, .movie, .software, .video, .accountants, .gratis, .legal, .school, .schule, .toys, .care, .fitness, .capital, .cash, .exchange, .financial, .lease, .market, .money, .degree, .mba, .band, .digital, .associates, .fan, .discount, .sale, .media, .news, .pictures, .show, .theater, .tours, .vet, .engineering, .limited, .capital, .town, .city, .reisen), Big Room, Inc. (.eco), Afiliias (.organic), DotHealth (.health), Stable Tone Limited (健康 (xn--nyqy26a) – Chinese for “healthy”), Medistry LLC (.med), Celebrate Broadway, Inc. (.broadway), Famous Four Media (.download, .loan, .accountant), Rightside (.gives, .engineer, .rip, .rehab), Minds+Machines (.law, .fit, .fashion), Foggy Way, LLC (.reise). The National Association of Real Estate Investment Trusts, Inc. (.reit) and European Broadcasting Union (EBU) (.radio) adopted Specification 12 Community Registration Policies.

⁴⁷⁰ Donuts (.surgery, .dentist, .creditcard, .attorney, .lawyer, .doctor, .ltd, .sarl, .gmbh, .bingo, .university, .casino), Minds+Machines (.dds, .abogado), CUNA Performance Resources, LLC (.creditunion), Excellent First Limited (慈善 (xn--30rr7y) – Chinese for “charity”), mySSL GmbH (.srl).

⁴⁷¹ Based on data available to ICANN organization on 12 September 2016, these included: Famous Four (.win, .loan, .date, .racing, .download, .accountant), Minds+Machines (.vip, .bayern, .work), Donuts (.news, .rocks, .guru, .email, .solutions, .photography, .company, .tips, .center, .city, .world, .expert, .media, .today, .live, .life), Rightside (.pub, .ninja), Dot London Domains Limited (.london), Infibeam Incorporation Limited (.ooo), and Over Corner, LLC/Donuts (.ltd). Of these gTLDs, .accountant, .city, .download, .loan, .news, and .media are gTLDs designated as GAC Category 1 strings (Regulated Sectors/Open Entry Requirements in Multiple jurisdictions. One gTLD, .ltd is designated as a Highly Regulated sector/Closed Entry Requirements in Multiple Jurisdictions.

⁴⁷² ICANN, “Specification 11 Public Interest Commitments,” accessed 3 February 2017, <https://newgtlds.icann.org/en/applicants/agb/base-agreement-spec-11-pic-19feb13-en.pdf>.

Commitments ultimately adopted into voluntary PICs ranged greatly in topic area and substance. Some of the voluntary PICs used language resembling other obligations,⁴⁷³ such as those found in the applicant guidebook or elsewhere in the registry agreement, while many articulated unique methods for enforcing acceptable use, avoiding ambiguity,⁴⁷⁴ protecting intellectual property rights, or proactively preventing DNS abuse.

For example, of the 30 most popular new gTLDs that ultimately adopted voluntary PICs in their registry agreements, six registry applications included provisions related to pre-existing obligations, such as the Abuse Prevention and Mitigation plan, the Additional Mechanism for Protection of Capital City Names, the Additional Mechanisms to Protect and Reserve IGO Names, the Acceptable Abuse Policy, Rights Protection Mechanisms, and WHOIS Accuracy.⁴⁷⁵ The only wholly new voluntary commitment made in these applications was for the creation of an “Abuse Prevention and Mitigation Seal,” which requires registrants to incorporate an APM Seal onto their webpages for one-click access by visitors to geographically-tailored abuse reporting resources.⁴⁷⁶ These voluntary PICs were ultimately incorporated into Specification 11, Section 4 of the respective registration agreements.⁴⁷⁷

Many voluntary PICs emphasized prohibited uses of domain names, including some also forbade by other obligations, while others created new anti-abuse provisions. For example, some of the voluntary PICs incorporated into registry agreements included attempts to prevent the ability of DNS abusers to rely on privacy and proxy services. One operator focused on registrants by committing to “[l]imit the use of proxy and privacy registration services in cases of malfeasance,”⁴⁷⁸ whereas another targeted service providers by promising to “allow domain name proxy or privacy services to be offered only by select registrars and resellers who have demonstrated a commitment to enforcing the accuracy of registrant data and their willingness to cooperate with members of law enforcement to identify users who are engaging in improper or illegal activity.”⁴⁷⁹ One operator of two highly-regulated domain names included provisions aimed at preventing repeat abuse by voluntarily committing to “block registrants of abusive

⁴⁷³ This may have been due to the fact that the Registry Agreement was not yet finalized when voluntary PICs were submitted, and therefore applicants may not have been aware of pre-existing obligations.

⁴⁷⁴ Voluntary PICs were incorporated into the .ooo Registry Agreement to protect against confusion with Australia’s Triple Zero Emergency Call Service, including the reservation of domain names related to police, fire, and emergency, in order to prohibit domain name registrations that might lead to confusion with these services. See ICANN, “.ooo Registry Agreement,” accessed 2 February 2017, <https://www.icann.org/resources/pages/registries/registries-agreements-en>, Specification 11, Section 4 a-c.

⁴⁷⁵ Famous Four Media for .win, .loan (regulated), .date, .racing, .download (regulated), .accountant (regulated).

⁴⁷⁶ ICANN, “Registry Agreement,” Specification 11 Public Interest Commitments. Registry Agreements for .loan, .win, .date, .racing, .download, and .accountant can be found at the Registry Agreement homepage. ICANN, “.loan Application Details,” accessed 2 February 2017, <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1205>; ICANN, “.win Application Details,” accessed 2 February 2017, <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1201>; ICANN, “.date Application Details,” accessed 2 February 2017, <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1175>; ICANN, “.racing Application Details,” accessed 2 February 2017, <https://gtldresult.icann.org/application-result/applicationstatus/applicationdetails/1227>; ICANN, “.download Application Details,” accessed 2 February 2017, <https://gtldresult.icann.org/applicationstatus/applicationdetails/1217>; ICANN, “.accountant Application Details,” accessed 2 February 2017, <https://gtldresult.icann.org/applicationstatus/applicationdetails/1187>.

⁴⁷⁷ See ICANN, “Registry Agreement,” Specification 11, Section 4. Registry Agreements for .loan, .win, .date, .racing, .download, and .accountant. These can be found on the Registry Agreement homepage at <https://www.icann.org/resources/pages/registries/registries-agreements-en>.

⁴⁷⁸ ICANN, “Registry Agreement,” Specification 11, Section 4 (iii). Registry Agreements for .life, .live, .today, .ltd, .news, .rocks, .guru, .email, .solutions, .photography, .company, .tips, .center, .city, .world, .expert, .media can be found at the Registry Agreement homepage.

⁴⁷⁹ ICANN, “Registry Agreement,” Specification 11, Section 4 c(v). Registry Agreements for .life, .live, .today, .ltd, .news, .rocks, .guru, .email, .solutions, .photography, .company, .tips, .center, .city, .world, .expert, .media can be found at the Registry Agreement homepage.

domain names from further registrations” and “suspend or delete all names associated with a registrant.”⁴⁸⁰

Many voluntary PICs included proactive and reactive methods for protecting intellectual property rights claims. Even for generic and open gTLDs, several registry agreements included voluntary PICs to undertake “commercially reasonable efforts” to consult with specific brand owners regarding the use of domain names in relevant commercial applications and to “reserve certain names that likely would interfere with the rights of that entity.”⁴⁸¹ The same operator also committed to creating a “Domains Protected Marks List” that “allows rights holders to reserve registration of exact match trademark terms and terms that contain their trademarks across all gTLDs administered by registry operator under certain terms and conditions.”⁴⁸² Moreover, the operator committed to establishing a “Claims Plus service,” which would alert new registrants if they attempted to register a domain name that matched a trademark.⁴⁸³

Registrant validation methods also appeared in some voluntary PICs. For example, the operator of a highly-regulated new gTLD included in its voluntary PICs a requirement that registrants hold a valid trademark corresponding to the domain name for which they are registering.⁴⁸⁴ Another operator added a commitment to include corporate designation status in the WHOIS records for a highly regulated domain,⁴⁸⁵ committing to “provide appropriate jurisdictional authorities with the capability at their option and at no cost to make designations in the WHOIS record indicating the registrant’s organizational status in the registrant’s jurisdiction.”⁴⁸⁶

Both the registrant and consumer surveys commissioned by the CCT demonstrated a positive correlation between restrictions imposed by TLD operators and trust associated with a given TLD.⁴⁸⁷ In line with this notion, voluntary PICs provided a mechanism by which new gTLD operators imposed and promoted registration and use restrictions as part of their brand identity, making binding commitments to ICANN as well as to registrants, which, in effect, may have assuaged concerns from the GAC and other Community members. However, two factors could be viewed as undermining this goal: first, the applicant could choose whether or not to incorporate these application representations into the final registration agreement and second, even if the applicant chose to incorporate the representations into its registry agreement as PICs, it could also include a provision permitting it and subsequent operators⁴⁸⁸ to withdraw or modify the PICs.⁴⁸⁹

⁴⁸⁰ Minds+Machines (.dds, .abogado)

⁴⁸¹ ICANN, “Registry Agreement,” Specification 11, Section 4. Registry Agreements for .life, .live, .today can be found at the Registry Agreement homepage.

⁴⁸² ICANN, “Registry Agreement,” Specification 11, Section 4 (iii). Registry Agreements for .life, .live, .today, ., .ltd, .news, .rocks, .guru, .email, .solutions, .photography, .company, .tips, .center, .city, .world, .expert, .media can be found at the Registry Agreement homepage.

⁴⁸³ ICANN, “Registry Agreement,” Specification 11, Section 4 (iv). Registry Agreements for .life, .live, .today, ., .ltd, .news, .rocks, .guru, .email, .solutions, .photography, .company, .tips, .center, .city, .world, .expert, .media can be found at the Registry Agreement homepage.

⁴⁸⁴ gTLD Registry Services (.insurance)

⁴⁸⁵ ICANN, “Annex 2 - ICANN NGPC Resolution NO.2014.02.05.NG01.”

⁴⁸⁶ ICANN, “Registry Agreement,” Specification 11, Section 4 (e). The Registry Agreement for .ltd can be found at the Registry Agreement homepage.

⁴⁸⁷ Nielsen, Consumer Research (2015); Nielsen, Consumer Research Wave 2 (2016). Nielsen, Registrant Survey (2015); Nielsen, Registrant Survey Wave 2 (2016).

⁴⁸⁸ .Live was assigned from the original applicant, a Donuts subsidiary, to United LTD.

⁴⁸⁹ One registry operator that made several uniquely robust voluntary PICs reserved the right to discontinue any of its voluntary PICs “in the case of a substantial and compelling business need.” ICANN, “Registry Agreement,” Specification 11, Section 4 (iii). Registry Agreements for .life, .live, .today, ., .ltd, .news, .rocks, .guru, .email, .solutions, .photography, .company, .tips, .center, .city, .world, .expert, .media can be found at the Registry Agreement homepage.

Ultimately, applicants had little time to decide which PICs to adopt voluntarily and did not know what the enforcement mechanism would be for the PICs. The combination of a short timeframe—less than 30 days—and uncertainty about the specifics of enforcement may have deterred certain applicants from submitting PICs or impacted which PICs they elected to submit.⁴⁹⁰

Enforcement of PICs

Mandatory and voluntary PICs are enforced by both ICANN Contractual Compliance via its standard complaint procedures and via the Public Interest Commitment Dispute Resolution Process (PICDRP) established on December 19, 2013.⁴⁹¹ The GAC has expressed concerns that the PICDRP is “complex, lengthy, and ambiguous, raising questions as to its effectiveness in addressing serious threats.”⁴⁹²

To date, only one complaint has been accepted and heard via the PICDRP.⁴⁹³ After an investigation carried out by Contractual Compliance, it was determined that the registry in question had breached its Specification 11 obligations.⁴⁹⁴ Although the complaint alleged that the registry engaged in widespread fraud, ICANN advised the PICDRP Panel to focus its review on the “evaluation of the applicable sections of Specification 11 raised in the Complaint, and on the policies established by the registry operator and its adherence to them.”⁴⁹⁵ The PICDRP analyzes the operator’s adherence to the contractual language and its own policies. Going forward, applicants should be required to state the intentions of their PIC and incorporate these into their Registry Agreements, making them enforceable. At present, there is a gap between the apparent goals of voluntary PICs and the enforceable obligations arising from such PICs. This gap creates a risk that only the letter and not the spirit of a voluntary PIC would be enforceable. In fact, the degree to which voluntary PICs were ultimately effective, implemented, and enforced is also called into question by data from the DNS Abuse Study. Ironically, all six of the top 30 most popular new gTLDs registries that adopted voluntary PICs focused on preventing DNS abuse actually correlated with some of the highest concentrations of DNS Security Abuse of all new gTLDs.⁴⁹⁶

Recommendations

Recommendation 25: To the extent voluntary commitments are permitted in future gTLD application processes, all such commitments made by a gTLD applicant must state their intended goal and be submitted during the application process so that there is sufficient

⁴⁹⁰ ICANN, “Frequently Asked Questions: Specification 11 of the Revised New gTLD Registry Agreement: Public Interest Commitments: What is schedule for the Public Interest Commitments (PIC) Specification Proposal?” accessed 8 August 2018, <https://newgtlds.icann.org/en/applicants/agb/base-agreement-specs-pic-faqs>;

ICANN, “Revised New gTLD Registry Agreement Including Additional Public Interest Commitments Specification: Section I: Description, Explanation, and Purpose,” accessed 8 August 2018, <https://www.icann.org/resources/pages/base-agreement-2013-02-05-en>; ICANN, “Posting of Public Interest Commitments (PIC) Specifications Completed,” accessed 8 August 2018, <https://newgtlds.icann.org/en/announcements-and-media/announcement-06mar13-en>.

⁴⁹¹ ICANN, “About Public Interest Commitments Dispute Resolution Procedure (PICDRP),” accessed 8 August 2018, <https://www.icann.org/resources/pages/picdrp-2013-10-31-en>; ICANN, “About gTLD Compliance Program,” accessed 8 August 2018, <https://www.icann.org/resources/pages/gtld-2012-02-25-en>; GAC, *Singapore Communiqué (see p. 4 regarding the role of Contractual Compliance in enforcing PICS)*.

⁴⁹² ICANN GAC (2014), “London Communiqué” and ICANN GAC (2015), “Singapore Communiqué.”

⁴⁹³ “Complaint for ICANN Compliance Investigation, Evaluation by PICDRP Standing Panel, and Remedies,” 12 October 2016, accessed 8 August 2018, <http://domainincite.com/docs/FEEDBACK-PICDRP-Complaint.pdf>.

⁴⁹⁴ “Notice of Breach of Registry Agreement,” 16 March 2017, accessed 8 August 2018, https://www.icann.org/uploads/compliance_notice/attachment/911/serad-to-westerdal-16mar17.pdf.

⁴⁹⁵ *Ibid.*, p. 16.

⁴⁹⁶ SIDN Labs and the Delft University of Technology, “DNS Abuse in gTLDs”.

opportunity for Community review and time to meet the deadlines for Community and limited public interest objections. Furthermore, such requirements should apply to the extent that voluntary commitments may be made after delegation. Such voluntary commitments, including existing voluntary PICs, should be made accessible in an organized, searchable online database to enhance data-driven policy development, Community transparency, compliance, and awareness of variables relevant to DNS abuse trends.

Rationale/related findings: The intended purpose of many existing voluntary commitments, through the form of voluntary PICs, is not readily discernible. This ambiguity stifles the Community's ability to evaluate effectiveness. Moreover, upon submission of a gTLD application, there is no mechanism in place for the Community to ensure that such commitments do not negatively impact the public interest and other aspects of the DNS. Consequently, it is important to the multistakeholder process that such voluntary commitment proposals be made available to the Community with adequate time for assessment and potential objections. Furthermore, once adopted, the current process for analyzing voluntary commitments, drawing comparisons amongst TLDs, measuring effectiveness, and building data points for analysis, is too cumbersome because such commitments are only available in individualized contractual documents embedded on the ICANN website and not available in a categorized, searchable form. Unlike many other aspects of registry agreements, voluntary PICs vary greatly from one TLD to another. Therefore, a publicly accessible, categorized, searchable database of these commitments would enhance data-driven policy development, Community transparency, compliance, awareness of variables relevant to DNS abuse trends, and the overall ability of future review teams to measure their effectiveness.

To: ICANN organization, New gTLD Subsequent Procedures PDP Working Group

Prerequisite or priority level: Prerequisite

Consensus within team: Yes

Success measures: The implementation of this recommendation would be successful if the purpose of any voluntary commitment proposed by a registry operator is clearly stated to describe its intended goal, all parties in the multistakeholder community are given ample time to provide input before such a commitment is adopted into a contract, and any adopted measures are available and easily accessible on the ICANN website in an organized way to empower Community awareness and accountability.

Rights Protection Mechanisms

New Rights Protection Mechanisms (RPMs) were specifically developed in connection with the introduction of the New gTLD Program alongside existing rights protection mechanisms. The CCT Review Team examined whether these RPMs help encourage a safe environment and promote consumer trust in the DNS, and also sought to measure the costs impact of the New gTLD Program to intellectual property owners.

The RPMs themselves are firstly described for completeness before moving on to a consideration of these mechanisms and whether they have helped mitigate the issues around the protection of trademark rights and consumers in this expansion of gTLDs. It was clear that the CCT faced difficulties in obtaining reliable data to make this assessment, turning primarily to the data obtained by ICANN under the CCT Metrics Reporting⁴⁹⁷ and the INTA Impact

⁴⁹⁷ ICANN, "Competition, Consumer Trust and Consumer Choice (CCT) Metrics Reporting," accessed 10 October 2017, <https://www.icann.org/resources/reviews/cct/metrics>.

Study,⁴⁹⁸ as well as existing data and commentary from the ICANN Rights Protection Mechanisms Review and the Independent Review of Trademark Clearinghouse (TMCH) Services Revised Report.⁴⁹⁹

The review team also noted the parallel work by the ongoing working groups currently looking into RPMs and sought not to duplicate or undermine that work and thus looks forward to the reports from those groups.⁵⁰⁰

Background to the RPMs

Prior to the 2012 gTLD expansion in the number of gTLDs, aside from action taken by courts, the main rights protection mechanism for the DNS was the Uniform Domain Name Dispute Resolution Policy (UDRP), an alternative dispute resolution procedure (adopted by ICANN on 26 August 1999) that applied to all generic top-level domains. However, the existence of issues concerning trademark protection was identified prior to the 2012 gTLD expansion. In particular, the trademark community had voiced concerns that this mechanism alone would be insufficient to adequately protect trademark rights and consumers in an expanded DNS. The ICANN Board therefore resolved that an internationally diverse group of persons with knowledge, expertise, and experience in the fields of trademarks, consumer protection, competition law, and their relationship to the DNS be convened to propose solutions to the overarching issue of trademark protection in connection with the introduction of new gTLDs.⁵⁰¹ This group was named the Implementation Recommendation Team (IRT).

The IRT proposed a new set of RPMs, namely: Uniform Rapid Suspension System (URS); Post-Delegation Dispute Resolution Procedures (PDDRPs); the Trademark Post-Delegation Dispute Resolution Procedure (TM-PDDRP); Registry Restriction Dispute Resolution Procedure (RRDRP); Public Interest Commitments Dispute Resolution Procedure (PICDRP); and the Trademark Clearinghouse (Sunrise and Claims Service).⁵⁰²

Description of the RPMs

Uniform Domain Name Dispute Resolution Policy (UDRP)

The Uniform Domain Name Dispute Resolution Policy (UDRP) is an alternative dispute resolution procedure adopted by ICANN on 26 August 1999 that applies to all generic top-level domains (gTLDs), including legacy gTLDs (such as .com, .net, .info) as well as new gTLDs, and certain country code top-level domains (ccTLDs) that have adopted it. To be successful under the UDRP, a complainant must demonstrate with a preponderance of evidence the following three requirements: (1) the domain name registered by the respondent is identical or confusingly similar to a trademark or service mark in which the complainant has

⁴⁹⁸ Nielsen, *INTA New gTLD Cost Impact Study*.

⁴⁹⁹ ICANN, *Rights Protection Mechanisms Review: Revised Report* (11 September 2015), accessed 9 August 2018, <https://newgtlds.icann.org/en/reviews/cct/rpm>; Analysis Group, *Independent Review of Trademark Clearinghouse*.

⁵⁰⁰ For example, see ICANN GNSO, "PDP Review of All Rights Protection Mechanisms in All gTLDs."

⁵⁰¹ ICANN, "Adopted Board Resolutions: Mexico: Protections for Trademarks in New gTLDs," 6 March 2009, <https://www.icann.org/resources/board-material/resolutions-2009-03-06-en#07>.

⁵⁰² In addition, string contention processes were introduced for applications for the gTLDs themselves, relating to string confusion, limited public interest, community objection, and legal rights objection. These are discussed in more detail in the Application and Evaluation section below.

rights; (2) the respondent has no rights or legitimate interests in respect of the domain name; and (3) the domain name has been registered and is being used in bad faith.

A procedure under the UDRP takes approximately two months, from the filing of a complaint to a decision. Costs for filing a complaint for one to five domain names under the UDRP range between USD \$1,500 (single-member panel) and USD \$4,000 (three-member panel), excluding lawyers' fees. The remedies available under the UDRP are limited to the transfer or cancellation of a domain name. No damages are awarded and there is no appeal mechanism in place. A decision is generally implemented after 10 business days following the notification of the decision, unless court proceedings are initiated in a court of competent jurisdiction.

UDRP complaints are filed electronically with an ICANN-approved dispute resolution provider. To date, the following providers have been approved by ICANN: the Asian Domain Name Dispute Resolution Centre (ADNDRC), the National Arbitration Forum (NAF), World Intellectual Property Organization (WIPO), the Czech Arbitration Court Arbitration Center for Internet Disputes (CAC), and the Arab Center for Domain Name Dispute Resolution (ACDR).

Uniform Rapid Suspension System (URS)

The Uniform Rapid Suspension System (URS) is an alternative dispute resolution procedure launched in 2013 that was originally designed for clear-cut cases of cybersquatting in new generic top-level domains (gTLDs), although it has been voluntarily adopted by a handful of ccTLDs and “sponsored” TLDs (such as .pw, .travel, .pro and .cat). The substantive requirements under the URS are similar to those under the UDRP, although the required burden of proof is heavier (“clear and convincing evidence,” as opposed to “preponderance of the evidence”). A complainant must thus prove the following three requirements:

1. That the domain name is identical or confusingly similar to a wordmark:
 - a. For which the Complainant holds a valid national or regional registration and that is in current use, or
 - b. That has been validated through court proceedings or (c) that is specifically protected by a statute or treaty in effect at the time the URS complaint is filed.⁵⁰³
2. That the registrant has no rights or legitimate interests in the domain name.⁵⁰⁴
3. The domain name was registered and is being used in bad faith.⁵⁰⁵

Complaints are limited to 500 words. The URS is intended for the most clear-cut cases of cybersquatting, so it is generally not appropriate for domain name disputes involving more complex, genuine contestable issues (such as fair use). The only remedy available under the URS is the suspension of the domain name, as opposed to the transfer or cancellation (which are remedies available under the UDRP).

Under the URS, a domain name may be suspended in as quickly as three weeks from the filing of a complaint. In the event of a favorable decision for the complainant, the domain name

⁵⁰³ ICANN, “Uniform Rapid Suspension,” Section 1.2.6.1

⁵⁰⁴ Ibid., Section 1.2.6.2

⁵⁰⁵ Ibid., Section 1.2.6.3

is suspended for the remainder of the registration period (which may be extended for an additional year). The website associated with the domain name in question will display a banner stating “This Site is Suspended,” but the WHOIS record for the domain name will continue to display the information of the original registrant (except for the redirection of the name servers). If the decision in favor of the complainant was a judgment by default, the registrant may seek a *de novo* review by filing a response up to six months after the notice of default (which may be extended by six additional months upon request by the registrant). In the event the decision is denied, the URS provides for an appeal mechanism based on the existing record.

Costs for filing a URS complaint are around USD \$375 (for 1 to 14 domain names).

Only three providers have so far been accredited to provide URS services: the Asian Domain Name Dispute Resolution Centre (ADNDRC), the National Arbitration Forum (NAF) and MSFD Srl.⁵⁰⁶

Post-Delegation Dispute Resolution Procedures (PDDRP)

Post-Delegation Dispute Resolution Procedures are RPMs that have been designed to provide relief against a new gTLD registry operator's alleged conduct (as opposed to a domain name registrant or registrar). There are three types of PDDRP:

- 1. The Trademark Post-Delegation Dispute Resolution Procedure (TM-PDDRP)** allows a trademark holder to file a complaint against the registry operator for its involvement in trademark infringement either at the top- or second-level of a new gTLD.

At the top level, a complainant must demonstrate by “clear and convincing evidence” that “the registry operator’s affirmative conduct in its operation or use of a new gTLD that is identical or confusingly similar to the complainant’s mark, causes or materially contributes to the gTLD doing one of the following: (1) taking unfair advantage of the distinctive character or the reputation of the complainant's mark; or (2) impairing the distinctive character or the reputation of the complainant's mark; or (3) creating a likelihood of confusion with the complainant's mark.”⁵⁰⁷ (paragraph 6.1 of the TM-PDDRP).

At the second-level, complainants are required to demonstrate by “clear and convincing evidence” that “through the registry operator’s affirmative conduct: (a) there is a substantial pattern or practice of specific bad faith intent by the registry operator to profit from the sale of trademark infringing domain names, and (b) the registry operator’s bad faith intent to profit from the systematic registration of domain names within the gTLD that are identical or confusingly similar to the complainant’s mark, which: (i) takes unfair advantage of the distinctive character or the reputation of the complainant's trade mark, (ii) impairs the distinctive character or the reputation of the complainant's trade mark, or (iii) creates a likelihood of confusion with the complainant's trade mark”.

If the registry operator is found liable by the expert panel, a number of remedies may be recommended, including remedial measures to prevent future infringing registrations; suspension of accepting new domain name registrations in the gTLDs at

⁵⁰⁶ ICANN, “Uniform Rapid Suspension System (URS),” accessed 9 August 2018, <https://newgtlds.icann.org/en/applicants/urs>

⁵⁰⁷ ICANN, *Trademark Post-Delegation Dispute Resolution Procedure (Trademark PDDRP)*, 4 June 2012, accessed 9 August 2018, <https://newgtlds.icann.org/en/program-status/pddrp>, Section 6.1.

stake until the violation has ceased or for a set period of time prescribed by the panel; or termination of the Registry Agreement in cases where the registry operator has acted “with malice”.⁵⁰⁸ Ultimately, ICANN has the authority to impose the remedies it deems appropriate, if any.

To date, ICANN has appointed the following dispute resolution providers to resolve disputes under the TM-PPDRP: the Asian Domain Name Dispute Resolution Centre (ADNDRC), the National Arbitration Forum (NAF), and World Intellectual Property Organization (WIPO).⁵⁰⁹

2. **The Registry Restriction Dispute Resolution Procedure (RRDRP)** allows an established institution to file a complaint against a community-based new gTLD registry operator for failing to meet registration restrictions set out in its Registry Agreement. For a claim to be successful, a complainant must demonstrate by “preponderance of the evidence” that: “(i) the community invoked by the objector is a defined community; (ii) there is a strong association between the community invoked and the gTLD label or string; (iii) the TLD operator violated the terms of the community-based restrictions in its agreement; (iv) there is a measurable harm to the Complainant and the community named by the objector.”⁵¹⁰ The remedies recommended by the expert panel are similar to those prescribed under the TM-PDDRP. Ultimately, ICANN has the authority to decide whether to impose such remedies.
3. **The Public Interest Commitments Dispute Resolution Procedure (PICDRP)** allows any person or entity (the “reporter”) to file a complaint against a new gTLD registry operator for failure to comply with the Public Interest Commitment(s) in Specification 11 of its Registry Agreement. The Reporter must file a “PIC Report” with ICANN by completing an online form. The PIC Report must (1) identify which PIC(s) form the basis for the report; (2) state the grounds for non-compliance with one or more PICs and provide supporting evidence; and (3) state how the reporter has been harmed by the alleged noncompliance.⁵¹¹ ICANN may undertake a compliance investigation or invoke a “Standing Panel.” If the registry operator is found to be not in compliance with its PIC, it will have 30 days to resolve its noncompliance. If the registry operator fails to resolve the noncompliance issues, ICANN will determine the appropriate remedies.

Trademark Clearinghouse (TMCH)

The Trademark Clearinghouse (TMCH) is a centralized database of verified trademarks from around the world mandated by ICANN to provide protection to trademark holders under the new gTLDs. The TMCH performs several important functions, including authenticating and verifying trademark records, storing such trademark records in a database, and providing this information to new gTLD registries and registrars. The data contained in the TMCH supports RPMs such as Sunrise Services (which provide an opportunity to trademark holders to register domain names corresponding to their trademarks prior to general availability) and the Trademark Claims services (a notification service to domain name registrants and trademark holders of potentially infringing domain name registrations). Registration of a trademark in the TMCH is required to be able to participate not only in the Sunrise Period and Trademark

⁵⁰⁸ Ibid., Section 18.

⁵⁰⁹ ICANN, “Post-Delegation Dispute Resolution Procedures (PDDRP),” accessed 9 August 2018, <https://newgtlds.icann.org/en/program-status/pddrp>

⁵¹⁰ ICANN, *Registry Restriction Dispute Resolution Procedure (RRDRP)*, 4 June 2012, accessed 9 August 2018, <https://newgtlds.icann.org/en/program-status/pddrp>, Section 6.

⁵¹¹ ICANN, *Public Interest Commitment Dispute Resolution Procedure*, 19 December 2013, accessed 9 August 2018, <https://newgtlds.icann.org/en/program-status/pddrp>

Claims services,⁵¹² but also in other registry-specific RPMs, such as domain name blocking mechanisms (for instance, Donuts' "Domain Protected Marks List"). Registration of a trademark is optional for other RPMs, such as the URS. The TMCH is therefore an important tool to protect trademark rights under the New gTLD Program.

Consideration of these Mechanisms and Whether they have Helped Mitigate the Issues around the Protection of Trademark Rights and Consumers in this Expansion of gTLDs

The review team looked at whether these mechanisms have helped to mitigate the issues around the protection of trademark rights and consumers in this expansion of gTLDs, and have sought to obtain data to help assess the impact of the New gTLD Program on the cost and effort required to protect trademarks in the DNS.

The review team turned primarily to the data obtained by ICANN under the CCT Metrics Reporting page and the INTA Impact Study,⁵¹³ which, it was hoped, would provide additional data on the cost impact of new gTLDs on brand owners as well as existing data and commentary from the ICANN Rights Protection Mechanisms Review.⁵¹⁴ The Team also noted the parallel work by the ongoing GNSO working groups currently looking into RPMs, and sought not to duplicate or undermine their efforts.⁵¹⁵ The Team looks forward to the reports from those groups.

INTA Impact Study

The results of the International Trademark Association (INTA) Impact Study contain important information for the Community to consider regarding the impact of ICANN's New gTLD Program on the cost and effort required to protect trademarks in the DNS. INTA members and intellectual property owners have expressed concern on multiple occasions about the new gTLDs on the basis that such expansion would likely create additional and increased costs in enforcing intellectual property rights. The survey sought to assess what additional costs and efforts have been required to protect trademarks in the DNS.

The INTA is a global organization of 6,600 trademark owners and professionals from over 190 countries. As such, it was well-placed to respond to the Nielsen survey, which was informed by the review team's input. INTA members were asked to estimate all costs associated with protecting their trademarks in the DNS over a two-year period (2015 and 2016). Their cost estimates include:

- ⦿ Both in-house and outside legal fees.
- ⦿ Filing fees.
- ⦿ Investigation costs.
- ⦿ The total costs, including benefits, of personnel responsible for these activities.

⁵¹² ICANN, "TLD Startup Information," accessed 9 August 2018, <https://newgtlds.icann.org/en/program-status/sunrise-claims-periods>

⁵¹³ Nielsen (April 2017), *INTA New gTLD Cost Impact Survey*.

⁵¹⁴ ICANN, *Rights Protection Mechanisms Review: Revised Report*.

⁵¹⁵ ICANN GNSO, "PDP Review of All Rights Protection Mechanisms in All gTLDs."

Respondents who completed the survey reported that compiling the data necessary to properly respond was a significant task. There were 33 respondents in total, including one not-for-profit. The response rate for the survey was actually above the norm for similar surveys,⁵¹⁶ especially considering the level of required effort to complete what respondents indicated was an onerous questionnaire. However, the sample size of completed surveys is small from a statistical standpoint and requires some caution in its interpretation. Nevertheless, the results are indicative of key themes and trends.⁵¹⁷

Key Takeaways from the Impact Study:

1. While one of the goals of the New gTLD Program was to increase choice for brand owners, choice does not seem to be a prime consideration for why some brand owners elect to register in new gTLDs. Rather, the principal reason why the overwhelming majority (90 percent) of trademark owners who responded the survey are registering domain names in new gTLDs is for defensive purposes, i.e. to prevent someone else from registering.
2. Domain names registered by brand owners in new gTLDs are commonly parked and not creating value other than preventing unauthorized use by others.
3. According to the respondents, the New gTLD Program has increased the overall costs of trademark defense, with Internet monitoring and diversion actions being the largest expenditure. These costs have impacted small and big companies alike, with the most relevant cost-driving factor being the number of brands.
4. Respondents reported that the average total enforcement costs related to TLDs generally (both legacy and new) per company is \$150,000 per year. Having said this, the costs varied widely among the survey respondents.⁵¹⁸ This is something that would benefit from further investigation in future surveys.
5. Regarding disputes, more than 75 percent of cases brought now involve privacy and proxy services and close to two-thirds encounter some level of inaccurate or incomplete WHOIS information.
6. While the new gTLDs account for one-sixth of the enforcement costs incurred by the survey respondents, they do not yet represent one-sixth of domain name registrations. In other words, the cost of enforcement actions for the survey respondents in new gTLDs is approximately 18 percent of overall TLD enforcement costs while the total numbers of new gTLD registrations compared to all TLDs is 10 percent at the time the Impact Study was conducted.⁵¹⁹ This data indicates that for the respondents, there is a disproportionate cost associated with new gTLD enforcement actions compared to overall enforcement actions. This provides further indication that there may be proportionately more trademark infringement in new gTLDs than in the legacy gTLDs.⁵²⁰

⁵¹⁶ This statement is based on Nielsen's general experience with samples of customers or members.

⁵¹⁷ According to Nielsen, the total sample is sufficient to give directional information about those trends, but any statistical significance testing would be subject to a high margin of error.

⁵¹⁸ The range of total costs reported ran from zero to \$5.2 million.

⁵¹⁹ Nielsen, *New gTLD Cost Impact Survey*. The average costs for all TLDs for 2 years = \$292,000. The average costs for new gTLDs for 2 years = \$53,690 (approximately 18 percent).

⁵²⁰ *Ibid.*, slides 10 and 27. Nielsen explains that the figures for internet monitoring being one of the main costs should be qualified; these costs are general overall costs and not specific to new gTLDs. An entity will pay for monitoring across all TLDs. There is likely to be some incremental increase in monitoring costs given additional new gTLDs being in scope, and indeed there is anecdotal evidence that more brands have started monitoring

7. RPMs are generally considered to have been helpful in mitigating the risks anticipated with new gTLDs. In response to the question, “Please tell us why you feel the Rights Protection Mechanisms listed above have or have not mitigated the risks involved with new TLDs,” the responses were varied, but provided a useful insight into the mindset of brand owners.⁵²¹ Two-thirds of the respondents surveyed feel that the UDRP and required Sunrise periods have helped mitigate risks, with 90 percent of respondents registering in new gTLDs during a Sunrise period. Of those who think that RPMs are effective, the ranking is as follows:

- a. Sunrise: 79 percent
- b. UDRP: 73 percent
- c. Claims: 66 percent
- d. URS: 49 percent
- e. PDDRP/RRDRP/PICDRP: 27 percent

There is nevertheless evidence that brand owners are reluctant purchasers of Sunrise registrations and many see it as a cost that is overly expensive:

“Sunrise Periods have quickly become more a money-making product than a protective tool.”⁵²²

“Sunrise periods have only a minor effect because many registries target brand owners with discriminatory pricing while at the same time many offer the same domain name to non-brands at a much cheaper price.”⁵²³

“The .top registry raised the Sunrise fee by \$30,000 for [company].top. We refused to register.”⁵²⁴

since the introduction of new gTLDs. However, since these costs were not broken down in the questionnaire, monitoring was basically treated as a sunk cost. It would thus be reasonable to assume that these costs have gone up rather than down. Thus, the total costs are likely to be above 18 percent.

⁵²¹ Some examples are summarized here. Respondents indicated that: 1) While the Sunrise Period allows trademark owners to purchase a domain incorporating a key trademark before anyone else can, Sunrise claims often come with a major cost to the brand owner; 2) Claims notices came too late (the name was already registered before the respondent was notified), and they do not prevent squatters from registering domain names despite notice of existing rights, which means that the same problems as exist in the legacy TLDs persist in the new gTLDs after registration has occurred; 3) the URS, although faster than the UDRP, has narrow criteria for action, a high burden of proof compared to the (more expensive) UDRP, requires multiple domains to make a claim, the name cannot be transferred as a result of adjudication, and it’s costly to suspend—as opposed to transfer—the domain in dispute; 4) the Post-Delegation Dispute Resolution Procedure criteria are so narrow that the circumstances to invoke it are extremely unlikely to arise, and the procedure is onerous to carry out (it requires joint action on the part of various trademark holders to be effective); 5) the UDRP has well-defined criteria, has helped to provide a body of helpful case law, provided the ability to transfer a domain if a UDRP dispute was successful on the part of the claimant, but the price of filing a claim was a deterrent for all but the most egregious cases, and most claims were filed against .com, where the most infringing domains are found [according to one respondent]; 6) the Sunrise and trademark claim periods are too short, and companies need to implement additional measures to monitor their portfolio in numerous gTLDs; 7) the PDDRP, RRDRP, and PICDRP can be effective, but are not well understood as available options, leading them to have minor impacts on mitigating risks, and defensive registration is the only cost-effective recourse (although respondents indicated that this could be costly as well, just less so than filing URS or UDRP claims); 8) the TMCH at least provides a mechanism for trademark owners to register domains with their marks before they are registered by cybersquatters, but the claims procedure works only to a minor extent because it only captures filings for a very limited period of time, and a “blocking procedure” for trademarks would greatly mitigate the risks. Respondents in general indicated that the above are good, but incomplete mechanisms. One respondent provided a succinct summary: “The mechanisms [other than the URS, UDRP, and TMCH]... do not seem that effective and require a significant outlay of resources from trademark owners. We’ve not had the opportunity to use. Registrants are willing to risk a small registration fee to use a domain name with a famous trademark in it.” (p. 59).

⁵²² Nielsen, *New gTLD Cost Impact Survey*, p. 52.

⁵²³ *Ibid.* p. 59.

⁵²⁴ *Ibid.* p. 50.

1. TMCH registrations are used by a majority of the respondents. Looking at the data, the majority of respondents (approximately 9 in 10) registered at least one trademark in the TMCH, with 6 in 10 registering 1-10. With regard to associated costs, these vary considerably across the respondents, ranging from less than USD \$1,000 to USD \$48,000, with the average being approximately USD \$7,700.
2. The introduction of the URS process has provided an alternative to the UDRP, but it is less used. The most cited reasons for why it is less popular include the inability to transfer the domain name after a successful decision and the higher burden of proof.
3. With regard to premium pricing, three-quarters of the respondents evaluate premium pricing for domain names on a case-by-case basis, and two-thirds of their domain name registration decisions have been affected by premium pricing, with .sucks being mentioned the most as a TLD that respondents paid premium pricing for. However, 15 percent of respondents refused to pay premium pricing at all.

ICANN Competition, Consumer Trust, and Consumer Choice (CCT) Metrics Reporting

Numbers of Cases Filed (UDRP and URS)

It is clear from the data obtained by ICANN across all domain name dispute resolution providers that the total cases filed (UDRP and URS combined) from 2013-2016 increased considerably since the introduction of new gTLDs.⁵²⁵ Concerning the UDRP, there has been a fairly substantial increase in the number of UDRP complaints filed, while the use of the URS has been more limited and has seen a slight decline in cases filed since its introduction and first use in new gTLDs in 2014.

The first new gTLDs entered the root in 2013,⁵²⁶ but it was not until March 2014 that the first UDRP case was filed involving a new gTLD.⁵²⁷ The first URS decision was filed in April 2014.⁵²⁸ Taking into account the previous year without any new gTLD-related disputes as the baseline, there were a total of 3,371 disputes decided, all of which were UDRPs and all of which concerned only legacy gTLDs.

⁵²⁵ ICANN, "Competition, Consumer Trust and Consumer Choice (CCT) Metrics Reporting: Rights Protection Mechanisms," accessed 10 October 2017, <https://www.icann.org/resources/pages/cct-metrics-rpm-2016-06-27-en#1.12>.

⁵²⁶ ICANN, "First New gTLD Registries Receive Tokens for Root Zone Management System," accessed 10 October 2017, <https://newgtlds.icann.org/en/announcements-and-media/announcement-22oct13-en>.

⁵²⁷ WIPO, "Arbitration and Mediation Center Administrative Panel Decision: Canyon Bicycles GmbH v. Domains By Proxy, LLC / Rob van Eck Case No. D2014-0206," accessed 9 August 2018, <http://www.wipo.int/amc/en/domains/search/text.jsp?case=D2014-0206>.

⁵²⁸ ADR, "National Arbitration Forum URS Appeal Determination: Aeropostale Procurement Company, Inc. v. Michael Kinsey et al. Claim Number: FA1403001550933," accessed 9 August 2018, <http://www.adrforum.com/Domaindecisions/1550933A.htm>.

Table 14: Number of Cases Filed with UDRP and URS Providers through 2017⁵²⁹

	Total Split UDRP and URS	Total Cases Combined
2013	3,371 (UDRP)	3,371
2014	4,056 (UDRP) & 231 (URS)	4,287
2015	4,130 (UDRP) & 213 (URS)	4,343
2016	4,371 (UDRP) & 222 (URS)	4,590
2017	3,095 (UDRP) & 126 (URS)	3,221

In 2014, total cases (UDRP and URS combined) rose to 4,287, representing a 27 percent increase. In 2015, the total cases increased slightly again to 4,343 (1.3 percent higher than 2014), and in 2016, there was a further 5.7 percent increase, taking the total cases to 4,590. In 2017, total cases decreased to 3,221 (almost 30% lower than 2016). Thus, comparing total cases in 2013, the year before the first new gTLD dispute, and in 2016, we have a considerable increase of 36 percent in cases filed across all providers. However, this growing trend changed last year, with significantly fewer cases in 2017.

If only UDRP cases are considered, one sees a 20 percent rise from 2013 to 2014, a further 2 percent rise from 2014 to 2015, a further 5.8 percent rise from 2015 to 2016, and a 29.8 percent decrease from 2016 to 2017. Examining URS cases alone, the first thing to note is that their popularity as an RPM is and remains low, with 231 cases in 2014, 213 cases in 2015, and 222 cases in 2016, and 126 cases in 2017. Thus, around only five percent of the total cases are filed under the URS. In addition, there appears to be no significant rise in the number of complaints filed year on year. There was a decrease in URS cases filed when comparing 2016 to 2015, and even in 2017, the total number of URS cases filed remained lower than in 2014, the first year of operation for new gTLDs. Thus, this leads one to question whether URS is meeting its potential as a useful RPM.

It is important to note that the number of UDRP and URS cases filed reflect only part of the costs incurred by trademark owners in defending their brands. Significant enforcement costs may have been incurred in the form of defensive registrations, blocking, monitoring, cease and desist letters, and court action (although the review team did not have data to evaluate this). The INTA Impact Study, however, does provide some insight.

Complaints to ICANN Concerning Implementation of UDRP and URS Decisions

ICANN's role is to ensure that registrars and registries comply with the UDRP procedures and rules as well as those of the URS.

For example, a UDRP provider may file a UDRP complaint that a registrar did not lock a domain subject to a UDRP or respond to the provider's verification request in a timely manner. The complainant may then submit a complaint to ICANN if the registrar fails to implement a UDRP decision in a timely manner.

⁵²⁹ "CCT Metrics: Rights Protection Mechanisms: Metric 1.9.a: UDRP and URS Cases Filed Against Registrants," accessed 8 August 2018, <https://www.icann.org/resources/pages/cct-metrics-rpm-2016-06-27-en#1.9.a>

With regard to the URS, for example, a registry operator must also lock in a timely manner, and if applicable, suspend the relevant domain name in accordance with the URS determination and the URS procedure and rules. The prevailing complainant in the URS proceeding, and the URS provider, may submit a URS complaint regarding such alleged violations to ICANN via the URS compliance webform.⁵³⁰

Looking at the number of complaints made to ICANN concerning the implementation of UDRP and URS decisions,⁵³¹ the number of complaints concerning the UDRP declined between 2012 and 2014 by some 65 percent and, since then, has remained fairly static at between 250 and 227 complaints annually. URS complaints were relatively high in 2014, the first year in which the URS was available for new gTLDs, but from 2015 through 2017, the number of complaints has roughly halved.

Table 15: Total UDRP/URS Complaints to ICANN⁵³²

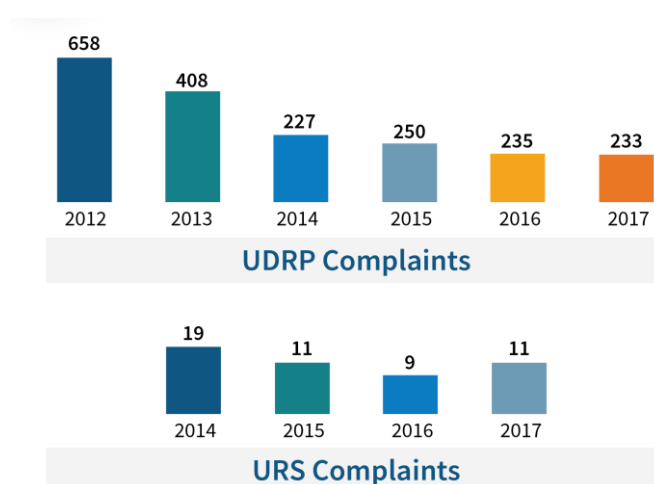
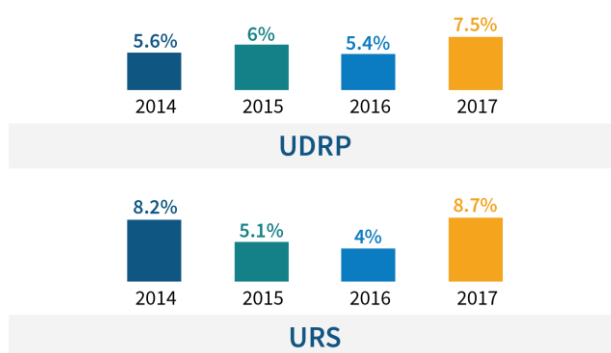


Table 16: Percent of Complaints to ICANN in each RPM Compared to Total Number of Domain Name Decisions in each RPM



⁵³⁰ ICANN, “Uniform Rapid Suspension (URS) Form,” accessed 9 August 2018, <https://forms.icann.org/en/resources/compliance/registries/urs/form>

⁵³¹ It should be noted that complaints regarding the merits of the decision are outside of ICANN's contractual scope.

⁵³² ICANN, “Competition, Consumer Trust and Consumer Choice (CCT) Metrics Reporting: Rights Protection Mechanisms: Metric 1.9.b: Combined UDRP and URS Complaints to ICANN,” accessed 9 August 2018, <https://www.icann.org/resources/pages/cct-metrics-rpm-2016-06-27-en#1.9.b>.

In 2014, the year that the URS was introduced, there was a relatively high number of complaints to ICANN. When compared to the total number of URS complaints that year, the level was at roughly 8 percent. This compares to the complaint level for the UDRP in 2014 of 5.6 percent. The higher level of implementation complaints concerning the URS compared to the UDRP may have been down due to a number of factors including its relative newness, the complexity of the process, and recent adoption by registrars.

Moving through 2015 and 2016, the relative number of complaints for the URS decreases, and in 2016, the relative number of URS related complaints compared to the UDRP was actually less, at 4 percent compared to 5.4 percent for the UDRP. It may be that over time, the complexities of the URS had been understood by registrars, registries, and end-users.

Trademark Clearing House (TMCH)

ICANN commissioned Analysis Group to undertake an independent review of TMCH services based on the Governmental Advisory Committee (“GAC”) recommendation in May 2011 that a comprehensive, post-launch review be performed.⁵³³ The review sought to assess the strengths and weaknesses of the TMCH services in light of that recommendation and was based on an analysis of TMCH and third-party data sources, as well as interviews and surveys of TMCH stakeholders. The 2017 revised report⁵³⁴ incorporated public comments into the draft report published on 25 July 2016.⁵³⁵

According to the report, the data obtained allowed for meaningful observations to be made about the use of the TMCH services studied. The research did not provide quantifiable information on the costs and benefits associated with the present state of the TMCH services. Indeed, the potential costs and benefits of expanding or altering the way the services function needed a concrete cost-benefit analysis, which was outside the scope of the Analysis Group report.

Summary of Findings

The report found that extending the Claims Service period, or expanding the matching criteria used for triggering the Claims Service notifications, may actually be of limited benefit to trademark holders. Indeed, such an extension would potentially be associated with increased costs to other stakeholder groups such as registries, registrars, and non-trademark-holder domain registrants. Data limitations prevented definitive conclusions being drawn.

The report noted that given the fact that a cost-benefit analysis had not been performed, a potential extension of the Claims Service or expansion of the matching criteria should consider the inevitable tradeoffs felt by different stakeholder groups. Indeed, the report stressed that when evaluating whether the Claims Service period should be extended, the number of potential registrations affected by the extension needs to be assessed. The effectiveness of the Claims Service notifications depends on how many registration attempts are being made; if there are few registration attempts, then there are fewer potentially infringing registrations being made.

⁵³³ ICANN GAC, (26 May 2011), *GAC comments on the Applicant Guidebook (April 15th, 2011 version)*, accessed 9 August 2018, <https://archive.icann.org/en/topics/new-gtlds/gac-comments-new-gtlds-26may11-en.pdf>.

⁵³⁴ Analysis Group (2017), *Independent Review of Trademark Clearinghouse (TMCH) Services Revised Report* (2017).

⁵³⁵ Analysis Group (July 2016), *Independent Review of Trademark Clearinghouse (TMCH) Services Draft Report*, accessed 9 August 2018, <https://newgtlds.icann.org/en/reviews/tmch/draft-services-review-25jul16-en.pdf>.

The report found that registration activity declined after the 90-day Claims Service period ends, thus any additional months added to the Claims Service period will likely have diminishing value.

The report also found that according to the data, trademark holders appeared less concerned about variations of trademark strings and thus felt that an expansion of the matching criteria may in fact bring little benefit to trademark holders. On the contrary, the potential harm towards non-trademark holder domain registrants could increase. The latter could find themselves deterred from registering trademark string variations that would not be considered trademark infringement.

Finally, the report considered the Sunrise period and the questionnaire feedback. It seems that while trademark holders felt that there is value in the Sunrise periods, and many do use them, having recorded their marks in the TMCH, many trademark holders in fact do not utilize the Sunrise period. The report concluded that this could be due to the expense of Sunrise domain name registrations or because other protections of the TMCH service, such as the Claims Service, reduce the need for trademark holders to utilize Sunrise registrations. The CCT Review Team feels that it is also likely due to the sheer number of new gTLDs. Defensive registrations, when multiplied across many new gTLDs, become cost prohibitive and few brand owners are willing to engage in the same way with large-scale defensive domain name registrations. The review team questioned whether the extra expense of the TMCH was actually bringing value, and not acting as a deterrent itself as an additional cost for brand owners.

Trademark Post-Delegation Dispute Resolution Procedure (TM-PDDRP)

ICANN Contractual Compliance has received no complaints regarding a registry operator's non-compliance with the TM-PDDRP. However, it should be noted that there is currently a GNSO Working Group conducting a Policy Development Process (PDP) to review all RPMs in all gTLDs.⁵³⁶ The Working Group is exploring possible impediments to implementation of the TM-PDDRP since there are no known PDDRP filings with arbitration providers to date.

Registry Restrictions Dispute Resolutions Procedure (RRDRP) Decisions

The RRDRP is intended to address circumstances in which a community-based new gTLD registry operator deviates from the registration restrictions outlined in its Registry Agreement. As of 17 July 2018, there have been no RRDRP cases.

Share of Sunrise Registrations and Domain Blocks to Total Registrations in Each TLD

As of 17 July 2018, the only available data on the number of Sunrise registrations compared to total registrations in new gTLDs are from ICANN. According to ICANN, there are no consolidated data available regarding commercial blocking services offered by registries.

Conclusion

The data above points to increasing numbers of disputes since the introduction of new gTLDs, with disputes rising year-on-year after their introduction. Indeed, in 2016, the total number

⁵³⁶ ICANN GNSO, "PDP Review of All Rights Protection Mechanisms in All gTLDs."

cases filed (UDRP and URS combined) was 36 percent higher than in 2013, when the first new gTLD entered the root zone (25 percent higher if the average number of cases during 2012 and 2013 is used as the baseline).

However, a rising number of domain name disputes is not in itself surprising, with the increased number of domain name registrations worldwide continuing to increase as new gTLDs are introduced into the root and more registrations occur.

A more pertinent question is whether there is proportionately more trademark infringement in new gTLDs than in legacy TLDs. This is a more difficult issue, as there are many factors involved in assessing trademark infringement, and few data are available. The INTA Impact Study is a good example of the complexities of obtaining such information.

In addition to the UDRP and URS, trademark owners also use a variety of other means to deal with abusive domain name registrations, such as court action and cease and desist letters, which are not tracked centrally, nor are the costs associated with such actions available. It is not within ICANN's remit to track or attempt to track such data either. However, ICANN does collect data on the usage of the dispute resolution mechanisms, the UDRP, and the URS, across all domain name dispute providers. This data shows that domain name disputes are rising. ICANN also provides data on the number of new gTLD registrations compared to total gTLD registrations (including both legacy and new gTLDs). This data also shows that gTLD domain name registrations are rising. However, ICANN's metrics do not show a breakdown of the relative use of UDRPs, i.e. the use of UDRPs in new gTLDs as opposed to legacy TLDs.

Thus, in order to attempt to answer the question of whether there is proportionately more trademark infringement in new gTLDs than in legacy TLDs, publicly available data from WIPO, the major dispute resolution provider, are a useful resource.

The WIPO data for 2017 show that cybersquatting disputes relating to new gTLDs rose to 12 percent of WIPO's 2017 caseload.⁵³⁷ Among these, the new gTLDs .STORE, .SITE and .ONLINE were the most common new gTLDs involved in such disputes.⁵³⁸ In 2017, disputes in the legacy gTLDs .com, .net, .org, and .info accounted for more than 80 percent of WIPO's domain name caseload, and just over 15 percent of it involved new gTLDs.⁵³⁹

ICANN statistics on domain name registrations for March 2018 show 196,450,282 gTLD registrations and 23,348,286 new gTLD registrations.⁵⁴⁰ Thus, new gTLDs account for 12 percent of the registration volume of gTLDs. This data provides a good indication that there is proportionately more trademark infringement presently in new gTLDs than in legacy TLDs.

Based on the analysis above, the review team cannot definitively conclude whether the URS is a valuable RPM given its low usage compared to the UDRP. The fact that the TM-PDDRP and RRDRP have not been invoked to date may on the one hand also bring their existence into question, but may equally underline that their mere existence is acting as a deterrent.

⁵³⁷ WIPO, "WIPO Cybersquatting Cases Reach New Record in 2017," 14 March 2018, accessed 9 August 2018, http://www.wipo.int/pressroom/en/articles/2018/article_0001.html

⁵³⁸ *Ibid.*

⁵³⁹ WIPO (2018), *Total Number of WIPO Domain Name Cases and Domain Names by Year*, accessed 9 August 2018, http://www.wipo.int/export/sites/www/pressroom/en/documents/pr_2018_815_annexes.pdf#annex1, Annex 2.

⁵⁴⁰ ICANN, "Monthly Transaction Reports," accessed 9 August 2018, <https://www.icann.org/resources/pages/registry-reports>

Recommendations

Recommendation 26: A study to ascertain the impact of the New gTLD Program on the costs required to protect trademarks in the expanded DNS marketplace should be repeated at regular intervals to see the evolution of those costs over time. The CCT Review Team recommends that the next study be completed within 18 months after issuance of the CCT final report, and that subsequent studies be repeated every 18 to 24 months.

The CCT Review Team acknowledges that the Nielsen survey of INTA members in 2017 was intended to provide insight into this topic but yielded a lower response rate than anticipated. The Team recommends a more user-friendly and perhaps shorter survey to help ensure a higher and more statistically representative response rate.

Rationale/related findings: Costs will likely vary considerably over time as new gTLDs are delegated and registration levels evolve. Repeating the Impact Study would enable a comparison over time.

To: ICANN organization

Prerequisite or priority level: High

Consensus within team: Yes

Details: The evolution of costs required to protect trademarks over time will provide a more precise picture of the effectiveness of RPMs generally in the DNS.

Success measures: The results of future impact studies should provide significantly more data to the relevant working groups currently looking into RPMs and the TMCH, as well as to future working groups, thereby benefiting the Community as a whole. Recommendations would then also be able to evolve appropriately in future CCT Review Teams.

Recommendation 27: Since the Review Team's initial draft recommendation, the PDP Review of All RPMs in All gTLDs Working Group started reviewing the URS in detail and, at the time of writing, their review is ongoing. Given this ongoing review, the Review Team recommends that the Working Group continue its review of the URS and also looks into the interoperability of the URS with the UDRP.

The review team encountered a lack of data for complete analysis. The PDP Review of All RPMs appears to also be encountering this issue and this may well prevent it from drawing firm conclusions. If modifications are not easily identified, then the CCT Review Team recommends continued monitoring until more data is collected and made available for review at a later date.

Rationale/related findings: It is important for all gTLDs to have a level playing field, so the applicability of the URS should be considered for all gTLDs.

To: Generic Names Supporting Organization

Prerequisite or priority level: Prerequisite

Consensus within team: Yes

Details: A review of the URS should explore potential modifications, such as: (1) whether there should be a transfer option with the URS rather than only suspension; (2) whether two full systems should continue to operate (namely the UDRP and URS in parallel), considering their relative merits; (3) the potential applicability of the URS to all gTLDs; and (4) whether the availability of different mechanisms applicable in different gTLDs may be a source of confusion to consumers and rights holders.

Success measures: Based on the findings, a clear overview of the suitability of the URS and whether it is functioning effectively in the way originally intended.

Recommendation 28: A cost-benefit analysis and review of the TMCH and its scope should be carried out to provide quantifiable information on the costs and benefits associated with the present state of the TMCH services, and thus to allow for an effective policy review. Since the review team's initial draft recommendation, the PDP Review of All RPMs in All gTLDs Working Group has started reviewing the TMCH in detail and ICANN has appointed Analysis Group to develop and conduct the survey(s) to assess the use and effectiveness of the Sunrise and Trademark Claims RPMs. Provided that the PDP Working Group has sufficient data from this survey or other surveys and is able to draw firm conclusions, the review team does not consider that an additional review is necessary. However, the CCT Review Team reiterates its recommendation for a cost-benefit analysis to be carried out if such analysis can enable objective conclusions to be drawn. Such cost-benefit analysis should include, but not necessarily be limited to, looking at cost-benefits of the TMCH for brand owners, registries, and registrars now and going forward, as well as examine the interplay of the TMCH with premium pricing.

Rationale/related findings: The Independent Review of Trademark Clearinghouse (TMCH) Services Revised Report was unable to provide definitive conclusions on the relative utility of the TMCH due to data limitations. Analysis Group noted in the report that it was unable to perform a cost-benefit analysis of extending the Claims Service or expanding the matching criteria.⁵⁴¹

To: Generic Names Supporting Organization

Prerequisite or priority level: Prerequisite

Consensus within team: Yes

Details: There appears to be considerable discussion⁵⁴² on whether the TMCH should be expanded beyond applying to only identical matches and if it should be extended to include

⁵⁴¹ Analysis Group (2017), *Independent Review of Trademark Clearinghouse (TMCH) Services Revised Report* (2017).

⁵⁴² Trademark Clearinghouse, "Fee Structure Summary 1.1," accessed 5 September 2018, http://trademark-clearinghouse.com/sites/default/files/files/downloads/trademarkclearinghouse_fee_structure_01-04-2015_2.pdf. "Recent developments It was decided on 20 March 2013 that most aspects of ICANN's "Strawman Solution" would be implemented in order to extend protections under the new gTLD program. One approved feature was the Trademark +50 (TM+50) abused variations model, whereby trademark owners are now permitted to attach up to 50 previously abused domain registrations to a TMCH record, which have been connected to a Uniform Domain-Name Dispute-Resolution Policy (UDRP) or court proceeding at the national level. These Labels are not eligible for Sunrise registration periods, but they do qualify for Trademark Claims." See Com Laude, "The Trademark Clearinghouse: Pinning labels on verified trademark records," 29 August 2013, accessed 5 September 2018, <https://comlaude.com/news/trademark-clearinghouse-pinning-labels-verified-trademark-records-0>.

"Expanding Matching Criteria to include non-exact matches may be of limited benefit: The dispute rate of completed registrations that are variations of trademark strings is very low. — "We also find that trademark holders infrequently dispute registrations that are variations of trademark strings. Given the low dispute rates, an

“mark+keyword” or common typographical errors of the mark in question. If an extension is considered valuable, then the basis of such extension needs to be clear.

Success measures: The availability of adequate data to make recommendations and allow an effective policy review of the TMCH.

expansion of the matching criteria may bring little benefit to trademark holders and only harm non trademark-holder domain registrants, who may be deterred from registering trademark string variations that would otherwise not be considered a trademark infringement by trademark holders or authorities who make such determinations." See Philip S. Corwin, "TMCH Review Recommends Status Quo," CircleID, 1 August 2016, accessed 5 September 2018, http://www.circleid.com/posts/20160801_tmch_review_recommends_status_quo/.

10 Application and Evaluation Process of the New gTLD Program

In addition to exploring the consumer welfare impact of the New gTLD Program, the CCT Review Team was charged with evaluating the “effectiveness” of the Application and Evaluation process.⁵⁴³ Obviously, this is a potentially overbroad mandate, especially given the concurrent GNSO PDP on new gTLD subsequent procedures.⁵⁴⁴ Therefore, instead of focusing on the possible inefficiencies of the application and evaluation process, the CCT Review Team decided to focus on possible inequities in the process. These include the potential for the process to favor some communities over others, some regions over others, or simply produce inconsistent and unpredictable results.

Applications and the “Global South”

One of the questions that the CCT Review Team addressed was whether the application and evaluation process was effective in serving the needs of previously underserved regions or communities, sometimes referred to as the “developing world.” In particular, the review team endeavored to determine if these communities had special needs that were not met or resource deficiencies that were insufficiently supplemented to create a level playing field among all potential applicants. For purposes of this review, the Global South was defined to include Africa, Latin America, the Caribbean, India, and Southeast Asia, excluding China.⁵⁴⁵

Of course, the only “hard” data on applications from the Global South was their **scarcity**. In total, there were only 303 applications from the Global South and only 200 continued all the way to delegation.⁵⁴⁶ To better understand the challenges faced by those applicants, the CCT Review Team commissioned a survey of applicants, conducted by Nielsen.⁵⁴⁷ Unfortunately, low participation in the survey meant that only two respondents were from the Global South,⁵⁴⁸ but these nonetheless identified some special problems that were faced by applicants from the Global South.

A trickier task was to determine why there were so few applications for new strings from these regions. There were a number of possible explanations: insufficient outreach by ICANN, insufficient funds for applicants, insufficient technical expertise, or possibly insufficient market confidence. Given the low penetration of ccTLD registrations in the Global South,⁵⁴⁹ it might simply have been rational for potential applicants to adopt a “wait-and-see” posture. Moreover, to the extent that promotion of the New gTLD Program by ICANN would be considered part of

⁵⁴³ ICANN, *Affirmation of Commitments* (September 2009).

⁵⁴⁴ ICANN GNSO, “PDP New gTLD Subsequent Procedures.”

⁵⁴⁵ “Global South” is a fluid and sometimes contested term used by social scientists to refer broadly to regions in Latin America, Asia, Africa, and Oceania. For an overview of the term’s origins and use, see Nour Dados and Raewyn Connell, “The Global South,” *Contexts: Journal of the American Sociological Association* [11, 1] (2012): <http://journals.sagepub.com/doi/pdf/10.1177/1536504212436479>

⁵⁴⁶ ICANN, “Competition, Consumer Trust and Consumer Choice (CCT) Metrics Reporting: Registries,” accessed 10 August 2018, <https://www.icann.org/resources/pages/cct-metrics-registries-2016-06-27-en>

ICANN, “Program Statistics”, accessed 25 January 2017, <https://newgtlds.icann.org/en/program-status/statistics>. The total number of applications received from the Global South excludes 41 applications from China.

⁵⁴⁷ Nielsen (December 2016), *ICANN Application Process Survey*, accessed 10 August 2018, <https://community.icann.org/download/attachments/56135378/2016%20ICANN%20Application%20Process%20Report.pdf?version=1&modificationDate=1482246915000&api=v2>.

⁵⁴⁸ Ibid.

⁵⁴⁹ ICANN, “Zooknic ccTLD data,” accessed 10 August 2018, <https://community.icann.org/display/CCT/Studies%2C+Research%2C+and+Background+Materials?preview=/56135378/60492555/Zooknic%20ccTLD%20data.xlsx>.

the “application and evaluation” process, it is certainly useful to understand what kinds of information were available to potential applicants from the Global South.

To that end, the Review Team commissioned a study by AMGlobal, which included evaluating the characteristics of those entities from the Global North that had applied for new strings, identifying similar entities in the Global South that had not applied, and conducting a phone survey of a sample of those entities to better understand their reasons for nonparticipation.⁵⁵⁰ Although it was not feasible to conduct a statistically valid survey of potential applicants, the anecdotal data (largely from Latin America) suggest a number of areas for improvement in outreach and facilitation efforts by ICANN in any future rounds. In particular, the review team wanted to explore the program outreach and applicant support, both financial and non-financial.

Program Outreach

The AMGlobal Study indicated that limited awareness of the New gTLD Program and unfamiliarity with ICANN were key factors limiting participation from the Global South. Fewer than half of the interviewees described having moderate to high levels of awareness of the Program and many said that despite having some information, they felt they did not have needed details. Almost one-third all interviewees said that they had almost no knowledge of the Program or had never heard about it at all. Many interviewees who had heard “something” noted they had no understanding of the Program’s connection to ICANN, and about one-third of all interviewees had no knowledge of ICANN at all. Given the newness of the idea of new gTLDs in many emerging markets, this lack of information was a significant issue.⁵⁵¹

ICANN carried out a promotional campaign for the Program that included online advertising and outreach through its regional centers. These included live presentations, live consultations, and webinars.⁵⁵² It chose to eschew what might be considered “sales” in favor of general information, arguing that it was not in its remit to convince the market to apply for strings, but rather to make it known that applications were being accepted.⁵⁵³ Many in the Community believed that these outreach efforts were insufficient,⁵⁵⁴ and the responses from the AMGlobal Study appear to bear that out.

One barrier to entry, especially in Latin America, was the limited time window between the provision of information to the close of the new round. While many in the ICANN Community have been waiting for the start of a new gTLD round, it was news to many in the Global South. A number of interviewees in the AMGlobal Study admonished ICANN for providing information too late, thus providing inadequate time for decision-making.⁵⁵⁵ This seemed to have especially affected decision-making at large conglomerates and government entities, which suggested that they might need six months or more to fully explore, socialize, and win approval for a new gTLD initiative. As a number of Latin American respondents suggested, it could take time to find the right home or champion within a large organization for an initiative as new as

⁵⁵⁰ AMGlobal, *New gTLDs and the Global South*.

⁵⁵¹ Ibid.

⁵⁵² ICANN, “New gTLD Program Global Consultation and Outreach Events,” accessed 10 August 2018, <https://archive.icann.org/en/topics/new-gtlds/consultation-outreach-en.htm>.

⁵⁵³ Ibid.

⁵⁵⁴ Avri Doria, “The need for a remedial gTLD program for #newgtlds,” accessed 10 August 2018, <http://avri.doria.org/post/74920388723/the-need-for-a-remedial-gtld-program-for-newgtlds>;

Constantine Roussos, “Role of influencers and media in ICANN’s TLD global awareness campaign: How ICANN can create a strong value proposition with new Top-Level Domain extensions to benefit the Internet,” 9 July 2011, accessed 10 August 2018, <http://mytld.com/articles/3018-influencers-media-icann-top-level-domains-tld-benefits-internet.html>.

⁵⁵⁵ AMGlobal, *New gTLDs and the Global South*, p. 10.

a new gTLD.⁵⁵⁶ Time issues were cited by nearly 19 of the 37 respondents, with 11 citing this as their number one constraint to participation. Many interviewees either heard about the Program too late or said they simply did not have enough time to fully explore the idea.⁵⁵⁷

Applicant Informational Support

Many respondents who were aware of the Program cited a lack of complete information and/or clear communication as key constraints to participation.⁵⁵⁸ Communications around the Program were described by interviewees as “complicated” and “dense,” and “more for insiders than for me or the general public.”⁵⁵⁹ Information around Program deadlines, application costs, and longer-term costs were all cited as areas where information was either hard to understand or poorly understood. Inadequate information about the Program was mentioned by 30 of the 37 respondents as a constraint, with 10 of them ranking the lack of information as their number one concern.⁵⁶⁰ The Nielsen survey of applicants revealed a general insufficiency of information from ICANN, with only 49 percent of applicants saying they got enough information from ICANN.⁵⁶¹

Given the high propensity to use some form of consulting services—62 percent of applicants indicated they did so—it stands to reason that such services would be in even higher demand in underserved markets.⁵⁶² It is not clear the sufficient support was available to potential applicants in the Global South.

The Applicant Support Program (ASP) is a program that was conceptualized by the Joint Applicant Support Working Group (JASWG) in order to provide assistance to gTLD applicants in underserved regions and communities to ensure worldwide accessibility and competition within the New gTLD Program.⁵⁶³ Entities interested in the ASP had three options:

- ⦿ Access to *pro bono* services for startup gTLD registries through the Applicant Support Directory: New gTLD applicants, particularly from developing countries, were able to obtain financial and technical information or assistance from members of the ICANN Community who had agreed to provide financial or nonfinancial *pro bono* services.⁵⁶⁴
- ⦿ Financial assistance: reduced evaluation fees were provided to qualified applicants.
- ⦿ The Applicant Support Fund: a \$2,000,000 seed fund was set aside by ICANN to help applicants who demonstrated need.

The non-financial support aspect of the ASP called for Community volunteers to provide *pro bono* services to potential applicants. In total, 20 entities volunteered to provide these services.⁵⁶⁵ Approximately 40 potential applicants expressed interest in *pro bono* support, with

⁵⁵⁶ Ibid., p. 10.

⁵⁵⁷ Ibid., p. 10.

⁵⁵⁸ Ibid., p. 9.

⁵⁵⁹ Ibid., p. 9.

⁵⁶⁰ Ibid., pp. 9-10.

⁵⁶¹ Nielsen, *ICANN Application Process Survey*.

⁵⁶² Ibid.

⁵⁶³ ICANN, “Understanding the Applicant Support Program,” accessed 25 January 2017, <https://newgtlds.icann.org/en/applicants/candidate-support>.

⁵⁶⁴ ICANN, “Applicant Support Directory,” accessed 10 August 2018, <https://newgtlds.icann.org/en/applicants/candidate-support/non-financial-support#organizations-offering-support>

⁵⁶⁵ ICANN, “Applicant Support Directory,” accessed 25 January 2017, <https://newgtlds.icann.org/en/applicants/candidate-support/non-financial-support#organizations-offering-support>

half of these potential applicants from the Global South.⁵⁶⁶ Unfortunately, efforts by the review team to obtain information from either the volunteers or applicants for support about these efforts were unsuccessful. Consequently, the efficacy of this program cannot be evaluated, and better coordination and data collection in subsequent procedures for new gTLDs is called for.

Despite the availability of such services, the AMGlobal research revealed concerns centered around the lack of an obvious business plan for a new gTLD for potential applicants from the Global South. This issue was cited by the vast majority (31 out of 37 of respondents), although others—citing time or information concerns, which were often the first issues raised—ranked it as a somewhat lower priority concern (only nine respondents said this was their primary or secondary driver).⁵⁶⁷

A number of applicants across different regions—and especially in Asia and the Middle East—also cited concerns about customer confusion as a major constraint to submitting an application. They wondered if customers would understand and use a new gTLD and expressed concern about the impact of a new gTLD on search engine optimization (SEO).⁵⁶⁸

New gTLD Application and Program Costs

Another concern for potential applicants in the Global South was cost, both of the application process itself as well as running a new gTLD. Accordingly, the JASWG also specified a discounted application fee of only \$47,000.⁵⁶⁹ However, there were only three applicants for financial support,⁵⁷⁰ so it is difficult to assess the effectiveness of the support program.

Price and longer-term running cost were important issues expressed by many interviewees.⁵⁷¹ Although many of the interviewees said they believed their organizations could probably afford the kind of investment needed, almost none had a clear sense of the real costs involved in applying for or running a new gTLD, and many felt the cost was too high for them or potential applicants like them. Consequently, it is difficult to assess the role of cost in decisions not to apply. It seems as though uncertainty surrounding costs was as big an issue as the costs themselves, especially the application fee.

Still, as the ICANN Program Implementation Review notes, “given the low number of applications submitted, consideration should be given to exploring how the Program can be improved to serve its intended purpose.”⁵⁷²

Recommendations

A number of factors appear to have contributed to the low participation in the New gTLD Program by actors in the Global South. These include insufficient information about the Program, market uncertainty, and financial uncertainty. While the need for more clarity and more substantial outreach may be necessary to increase participation in future rounds, the ICANN Community must determine whether increased participation is the ultimate goal. Given

⁵⁶⁶ Ibid.

⁵⁶⁷ AMGlobal, *New gTLDs and Global South*, p. 10.

⁵⁶⁸ Ibid., p. 11.

⁵⁶⁹ ICANN, “Understanding the Applicant Support Program.”

⁵⁷⁰ ICANN, *Program Implementation Review*.

⁵⁷¹ AMGlobal, *New gTLDs and Global South*, p. 12.

⁵⁷² ICANN, *Program Implementation Review*, p. 159.

the low participation in the DNS itself in the Global South,⁵⁷³ reflected in registrations in existing TLDs, some caution should be exercised in the promotion of subsequent procedures in underserved regions. Some have called for “capacity building” to lay the necessary groundwork for new registries,⁵⁷⁴ but, absent market demand for domains in general, efforts to expand participation in these markets might be better placed elsewhere.

One counterpoint is that several respondents in the AMGlobal survey indicated interest in applying for a string in a future round.⁵⁷⁵ This suggests that the provision of more and better information by ICANN might increase the number of applicants.

Improved Outreach

Beginning the communications process earlier was a common refrain expressed by respondents to the AMGlobal survey.⁵⁷⁶ This would allow information about the applicant process to find its way to less technical decision-makers and perhaps even the public. Of course, a more extensive public outreach program would represent a considerable commitment by ICANN, but the added time might lead to a greater number of applications. In addition, expanded participation in conferences and events where the audience already exists, for example, by targeting conferences of professional associations, might have a similar effect.⁵⁷⁷

Informational Content

Another deficiency reported in the AMGlobal Survey related to outreach efforts concerns the content that was provided. This might have been unavoidable given the newness of the Program, but an emphasis on risk mitigation in outreach efforts seems designed more to put already engaged interests at ease rather than to broadening the appeal of the program.⁵⁷⁸ Instead, content focused on successful case studies and business model templates might embolden more tentative players to explore their options.⁵⁷⁹ Recognizing that this is challenging (given the need for ICANN as an institution to remain neutral in the competitive landscape), the AMGlobal Survey suggests that there may be a real demand for documentation of success cases that can be shared with the potential applicant community. The information needs to be straightforward and aimed at audiences with different levels of technical expertise, with a goal of answering one simple question: if our group, association, or organization decides to go forward, what path(s) can we take and what would we get out of it? This is one of most important issues mentioned across numerous markets, and if at all possible, one ICANN needs to address.

Program Costs

There appear to be efforts already underway to reduce application costs and inefficiencies generally. However, the Applicant Support Program, while well intentioned, appears to have

⁵⁷³ ICANN, “Zooknic ccTLD data.”

⁵⁷⁴ Doria, “The need for a remedial gTLD program for #newgtlds.”

⁵⁷⁵ AMGlobal, *New gTLDs and Global South*, p. 13.

⁵⁷⁶ *Ibid.*, p. 16.

⁵⁷⁷ Reaching out via professional and trade associations about new gTLDs and the application process was the top recommendation regarding outreach from respondents to the AMGlobal Survey. See p. 16.

⁵⁷⁸ Philip Corwin, Internet Commerce Association, “ICANN Road Show Opens on Broadway to Mixed Reviews,” 14 July 2009, accessed 10 August 2018, <http://www.internetcommerce.org/icann-road-show-opens-broadway-mixed-reviews/>.

⁵⁷⁹ AMGlobal, *New gTLDs and Global South*.

missed the mark either in its design or execution. This suggests that greater study on how to subsidize participation from underserved markets is necessary, perhaps, as the ICANN Program Implementation Review suggests, by looking at existing programs from institutions such as the World Bank.⁵⁸⁰

That said, cost was rarely given as the primary rationale for the failure to participate. Instead, cost appears to have been primarily an informational issue. With a clear business model and sufficient assistance in navigating the application process, it is possible that there will be greater participation in future rounds by applicants from the Global South.

Recommendations

Recommendation 29: Set objectives/metrics for applications from the Global South.

Rationale/related findings: Applications were few, but there was no concerted effort to encourage them.

To: New gTLD Subsequent Procedures PDP Working Group/Generic Supporting Names Organization

Prerequisite or priority level: Prerequisite—objectives must be set

Consensus within team: Yes

Details: The New gTLD Subsequent Procedures Working Group needs to establish clear, measurable goals for the Global South, including whether or when applications and even number of delegated strings should be objectives. It is possible that short-term objectives should be around second-level participation.

Success measures: Increased participation by the Global South as demonstrated by increased applications and delegations.

Recommendation 30: Expand and improve outreach into the Global South.

Rationale/related findings: Low understanding of New gTLD Program in the Global South

To: ICANN organization

Prerequisite or priority level: Prerequisite

Consensus within team: Yes

Details: If increased applications from the Global South is determined to be an objective for a future round of applications, outreach to the Global South requires a more comprehensive program of conference participation, thought leader engagement, and traditional media. The work of AMGlobal should be built upon to identify targets, outlets, and venues for better outreach. This outreach should include cost projections, potential business models, and resources for further information. Furthermore, the review team recommends that the outreach program begin significantly earlier to facilitate internal decision-making by potential applicants.

⁵⁸⁰ ICANN, *Program Implementation Review*, p. 159. For example, see The World Bank, “What We Do,” accessed 10 August 2018, <http://www.worldbank.org/en/about/what-we-do>

Success measures: Ideally, success would be measured in appreciable growth in applications from the Global South. In the absence of such growth, ICANN should survey entities in the Global South again to determine the sources of the difficulties that continue to be faced by potential applicants.

Recommendation 31: The ICANN organization to coordinate the *pro bono* assistance program.

Rationale/related findings: Despite the registration of both volunteers and applicants, there is no evidence of interaction.

To: ICANN organization

Prerequisite or priority level: Prerequisite

Consensus within team: Yes

Details: Again, if additional applications from the Global South is determined to be an objective of a future round, the *pro bono* assistance program would be coordinated by the ICANN organization to ensure that communication is successful between volunteers and applicants.

Success measures: Both volunteers and applicants should be surveyed by the ICANN organization on the success of the interaction between them so that future reforms can be based on better information.

Recommendation 32: Revisit the Applicant Financial Support Program.

Rationale/related findings: Only three applicants applied for support.

To: New gTLD Subsequent Procedures Working Group

Prerequisite or priority level: Prerequisite

Consensus within team: Yes

Details: The total cost of getting a new gTLD string far exceeds the USD \$185,000 application fee. Beyond efforts to reduce the application fee for all applicants, efforts should be made to further reduce the overall cost of application, evaluation, and conflict resolution, including additional subsidies and dedicated support for applicants from the Global South.

Success measures: Greater participation in the Applicant Support Program.

Preventing Delegations That Would Be Confusing or Harmful

To ensure that the New gTLD Program would not only contribute to competition, consumer trust, and consumer choice in the DNS marketplace, it was important that the introduction of new gTLDs not be confusing or harmful either to the DNS itself or to potential users. While ICANN's initial assessment of applications for new gTLDs was intended to assess whether

new gTLD strings that had been applied for might adversely affect DNS security or stability, there was also the possibility for the Governmental Advisory Committee (GAC) to provide formal advice to the ICANN Board (following its usual procedures)⁵⁸¹ or via “Early Warnings” to applicants that certain new gTLD applications might be confusing or harmful.⁵⁸² There were no limitations or restrictions on the nature or type of GAC Early Warnings, although the GAC had indicated that strings that could raise sensitivities include those that “purport to represent or that embody a particular group of people or interests based on historical, cultural, or social components of identity, such as nationality, race or ethnicity, religion, belief, culture or particular social origin or group, political opinion, membership of a national minority, disability, age, and/or a language or linguistic group (non-exhaustive)” and “those strings that refer to particular sectors, such as those subject to national regulation (such as .bank, .pharmacy) or those that describe or are targeted to a population or industry that is vulnerable to online fraud or abuse.”⁵⁸³

The idea behind GAC Early Warnings was that advance indications of potential problems would either stop particularly problematic applications at an early stage (thus permitting the applicant to recover the bulk of its application fee) or be adjusted to meet the public policy concerns raised by the Early Warning.⁵⁸⁴

The review team assessed whether GAC Early Warnings influenced or affected the new gTLD applications by ensuring that delegations that might be confusing or harmful were stopped or limited. The Warnings had an influence on a number of new gTLD applications regarding consumer protection or applicable law and were instrumental in withdrawals of some applications involving geographic names.⁵⁸⁵

The review team looked at the number of GAC Early Warnings that were made with respect to withdrawn applications, the reasons for those withdrawals, and whether any Early Warning was directly responsible for applications being put on hold and the reasons why that was the case. Of the 1,930 applications, 575 were withdrawn by the applicants.⁵⁸⁶ Of the 187 applications that received an Early Warning as of December 2016, 89 were delegated and 65 were withdrawn.⁵⁸⁷ Most withdrawn applications related to multiple applications for the same string. Most substantive withdrawals related to conflicts with geographic names, for example, .guangzhou, .roma and .zulu. This is a limited number, and the majority of withdrawals do not appear to be directly related to Early Warnings *per se*, but rather to multiple applications for the same name.

Another issue addressed by the review team was whether GAC Early Warning advice was associated with the addition of Public Interest Commitments (PICs) intended to reduce

⁵⁸¹ ICANN, *gTLD Applicant Guidebook* (2012). The AGB addressed the procedures for GAC Advice on new gTLDs in section 1.1.2.7 and 3.1. See also ICANN, “GAC Early Warning,” accessed 10 August 2018, <https://newgtlds.icann.org/en/applicants/gac-early-warning> and ICANN GAC, “GAC Early Warnings,” accessed 10 August 2018, <https://gacweb.icann.org/display/gacweb/GAC+Early+Warnings>

⁵⁸² *Ibid.*, Section 1.1.2.4. GAC EW had to be submitted during the public comment period, did not require consensus of other GAC members (unlike GAC advice to the Board), had to be submitted via the ICANN Board, and did not constitute a formal objection. GAC EW advice was intended to “address applications...identified by governments to be problematic, e.g., that potentially violate national law or raise sensitivities.”

⁵⁸³ ICANN, *gTLD Applicant Guidebook* (2012), p. 1-8.

⁵⁸⁴ *Ibid.*, p. 1-42. The refund available to an applicant within 21 days of a GAC Early Warning was 80 percent of the application fee, or US\$148,000.

⁵⁸⁵ The introduction of Public Interest Commitments, which was the subject of GAC advice to the ICANN Board on the New gTLD Program, is addressed in the “Public Interest Commitments” section of this report.

⁵⁸⁶ It should be noted that these include multiple applications for the same string. The number of withdrawn applications, and applications that received GAC Early Warnings, is calculated as of December 2016. See ICANN, “New gTLD Current Application Status,” accessed 10 August 2018,

<https://gtldresult.icann.org/application-result/applicationstatus>. The page contains a search function with a capability to filter applications on the basis of whether they’ve received a GAC Early Warning.

⁵⁸⁷ *Ibid.* See also ICANN, “Program Statistics.”

potential harm to consumers and whether Early Warning advice resulted in any other changes to new gTLD applications. Of the 84 delegated gTLDs that received Early Warnings, 50 added PICs, primarily for sensitive or regulated sectors like .tax, .doctor, and .casino. It is possible that the specific GAC Early Warning advice in these cases encouraged the applicants to add PICs intended to protect consumers.⁵⁸⁸

Two other cases involved .halal and .islam. GAC Early Warning advice, which initially resulted in the delegation being put on hold, are now the subject of Independent Review proceedings.⁵⁸⁹ In a 4 November 2013 letter from the Organization of Islamic Cooperation (OIC) to the GAC Chair, the OIC requested that its letter be considered an “official opposition of the Member States of the OIC towards probable authorization by the GAC allowing the use of [...] .ISLAM and .HALAL by any entity not representing the collective voice of the Muslim people.”⁵⁹⁰ In a 7 February 2014 letter, ICANN noted to the applicant that there seems to be a conflict between the commitments made in the applicant’s letters and the concerns raised in letters to ICANN urging ICANN not to delegate the strings. Given these circumstances, the NGPC stated that it would not address the applications further until the conflicts have been resolved.⁵⁹¹

Overall, GAC Early Warnings appear to have been a useful and timely component of the public comment period, permitting applicants to ensure that public policy or related concerns could be addressed prior to delegation. It also permitted withdrawal of an application and reimbursement of part of the application fee in certain cases.

Recommendation

Recommendation 33: As required by the October 2016 Bylaws, GAC consensus advice to the Board regarding gTLDs should also be clearly enunciated, actionable, and accompanied by a rationale, permitting the Board to determine how to apply that advice.⁵⁹² ICANN should provide a template to the GAC for advice related to specific TLDs in order to provide a structure that includes all of these elements. In addition to providing a template, the Applicant Guidebook should clarify the process and timelines by which GAC advice is expected for individual TLDs.

Rationale/related findings: The GAC Early Warnings helped applicants to improve delegated gTLDs by ensuring that public policy or public interest concerns were addressed and should continue to be an element of any future expansion of the gTLD space. Applicants could

⁵⁸⁸ A further review of the linkages between PICs relating to consumer protection and GAC Advice can be found in the “Public Interest Commitments” section of this report.

⁵⁸⁹ See: ICANN, “Independent Review Process Documents,” accessed 10 August 2018, <https://www.icann.org/resources/pages/accountability/irp-en>; ICANN, “Asia Green IT Systems Bilgisayar San. ve Tic. Ltd. Sti. v. ICANN (.ISLAM/.HALAL),” accessed 10 August 2018, <https://www.icann.org/resources/pages/irp-agit-v-icann-2015-12-23-en>; “GAC Early Warning – Submitted Halal-AE-60793,” accessed 10 August 2018, <https://gacweb.icann.org/display/gacweb/GAC+Early+Warnings?preview=/27131927/27197890/Halal-AE-60793.pdf>; “GAC Early Warning – Submitted Islam-AE-23450,” accessed 10 August 2018, <https://gacweb.icann.org/display/gacweb/GAC+Early+Warnings?preview=/27131927/27197891/Islam-AE-23450.pdf>; “GAC Early Warning – Submitted Islam-IN-23459,” accessed 10 August 2018, <https://gacweb.icann.org/display/gacweb/GAC+Early+Warnings?preview=/27131927/27197989/Islam-IN-23459.pdf>; “GAC Early Warning – Submitted Halal-IN-60793,” accessed 10 August 2018, <https://gacweb.icann.org/display/gacweb/GAC+Early+Warnings?preview=/27131927/27197987/Halal-IN-60793.pdf>.

⁵⁹⁰ Steve Crocker ([former] Chair, ICANN Board of Directors), “RE: Letter from the Secretary General of of the Organisation of Islamic Cooperation,” letter to GAC Chair, 11 November 2013, <https://www.icann.org/en/system/files/correspondence/crocker-to-dryden-11nov13-en.pdf>.

⁵⁹¹ “2013-11-20-islam-halal-GAC Register of Advice,” accessed 10 August 2018, <https://gacweb.icann.org/display/GACADV/2013-11-20-islam-halal>.

⁵⁹² ICANN, “Bylaws,” (2016). Section 3.6.

withdraw their applications if they determined that the response or action required to respond to GAC Early Warning advice was either too costly or too complex, and to do so in a timely manner that would permit them to recover 80 percent of the application cost.⁵⁹³

Where general GAC advice was provided by means of communiqués to the ICANN Board, it was sometimes not as easy to apply to the direct cases.⁵⁹⁴ Applying for a gTLD is a complex and time-consuming process, and the initial AGB was amended even after the call for applications had closed. Given the recommendations to attempt to increase representation from applicants from the Global South, it would be appropriate to ensure that the clearest possible information and results from the last round are made available.⁵⁹⁵

To: New gTLD Subsequent Procedures PDP Working Group, GAC, ICANN organization

Prerequisite or priority level: Prerequisite

Consensus within team: Yes

Details: While the details should be left to the Subsequent Procedures PDP Working Group, the CCT Review Team believes there should be a mechanism created to specifically allow objections and means to challenge assertions of fact by individual members of the GAC. Finally, some sort of appeals mechanism is imperative.

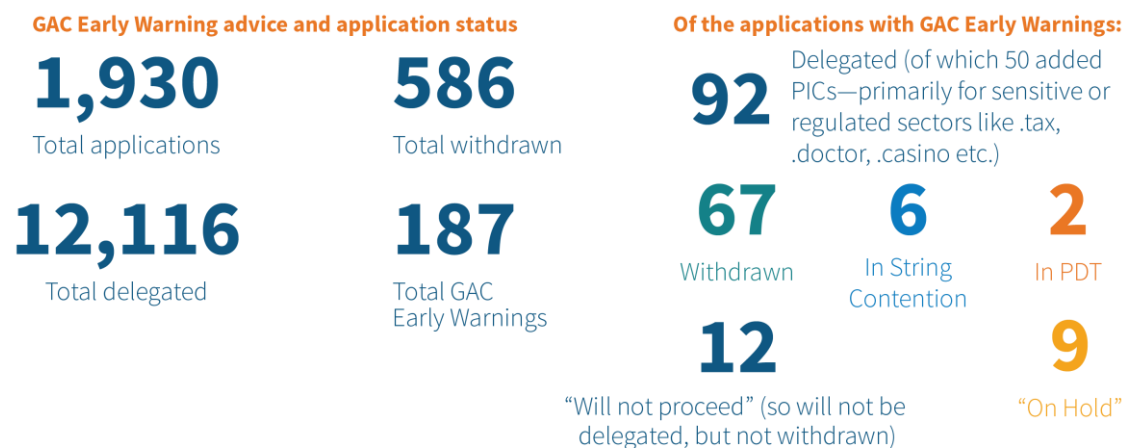
Success measures: This recommendation stems from a more qualitative assessment by the review team and anecdotal feedback from applicants. Consequently, the measures for success will be similarly qualitative as the next CCT Review Team evaluates the process of gTLD application moving forward. That said, the proof will lie in the implementation of the recommendation. With a structured process and template for the submission of GAC advice, and a process for objection and appeal, the most frequently voiced concerns of applicants regarding such advice will be addressed.

⁵⁹³ In 2 of the 187 GAC Early Warning cases, the applications were withdrawn within 21 days of receiving the Warning, which permitted the applicants to receive the 80 percent refund. See ICANN, *Program Implementation Review*, p. 43.

⁵⁹⁴ ICANN's *Program Implementation Review* (p. 96) shows that although 187 applications received GAC Early Warning advice, some 355 applications were subject to GAC advice via communiqués to the ICANN Board only, and did not have the same advantage of GAC Early Warning specificity or predictability.

⁵⁹⁵ See also the discussion on "Application and the Global South" earlier in this chapter.

Table 17: Applications Receiving GAC Early Warning Advice⁵⁹⁶



Allowing Specific Communities to Be Served by a Relevant TLD

The Applicant Guidebook included a special provision for applications for new gTLDs that could be designated as serving a specific community.⁵⁹⁷ Any application wishing to be designated as a community-based gTLD had to show “an ongoing relationship with a clearly delineated community,” that the string applied for was “strongly and specifically related to the named community,” that there were dedicated registration and use policies for registrants including security verification, and show that the application was endorsed by one or more communities representing the community-based gTLD.⁵⁹⁸ All other applications were not presumed to be community-based. However, formal objections on community grounds could be raised against any application, even if it had not been submitted as a community application. Of the 62 community objections raised, the the International Chamber of Commerce (a primary dispute resolution provider) found in favor of the community in 12 gTLDs, the objectors failed for 31 gTLDs, and objections were dropped for 19 gTLDs.⁵⁹⁹

Where a community had applied for a community-based gTLD and a “standard” applicant had applied for the same gTLD, a different evaluation process and criteria applied. The criteria and process for Community Priority Evaluation (CPE) were established to determine whether the community gTLD should be awarded priority in a contention set.⁶⁰⁰

⁵⁹⁶ ICANN, “New gTLD Current Application Status page,” (updated as of 23 February 2017). Note that one application with GAC Early Warning is both on hold and in string contention.

⁵⁹⁷ ICANN, *Applicant Guidebook* (2012), Section 1.2.3.1: “Community-based applications are intended to be a narrow category, for applications where there are unambiguous associations among the applicant, the community served, and the applied-for gTLD string. Evaluation of an applicant’s designation as community-based will occur only in the event of a contention situation that results in a community priority evaluation. However, any applicant designating its application as community-based will, if the application is approved, be bound by the registry agreement to implement the community-based restrictions it has specified in the application. This is true even if there are no contending applicants.”

⁵⁹⁸ Ibid.

⁵⁹⁹ See International Chamber of Commerce, “Pending Cases,” <https://iccwbo.org/dispute-resolution-services/icann-gtld-process/pending-cases/> and “Expert Determinations,” <https://iccwbo.org/dispute-resolution-services/icann-gtld-process/expert-determinations/>, accessed 10 August 2018.

⁶⁰⁰ ICANN, “Community Priority Evaluation,” accessed 10 August 2018, <https://newgtlds.icann.org/en/applicants/cpe>. The community applicant had to score at least 14 points to prevail in a CPE. If those 14 points were not attained, then there was no “priority” for the community that claimed it and the contention was treated in the standard way.

The special priority awarded to successful community-based applications meant that other, even well-qualified or highly-rated, contending applications would be eliminated. For that reason, the AGB indicated that “very stringent requirements for qualification of a community-based application” would apply, although it was underlined that not meeting the scoring threshold was “not necessarily an indication the community itself is in some way inadequate or invalid.”⁶⁰¹

Of the 84 community-based applications, a very large majority (some 75 percent) did not prevail in CPE, in part because of the assessment by the external independent evaluator (the Economist Intelligence Unit) of whether or not the applicant(s) adequately represented the specific community.⁶⁰²

Having noted the disproportionate number of failed applications for the community-based applications, and the queries on the process raised by the GAC and other interested parties, the review team considered the ICANN Ombudsman's “Own Motion Report.”⁶⁰³ That report assessed both the Applicant Guidebook information and the process for assessing applications. While it found that the process outlined in the Guidebook was not unfair to applicants, the processing of applications could have been clearer, and while there had been no inherent unfairness, there is certainly room for improving the process in the future, both to ensure a better rate of success of community applications, to avoid inconsistencies between standard and community applicants, and to ensure that expectations of applicants were not unnecessarily raised. The Ombudsman's report concluded that some problems had arisen in the CPE process, which, while not inherently unfair or warranting rejection of the outcomes, did lead to recommendations for changes in any future round.⁶⁰⁴ These include “better scope of understanding what community-based applications were for and what sort of persons or organizations would benefit from the use of a community-based top-level domain. Some consideration should have been given to the types of community which could use their own top-level domain, whether these were to be charitable, community organizations or perhaps even NGOs or others.”⁶⁰⁵

In addition, the more recent Council of Europe report of November 2016 raises a number of observations and recommendations on the process for evaluating and assessing such applications.⁶⁰⁶

Recommendation

Recommendation 34: A thorough review of the procedures and objectives for community-based applications should be carried out and improvements made to address and correct the concerns raised before a new gTLD application process is launched. Revisions or adjustments should be clearly reflected in an updated version of the 2012 Applicant Guidebook.

⁶⁰¹ ICANN, *Applicant Guidebook*, Section 4.9.

⁶⁰² Applications had to show an ongoing relationship with a clearly delineated community, the string itself had to be specifically related to the named community and had to have dedicated registration and use policies for registrants, and the application had to be endorsed by the named community.

⁶⁰³ ICANN Ombudsman Blog, “EIU Own Motion Report,” 11 October 2015, accessed 10 August 2018, <https://omblog.icann.org/index.html%3Fm=201510.html>.

⁶⁰⁴ Ibid.

⁶⁰⁵ Ibid.

⁶⁰⁶ Council of Europe (November 2016), *Applications to ICANN for Community-Based New Generic Top-Level Domains (gTLDs): Opportunities and Challenges from a Human Rights Perspective*, accessed 10 August 2018, <https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=09000016806b5a14>

Rationale/related findings: Given the assessment carried out by the Ombudsman's Own Motion Report, the results of community-based objections, the Council of Europe report on the human rights perspective of those applications, and the interest raised by the ICANN community regarding the relative lack of success of community-based applications (an area where the ICANN community had intended to provide a special entry for communities to gTLDs of particular interest and use for them), it could be expected that there would be a higher rate of success for community-based applications.

To: New gTLD Subsequent Procedures PDP Working Group

Prerequisite or priority: Prerequisite

Consensus within team: Yes

Effectiveness of the Dispute Resolution Process in Cases of Formal String Objection

The application and evaluation process for the New gTLD Program was described in the ICANN gTLD Applicant Guidebook of 4 June 2012: this was based on the policies developed by the Community on the demand, benefits, and risks of new gTLDs, the selection criteria that should be applied, how gTLDs should be allocated, and the contractual conditions that should be required for new gTLD registries.

After the close of the application submission deadline, ICANN began assessing administrative completeness of each application and posted for public comment the public portions of complete applications in order to allow the Community to submit observations to be considered during the Initial Evaluation review (also carried out by ICANN). Evaluation criteria for the Initial Review included “string reviews” to determine whether the security or stability problems might arise, including those that might be caused due to “similarity to existing TLDs or reserved names.”⁶⁰⁷ These comments and the evaluation were distinct from formal objections that could be raised concerning issues going beyond the evaluation criteria.

During the same open comment period, the ICANN Governmental Advisory Committee (GAC) could issue Early Warning notices that an application was potentially sensitive or problematic for government(s). These early warnings were not formal objections, but their substance might be developed into a formal objection if not resolved.⁶⁰⁸

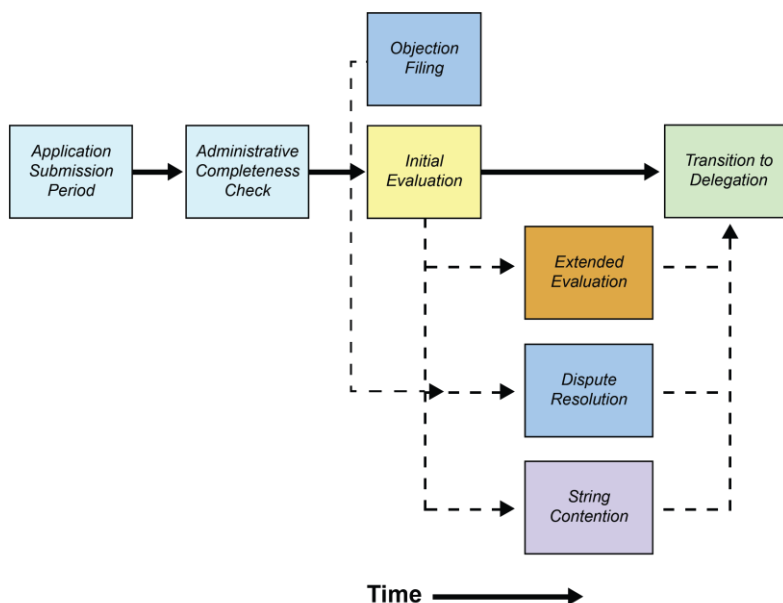
In addition to the public comments, objections could be filed by third parties to protect specific rights and via a dispute resolution mechanism established to resolve cases that went beyond ICANN's initial evaluation of applications.⁶⁰⁹

⁶⁰⁷ ICANN, *Applicant Guidebook*, Section 1.1.2.5. Initial evaluation panels were established to review string similarity, DNS stability and geographic names. The Initial Review also included an assessment of the required technical, operational and financial capability of the applicant. As noted in the section on competition, the use of back-end providers means that technical capability of an applicant could be achieved by using third-party assistance.

⁶⁰⁸ See the “Preventing Delegations that Would Be Confusing or Harmful” section of this report for a review of the GAC Early Warning process.

⁶⁰⁹ ICANN, *Applicant Guidebook*, pp. 1-12, 1-14, Sections 1.1.2.6 and 1.1.2.9.

Table 18: Application Process Stages⁶¹⁰



Once submitted to ICANN, applications will pass through multiple stages of processing.

The grounds for objection were developed to implement the GNSO recommendations relating to string confusion, community objections, limited public interest, or violation of legal rights and were explained in the Applicant Guidebook. Dispute resolution proceedings were carried out by three different service providers selected by a public call for expressions of interest.⁶¹¹

In order to provide a rough assessment of the effectiveness of the process, the review team analyzed both the number and nature of objections that were filed after the initial assessment by the ICANN organization and the outcomes of those objections.⁶¹² In particular, the Team assessed the results of singular/plural string confusion objections and identified some improvements that might be made to the process of application and evaluation in any new launch of gTLDs.

Four types of objections (after initial ICANN assessment) were possible:

- ⦿ **String confusion**, which also involved singular and plural versions of the same word).⁶¹³

⁶¹⁰ ICANN, *gTLD Applicant Guidebook*, pp. 1-4.

⁶¹¹ ICANN, *Program Implementation Review (2016)*, p. 104. The following organizations carried out the proceedings: International Center for Dispute Resolution (ICDR) for string confusion, Arbitration and Mediation Center of the World Intellectual Property Organisation for legal rights objections, and International Center for Expertise of the International Chamber of Commerce for community objections and limited public interest objections.

⁶¹² ICANN, *Applicant Guidebook*, Sections 2-2, 2-4. An initial evaluation was carried out by ICANN, which looked at "String similarity, Reserved names, DNS stability and Geographic names.." and in particular "Whether the applied-for gTLD string is so similar to other strings that it would create a probability of user confusion; Whether the applied-for gTLD string might adversely affect DNS security or stability; and Whether evidence of requisite government approval is provided in the case of certain geographic names."

⁶¹³ The GAC advised that single and plural versions of the same word could create confusion for consumers and should be avoided. See ICANN GAC, *Beijing Communiqué*.

- ⦿ **Community objections**, where there was substantial opposition from a significant portion of the community that the string targets.⁶¹⁴
- ⦿ **Limited Public Interest Objections**, which were objections on the grounds that the gTLD applied for contradicted generally accepted legal norms of morality and public order recognized under principles of international law.
- ⦿ **Legal rights**, which the objector could claim would be violated if a particular string was delegated.⁶¹⁵

The review team's analysis of the outcome of the dispute resolutions relating to string confusion objections showed that there were 230 exact match sets (i.e., multiple applicants for the same gTLD), and in some cases up to 13 applicants for the same gTLD (for example, .app, .book, and .blog), the majority of which were resolved.⁶¹⁶ However, a few are still on hold at the time of writing, including, for example: gay, .home, .cpa, .llp, .hotel, .llc, .mail, .llc, .inc, and .corp. It should be noted that many applications had objections filed on more than one ground (for example, community plus limited public interest, or confusability plus community).

String confusion objections were brought before the International Centre for Dispute Resolution (ICDR), the international division of the American Arbitration Association (AAA). From the cases reviewed by the review team of the outcome of ICDR panels on objections to new gTLD applications regarding similarity between the singular and plural version of the same gTLD, it would appear there was not a clear, consistent ruling in all cases. In some cases, singular and plural versions were not considered to be confusingly similar (for example .car/.cars), whereas in other cases the plural was considered to be confusingly similar (for example .pet/.pets; .web/.webs; .game/.games).⁶¹⁷

It would appear that inconsistency in outcome on singular/plural cases arose because the dispute resolution process allowed for different expert panels to examine individual cases, even though they were based on similar situations. Although this was intended to give the panels latitude to consider the facts of each individual application, it also meant that different expert panels could come to different conclusions in cases that otherwise might have been considered to have similar characteristics. This could be avoided in future by ensuring that all similar cases of plural versus singular strings were examined by the same expert panelist, or by determining in advance that strings would not be delegated for singular and plurals of the same gTLD. All such similar applications would be resolved either by negotiation between the parties, for example, via a private auction, or by ICANN auction. Whatever the option chosen, it should be made clear in the Applicant Guidebook in advance of any future round of new gTLDs.

Furthermore, there was no appeal mechanism foreseen after the dispute resolution panel had taken its decision. This meant that some unsuccessful objectors then sought to have their cases considered either by the ICANN Board or the ICANN Ombudsman for resolution via ICANN Accountability Mechanisms.⁶¹⁸ In order to avoid different solutions to similar problems and consistency of outcome, and to ensure a fairer process overall in all objection cases,

⁶¹⁴ See the "Allowing Specific Communities to be Served by a Relevant TLD" section of this report for a review of community objections.

⁶¹⁵ ICANN, *Program Implementation Review*, p. 104.

⁶¹⁶ *Ibid.*, p. 64.

⁶¹⁷ International Center for Dispute Resolution, "ICANN New gTLD Program: Listing of String Confusion Objections Filed and Determinations," accessed 10 August 2018, <http://info.adr.org/icannngtld/>

⁶¹⁸ ICANN, "Accountability Mechanisms," accessed 10 August 2018, <https://www.icann.org/resources/pages/mechanisms-2014-03-20-en>

introducing a post-dispute resolution panel review mechanism (as proposed in the ICANN Program Implementation Review) should be considered.⁶¹⁹

Recommendation

From the initial information available, the conclusions are:

Recommendation 35: The Subsequent Procedures PDP should consider adopting new policies to avoid the potential for inconsistent results in string confusion objections. In particular, the PDP should consider the following possibilities:

1. Determining through the initial string similarity review process that singular and plural versions of the same gTLD string should not be delegated.
2. Avoiding disparities in similar disputes by ensuring that all similar cases of plural versus singular strings are examined by the same expert panelist.
3. Introducing a post-dispute resolution panel review mechanism.

Rationale/related findings: From a review of the outcome of singular and plural cases, it would appear that discrepancies in outcomes arose because the dispute resolution process allowed for different expert panelists to examine individual cases, although they were based on similar situations. This meant that different expert panelists could come to different conclusions in cases that otherwise might have been considered to have similar characteristics

The ICANN Program Implementation Review found that there was no recourse after a decision was reached by an expert panel. Given that there appear to be inconsistencies in the outcomes of different dispute resolution panels, it would be useful to establish a review mechanism.

There appear to be inconsistencies in the outcomes of different dispute resolution panels regarding singular and plural versions of the same word, which should be avoided in order to avoid confusing consumers.⁶²⁰

To: New gTLD Subsequent Procedures PDP Working Group

Prerequisite or priority level: Prerequisite

Consensus within team: Yes

Details: While the details should be left to the New gTLD Subsequent Procedures Working Group, the CCT Review Team believes there should be a mechanism created to specifically allow for objections by individual members of the GAC and means to challenge assertions of fact by GAC members. Finally, some sort of appeals mechanism is imperative.

Success measures: No string confusion objections are filed for cases of singular and plural versions of the same string. Or, should singular and plural versions be allowed, objection panels evaluate all such cases with a consistent approach so that all single or plural disputes are resolved in the same manner.

⁶¹⁹ ICANN, *Program Implementation Review*, p. 114.

⁶²⁰ This was also mentioned in the GAC's *Beijing Communiqué*.

Table 19: List of Single/Plural Strings Applied for and Delegated (in Yellow Highlight)⁶²¹

.tour	.tours
.web	.webs
.sport	.sports
.kid	.kids
.gift	.gifts
.game	.games
.deal	.deals
.coupon	.coupons
.car	.cars
.fan	.fans
.home	.homes
.hotel	.hotels
.hotel	.hoteles
.loan	.loans
.market	.markets
.watch	.watches
.pet	.pets
.photo	.photos
.property	.properties
.review	.reviews
.supply	.supplies
.work	.works
.auto	.autos
.cruise	.cruises
.career	.careers
.accountant	.accountants

⁶²¹ See ICANN, “New gTLD Current Application Status,” accessed 10 August 2018, <https://gtldresult.icann.org/application-result/applicationstatus>. The page contains a search function with a capability to filter applications on the basis of whether are part of a contention set.

11 Appendices

Appendix A: Glossary of Terms

Term	Acronym (if applicable)	Definition
Applicant Guidebook	AGB	A document describing the requirements of the new gTLD application and evaluation processes.
American Standard Code for Information Exchange	ASCII	Character encoding based on the English alphabet.
Botnet Command-and-Control	Botnet C2	Using domain names as a way to control and update botnets, which are networks of thousands to millions of infected computers under the common control of a criminal. Botnets can automate and amplify the perpetration of many forms of DNS abuse.
Compromised Domains		Domains in which a malicious actor has broken into the web hosting of a registrant for the express purpose of engaging in DNS abuse.
Country Code Top-Level Domain	ccTLD	A class of top-level domains only assignable to represent countries and territories listed in the ISO 3166-1 standard. See http://www.iana.org/domains/root/db .
DNS Abuse		Intentionally deceptive, conniving or unsolicited activities that actively exploit the DNS and/or the procedures used to register domain names.
DNS Security Abuse		DNS abuse related to cybersecurity, such as malware distribution, phishing, pharming, botnet command-and-control, and high volume spam.
Domain Name System	DNS	The global hierarchical system of domain names.
Governmental Advisory Committee	GAC	An ICANN committee comprising appointed representatives of national governments, multinational governmental organizations and treaty organizations, and distinct economies. Its function is to advise the ICANN Board on matters of concern to governments. The GAC operates as a forum for the discussion of government interests and concerns, including consumer interests. As an Advisory Committee, the GAC has no legal authority to act for ICANN, but will report its findings and recommendations to the ICANN Board.
Generic Names Supporting Organization	GNSO	ICANN's policy development body for generic TLDs and the lead in developing policy recommendations for the introduction of new gTLDs. The GNSO is the body of six constituencies: the Commercial and Business Constituency, the gTLD Registry Constituency, the Internet Service Provider(ISP) Constituency, the Non-Commercial Constituency, the Registrar Constituency, and the Intellectual Property (IP) Constituency.
Generic Top-Level Domain	gTLD	Generic top-level domains (gTLDs) are one of the categories of top-level domains (TLDs) maintained by

		the Internet Assigned Numbers Authority (IANA) for use in the Domain Name System of the Internet. They have three or more characters, and can be used for general purposes.
Internet Assigned Numbers Authority	IANA	IANA is the authority originally responsible for overseeing Internet Protocol (IP) address allocation, coordinating the assignment of protocol parameters for Internet technical standards, managing the DNS (including delegating top-level domains), and overseeing the root name server system. Under ICANN, IANA distributes addresses to Regional Internet Registries, coordinates with the IETF and other technical bodies to assign protocol parameters, and oversees DNS operation.
Internationalized Domain Name	IDN	A domain name consisting, in whole or in part, of characters used in the local representation of languages other than the basic Latin alphabet (a–z), European-Arabic digits (0–9) and the hyphen (-).
Malicious Registrations		Domains registered by malicious actors for the express purpose of engaging in DNS abuse.
Malware		Software intended to damage, disable or otherwise gain access to the computer systems of others in order to engage in various forms of DNS abuse.
Public Interest Commitment	PIC	PICs are safeguards enumerated in Specification 11 of the Registry Agreement, which are intended to hold registry operators to certain standards. PICs are a mechanism to allow registry operators to commit to binding contractual obligations that may be enforced by ICANN Compliance and via the Public Interest Commitments Dispute Resolution Procedure (PICDRP).
Public Interest Commitment Dispute Resolution Procedure	PICDRP	A dispute resolution procedure established to address complaints that a Registry Operator may not be complying with the Public Interest Commitments set forth in Specification 11 of its Registry Agreement.
Phishing		A form of DNS abuse in which a website address or link is sent via email to Internet users to direct them to a website that fraudulently presents itself as a trustworthy site with the purpose of deceiving those users into divulging sensitive information (e.g., online banking credentials or email passwords). The goal of phishing is usually the theft of funds or other valuable assets.
Registry Agreement	RA	The agreement executed between ICANN and successful gTLD applicants.
Registry Services Evaluations Policy/Registry Services Evaluation Process	RSEP	RSEP is ICANN's process for evaluating proposed gTLD registry services or contractual modifications for security, stability or competition issues.
Registry Services Provider	RSP	A company that manages the operations of a TLD on behalf of the TLD owner or licensee. The RSP keeps the master database and generates zone files to allow computers to route Internet traffic using the DNS.
Security and Stability Advisory Committee	SSAC	An advisory committee to the ICANN Board composed of technical experts from industry and academia, as well as operators of Internet root servers, registrars and TLD registries.

Spam		Bulk unsolicited emails sent from domains that are used to advertise websites. Spam is often an avenue for phishing and malware distribution.
Top-Level Domain	TLD	A name at the top of the DNS naming hierarchy. It appears in domain names as the string of letters following the last dot, such as “net” in www.example.net. The TLD administrator controls which second-level names are recognized in that TLD. The administrators of the root domain or root zone control which TLDs are recognized by the DNS.
Trademark Clearinghouse	TMCH	A repository for trademark data supporting rights protection services offered by new gTLD registries.
Uniform Domain Name Dispute Resolution Policy	UDRP	A policy under which challenges to domain name registrations are resolved by a mandatory online arbitration based upon written statements and arguments. All ICANN-accredited registrars follow a uniform dispute resolution policy.
Uniform Rapid Suspension	URS	The URS provides trademark holders with a streamlined and quick mechanism to “take down” clear cases of infringements domain names. A successful proceeding will result in the suspension of the domain name for the balance of its registration term. Compliance with URS decisions is mandatory for all new ICANN-accredited gTLD operators.

Appendix B: Review Process

Founding Documents

The CCT prepared Terms of Reference⁶²² and several iterations of the Work Plan⁶²³, which was regularly updated, to guide its work. The two founding documents were adopted in March 2016. The Terms of Reference set the review team's mandate, includes detailed definitions of key concepts, outlines the expected deliverables, and establishes ground rules pertaining to the process, engagement, and tools used to conduct work. The Work Plan identifies milestones and deliverables in the CCT Review's lifecycle, lists data elements to be considered, and establishes timelines.

The CCT adopted a conflict of interest policy in March 2016.⁶²⁴ All members' declarations were submitted in accordance with the policy and made public on the CCT wiki.⁶²⁵ All CCT calls began with a request to provide updates to statements of interests.⁶²⁶

Modus Operandi

The CCT conducted its work on publicly archived mailing lists.⁶²⁷ Its meetings and conference calls were open to silent observers. Observers were also welcome to subscribe to mailing lists (with viewing rights only). Activities of the review team are documented on a public wiki space.⁶²⁸

The CCT operated in a consensus fashion.

Subteams

Its mandate being threefold, the CCT decided to conduct its work by establishing three subteams: (1) Competition and Consumer Choice; (2) Safeguards and Consumer Trust; and (3) the Application and Evaluation Process of the New gTLD Program.

- ⦿ The **Competition and Consumer Choice** subteam – led by Jordyn Buchanan – was tasked with reviewing the available data on competition and consumer choice, requesting additional data or other resources that may assist in their review, and reporting to the larger CCT Review Team on its findings and recommendations. The group utilized the work of Analysis Group, which conducted an ICANN-commissioned

⁶²² Competition, Consumer Trust and Consumer Choice Review Team (23 March 2016), *Terms of Reference*, accessed 10 August 2018,

<https://community.icann.org/download/attachments/58727379/CCTRToRDRAFTv6.pdf?version=1&modificationDate=1458753064411&api=v2>

⁶²³ Competition, Consumer Trust and Consumer Choice Review Team (23 March 2016), *Work Plan*, accessed 10 August 2018,

<https://community.icann.org/download/attachments/58727379/DRAFT%20workplan%20v2.pdf?version=1&modificationDate=1458753104114&api=v2>

⁶²⁴ Competition, Consumer Trust and Consumer Choice Review Team (9 March 2016), *Conflict of Interest Policy*, accessed 10 August 2018, <https://community.icann.org/download/attachments/58732354/ColPolicy-CCTReviewTeam-revised9March2016.pdf?version=1&modificationDate=1459161203000&api=v2>

⁶²⁵ ICANN, "Composition of Review Team," accessed 10 August 2018, <https://community.icann.org/display/CCT/Composition+of+Review+Team>

⁶²⁶ The statements of interest of the review team members can be found at <https://community.icann.org/display/CCT/Composition+of+Review+Team>.

⁶²⁷ ICANN, "Email Archives," accessed 10 August 2018, <https://community.icann.org/display/CCT/Email+Archives>

⁶²⁸ ICANN, "Competition, Consumer Trust and Consumer Choice," accessed 10 August 2018,

<https://community.icann.org/display/CCT/Competition%2C+Consumer+Trust+and+Consumer+Choice>

economic study on the competitive effects of the New gTLD Program on the domain name marketplace.⁶²⁹The Competition and Consumer Choice subteam conducted work on a dedicated mailing list⁶³⁰ and calls.⁶³¹

- ⦿ The **Safeguards and Trust** subteam – led by Laureen Kapin and Andrew Bagley – was created to explore two key areas of the review as outlined in section 9.3 of the Affirmation of Commitments: (1) consumer trust; (2) effectiveness of safeguards put in place to mitigate issues involved in the introduction or expansion of new gTLDs. The Safeguards and Consumer Trust subteam conducted work on a dedicated mailing list⁶³² and calls.⁶³³
- ⦿ Although the **Effectiveness of the Application and Evaluation Process of the New gTLD Program** is considered a subteam, it assembles all the members of the full review team. Application and Evaluation Process-related discussions were held on plenary calls. The subteam – led by Jonathan Zuck – focused its activities around three tracks: (1) successful applicants, determining the challenges successful applicants faced, the support they received and an assessment of the impact of the GAC early warnings on the process; (2) unsuccessful applicants, assessing causes of failure and the support received; (3) missing applicants, with an emphasis on the developing world, to better understand why these would-be registries did not submit an application.
- ⦿ An **INTA Impact Study** subteam - led by David Taylor - was limited in time as it was formed to analyze and draw conclusions on the INTA Impact Study results. The subteam held three dedicated calls.⁶³⁴

Template

Building on readings and discussions, the CCT Review Team formulated sets of high-level questions to be addressed and developed a list of discussion papers. To ensure consistency in the subteams' work leading to draft recommendations, the CCT Review Team adopted a template that framed the drafting effort.⁶³⁵ The CCT made its recommendations on fact-based findings.

Consensus

The draft report and recommendations were developed according to a bottom-up, multistakeholder approach. The Draft Report was circulated for review and comment by the CCT from December 2016 to January 2017. The first reading took place during the 7 December 2016 plenary meeting and the final on 16 February 2017. Following the final reading, the draft report was sent to the CCT for a 24-hour period to relay any additional edits. The draft report is the outcome of extensive work by the CCT conducted during the first 12 months of its work, during which it held 81 calls or meetings. It represents a careful consideration of the data received and a diligent attention to the input received.

⁶²⁹ Analysis Group, *Phase I Assessment* (2015) and Analysis Group, *Phase II Assessment* (2016)

⁶³⁰ ICANN, "The cctreview-competition Archives" accessed 10 August 2018,

<http://mm.icann.org/pipermail/cctreview-competition/>

⁶³¹ ICANN, "Competition and Consumer Choice - Calls," accessed 10 August 2018,

<https://community.icann.org/pages/viewpage.action?pagelId=58737630>

⁶³² ICANN, "The cctreview-safeguards Archives," accessed 10 August 2018,

<http://mm.icann.org/pipermail/cctreview-safeguards/>

⁶³³ ICANN, "Safeguards and Trust - Calls," accessed 10 August 2018,

<https://community.icann.org/pages/viewpage.action?pagelId=58737319>

⁶³⁴ ICANN, "INTA Impact Study - Calls" <https://community.icann.org/x/oGjwAw>

⁶³⁵ Competition, Consumer Trust and Consumer Choice Review Team,, *CCTRT Discussion Paper Worksheet*, " accessed 10 August 2018,

<https://community.icann.org/download/attachments/58727456/Revised%20template%20%28adopted%29.docx?version=1&modificationDate=1471445497000&api=v2>

Consultations and Outreach Efforts

An outreach plan was designed to ensure that the CCT's work was discussed by the entire ICANN community in a robust and timely fashion.

The CCT sought input from the global multistakeholder community throughout the development of its draft report. Consultation was conducted through (but not limited to) the following channels:

- ⦿ Engagement sessions at ICANN meetings, e.g., the CCT sought input on its interim recommendations at ICANN57⁶³⁶
- ⦿ Updates to Supporting Organizations and Advisory Committees through membership representation

In addition, the CCT posted blogs, communiqués, and videos to document its progress and establish resources for further engagement.

Any community member may contact the CCT to share input or ask questions. Any submission to the list input-to-cctr@icann.org is publicly archived.⁶³⁷

In light of the synergies between the CCT and New gTLD Subsequent Procedures PDP Working Group mandates, regular coordination calls were held between leadership of both groups to ensure no significant overlap occurs and to complement each other's work. The CCT invited the Subsequent Procedures PDP Working Group to provide input on the applicant survey questions prior to its launch and sought input on its interim recommendations.

In addition, the CCT sought input from ICANN's Global Domains Division on the feasibility of implementing its recommendations, to be shared after the publication of the draft report.⁶³⁸

Budget Management

Further to an exchange held with ICANN CFO Xavier Calvez, the CCT appointed Jonathan Zuck – CCT Chair – as the assigned budget manager in an effort to be fiscally responsible and accountable for its budget management. The budget manager works with the ICANN organization to meet the budget restrictions in place.

⁶³⁶ ICANN, "ICANN57 Hyderabad: Input to Competition, Consumer Choice, Consumer Trust Review Team," accessed 10 August 2018, <https://icann572016.sched.com/event/8czO/input-to-competition-consumer-choice-consumer-trust-review-team>

⁶³⁷ ICANN, "The Input-to-CCTR Archives," accessed 10 August 2018, <http://mm.icann.org/pipermail/input-to-cctr/>

⁶³⁸ ICANN (19 May 2017), *ICANN Organization Inputs: Competition, Consumer Trust and Consumer Choice Review Team Draft Report*, accessed 10 August 2018, <https://mm.icann.org/pipermail/comments-cct-rt-draft-report-07mar17/attachments/20170520/06db1b61/ICANNInputsonCCTRRecs-19May2017.pdf> and ICANN (15 January 2018), *ICANN Org Inputs: Competition, Consumer Trust and Consumer Choice Review Team Draft Report*, <https://mm.icann.org/pipermail/comments-cct-recs-27nov17/attachments/20180126/b9ad18cc/CCT-NewRecs-Input-26jan18-0001.pdf>

Appendix C: Surveys and Studies

Several surveys and studies were commissioned prior to the launch of the CCT to inform its work. These are referenced in footnotes throughout the report, and can also be viewed in the bibliography:

- ③ An Implementation Advisory Group was convened by the ICANN Board in 2013 to examine a series of potential metrics that were proposed by the Generic Names Supporting Organization (GNSO) and the At-Large Advisory Committee (ALAC). This team, referred to as the IAG-CCT, evaluated the feasibility, utility and cost-effectiveness of adopting several recommended metrics produced by these two groups and issued a set of 66 metrics, which the ICANN Board adopted for the CCT to consider.⁶³⁹ ICANN organization has continued to collect data on many of these metrics.⁶⁴⁰ Of the 66 recommended metrics, several included baseline figures that capture a snapshot of behaviors and activity in the domain name marketplace prior to the introduction of new gTLDs. Depending on the metric, the baseline period may span from one year to multiple years prior to the delegation of new gTLDs.
- The IAG-CCT determined that a subset of the metrics was best evaluated using a consumer and registrant survey. Nielsen's Wave 2 Consumer Survey results were released in June 2016.⁶⁴¹ The study measured Internet users' current attitudes about the gTLD landscape and the DNS, as well as changes in these consumers' attitudes from Nielsen's Wave 1 Consumer Survey, which was conducted in 2015.⁶⁴² Internet users were asked about aspects of consumer awareness, consumer choice, experience, and trust. The consumer survey's respondents included a representative sample of Internet users from all five ICANN regions and was conducted in each sampled country's relevant language. Results of the Phase 2 study revealed more than half of respondents (52 percent) were aware of at least one new gTLD, and overall, trust of the domain name industry relative to other technology-related industries has improved.
- Similarly, Nielsen conducted a global domain name registrant survey, which targeted those who have at least one registered domain name. Survey participants were questioned about their awareness of new gTLDs, as well as their perceived sense of choice, experience, and trust related to the current gTLD landscape. Nielsen's Wave 1 Registrant Survey results were issued in September 2015.⁶⁴³ The CCT received the Wave 2 Registrant Survey results on 15 September 2016.⁶⁴⁴ Results revealed that new gTLDs included in both phases of the survey to have similar awareness levels, with higher awareness reported in South America and Asia Pacific, and that trust in the domain name industry generally remains high, particularly in Asia.
- A second subset of IAG-CCT metrics aims to measure competition in the new gTLD marketplace based on an analysis of pricing data and other, non-price-related indicia. ICANN contracted with Analysis Group to conduct an economic study with two primary aims: 1) gauge the pricing practices for domains in new gTLDs against those in the legacy space; and 2) provide a qualitative analysis of other non-price competition indicators, like technical or other business innovations. Analysis Group's Phase 1

⁶³⁹ Implementation Advisory Group for Competition, Consumer Trust, and Consumer Choice (2014), *Final Recommendations*

⁶⁴⁰ ICANN, "Competition, Consumer Trust and Consumer Choice (CCT) Metrics Reporting."

⁶⁴¹ Nielsen, Consumer Research Wave 2 (2016).

⁶⁴² Nielsen, Consumer Research (2015).

⁶⁴³ Nielsen, Registrant Survey (2015).

⁶⁴⁴ Nielsen, Registrant Survey Wave 2 (2016).

Assessment results were delivered in September 2015.⁶⁴⁵ Analysis Group's Phase II Assessment describes how the competition metrics established in the Phase I Assessment have changed (or remained the same) as the New gTLD Program expanded over the course of one year (review team members provided feedback to Analysis Group on its methodology and approach prior to beginning the Phase II analysis).⁶⁴⁶ Results of the Phase II economic study, which were delivered in October 2016, revealed a decline in the share of new gTLD registrations attributable to the four and eight registries with the most registrations. They also revealed volatility in the registration shares held by registry operators.

- ⦿ To help the review team assess the effectiveness of the New gTLD Program's application and evaluation processes, as well as safeguards put in place to mitigate abuse, ICANN organization collaborated with the community to draft the following reports:
 - The *Revised Program Implementation Review*, published in January 2016, examines the effectiveness and efficiency of ICANN's implementation of the New gTLD Program from the ICANN organization perspective.⁶⁴⁷
 - The *New gTLD Program Safeguards Against DNS Abuse: Revised Report* explores methods for measuring the effectiveness of safeguards to mitigate DNS abuse that were implemented as part of the New gTLD Program. It outlines which activities may constitute DNS abuse and provides a preliminary literature review examining rates of abuse in new gTLDs and the DNS as a whole.⁶⁴⁸
 - The *Rights Protection Mechanisms Review: Revised Report* evaluates data on key protection mechanisms such as the Trademark Clearinghouse, the Uniform Rapid Suspension System, and Post-Delegation Dispute Resolution Procedures. The interaction between Rights Protection Mechanisms and other elements of the New gTLD Program are also considered.⁶⁴⁹
- ⦿ To supplement the existing data, the CCT requested additional surveys and studies to further inform its work:
 - The Competition and Consumer Choice subteam requested data on pricing and registration analyses from Analysis Group and ICANN organization to help answer research questions on the effectiveness of the New gTLD Program in promoting price competition among gTLD operators, registrars, and resellers.
 - The Competition and Consumer Choice subteam sought legacy gTLD parking data to complement the new gTLD parking data available on ntdstats.com. The parking data allowed the subteam to see a more accurate picture of registrations in each registry by controlling for registration numbers that do not reflect "active" registrations. The subteam also obtained ccTLD registration data from CENTR and Zooknic.⁶⁵⁰
 - ⦿ At the request of the review team, ICANN contracted with SIDN Labs to conduct a study analyzing rates of abusive, malicious, and criminal activity in new and legacy gTLDs. The *Statistical Analysis of DNS Abuse in gTLDs: Final Report* compares rates

⁶⁴⁵ Analysis Group, *Phase I Assessment* (2015)

⁶⁴⁶ Analysis Group, *Phase II Assessment* (2016)

⁶⁴⁷ ICANN, *Program Implementation Review* (2016)

⁶⁴⁸ ICANN Operations and Policy Research, *New gTLD Program Safeguards Against DNS Abuse: Revised Report* (July 2016).

⁶⁴⁹ ICANN, *Rights Protection Mechanisms Review* (2015)

⁶⁵⁰ ICANN CCT Wiki, "Studies, Research, and Background Materials."

of these activities between new and legacy gTLDs, as well as employs inferential statistical analysis to measure the effects of DNSSEC, domain parking, and registration restrictions on abuse rates using historical data covering the first three full years of the New gTLD Program (2014 – 2016).⁶⁵¹

- At its third face-to-face meeting in June 2016, the CCT requested that an applicant survey be commissioned. In addition to addressing topics pertaining to competition, consumer choice and trust, the survey was also tasked with reviewing the effectiveness of the application and evaluation process of the New gTLD Program. The CCT sought answers to gain a better understanding of applicants' views on the application process among those who completed the process, are actively in progress, and those who withdrew their applications.
- To help inform its assessment of the application and evaluation process, the CCT requested that AMGlobal Consulting research and conduct interviews with firms, organizations and other institutions in the “Global South” that did not apply for new gTLDs, but who may have been considered good candidates for the program as cohorts of similar entities that did apply.⁶⁵² The purpose of this research was to obtain a deeper understanding of consumer awareness of the New gTLD Program, as well as why more firms from the Global South did not apply to the Program. The report was delivered in November 2016. It included recommendations such as creating outreach tools for non-expert audiences to answer their questions on cost, application process, timing, and about ICANN itself. Another recommendation was to provide the community with a full explanation of the different uses for new gTLDs in order to address business model and use case questions the community might have. Regarding future application rounds, the report proposed to develop additional research on the best ways to reach the general public in the Global South, build dialogue around new gTLDs in the public-private sphere, and, to the greatest extent possible, start preparing the public for the next round as soon as possible.
- In addition, the CCT used the results from a survey commissioned by the International Trademark Association (INTA). The survey, conducted between January and February 2017, received responses from 33 INTA corporate members, non-INTA corporate members, and IP owners who responded to questions on the costs incurred by their clients related to the expansion of the TLD space. The survey, which was sent to 1,096 potential respondents, provided insight into these trademark holders' experiences with the Program.⁶⁵³

⁶⁵¹ SIDN Labs and the Delft University of Technology (August 2017), *Statistical Analysis of DNS Abuse in gTLDs*.

⁶⁵² AMGlobal, *New gTLDs and Global South* (2015).

⁶⁵³ Nielsen (April 2017), *INTA New gTLD Cost Impact Survey*.

Appendix D: Public Comments

With its Initial Report, the review team provided a relatively granular set of recommendations to encourage input via public comment.⁶⁵⁴ The review team received a total of twenty three comments on the first part of its Draft Report, and seventeen comments on the second part of its draft report.⁶⁵⁵ These comments were submitted from sixteen stakeholder groups and constituencies and by five individuals, two governments or governmental agencies, five companies, ten coalitions, and the ICANN Organization and Board. All comments were made available to the entire review team and its relevant subgroups. Each group examined the public comments as they related to each proposed recommendation. ICANN organization assisted in this process by creating a spreadsheet that noted the applicability of each public comment to a specific review team recommendation.⁶⁵⁶ Finally, the review team explored comments not tied to a specific recommendation but instead to the underlying findings of the report.

While there was general support for most of the recommendations, a few themes stood out in the public comments. First, it became clear that the review team needed to be specific about which actors in the community would be called on to implement a recommendation, while leaving room for those actors to determine the best way to implement it. Accordingly, the review team endeavored to identify the most appropriate actors while rewriting several recommendations to allow more flexible implementation. Second, it was clear from the comments on the Initial Report that the review team made recommendations for research with no clear practical value. Several of those recommendations were modified or eliminated.

The review team engaged in a systematic process of reviewing the public comments, summarizing them for the entire review team and assessing what revisions should be made to the proposed recommendations, if any. Any proposed changes were discussed and agreed upon by the both the applicable subteam and the entire review team. Any final recommendations that lacked full consensus would be noted in this Final Report. The comments received comprised varying, and in certain instances, conflicting views. Although the review team considered every comment received, it only revised recommendations when the full Review agreed that revision was necessary to clarify, amend, or further improve the recommendation. The ICANN organization and the review team created two spreadsheets to track the review team's consideration of the public comments.⁶⁵⁷

The review team appreciates the thoughtful public comments it received, which reflected a genuine effort on the part of commenters to provide constructive input and guidance. Although the review team did not accept every comment offered, the review team is grateful for the good faith effort to provide diverse perspectives. The review team believes this Final Report

⁶⁵⁴ ICANN, "Competition, Consumer Trust and Consumer Choice Review Team Draft Report of Recommendations for New gTLDs," accessed 10 August 2018, <https://www.icann.org/public-comments/cct-rt-draft-report-2017-03-07-en>

⁶⁵⁵ Ibid. and ICANN, "Competition, Consumer Trust, and Consumer Choice Review Team – New Sections to Draft Report of Recommendations," accessed 10 August 2018, <https://www.icann.org/public-comments/cct-rt-draft-report-2017-03-07-en>

⁶⁵⁶ ICANN, "Competition, Consumer Trust and Consumer Choice Review Team Draft Report of Recommendations for New gTLDs: Staff Report of Public Comment Proceeding," 10 July 2017, accessed 10 August 2018, Section IV (click "Summary of Comments" hyperlink to download the spreadsheet).

⁶⁵⁷ ICANN CCT Wiki, "Plenary Drafts/Documents" accessed 5 September 2018, <https://community.icann.org/download/attachments/58727456/CCTRT%20Public%20Comment%20-%20Draft%20Report%20-%2010July2017%20Approved.xlsx?version=1&modificationDate=1536147730041&api=v2>, and <https://community.icann.org/download/attachments/58727456/CCTRT%20Public%20Comment%20-%20New%20Sections%20-%2015Feb2018%20Approved.xlsx?version=1&modificationDate=1536142801000&api=v2>.

contains improved recommendations that reflect the constructive feedback it received as part of the public comment process.

Draft Report Public Comment Period

The review team [submitted its Draft Report for public comment](#), which included 50 draft recommendations, from 7 March 2017 to 19 May 2017.⁶⁵⁸ The review team presented its draft recommendations and sought input from the community at ICANN58 and on various occasions, including:

- ⦿ [Two webinars held on 3 April 2017](#)⁶⁵⁹
- ⦿ [A Community engagement session at ICANN58](#)⁶⁶⁰

A summary of the 23 public comments received was published on 10 July 2017, which the review team used as a basis to review and update its draft recommendations.⁶⁶¹

Draft Report With New Sections Public Comment Period

Following the results of the INTA survey and the publication of the DNS Abuse Study, the CCT added new sections to its previous report pertaining to DNS abuse, costs to trademark holders, parking and consumer choice. Ten recommendations were [submitted for public comment](#) from 27 November 2017 to 15 January 2018.⁶⁶²

The review team sought input from the community at ICANN60 during an engagement session, had individual outreach sessions, and also held a webinar to discuss the new sections.⁶⁶³

A summary of the 17 public comments received was published on 15 February 2018, which the review team used as a basis to review and update its draft recommendations.⁶⁶⁴

All outreach and engagement actions from the review team are available on its wiki page.⁶⁶⁵

⁶⁵⁸ ICANN, “Competition, Consumer Trust and Consumer Choice Review Team Draft Report of Recommendations for New gTLDs,”

⁶⁵⁹ ICANN CCT Wiki, “Webinars: CCTRT Draft Recommendations,” 3 April 2017, accessed 10 August 2018, <https://community.icann.org/display/CCT/Webinars%3A+CCTRT+Draft+Recommendations+-+3+April+2017>

⁶⁶⁰ ICANN CCT Wiki, “Community Discussion – ICANN58,” 12 March 2017, accessed 10 August 2018, <https://community.icann.org/display/CCT/Community+Discussion+-+ICANN58>

⁶⁶¹ ICANN, “Competition, Consumer Trust and Consumer Choice Review Team Draft Report of Recommendations for New gTLDs.”

⁶⁶² ICANN, “Competition, Consumer Trust, and Consumer Choice Review Team – New Sections to Draft Report of Recommendations.”

⁶⁶³ ICANN CCT Wiki, “Webinar: CCTRT New Sections of Draft Report,” 18 December 2017, accessed 10 August 2018, <https://community.icann.org/display/CCT/Webinar%3A+CCTRT+New+Sections+of+Draft+Report+-+18+December+2017+@+16%3A00+UTC>

⁶⁶⁴ ICANN, “Competition, Consumer Trust, and Consumer Choice Review Team – New Sections to Draft Report of Recommendations.”

⁶⁶⁵ ICANN CCT Wiki, “Outreach and Engagement,” accessed 10 August 2018, <https://community.icann.org/pages/viewpage.action?pageId=58729463>

Appendix E: Terms of Reference

The Affirmation of Commitments

The Affirmation of Commitments signed on 30 September 2009 between ICANN and the U.S. Department of Commerce (the “AoC”) contain specific provisions for periodic review of four key ICANN objectives, including “promoting competition, consumer trust, and consumer choice.”

Under the AoC, ICANN agreed to ensure that as it contemplated expanding the top-level domain space, the various issues that are involved (including competition, consumer protection, security, stability and resiliency, malicious abuse issues, sovereignty concerns, and rights protection) would be adequately addressed prior to implementation. In Section 9.3 of the AoC, ICANN committed to the following:

...when new gTLDs (whether in ASCII or other language character sets) have been in operation for one year, ICANN will organize a review that will examine the extent to which the introduction or expansion of gTLDs has promoted competition, consumer trust and consumer choice, as well as effectiveness of (1) the application and evaluation process and (2) safeguards put in place to mitigate issues involved in the introduction or expansion. ICANN will organize a further review of its execution of the above commitments two years after the first review, and then no less frequently than every four years. The reviews will be performed by volunteer community members and the review team will be constituted and published for public comment, and will include the following (or their designated nominees): the Chair of the GAC, the CEO of ICANN, representatives of the relevant Advisory Committees and Supporting Organizations, and independent experts. Composition of the review team will be agreed jointly by the Chair of the GAC (in consultation with GAC members) and the CEO of ICANN. Resulting recommendations of the reviews will be provided to the Board and posted for public comment. The Board will take action within six months of receipt of the recommendations.

This appendix details the terms of reference that the CCT will use to carry out its duties under the AoC.

The goal of the CCT is to assess the impact of the expansion of the DNS marketplace on competition, consumer trust and consumer choice. In addition, this review shall examine the effectiveness of the application and evaluation process used for the 2012 round of gTLD applications, and the effectiveness of the safeguards enacted to mitigate issues involved in the introduction of new gTLDs. The review defines effectiveness as, “to what degree the process (of implementing the New gTLD Program) was successful in producing desired results/achieving objectives.” The CCT will analyze both quantitative and qualitative data to produce recommendations for the ICANN Board to consider and adopt.

This inaugural review will lay the groundwork for recurring reviews, which the AoC requires no less frequently than every three years, subject to potential revision of the ICANN Bylaws. These recurring reviews will play an important role in assessing how ICANN continues to meet

its commitments in the areas of competition, consumer trust, and consumer choice. This first review will examine the initial impact of the New gTLD Program in these three areas.

Background

ICANN has anticipated this review since the AoC was signed with the U.S. Department of Commerce in 2009. Since that time, the ICANN Board has turned to the community for its input on metrics that may be used for data-based recommendations. To that end, the ICANN Board tasked the GNSO and ALAC to propose metrics in December 2010. In June 2011, at the ICANN meeting in Singapore, a working group was formed to come up with recommended metrics for the CCT review. The working group's goal was to provide the ICANN Board with definitions, measures, and targets that could be useful to the CCT Review Team. In December 2012, the group presented the Board with a document detailing 70 recommended metrics, with proposed definitions and three-year targets.

The ICANN Board formed the IAG-CCT in September 2013 to review those recommended metrics and make recommendations to the review team based on an evaluation of the feasibility, utility and cost-effectiveness of each of the proposed 70 metrics. The group first met in November 2013, via conference call, then in person at the ICANN 48 meeting in Buenos Aires. In March 2014, the IAG-CCT made an interim recommendation to commission a survey of Internet users and registrants to gauge their sense of trust and choice, and an economic study on gTLD pricing and marketplace. The ICANN Board adopted those recommendations. In September 2014, the IAG-CCT submitted its final recommendations to the ICANN Board, which adopted those recommendations in February 2015. Those recommendations included the collection of 66 metrics related to competition, consumer trust and consumer choice. The IAG-CCT also revised the original recommendations from the GNSO-ALAC working group.

Framework

ICANN's commitment to promoting competition, consumer trust and consumer choice within the New gTLD Program requires a clear understanding of the program's history and its role in ICANN, followed by a focused examination of its development and implementation. As one of the four key objectives to be evaluated as part of the AoC, the CCT review will also help frame how ICANN may approach future rounds of new gTLDs.

Scope

This review shall assess the New gTLD Program's impact on competition, consumer trust and consumer choice. This includes reviewing the implementation of policy recommendations from the launch of the program through delegation and on to general availability. To conduct the evaluation, review team members may be asked to review data derived from processes related to the program, as well as broader inputs on marketplace indicators and consumer trends and feedback from the community. While these other inputs are not related to this particular review, the findings and information produced from these may be useful to the CCT's work. For those efforts for which this review is critical, to complete their work, the CCT shall endeavor to issue its findings and recommendations in a timely manner such that those efforts may take these into consideration. Efforts under way that will rely on the findings and recommendations from this group may follow its progress on the CCT wiki page: <https://community.icann.org/display/CCT/Competition%2C+Consumer+Trust+and+Consumer+Choice>.

Data and Metrics

With the ICANN Board's February 2015 adoption of the IAG-CCT's 66 recommended metrics for collection, the ICANN organization has been continuously gathering and publishing data related to most of these metrics on the ICANN website: <https://www.icann.org/resources/reviews/cct/metrics>.

The February 2015 Board resolution also noted that the IAG-CCT, in its final report, set aside a group of metrics to be revisited by the CCT, when it began its work, as they required additional contextual analysis, or might require additional resources to capture the data. These metrics are noted in Table 4 of the IAG-CCT final report (<https://community.icann.org/download/attachments/48349551/IAG-CCT%20Final%20report.docx?version=1&modificationDate=1418863127000&api=v2>). The ICANN organization may provide their recommendations on feasibility for internal data collection and resources required for metrics that may require external data gathering.

ICANN Evaluation Reports

The AoC mandates an examination of the effectiveness of the application and evaluation processes used in the 2012 round of gTLD applications, including ICANN's implementation of the policy recommendations made for the New gTLD Program. To help inform the CCT, ICANN organization has compiled and published the Program Implementation Review report to provide staff perspective on the execution of the New gTLD Program, as well as incorporating feedback from stakeholders including applicants, service providers and other community members.

Finally, the review will also consider the effectiveness of safeguards enacted to mitigate abuse. This is understood to include a review of the rights protection mechanisms that were implemented in the program, as well as other efforts to mitigate DNS abuse (such as the various Public Interest Commitments incorporated into Registry Agreements). Reports produced on these topics will provide detailed insight to help the CCT enhance its recommendations and establish a proposed order of priority for implementation, as recommended by Recommendation 9 of the CCWG-Accountability proposal.

Definitions

An assessment of this type requires a common understanding of the terms associated with the review: consumer, competition, consumer trust and consumer choice.

Consumer: The term generally refers to a natural person, acting primarily for personal, family or household purposes and may, depending on the context, include businesses and government agencies as well. For the purposes of this review, consumers generally fall into two categories: (1) Internet users and other market participants who make use of domains through DNS resolution, such as by navigating to a URL or sending an email and (2) registrants (and potential registrants).

Consumer trust: The confidence Consumers have in the function, reliability, safety, security, and authenticity of the Domain Name System. This includes (1) trust in the consistency of name resolution; (2) confidence by Internet users that they can safely navigate to a domain name to find and safely use the site they intend to reach; (3) confidence that a TLD registry operator is fulfilling the registry's stated purpose and (4) confidence by a registrant in a domain's registration process and life cycle.

Consumer choice: The range of meaningful options arising from new entrants and innovations over incumbent offerings available to Consumers for domain names (including in their preferred languages and scripts.)

Competition: The rivalry between two or more parties in the domain name ecosystem (including but not limited to registries, registrars, resellers, registry service providers and registrants) acting independently to secure the business of a third party by offering innovative products and services and or the most favorable terms.

Relevant Market: For the purpose of this review, the CCT shall consider the competitive effects, costs, and benefits of the introduction of new gTLDs on the international domain name marketplace, which also includes legacy gTLDs and ccTLDs. Furthermore, the team may explore the impact of the New gTLD Program on the broader “internet identity” (social media, WIX, etc.) market. However, competitive dynamics in the domain name ecosystem unrelated to the introduction of new gTLDs are not in the scope of this review. The review team may break down the overall market by sector or region for its review and recommendations.

Process

CCT work will be conducted in English via teleconference calls, Adobe Connect web meetings and in person.

Communications and Transparency

1. Teleconferences will be recorded, subject to the right of a member of the CCT to take the discussion “off the record.” Face to face meetings will be streamed, to the extent practicable and subject to the right of a member of the CCT to take the discussion “off the record.” Wherever a meeting is taken “off the record,” however, the record shall reflect this decision, as well as the underlying considerations that motivated such action.
2. The CCT will endeavor to post (a) action items within 24 hours of any telephonic or face to face meeting and (b) streaming video and/or audio recordings as promptly as possible after any such meeting, subject to the limitations and requirements described in subsection (1) above.
3. The CCT will maintain a public website, <https://community.icann.org/display/CCT/Competition%2C+Consumer+Trust+and+Consumer+Choice>, on which it will post: (a) minutes, correspondence, meeting agendas, background materials provided by ICANN, members of the RT, or any third party; (b) audio recordings and/or streaming video; (c) the affirmations and/or disclosures of members of the CCT under the CCT’s conflict of interest policy; (d) input, whether from the general public, from ICANN stakeholders, from the ICANN organization or Board members, governments, supporting organizations and advisory committees, etc. Absent overriding privacy or confidentiality concerns, all such materials should be made publicly available on the CCT website within two business days of receipt.
4. Email communications among members of the CCT shall be publicly archived automatically via the CCT-review email cct-review@icann.org.

ICANN Organization Input

CCT staff will facilitate additional data gathering and coordinate dialogue with additional staff to provide expertise regarding certain elements of the program or its operations, as appropriate. To inform the CCT's work, staff will also solicit outside expertise as requested by CCT members and as budget and resources permit.

The ICANN organization may provide written responses to any questions posed by the CCT, and/or provide input to the CCT in connection with issues that the CCT did not raise but which, in the estimation of staff, are relevant to the work of the CCT.

The ICANN organization will also provide draft review team guidelines and procedures developed with Board oversight, to assist the CCT in its deliberations to cover additional topics beyond those identified in this Terms of Reference.

Community Consultations

Staff will also assist the CCT leadership at their request with materials, meeting arrangements and facilitating outreach with other ICANN supporting organizations and advisory committees and the ICANN Board, as well as individual community members through comment periods, questionnaires and surveys. The CCT will explore other avenues for outreach to the public to engage and collect inputs with respect to this review. This may include community sessions both in person at ICANN meetings or online in Adobe Connect web sessions or any other agreed technology that is convenient to all members, and has the requisite capabilities such as recording of sessions.

Work of Review Team

Decision-Making Within the CCT

Under the AoC, the CCT is to make recommendations regarding how the New gTLD Program impacted competition, consumer trust and consumer choice.

The CCT will seek, but will not require, full consensus with respect to such recommendations. To the extent that the CCT is unable to achieve consensus with respect to any such recommendations, its reports and recommendations will reflect the variety and nature of the CCT views. (See GNSO types of consensus as noted in Section 3.6 of the GNSO Guidelines for examples.)

Any conflicts of interest that may affect the views of a CCT member must be disclosed and addressed in accordance with the conflict of interest policy discussed above. The CCT will ensure that all documents are full consensus documents, i.e., they accurately reflect the discussion held.

Meetings

1. Face to Face Meetings: The CCT intends to hold its meetings concurrent with ICANN meetings and as needed to advance and complete its review. The CCT shall meet in person in Los Angeles on 22–23 February 2016; in Marrakech on 9–10 March 2016; and on additional dates as needed.

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2. Telephonic Meetings: In between face to face meetings, the CCT and/or working groups of the CCT shall conduct regular telephonic meetings. All such meetings shall be publicly noticed on the CCT wiki as far in advance as possible, and agendas for each such meeting will be published no fewer than 2 days in advance.

Reporting

1. Members of the CCT are, as a general matter, free to report back to their constituencies and others with respect to the work of the CCT, unless the information involves confidential information.
2. While the CCT will strive to conduct its business on the record to the maximum extent possible, members must be able to have frank and honest exchanges among themselves, and the CCT must be able to have frank and honest exchanges with stakeholders and stakeholder groups. Moreover, individual members and the CCT as a whole must operate in an environment that supports open and candid exchanges, and that welcomes re-evaluation and repositioning in the face of arguments made by others.
3. Accordingly, the CCT will retain the authority to determine that an interaction will be held under the Chatham House Rule: “When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.”
4. Members of the CCT are volunteers, and each will assume a fair share of the work of the team.
5. Members of the CCT shall execute the investigation according to the plan, based on best practices for fact-based research, analysis and drawing conclusions.
6. Where appropriate, and with the consensus of the CCT, the ICANN organization will be used to provide administrative support services related to travel, meeting logistics, and technology. To preserve the independence and integrity of the CCT, however, the ICANN organization will perform substantive tasks (e.g., report drafting, etc.) with respect to the work of the CCT, as requested. If necessary, the Chair and Vice Chairs of the CCT shall propose an approach to providing appropriate support to the CCT efforts.

Participation

1. Members could be assisted by parties outside the CCT and the ICANN organization when necessary (e.g., for translation purposes), although the emphasis must remain on direct interaction between the named members. CCT Observers should not intervene themselves, nor should they be able to substitute for a member who is unable to participate. This applies to conference calls as well as face-to-face meetings. Remote participation possibilities should be provided in cases where a member is unable to attend a face-to-face meeting. Independent experts are deemed to be full Members of the CCT.

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2. The CCT leadership (Chair and Issue Leads) of the working group will coordinate the work of the CCT, and will serve as full participants in the substantive deliberations of the CCT and in the development of the CCT's deliverables. All members of the CCT will have equivalent voting rights.
 3. External Experts (if applicable). The External Experts are third parties that may be engaged with to support the CCT work. These experts would be those engaged aside from the independent experts, who were chosen to participate in the review. Selection of the experts to support the work of the CCT will follow ICANN procurement processes and be conducted by an open ICANN Request for Proposal (RFP). The RFP will be based upon the criteria and expertise that the CCT has determined.

Tools /Means of Communications

The CCT will endeavor to use online communications capabilities to further its work. In particular, the review team will use Adobe Connect meeting rooms in connection with its telephonic meetings. The materials available in these settings will be made available to the public in keeping with open and transparent processes and the policies contained in this methodology.

Indicators/Metrics

A set of indicators of competition, consumer trust and consumer choice has been adopted by the ICANN Board for consideration in this review.

The CCT may identify a methodology for analyzing these metrics. In addition, the CCT will take into account reports created to support review of Program Implementation, Rights Protection Mechanisms, and safeguards against DNS abuse. In addition, the CCT may identify other sources of data it wishes to help inform in its review.

Finally, the CCT may request additional data or reports be generated to support unanticipated aspects of the review.

Deliverables

INTERIM RECOMMENDATIONS

The CCT might make interim recommendations to the GNSO and/or Board to launch new policy development initiatives, or further implementation work on existing policies, in tandem with the review where there is full consensus among the review team to do so.

FINDINGS

The CCT will present and document its findings on the degree to which the New gTLD Program did or did not enhance overall competition, consumer trust and consumer choice in the gTLD space. Further, the CCT will present and document the successes and challenges experienced by the community in the application process and the attempt to mitigate the adverse consequences of the New gTLD Program.

FINAL RECOMMENDATIONS

7. The CCT will try to post its draft prioritized recommendations in December 2016 in order to solicit public comment. Recommendations should be clear, concise, concrete, prioritized and implementable.

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4. The recommendations will fall into two categories: those which can be implemented directly by staff and those which require further policy development by the community.
 5. These recommendations will be limited to those designed to:
 - a. Enhance competition, consumer trust and consumer choice in the gTLD marketplace
 - b. Improve elements of the application and evaluation processes
 - c. Advance efforts to mitigate abusive activity in the DNS
 6. The team will document the rationale it has employed for any individual recommendation, and where possible, provide a quantitative target or metric for measurement of the recommendations' success.

RECOMMENDATIONS TO NEXT REVIEW PANEL(S)

Based on substantive review of its work, the CCT will provide recommendations regarding the procedures and conduct of future reviews as called for in the AoC. To facilitate the collection of this feedback, a survey will be conducted of all CCT members to gather information on the process, methodology and procedures used (so that the next CCT Review may be conducted using these lessons learned, and so that lessons learnt are available to subsequent CCT Review Teams).

Conflicts of Interest

The CCT has adopted the conflict of interest policy set forth in [Attachment A](#) to this Methodology. All member declarations submitted in accordance with the conflict of interest policy will be made public and posted on the CCT website.

At every meeting the CCT members confirm if declaration has changed.

Timeline

The review team will issue the draft report for public comment in December 2016 and solicit input from the community and stakeholders.

The review team will review the comments received on its draft recommendations and refine the report with the goal of producing the final recommendations by April 2017.

Appendix F: Fact Sheets

The ICANN organization publishes fact and expense sheets on a quarterly basis, as well as participation and milestones updates on a monthly basis. These documents bring transparency and accountability to the community on how review team resources and time are being used.

The Fact Sheet captures attendance of review team members, costs associated with professional services and travel to attend face-to-face meetings, milestones and participation.

Definitions are as follows:

Professional Services: Approved budget for the review team to use for services of independent experts, as noted in Bylaws Section 4.6(a)(iv). Review teams may also solicit and select independent experts to render advice as requested by the review team. ICANN shall pay the reasonable fees and expenses of such experts for each review contemplated by this Section 4.6 to the extent such fees and costs are consistent with the budget assigned for such review. Guidelines on how review teams are to work with and consider independent expert advice are specified in the Operating Standards.

Travel: Amount approved for review team travel for face-to-face meetings. Examples of travel expenditures include, but are not limited to, charges for airfare, hotel, per diem reimbursement, venue meeting costs, audio-visual/tech support, and catering. These expenses include Review Team and the ICANN organization support travel.

ICANN Organization Support: Amount approved in the budget for the ICANN organization to contract outside services to support the work of the review team.

Spent to Date: Amounts include quarterly financials since inception of the work by the review team through the most recent quarter end.

Committed Services:

1. Travel: Estimated expenses for approved face-to-face meetings.
2. Professional Services: Included services from signed contracts to be provided or invoiced. These are typically for non-employee related support services provided by contractors.

Total Spent and Committed to Date: This is the sum of the “Spent to Date” and “Committed Services” amounts through the most recent quarter end. The “Committed Services” amount does not include the “Spent to Date” amounts. **Remaining Budget:** This is the difference between the “Approved Budget” and the “Total Spent and Committed to Date” amounts.

Fact sheet archives may be viewed at: <https://community.icann.org/display/CCT/Fact+Sheet>.

Competition, Consumer Trust and Consumer Choice (CCT) Review

Fact sheet as of: 7-Sep-2018

Overview:
ICANN is committed to ensuring that, as it contemplates expanding the top-level domain space, the various issues that are involved will be adequately addressed prior to implementation.

These include issues such as competition, consumer protection, security, stability and resiliency, malicious abuse issues, sovereignty concerns, and rights protection.

The AbC also requires ICANN to convene a community-driven review to examine the extent to which the introduction or expansion of gTLDs has promoted competition, consumer trust and consumer choice, as well as the effectiveness of the application and evaluation process and safeguards put in place to mitigate issues involved in the introduction or expansion.

WIKI Page: [CCT Wiki Home Page](#)
CCT-RT Email: inputs.cct@icann.org
Review Questions: reviews@icann.org

CCT Chair: Jonathan Zuck
Competition and Consumer Choice Subteam Chair: Jordyn Buchanan
Safeguards & Trust Subteam Chair: Lauren Kapin

Start Date: 13-Jan-2016
Expected Completion: 8-Sep-2018
Review Duration to Date: 32 Months
Total Expected Duration: 32 Months

0% Complete, Based on Duration

0% Budget Spent/Committed

Section I: People (as of 07-Sep-2018)

Review Team members: 15
ICANN Org involved at various times (not in Review): 13

Volunteer Participation Rate: 64%

Face-to-face meetings: 8 Meetings
Calls (plenary and subteam): 142 Calls
Volunteer meeting & call time: 3,366 Hours
Personnel support time (1) (limited hours and cross-organizational): 11,653 Hours

Section II: Financial Resources (as of 07-Sep-2018)

Direct Review Costs (1)	FY19 Approved Budget (2)	FY19 Budget Spent to Date (3)	Committed FY19 Services (4)	Remaining FY19 Budget	Actual Expenses: Review to Date (5)	Total Spent and Committed to Date (6)
Professional Services - IAG-CCT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 210,000
Professional Services - CCT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,540,000
Travel	\$ -	\$ 5,490	\$ -	\$ (5,490)	\$ -	\$ 420,000
Total	\$ -	\$ 5,490	\$ -	\$ (5,490)	\$ -	\$ 2,170,000

(1) Does not include time for Executives, Legal, IT Personnel and Other Organizational Support
(2) Includes ICANN Organization and Overseas Allocation
(3) Based on the most recent month end financials from the budget center
(4) Professional services includes services from agreed contracts to be provided or received (includes ongoing contractual arrangements)
(5) Includes incremental approved professional services budget of \$362,000
(6) Professional services includes services from agreed contracts to be provided or received (includes ongoing contractual arrangements)

Section III: Milestones (as of 07-Sep-2018)

Milestone	Progress	Notes
Project Management (20% of total effort)	0%	<input checked="" type="checkbox"/> Adopt terms of reference <input checked="" type="checkbox"/> Adopt work plan <input checked="" type="checkbox"/> Assemble subteams <input checked="" type="checkbox"/> Prepare templates <input checked="" type="checkbox"/> Solidify list of projects <input checked="" type="checkbox"/> Adopt discussion paper template <input checked="" type="checkbox"/> Adopt report shell/framework
Research and Studies (20% of total effort)	0%	<input checked="" type="checkbox"/> Identify data/sources needed for work <input checked="" type="checkbox"/> Analyze data from research and studies
Draft Report (25% of total effort)	0%	<input checked="" type="checkbox"/> Assemble initial conclusions <input checked="" type="checkbox"/> Populate discussion papers with findings and potential recs. <input checked="" type="checkbox"/> Reach agreement on discussions papers <input checked="" type="checkbox"/> Discuss/approve/consolidate findings and interim recommendations <input checked="" type="checkbox"/> Approve interim recommendations <input checked="" type="checkbox"/> Seek Board/ICANN Organization input on implementability of interim recommendations <input checked="" type="checkbox"/> Circulate interim recommendation to Subsequent PDP WG <input checked="" type="checkbox"/> Socialize interim recommendations with community <input checked="" type="checkbox"/> Build and approve Draft report for public comment <input checked="" type="checkbox"/> Issue draft report for public comment and socialize draft recommendations with GDD to provide input on draft recommendations
Research and Studies (20% of total effort)	0%	<input checked="" type="checkbox"/> Identify data/sources needed for work <input checked="" type="checkbox"/> Analyze data from research and studies
Draft Report (25% of total effort)	0%	<input checked="" type="checkbox"/> Assemble initial conclusions <input checked="" type="checkbox"/> Populate discussion papers with findings and potential recs. <input checked="" type="checkbox"/> Reach agreement on discussions papers <input checked="" type="checkbox"/> Discuss/approve/consolidate findings and interim recommendations <input checked="" type="checkbox"/> Approve interim recommendations <input checked="" type="checkbox"/> Seek Board/ICANN Organization input on implementability of interim recommendations <input checked="" type="checkbox"/> Circulate interim recommendation to Subsequent PDP WG <input checked="" type="checkbox"/> Socialize interim recommendations with community <input checked="" type="checkbox"/> Build and approve Draft report for public comment <input checked="" type="checkbox"/> Issue draft report for public comment and socialize draft recommendations with GDD to provide input on draft recommendations
New Sections (10% of total effort)	0%	<input checked="" type="checkbox"/> Review studies' input and incorporate as appropriate <input checked="" type="checkbox"/> Produce additional recommendations/new sections, as appropriate and edit report <input checked="" type="checkbox"/> Approve additional recommendations <input checked="" type="checkbox"/> Publish new sections of the report for public comment <input checked="" type="checkbox"/> Socialize changes to report with community <input checked="" type="checkbox"/> Seek ICANN Org and Board Caucus WG input on implementability of recommendations <input checked="" type="checkbox"/> Circulate to New gTLD Subsequent Procedures PDP WG <input checked="" type="checkbox"/> Produce summary of public comments
New Sections (10% of total effort)	0%	<input checked="" type="checkbox"/> Review studies' input and incorporate as appropriate <input checked="" type="checkbox"/> Produce additional recommendations/new sections, as appropriate and edit report <input checked="" type="checkbox"/> Approve additional recommendations <input checked="" type="checkbox"/> Publish new sections of the report for public comment <input checked="" type="checkbox"/> Socialize changes to report with community <input checked="" type="checkbox"/> Seek ICANN Org and Board Caucus WG input on implementability of recommendations <input checked="" type="checkbox"/> Circulate to New gTLD Subsequent Procedures PDP WG <input checked="" type="checkbox"/> Produce summary of public comments
Draft Report (25% of total effort)	0%	<input checked="" type="checkbox"/> Assemble initial conclusions <input checked="" type="checkbox"/> Populate discussion papers with findings and potential recs. <input checked="" type="checkbox"/> Reach agreement on discussions papers <input checked="" type="checkbox"/> Discuss/approve/consolidate findings and interim recommendations <input checked="" type="checkbox"/> Approve interim recommendations <input checked="" type="checkbox"/> Seek Board/ICANN Organization input on implementability of interim recommendations <input checked="" type="checkbox"/> Circulate interim recommendation to Subsequent PDP WG <input checked="" type="checkbox"/> Socialize interim recommendations with community <input checked="" type="checkbox"/> Build and approve Draft report for public comment <input checked="" type="checkbox"/> Issue draft report for public comment and socialize draft recommendations with GDD to provide input on draft recommendations
Draft Report (25% of total effort)	0%	<input checked="" type="checkbox"/> Assemble initial conclusions <input checked="" type="checkbox"/> Populate discussion papers with findings and potential recs. <input checked="" type="checkbox"/> Reach agreement on discussions papers <input checked="" type="checkbox"/> Discuss/approve/consolidate findings and interim recommendations <input checked="" type="checkbox"/> Approve interim recommendations <input checked="" type="checkbox"/> Seek Board/ICANN Organization input on implementability of interim recommendations <input checked="" type="checkbox"/> Circulate interim recommendation to Subsequent PDP WG <input checked="" type="checkbox"/> Socialize interim recommendations with community <input checked="" type="checkbox"/> Build and approve Draft report for public comment <input checked="" type="checkbox"/> Issue draft report for public comment and socialize draft recommendations with GDD to provide input on draft recommendations
New Sections (10% of total effort)	0%	<input checked="" type="checkbox"/> Review studies' input and incorporate as appropriate <input checked="" type="checkbox"/> Produce additional recommendations/new sections, as appropriate and edit report <input checked="" type="checkbox"/> Approve additional recommendations <input checked="" type="checkbox"/> Publish new sections of the report for public comment <input checked="" type="checkbox"/> Socialize changes to report with community <input checked="" type="checkbox"/> Seek ICANN Org and Board Caucus WG input on implementability of recommendations <input checked="" type="checkbox"/> Circulate to New gTLD Subsequent Procedures PDP WG <input checked="" type="checkbox"/> Produce summary of public comments
New Sections (10% of total effort)	0%	<input checked="" type="checkbox"/> Review studies' input and incorporate as appropriate <input checked="" type="checkbox"/> Produce additional recommendations/new sections, as appropriate and edit report <input checked="" type="checkbox"/> Approve additional recommendations <input checked="" type="checkbox"/> Publish new sections of the report for public comment <input checked="" type="checkbox"/> Socialize changes to report with community <input checked="" type="checkbox"/> Seek ICANN Org and Board Caucus WG input on implementability of recommendations <input checked="" type="checkbox"/> Circulate to New gTLD Subsequent Procedures PDP WG <input checked="" type="checkbox"/> Produce summary of public comments
Draft Report (25% of total effort)	0%	<input checked="" type="checkbox"/> Assemble initial conclusions <input checked="" type="checkbox"/> Populate discussion papers with findings and potential recs. <input checked="" type="checkbox"/> Reach agreement on discussions papers <input checked="" type="checkbox"/> Discuss/approve/consolidate findings and interim recommendations <input checked="" type="checkbox"/> Approve interim recommendations <input checked="" type="checkbox"/> Seek Board/ICANN Organization input on implementability of interim recommendations <input checked="" type="checkbox"/> Circulate interim recommendation to Subsequent PDP WG <input checked="" type="checkbox"/> Socialize interim recommendations with community <input checked="" type="checkbox"/> Build and approve Draft report for public comment <input checked="" type="checkbox"/> Issue draft report for public comment and socialize draft recommendations with GDD to provide input on draft recommendations
Draft Report (25% of total effort)	0%	<input checked="" type="checkbox"/> Assemble initial conclusions <input checked="" type="checkbox"/> Populate discussion papers with findings and potential recs. <input checked="" type="checkbox"/> Reach agreement on discussions papers <input checked="" type="checkbox"/> Discuss/approve/consolidate findings and interim recommendations <input checked="" type="checkbox"/> Approve interim recommendations <input checked="" type="checkbox"/> Seek Board/ICANN Organization input on implementability of interim recommendations <input checked="" type="checkbox"/> Circulate interim recommendation to Subsequent PDP WG <input checked="" type="checkbox"/> Socialize interim recommendations with community <input checked="" type="checkbox"/> Build and approve Draft report for public comment <input checked="" type="checkbox"/> Issue draft report for public comment and socialize draft recommendations with GDD to provide input on draft recommendations
Final Report (25% of total effort)	0%	<input checked="" type="checkbox"/> Review public comment input received and incorporate as appropriate <input checked="" type="checkbox"/> Seek Board/ICANN Organization input on implementability of final recommendations <input checked="" type="checkbox"/> Circulate final recommendations to Subsequent Procedures PDP WG for input <input checked="" type="checkbox"/> Finalize Report <input checked="" type="checkbox"/> Adopt final recommendations and report <input checked="" type="checkbox"/> Send final report to ICANN Board
Final Report (25% of total effort)	0%	<input checked="" type="checkbox"/> Review public comment input received and incorporate as appropriate <input checked="" type="checkbox"/> Seek Board/ICANN Organization input on implementability of final recommendations <input checked="" type="checkbox"/> Circulate final recommendations to Subsequent Procedures PDP WG for input <input checked="" type="checkbox"/> Finalize Report <input checked="" type="checkbox"/> Adopt final recommendations and report <input checked="" type="checkbox"/> Send final report to ICANN Board
TOTAL:	0%	100% Milestones Completed

Appendix G: Participation Summary

Name	Affiliation	Plenary Calls	Face-to-Face Meetings (in days)	Competition and Consumer Choice Subteam Calls	Safeguard and Trust Subteam Calls	Nielsen Subteam Calls	Application and Evaluation Process Subteam Calls	INTA Impact Study Subteam Calls
Total Number of Calls/Meetings		67	16	27	38	4	3	
Drew Bagley	Independent Expert	59	14	2	31			
Stanley Besen ¹	Independent Expert	21	12	13	1	1		
Calvin Browne	GNSO	48	15	2	21			
Jordyn Buchanan	GNSO	63	15	27		3	1	3
Dejan Djukic	ccNSO	44	15	21			1	2
Jamie Hedlund	ICANN President and CEO rep.	49	10	6	22			
Kaili Kan	ALAC	59	15	18				
Laureen Kapin	GAC Chair rep.	59	15		32	2	2	
Gao Mosweu	ccNSO	44	15		28		1	
Carlos Raul Gutierrez	GNSO	39	15	5	16	2		
Megan Richards	GAC	37	12	12				
Carlton Samuels	ALAC	45	15		26			2
N. Ravi Shankar ²	Independent Expert	2	0					
Waldo Siganga	GNSO	55	15	20		2	1	1
Fabro Steibel	Independent Expert	22	10		12	3		
David Taylor	GNSO	41	15	1	24			3
Jonathan Zuck	GNSO	58	15	23	23	3	2	

¹ Resigned from CCTRT on June 25, 2017

² Resigned from CCTRT on October 18, 2017

Appendix H: Possible Questions for a Future Consumer Survey

As referenced in the Data Analysis chapter, the CCT would have found it useful to have answers to the following questions, which the review team recommends incorporating in the next iteration of a survey of domain name registrants:

1. What proportion of the registrants in the new gTLDs were previously registrants in a legacy gTLD but gave up their registrations when they registered in a new gTLD? This will provide some indication of the importance of *switching costs*.
2. What proportion of the registrants in the new gTLDs had not previously been registrants in any gTLD? This will provide some indication of the extent to which the introduction of new gTLDs expanded the number of individual registrants.
3. What proportion of the registrants in the new gTLDs are entities that continued to have registrations in legacy gTLDs? This will provide some indication of whether registrations in legacy and new gTLDs are complements as opposed to substitutes.
4. What proportion of the registrants in the new gTLDs registered primarily: (a) for defensive reasons, i.e., they felt compelled to register in a new gTLD because they existed but obtained no benefits from doing so and what proportion registered primarily or (b) for the benefits that they received, perhaps because doing so permitted them to reach users that would have otherwise been inaccessible? This will provide some indication of whether, on balance, the introduction of new gTLDs resulted in net costs or net benefits to registrants.
5. What are the characteristics of the new gTLDs that attracted registrants primarily because of the benefits that they offered? This will provide some indication of the sources of the benefits that the new gTLDs provided, e.g., new allowable characters, service to a specific community, higher levels of security or customer service, ability to offer domain names to noncompeting entities.

The CCT recommends that ICANN conduct a survey of registrants that would include the following questions:

6. Did you register a new domain name in the last 12 months?
7. For each name that you registered, did you register it in a new gTLD or in a legacy gTLD?
8. For each name that you registered in a new gTLD [Check one]
 - Was the registration a newly registered name?
 - Did the registration replace a registration in a legacy gTLD?
 - Did the registration duplicate a registration in a legacy gTLD?
9. For each name that you registered in a new gTLD, was the closest alternative that you considered another gTLD or a legacy gTLD? What was the identity of that gTLD?
10. For each name that you registered in a legacy gTLD, did you consider registering in a new gTLD as an alternative?

11. For each name that duplicated a registration in a legacy gTLD, was the registration intended primarily to prevent the name from being used by another registrant?

12. For each name that you registered, indicate whether it is currently parked.

Although definitions of parking vary, the general idea is that parked domains are not currently being used as identifiers for Internet resources. Examples of behaviors that could be considered parking include:

- ⦿ The domain name does not resolve.
- ⦿ The domain name resolves, but attempts to connect via HTTP return an error message.
- ⦿ HTTP connections are successful, but the result is a page that displays advertisements, offers the domain for sale, or both. In a small number of cases, these pages may also be used as a vector to distribute malware.
- ⦿ The page that is returned is empty or otherwise indicates that the registrant is not providing any content.
- ⦿ The page that is returned is a template provided by the registry with no customization offered by the registrant.
- ⦿ The domain was registered by an affiliate of the registry operator and uses a standard template with no unique content.
- ⦿ The domain redirects to another domain in a different TLD.

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