

**Economic Considerations in the
Expansion of Generic Top-Level Domain Names**

Phase II Report: Case Studies

prepared for ICANN

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I. INTRODUCTION AND OVERVIEW

1. Following a policy recommendation of the Generic Names Supporting Organization (GNSO), ICANN proposed introducing new generic top-level domains (gTLDs) and asked us to conduct an initial economic analysis of the costs and benefits of this proposed expansion.¹

Specifically, ICANN commissioned us to:

- Survey published studies and resources that describe the potential impacts of new gTLD introduction;
- Examine theoretical arguments about the benefits and costs of an increased number of gTLDs; and
- Consider and propose new empirical studies that could help assess costs and benefits of new gTLDs. The studies should be planned and structured to address open questions and to provide information about how best to structure rules for new gTLDs.

Our June 2010 report presented our findings and recommendations with respect to each of these tasks.²

2. In that report, we presented a theoretical framework to guide the assessment of the costs and benefits of introducing new gTLDs. That framework reached two important findings about the costs and benefits of new gTLDs:

- First, the costs and benefits of introducing a new gTLD can vary considerably depending on the policies and procedures adopted by the registry operator as well as the nature of the gTLD itself (*e.g.*, whether it is a trademarked name). Hence, depending on these factors, the benefits of introducing a particular gTLD may be positive or negative.

¹ The GNSO is one of the bodies within ICANN that develops policy recommendations. It comprises representatives of several different constituencies such as gTLD registries, gTLD registrars, Internet service providers, and the business community.

² Michael L. Katz, Gregory L. Rosston, and Theresa Sullivan, “An Economic Framework for the Analysis of the Expansion of Generic Top-Level Domain Names,” June 2010 (hereinafter, *Phase I Report*).

- Second, the costs and benefits of a new gTLD may accrue not only to the new gTLD operator, but also to third parties (those outside of the registry application and approval process). These “externalities” potentially create a gap between the net private benefits of new gTLDs to their operators and the total net benefits to society. In particular, in the presence of significant external costs, an applicant may find it beneficial to apply for and operate a new gTLD even in circumstances where the overall effects on society are negative. An important implication of this fact is that ICANN cannot rely solely on the self-interest of applicants for new gTLDs to ensure that only those new gTLDs that would create positive total net benefits to society will be proposed.

3. Because they can create a divergence between private and community benefits, external costs are of particular interest.³ It thus is valuable to use our analytical framework to estimate the likely size of the external costs associated with a proposed gTLD. In principle, projections regarding external costs could be used to design application-screening policies or to guide the design of policies to reduce the magnitude of any external costs associated with a new gTLD.

4. In preparing our June 2010 report, we surveyed existing studies of benefits and costs, and we found that these studies are helpful but that more information would be useful. Consequently, we proposed a set of empirical studies designed to provide evidence regarding the likely relative costs and benefits of new gTLDs based on experience from other TLDs and market behavior. Following discussions with ICANN staff, we undertook the studies reported below.

5. The remainder of this report is organized as follows. Section II presents a taxonomy of TLD types. Such a taxonomy is useful because the costs and benefits of new TLDs may vary by TLD type.

³ External benefits also create a divergence between private and social welfare. It is thus possible for a new gTLD to have negative private benefits (to the operator) but positive external benefits and positive net social benefits. The case studies of benefits below focus on the total benefits generated by specific gTLDs.

6. Section III examines sources of potential benefits to the Internet community from new TLDs, including: (a) competition to existing gTLDs, particularly .com; (b) relief of name scarcity; and (c) consumer benefits from differentiated offerings. With respect to (a), we find that additional generic, unrestricted TLDs using the Latin alphabet would be unlikely to provide significant additional competition for .com. However, because of their potential benefits—discussed below—differentiated offerings might provide such competition. We address (b) by studying a small sample of generic words, and we do not find evidence that scarcity of generic second-level domain names is a pervasive problem; in a high percentage of cases studied, generic terms are unregistered or unused on several different gTLDs. This pattern may arise because multiple TLDs and second-level names such as car, cars, autos, automobiles, *etc.* all are potential substitutes available to website creators. Finally, we reach several findings with regard to (c), the potential benefits of differentiated offerings. First, although many of the benefits associated with Internationalized Domain Names (IDNs) can be realized through the use of second-level IDNs, the benefits of top-level IDNs derived from reduced confusion, increased convenience, and the psychic benefits of inclusion could be meaningful. Second, the potential benefits from gTLDs that differentiate themselves either by being community-based or by employing restrictions on registrants or on the use of second-level domains within the gTLDs, could in, theory be substantial and, by their nature, the benefits of innovative new services are impossible to predict. However, as the case study of .mobi illustrates, the size of such benefits in practice will depend on whether there are other ways to achieve the primary objectives of the proposed gTLD, such as the use of second-level domain names or communication between servers and browsers that provide information that substitutes for the information conveyed by the use of the restricted gTLD.

7. Section IV turns attention to the issue of external costs and possible mechanisms for limiting such costs by examining the effectiveness of different intellectual property protections adopted by gTLDs in the past at the time of launch. We find that some intellectual property (IP) protection mechanisms implemented during a sunrise period can be effective in minimizing the number of claimed trademark infringements, but that poorly implemented procedures can result in large numbers of improper registrations, as happened in .info. Protection after the launch of a new gTLD is also important and may require different mechanisms, but several factors made it impossible to use case studies to shed light on the efficacy of post-launch mechanisms. First, all gTLDs that we studied used ICANN's Uniform Domain Name Dispute Resolution Policy (UDRP) and, thus, there is a lack of the variation necessary to conduct a comparative analysis.⁴ Second, UDRP is only one of the avenues trademark owners can use to protect their interests, and comprehensive data do not exist on the use of other methods, such as private actions. Third, the Uniform Rapid Suspension System (URS) has yet to be implemented. As a result of these factors, we do not have sufficient information to assess the effectiveness of different post-launch dispute resolution/IP protection procedures.

8. Section V presents results from empirical research on the domain names associated with top international brands. We find that there is: (a) a significantly lower rate of registration by these brands outside of .com, and (b) a lower rate of registration for less valuable brands than for the most valuable brands. Based on this research, it appears that brand owners expend less effort

⁴ The only gTLD we studied that uses any specific avenue beyond UDRP in the post-launch period, .name, allows trademark owners to block the registration of their names; because of the special uses and naming requirements of the .name registry, however, it is impossible to judge whether the number of blocks purchased by trademark owners is relatively large or small, and whether the blocks have been effective in preventing otherwise infringing registrations.

to protect their brands on less popular gTLDs, which is the pattern one would expect if there companies suffer lower costs from infringing activities on less popular gTLDs.

9. Lastly, a concluding section offers a very high-level summary of the empirical findings of our overall analysis.

II. A TAXONOMY OF TOP-LEVEL DOMAINS

10. We begin by describing the various types of TLDs that are in existence now or that may come into existence as the result of ICANN's proposed introduction of new gTLDs:

- *Generic TLDs (gTLDs)*.⁵ Generic TLDs are three or more characters in length and are used for many purposes. All of the seven original TLDs (.com, .edu, .gov, .int, .mil, .net, and .org) are considered gTLDs, even though some have special purposes and restricted registration rules. Thus the word “generic” does not mean “open” or “undifferentiated,” and gTLDs may or may not have restricted registration policies. Generic TLDs are of two types: unsponsored and sponsored.
 - *Unsponsored gTLDs* are generic TLDs for which the Internet community, through ICANN, sets rules.⁶ Examples include .com, .net, .org, .biz, .info, .name, and .pro.
 - *Sponsored gTLDs* are specialized TLDs intended to serve a specific community or purpose.⁷ They are also subject to policies adopted by ICANN (e.g., all of the current sponsored gTLDs adhere to a UDRP process for resolving trademark related domain name disputes), but they have additional rules and policies that are set by the sponsor of the TLD.⁸ Examples of sponsored gTLDs include .aero, .coop, .museum, .asia, .cat, .jobs, .mobi, .tel, and .travel.
- *Country Code TLDs (ccTLDs)* are two characters in length and are assigned to specific countries or territories.⁹ Each ccTLD operates under rules established by the country-

⁵ ICANN, “Top-Level Domains (gTLDs),” available at <http://www.icann.org/en/tlds/>, site visited September 18, 2010.

⁶ ICANN, “Registry Information,” available at <http://www.icann.org/en/registries/>, site visited October 6, 2010.

⁷ ICANN, “Registry Information,” available at <http://www.icann.org/en/registries/>, site visited October 6, 2010.

⁸ ICANN, “Uniform Domain-Name Dispute-Resolution Policy,” available at <http://www.icann.org/en/udrp/udrp.htm>, site visited October 6, 2010.

⁹ ICANN, “Top-Level Domains (gTLDs),” available at <http://www.icann.org/en/tlds/>, site visited September 18, 2010; IANA, “Country-code Top-level Domains,” available at <http://www.iana.org/domains/root/cctld/>, site visited September 18, 2010.

specific TLD manager; ICANN does not restrict their use to country-specific content or registrants, although the country-specific ccTLD manager may choose to do so. In recent years, some ccTLDs have been marketed outside their respective countries or territories as generic TLDs, namely, .me (Montenegro), .co (Colombia), and .tv (Tuvelo).

- *Internationalized Domain Name ccTLDs (IDN ccTLDs)* are ccTLDs that use characters from a local language in the TLD code, such as .рф for the Russian Federation.¹⁰

As currently proposed, applicants for new gTLDs will designate the requested gTLDs to be community based or standard:

- *Community-based gTLDs* must be “operated for the benefit of a clearly delineated community.”¹¹
- *Standard gTLDs.*¹² All new gTLDs that are neither IDN ccTLDs nor designated as community based are called standard gTLDs. This category would include gTLDs for a specific brand or company as well as gTLDs designed to serve a broader purpose. A standard gTLD

can be used for any purpose consistent with the requirements of the application and evaluation criteria, and with the registry agreement. A standard applicant may or may not have a formal relationship with an exclusive registrant or user population. It may or may not employ eligibility or use restrictions.¹³

Because the standard gTLD category is so broad, it is useful to distinguish between open and restricted standard gTLDs. For our purposes, an open, standard gTLD is one that has no restrictions on who may register or how second-level domains may be used, and a restricted, standard gTLD has restrictions on the identity of registrants or the uses or content of websites using second-level domains registered on the gTLD.

¹⁰ ICANN, “IDNs; Internationalized Domain Names,” available at <http://www.icann.org/en/topics/idn/fast-track/factsheet-idn-fast-track-12jun09-en.pdf>, site visited September 18, 2010. Under the new gTLD policy being developed by ICANN, TLDs other than country code TLDs also may use IDNs.

For additional examples, see <http://www.iana.org/domains/root/db/#>, site visited September 19, 2010.

¹¹ ICANN, “gTLD Applicant Guidebook, Proposed Final Version, Version 5,” November 12, 2010, available at <http://icann.org/en/topics/new-gtlds/draft-rfp-clean-12nov10-en.pdf>, site visited November 22, 2010 (hereinafter, *Proposed Final Applicant Guidebook*), § 1.2.3.1.

¹² *Proposed Final Applicant Guidebook*, § 1.2.3.1.

¹³ *Proposed Final Applicant Guidebook*, § 1.2.3.1.

III. BENEFITS

11. The Domain Name System maps numeric IP addresses to easier-to-remember website names, often reflecting a brand name, trademark, or descriptive phrase. In theory, new gTLDs could benefit Internet users by: (a) providing competition to existing gTLDs; (b) relieving name scarcity problems caused by having only a few gTLDs; and (c) offering differentiated services and new products that are valuable to users.

A. COMPETITION FOR EXISTING gTLDs

12. Consumers generally benefit from additional competition, which reduces quality-adjusted prices and/or increases variety, including the introduction of new products and services. Based on an examination of available data, however, our earlier report concluded that past gTLD introductions (*e.g.*, .biz and .info) have not had significant competitive impact on .com's dominance in the registration of second-level domain names. The finding that the *undifferentiated* gTLDs introduced in the past have been unable to provide significant competition for the well-established .com gTLD 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.

13. Based on these empirical and logical findings, we concluded that additional studies of competition between .com and the currently available undifferentiated gTLDs should receive a low priority. No comments were submitted challenging this conclusion. Consequently, we have not undertaken any additional studies since our earlier examination of the data.

14. Although the evidence suggests that additional generic unrestricted gTLDs using the Latin alphabet and a traditional business model of registering domain names would be unlikely

to provide significant additional competition for .com, gTLDs that offer new features or are significantly differentiated from existing TLDs have a greater chance of providing competition. We discuss the potential benefits of this type of gTLD in Parts C through F below.

B. RELIEVING NAME SCARCITY

15. If the relatively small number of gTLDs is a constraint on the registration of valuable second-level domain names, then additional gTLDs could benefit consumers by relieving name scarcity. This potential problem of name scarcity is not relevant for uniquely trademarked brands but is relevant for generic names (such as “books”), for local, non-trademarked brands (such as “Moe’s Pizza”), for shared, trademarked brands (such as “United”), and for common acronyms (such as “ABA”).

16. If past gTLDs have relieved name scarcity, then one might, for example, see Moespizza.com for a restaurant in New York and Moespizza.biz for a restaurant in San Francisco.¹⁴ Similarly, if gTLDs provided another platform for websites to compete with websites that have domains in .com, then one might see books.biz selling books in competition with books.com. In contrast, if generics are registered by the same registrant across gTLDs, that pattern would suggest either attempts to gather traffic from different populations of web users or defensive registrations (*i.e.*, the registrant is using the registration solely to block others from using the domain name). If a single registrant’s non-.com sites redirect or have original content, then the registrant likely is attempting to gather traffic, although one cannot rule out the

¹⁴ There are ways to relieve scarcity that do not require additional gTLDs. For instance, one might observe moespizza-ny.com as well as moespizza-sf.com. Similarly, there are many organizations with the acronym ABA that have found space on the Internet. For example, the American Bar Association uses abanet.org, the American Birding Association uses aba.org, the American Booksellers Association uses bookweb.org, and the American Bus Association uses buses.org.

possibility that the primary motivation is to block others from using the domain name. If a single registrant's non-.com sites are blank or return errors, then the registration is likely defensive.

17. In order to shed light on whether additional TLDs have relieved name scarcity, we examined a non-random sample of five generic words that are used as domain names: buy, hotels, news, shopping, and weather. For each word, we examined whether the second-level domain name was registered in any of 13 TLDs (including six gTLDs and seven ccTLDs) and how the domains in each of these TLDs are being used. The 13 TLDs we examined are .com, .net, .org, .biz, .info, .mobi, .us, .au, .uk, .nz, .za, .co, and .me.¹⁵ Table 1 below illustrates our findings with respect to how the domain name registrations are being used.

¹⁵ Website content can change frequently; the content currently provided on these websites may differ from the content on the date we visited. We visited these websites during the week of September 5-11, 2010.

Table 1: Summary of Generic Domains Examined

	Domains Examined	Registered			Unregistered
		Commercial Site	Opportunistic Site	Error Returned or Inactive Site	
gTLDs					
Buy	6	1	3	2	0
Hotels	6	4	0	0	2
News	6	1	4	0	1
Shopping	6	3	0	2	1
Weather	6	4	0	1	1
Total	30	13	7	5	5
		<i>43%</i>	<i>23%</i>	<i>17%</i>	<i>17%</i>
ccTLDs					
Buy	7	4	1	1	1
Hotels	7	4	1	1	1
News	7	4	1	0	2
Shopping	7	3	3	0	1
Weather	7	5	1	0	1
Total	35	20	7	2	6
		<i>57%</i>	<i>20%</i>	<i>6%</i>	<i>17%</i>

Notes: gTLDs examined include .com, .net, .org, .biz, .info, and .mobi; ccTLDs examined include .us, .au, .uk, .nz, .za, .co, and .me. Unregistered sites include domains reserved by the registry operator.

Sources: Various websites; Whois.

18. Table 1 shows that registrants are using generic domain names in different ways. In the gTLDs examined, 83 percent of the generic domains were registered by third parties, *i.e.*, not by the registry.¹⁶ Commercial content was present on 43 percent of the registered domains, 23 percent contained opportunistic content, and 17 percent either returned an error or were inactive

¹⁶ Some of the domain names sampled were registered by the registry. For example, hotels.mobi is registered to “mTLD Premium Name Escrow Account.” In other TLDs, second level domains such as shopping.me, are premium names that have not been released for registration by third parties. (See, dotMobi, dotMobi Whois Search, available at <http://mtld.mobi/content/dotmobi-whois-search> and <http://www.shopping.me/>, sites visited October 7, 2010.)

sites. Of the ccTLDs examined, 57 percent of registered domains contained commercial content, 20 percent contained opportunistic content, and six percent returned an error or were inactive sites. Although generalizing from such a small, non-random sample should be done with caution, we find that generic words are more likely to be used to gain commercial traffic and less likely to contain opportunistic content or return an error when registered in ccTLDs than when registered in gTLDs.

19. Table 2 below summarizes registrations of these generic domain names in the 13 TLDs broken down by the identity of the registrant.

Table 2: Commercial Sites Registered to the Same Entity

	Total Commercial Sites	Number of Sites Registered to the Same Entity	Number of Sites with Same Content as Another Site	Number of Sites with Different Content
Buy	5	0	-	-
Hotels	8	5	3	2
News	5	0	-	-
Shopping	6	2	2	0
Weather	9	3	0	3

Notes: gTLDs examined include .com, .net, .org, .biz, .info, and .mobi; ccTLDs examined include .us, .au, .uk, .nz, .za, .co, and .me.

Sources: Various websites.

This table shows mixed evidence regarding the registration of generic terms by the same entity on multiple gTLDs.¹⁷ For some generics (*i.e.*, hotels, shopping, and weather), a single registrant has registered the domain name in multiple TLDs. For others (*i.e.*, buy and news), the registrant was different in each gTLD. Domains that were registered by the same registrant often

¹⁷ We relied on whois information to determine the registrant for sites that returned an error or were opportunistic or inactive. The identities of registrants for websites with content were determined based on the content (usually a company logo or brand).

contained content targeted to a specific group. For example, Hotels.co.uk redirects to the UK specific page within Hotels.com and Weather.co.uk redirects to the UK and Ireland page within weather.com.

20. This small sample of non-random terms shows that there is little overlap in ownership – different parties have registered the terms in different TLDs or the terms remain unregistered. This pattern suggests that the availability of gTLDs other than .com might have relieved name scarcity. But the existence of unregistered generic names indicates that scarcity is not a current problem—even with the number of gTLDs and ccTLDs currently available, some names go unused, and there are variants of generic names that could be used such as car, cars, auto, autos, automobiles, carz, *etc.*, that might further reduce name scarcity within a specific TLD. Where a single party registers the same name on different TLDs to provide differentiated content, it appears that the objective is to target different users. Additional gTLDs targeted at specific communities may generate benefits (as discussed below) but these benefits are not derived from the relief of scarcity.¹⁸ Some generic terms may be more attractive than others, but marketing and website quality have allowed websites that rely on neither simple generic terms nor established brand names (*e.g.*, Wikipedia, Google, and Amazon¹⁹) to become very popular and well-known, providing additional support for the conclusion that the relief of name scarcity is unlikely to be the principal source of social benefits derived from new gTLDs.

¹⁸ In theory, a single owner of multiple domains with the same second-level names could be engaging in preemptive registration to block competitors from obtaining those domains. There could be competitive benefits to the extent that having a large number of gTLDs could make such preemption difficult. However, the potential benefits of this type appear to be small given that, at least in our sample, there frequently are unused opportunities to register the second-level domain names and there are also many possible variants of the second-level names that might be used.

¹⁹ Although these names are now well recognized among Internet users, the names had no brand equity when the respective websites were launched.

C. INTERNATIONALIZED DOMAIN NAME TLDS

21. An Internationalized Domain Name is any domain name that contains at least one character other than the letters a through z, the numbers 0 through 9, and hyphens.²⁰ The use of IDNs allows domain names to be written in local languages where those languages do not use exclusively Latin scripts.²¹ IDNs first came into use for second-level domain names in 2003, although not all TLDs offer them.²² For example, .org allows second-level domain name registrations in Danish, German, Hungarian, Icelandic, Korean, Latvian, Lithuanian, Spanish, Polish, Swedish, and Chinese, but it appears that .mobi supports only Chinese IDNs at the second level.²³

22. At the TLD level, ICANN has adopted a fast-track approval process for ccTLDs using IDNs. Under this process, ICANN has received 33 requests for IDN ccTLDs in 22 different languages²⁴ and has delegated IDN ccTLDs for 13 countries or territories, including China, the

²⁰ ICANN, “IDNs: Internationalized Domain Names,” *available at* <http://www.icann.org/en/topics/idn/factsheet-idn-program-05jun09.pdf>, *site visited* September 8, 2010.

²¹ IDNs allow non-Latin alphabetic scripts, such as those in Chinese, Russian, and Arabic, as well as diacritical marks such as those used in French and Spanish. (ICANN, “IDNs: Internationalized Domain Names,” *available at* <http://www.icann.org/en/topics/idn/factsheet-idn-program-05jun09.pdf>, *site visited* September 8, 2010.)

²² ICANN, “IDNs: Internationalized Domain Names,” *available at* <http://www.icann.org/en/topics/idn/factsheet-idn-program-05jun09.pdf>, *site visited* September 8, 2010. In order to offer IDNs at the second level, registries must gain authorization from ICANN in compliance with ICANN’s IDN Implementation Guidelines. (ICANN, “IDN Implementation Guidelines,” *available at* <http://www.icann.org/en/topics/idn/implementation-guidelines.htm>, *site visited* September 9, 2010.)

²³ See <http://pir.org/why/global/idn> and <http://mtld.mobi/content/general-faq#m>.

²⁴ ICANN, “The IDN ccTLD Fast Track Process is Open,” *available at* <http://www.icann.org/en/topics/idn/fast-track/>, *site visited* September 19, 2010.

Russian Federation, and Saudi Arabia.²⁵ ICANN plans to expand IDNs beyond ccTLDs by allowing IDNs for generic TLDs as part of its new gTLD process.²⁶

23. IDNs allow users to interact with the Internet in their own language and alphabet. Remembering and using second-level domain names or gTLDs written in a non-native alphabet is more difficult and potentially confusing.²⁷ In this case, the branding and consumer convenience benefits offered by IDNs could be great. This value is reflected in the auction prices of second-level IDN domain names on the secondary market; in 2010 auction prices ranged as high as \$60,000 (for pф.com) and in 2009 the domains Москва.com, gartenmöbel.de, and Büromöbel.de sold for \$216,000, \$214,500, and \$100,749 respectively.²⁸

24. IDNs can also create value in ways that are difficult to measure. Users may derive psychic benefits from the fact that their language is recognized and embraced by the Internet domain name system.

25. Many of the benefits of IDNs can be realized by implementing IDNs at the second level. Moreover, it is our understanding that it would be possible to write software that would allow a browser user to operate in his or her language and alphabet of choice without the creation of a

²⁵ IANA, “Root Zone Database,” available at <http://www.iana.org/domains/root/db/#>, site visited September 19, 2010.

²⁶ ICANN, “Frequently Asked Questions: Available Names and Languages,” available at <https://www.icann.org/en/topics/idn/fast-track/faq-en.htm#available4>, site visited September 10, 2010.

²⁷ According to one source, for example, companies in Japan may advertise a picture of someone searching a Japanese word in a search engine instead of advertising the domain name itself. Presumably companies do this because they believe potential customers find the Japanese word more convenient to remember and use than the domain name. (“Guest Post: Why IDNs Should Matter to Domain Investors,” Elliot’s Blog, available at <http://www.elliotsblog.com/why-idns-should-matter-to-domain-investors-53923>, site visited September 9, 2010.)

²⁸ IDN Tools, “Publicly Reported IDN Sales (over \$500),” available at <http://www.idntools.com/idnsales.php?Order=price&PriceC=1>, site visited September 9, 2010.

new IDN TLD.²⁹ A new IDN TLD would create incremental benefits for the Internet community only to the extent that it generated benefits that could not otherwise be realized through the use of second-level IDNs or software solutions. In our earlier report, we found that the incremental benefits of an IDN TLD could be significant even if individual users place relatively low values on convenience and the psychic rewards described above.^{30, 31}

D. RESTRICTIONS ON THE FUNCTIONING OF WEBSITES IN A gTLD

26. When domain name registration is limited based on technical or operational characteristics of planned websites, a gTLD can play a certification or authentication role. Consider the hypothetical example of an application to delegate .trust whose registry would certify that the registrants of domain names on that gTLD complied with particular privacy and security policies. In theory, website visitors who had preferences for strong privacy and security protections could rely on the .trust gTLD as an indication that the .trust sites they visited did, in fact, have such policies. Users would have this assurance even if they were unfamiliar with the particular websites being visited. However, the value of such a TLD would depend both on the extent to which website visitors were aware of the TLD and understood its rules, and whether

²⁹ For a discussion of content negotiation using the Apache server, *see*, Apache, “Content Negotiation,” available at <http://httpd.apache.org/docs/2.0/content-negotiation.html>, site visited September 8, 2010.

³⁰ *Phase I Report*, ¶ 30.

³¹ It should also be noted that IDNs raise issues with respect to external costs, as well as benefits. Specifically, IDNs can lead to typosquatting based on characters that have different Unicode representations but similar glyphs. (See, for example, Cary Karp (2005), “Internationalized Domain Names in the Management of Cultural Heritage,” available at <http://media.nic.museum/iuc27/karp.idn.pdf>, site visited September 8, 2010, at 4.)

there were alternative means of attaining the same ends at lower cost.³² We will explore these issues, especially the second one, by examining the experience of .mobi.

27. On December 15, 2003, ICANN released a request for proposals (RFP) for sponsored TLDs. In response, Nokia Corporation, Vodafone Group Services Limited, and Microsoft applied for the .mobi TLD. They proposed .mobi as a specialized domain for mobile applications. Websites on the .mobi TLD were intended to be mobile-device-friendly in that they would function well on small screens and relatively low-bandwidth devices.³³

28. ICANN solicited public comments on the .mobi application. Some commenters raised concerns about the problem of defensive registrations. In July 2004, the Device Independence Working Group published its comments on the .mobi TLD proposal, “The ‘.mobi’ Proposal is Inconsistent with Device Independence Principles.”³⁴ This assessment argued that .mobi was unnecessary because there were alternative and superior means of accomplishing .mobi’s stated objectives. Specifically, the Device Independence Working Group argued:

- protocols by which the device informed the web server of the device’s capabilities could serve the same function;
- a software-based approach would be superior because it could be more readily updated as mobile devices evolved and could better deal with a wide variety of devices; and

³² In a technical sense, there are always alternative ways of organizing the Internet so that new gTLDs are not necessary. Alternative means of organizing Internet content, however, may be less user-friendly or useful.

³³ “New sTLD RFP Application, .mobi, Part B,” available at <http://www.icann.org/en/tlds/stld-apps-19mar04/mobi.htm>, site visited September 6, 2010. “...the .mTLD sTLD serves to foster that trust by ensuring that the content that end users seek access to is suitable to the bandwidth, screen size, memory, and other technical capabilities of their mobile devices and do not create unnecessary costs to the consumer.”

³⁴ World Wide Web Consortium (W3C), “The ‘.mobi’ Proposal is Inconsistent with Device Independence Principles,” http://www.w3.org/2004/07/dotmobi_diwg.html, site visited September 8, 2010.

- .mobi undermined a fundamental architectural principal of the Internet: device independence.³⁵

29. In addition to soliciting public comments, ICANN sought an assessment from a panel of experts, who were divided into three teams to assess technical, business/financial, and policy issues, respectively.³⁶ The teams began their work in May 2004 and completed their (separate) reports in July 2004. The business/financial evaluation team concluded that .mobi met the relevant selection criteria, but the technical and policy evaluation teams (the latter of which evaluates criteria related to sponsorship/community-value) did not. The technical evaluation team noted concerns about fragmentation as well as defensive registrations and user lock-in. One of the concerns of the sponsorship/community-value evaluation team was that membership in the community would be difficult to establish clearly.

30. ICANN gave the .mobi applicants an opportunity to submit clarifying or additional documentation. In September 2004, .mobi responded to the reports of the technical and sponsorship/community-value evaluation teams. In response to the technical team, the .mobi applicants suggested that the technical team's concerns were outside the scope of the technical criteria of ICANN's RFP.³⁷ In response to the sponsorship/community-value evaluation team, the .mobi applicants asserted that the use of a specialized TLD would support benefits that could

³⁵ World Wide Web Consortium (W3C), "The '.mobi' Proposal is Inconsistent with Device Independence Principles," http://www.w3.org/2004/07/dotmobi_diwg.html, *site visited* September 8, 2010.

³⁶ The ICANN RFP contained selection criteria based on technical, business/financial, and sponsorship/community issues. The sponsorship/community criteria called for a demonstration that the proposed gTLD would represent the "addition of new value to the Internet name space," have protections for "the rights of others," avoid "abusive registration practices," and provide "assurance of adequate dispute-resolution mechanisms." (ICANN, "New sTLD Application, Part A: Explanatory Notes," December 15, 2003, *available at* <http://www.icann.org/tlds/new-stld-rfp/new-stld-application-parta-15dec03.htm>, *site visited* September 8, 2010.)

³⁷ IANA, "IANA Report on the Delegation of the .MOBI Top-Level Domain," October 2005, *available at* <http://www.iana.org/reports/2005/mobi-report-oct2005.html>, *site visited* September 11, 2010.

not be offered by second-level names in gTLDs and asserted that the governance mechanisms were appropriate.³⁸

31. In October 2004, ICANN, the technical team, and the .mobi applicants discussed the concerns raised about validation, content negotiation, and mobile device restrictions. The next month,

the technical team indicated its view that .MOBI “has not been able to convince us of the technical merit of its application beyond the criteria specified in the RFP” because of “significant concerns about deployment of a TLD for content negotiation reasons”. The team found there was an absence of technical arguments to support .MOBI’s belief that “currently mobile devices are not well served by standard content sites,” and that “the best way to address this issue is to create a new TLD.”³⁹

In December 2004, .mobi responded to the technical team.⁴⁰

32. Later that month, ICANN’s Board of Directors authorized ICANN staff to enter into commercial and technical negotiations with the .mobi applicants.⁴¹ In June 2005, ICANN announced the completion of those negotiations and posted the proposed .mobi Sponsored TLD Registry Agreement prior to Board consideration.⁴² At a Special Meeting of the Board on June 28, 2005, the Board found that “delegation of a .mobi sponsored top-level domain to DotMobi,

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ ICANN, “Special Meeting of the Board,” December 13, 2004, *available at* <http://www.icann.org/minutes/resolutions-13dec04.htm>, *site visited* September 8, 2010.

⁴² ICANN, “ICANN Publishes Proposed Agreement on .MOBI,” June 3, 2005, *available at* <http://www.icann.org/announcements/announcement-03jun05.htm>, *site visited* September 8, 2010.

Ltd. would be beneficial for ICANN and the Internet community,” approved the agreement, and directed the President of ICANN to implement its decision.⁴³

33. On July 11, 2005, ICANN and DotMobi signed the Registry Agreement. On September 9, 2005, DotMobi submitted a delegation template to IANA, with mTLD, Limited as the Sponsoring Organization.⁴⁴

34. The .mobi registry employed a phased registration scheme. Participants in the mobile industry were allowed to register first, beginning on May 22, 2006.⁴⁵ After two other phases were complete, general registration began on October 11, 2006.⁴⁶

35. Registrations in .mobi steadily increased from its launch until September 2008, when domain registrations reached 964,115.⁴⁷ Registrations then began to decline and did not

⁴³ ICANN, “Special Meeting of the Board, Approved Resolutions,” June 28, 2005, *available at* <http://icann.org/minutes/resolutions-28jun05.htm>, *site visited* September 8, 2010.

⁴⁴ mTLD Top-Level Domain Ltd. (known as dotMOBI) was founded by a group of telecommunications companies, computer companies, and internet content providers, including Ericsson, Google, GSM Association, Hutchison 3, Microsoft, Nokia, Orascom Telecom, Samsung Electronics, Syniverse, T-Mobile, Telefónica Móviles, Telecom Italia, Visa, and Vodafone. (dotMobi, “Meet the .mobi domain and the company behind it, dotMobi” *available at* <http://mtld.mobi/content/meet-mobi-domain-and-company-behind-it-dotmobi>, *site visited* September 8, 2010; IANA, “IANA Report on the Delegation of the .MOBI Top-Level Domain,” October 2005, *available at* <http://www.iana.org/reports/2005/mobi-report-oct2005.html>, *site visited* September 10, 2010.)

.mobi is now run by Afilias, Limited, which purchased mTLD in early 2010. (Afilias, “Afilias Limited Acquires .Mobi Domain Registry and Expands Market Leadership,” February 11, 2010, *available at* <http://www.afilias.info/mobi+acquisition>, *site visited* September 8, 2010.)

⁴⁵ WIPO, “WIPO End Report on Case Administration under the Sunrise Challenge Policy for .mobi and the Premium Name Trademark Application Rules for .mobi,” Annex 1, *available at* <http://www.wipo.int/amc/en/domains/reports/mobi/annex/1.html>, *site visited* September 11, 2010.

⁴⁶ *Id.*

⁴⁷ “.MOBI Monthly Registry Reports to ICANN,” *available at* <http://www.icann.org/en/tlds/monthly-reports/>, *site visited* September 8, 2010.

substantially increase again until October 2009 when .mobi introduced Chinese IDNs at the second level.⁴⁸

36. Public information indicates that .mobi registrations have not met expectations. For example, in February 2007, approximately five months after its launch, dotMobi's CEO told reporters that he believed registrations would reach a million by the end of the year.⁴⁹ At the end of 2007, dotMobi's Monthly Registry Report indicated that it had 802,455 registrations, falling 20 percent short of the CEO's expectation.⁵⁰ Moreover, of the domain names registered at the very beginning of the general registration period, no more than 37 percent were renewed when they came up for renewal two years later.⁵¹

37. Evidence from the secondary market for domain names also suggests that .mobi has not performed as expected. To at least some parties, .mobi initially appears to have been perceived to be a valuable designation. Flowers.mobi reportedly sold for \$200,000 in 2007.⁵² However, a recent *Los Angeles Times* article stated that investors in .mobi domain names "have found the names are now all but worthless," and claimed that technological advances such as the iPhone

⁴⁸ dotMobi, "dotMobi announces unique mobile domain and keyword bundle for Chinese brands and businesses," October 13, 2009, available at <http://mtld.mobi/content/dotmobi-announces-unique-mobile-domain-and-keyword-bundle-chinese-brands-and-businesses>, site visited September 8, 2010.

⁴⁹ "3GSM-INTERVIEW-DotMobi sees 1 mln mobile Web domains by year-end," *Reuters News*, February 15, 2007.

⁵⁰ mTLD Mobile Top Level Domain, Registry Operator's Report, December 2007, available at <http://www.icann.org/tlds/monthly-reports/mobi/mtld-200712.pdf>, site visited September 20, 2010.

⁵¹ ".MOBI Monthly Registry Reports to ICANN," available at <http://www.icann.org/en/tlds/monthly-reports/>, site visited October 7, 2010. The actual renewal rate is likely lower than 37 percent as some of the renewals in October and November 2008 could be from registrants who initially registered domains in Fall 2007 for a one-year period.

⁵² Bridget Carey, ".Mobi' mobile domain names snapped up by speculators are now all but worthless," *Los Angeles Times*, June 9, 2010. See also, "Domain Auction tops \$5.4 million in domain sales," *DomainNewz*, available at <http://www.moniker.com/news/vol6/v6art1.jsp>, site visited September 8, 2010.

and advances in the way websites are built have reduced the need for a mobile TLD.⁵³ Indeed, the principal current content of flowers.mobi is a list of .com sites (*e.g.*, FTD.com), which—at least intuitively—suggests that the site is creating relatively little consumer value from the specific features of .mobi.⁵⁴

38. The issue of whether .mobi adds value—especially relative to software-based alternatives—continues to be debated. For example, a blog post on dotMobi’s website discussing the impact of the iPhone and handset innovation argued that .mobi is still valuable because the changes needed to make web content appropriate for mobile devices goes well beyond accounting for differences in screen resolution and available bandwidth.⁵⁵ However, that same entry stated that many of the world’s top brands “are already creating device-aware sites that recognize the specific handset being used and serve content that is optimized for that

⁵³ Bridget Carey, “.Mobi’ mobile domain names snapped up by speculators are now all but worthless,” *Los Angeles Times*, June 9, 2010. Similar views about technology overtaking any need for .mobi have been voiced on online forums. For example,

IMO .mobi came about 3-4 years too late. When [cell] phones were first getting internet capabilities, .mobi would have been great (especially if the phones auto-redirected to them).

But – [by] the time .mobi came around cell phones had much better web capabilities to handle actual web sites and most companies redirected mobile visitors to a mobile version of the site.

Now, they will be extremely hard to catch on.

And, “Modern mobile devices can easily access the Internet without utilizing .mobi domains. Just type Domain.com into your smartphone and let technology take care of the rest.” (These posts are from a thread on dnforum.com, *available at* <http://www.dnforum.com/f557/collapse-mobi-idn-markets-aftermath-thread-390455.html>, *site visited* September 10, 2010.)

⁵⁴ <http://flowers.mobi> was visited on September 5, 2010. In fact, as of October 25, 2010, <http://flowers.mobi> is a free “Domain Parking” site with opportunistic advertising provided by Sedo.

⁵⁵ dotMobi, “Is The iPhone The End Of The .mobi Domain?,” *available at* <http://mtld.mobi/resource/is-the-iphone-the-end-of-the-mobi-domain>, *site visited* September 8, 2010.

device.”⁵⁶ The capability of device-specific recognition allows such sites to go well beyond the level of matching content to devices that is provided by .mobi because the .mobi gTLD indicates only that a site is generically optimized for mobile devices, and mobile devices can differ greatly from each other in format and capability.

39. In theory, the benefits associated with a gTLD that imposes specialized requirements on the functioning of websites with domains in that gTLD are potentially high because the gTLD might offer services that are not otherwise available to users or might offer services on better terms than are currently available. The .mobi case study suggests that, in practice, the benefits associated with such a gTLD will depend, in part, on the answers to the following questions. Are there other ways to achieve the primary objectives of the proposed gTLD, such as: (a) second-level domain names; (b) certificates; (c) software tags; and (d) filters that look at content beyond the URL and any tags? How do the alternatives, if any, compare in terms of their likely effectiveness in achieving the primary objectives of the gTLD and the costs they would impose on different members of the Internet community? How will the comparison of the gTLD and alternative solutions change over time as technological change occurs? Failure to take potential alternatives into account can result in a significant over-estimate of the likely benefits of a gTLD that attempts to create value by placing restrictions on the operations of registrants’ websites.

E. RESTRICTIONS ON THE TYPE OF ORGANIZATION REGISTERING A SECOND-LEVEL DOMAIN NAME

40. Next, consider benefits from gTLDs that either are community-based or will employ restrictions on the types of entity that may register second-level domain names. Community-based gTLDs would be “operated for the benefit of a clearly delineated community” with restrictions designed to serve the community. In its application, a community-based gTLD

⁵⁶ *Id.*

would be required to state the purpose of the gTLD and how it will serve the community of interest, and to establish “dedicated registration and use policies for registrants in its proposed gTLD, including appropriate security verification procedures, commensurate with the community-based purpose it has named.”⁵⁷ A community-based gTLD registry could impose restrictions on, for example: (a) technical or operational characteristics of registrants’ websites (*e.g.*, required transactional security protections for a gTLD aimed at the banking community); (b) the types of entities allowed to register second-level domain names (*e.g.*, authorized retailers for a gTLD owned by a single company, or accountants for a gTLD serving accounting professionals); (c) the nature of the content (*e.g.*, Catalan language websites for a gTLD serving the Catalan community, or information about New York City for a gTLD aimed at residents or tourists). In addition, some standard gTLDs may have similar attributes. Standard gTLDs could allow the registration of domain names from any entity or could restrict registration to a targeted group. In the extreme, a company could seek delegation of a standard gTLD that would be used solely by that company (*i.e.*, it would accept no outside registrants at all).

41. There are at least two possible sources of benefits from restricting the type of organization that can register a second-level domain name. First, restrictions create a place on the Internet for the collection of similar information and thus make it easier for Internet users to find that information. Second, restrictions can certify that certain sites are authentic or legitimate. Below, we examine the experience of two gTLDs with restricted eligibility: .museum and .aero. We describe the benefits anticipated at time of launch and assess whether those benefits have occurred, based in part by an evaluation of the number of domain names registered

⁵⁷ *Proposed Final Applicant Guidebook*, §1.2.3.1.

on the gTLD, how the sites are used by the registrants, and statistics on usage of the most-visited websites on these gTLDs.

1. **.museum**

42. On October 2, 2000, the Museum Domain Management Association (“MuseDoma”), whose founding members were The International Council of Museums (ICOM) and the J. Paul Getty Trust, submitted a sponsored gTLD application to ICANN for a restricted gTLD for the worldwide museum community.⁵⁸ Eligibility to register a domain within .museum would be based on the ICOM definition of museum, namely,

a non-profit making, permanent institution in the service of society and of its development, and open to the public which acquires, conserves, researches, communicates and exhibits, for purposes of study, education and enjoyment, material evidence of people and their environment.⁵⁹

In August 2001, the first draft registry agreement for .museum was posted for comment on ICANN’s website. The ICANN Board formally approved the agreement on September 10, 2001, and it was signed on October 17, 2001.⁶⁰ The .museum gTLD began registering domain names in November 2001.⁶¹

43. The anticipated benefits of .museum included benefits to users from authentication of museum websites and by making it easier to find information. Regarding authentication,

⁵⁸ MuseDoma, “TLD Application for .mus, .muse, .musea, and others,” Sponsored TLD Application Transmittal Form, *available at* <http://www.icann.org/en/tlds/mus1/a1.html>, *site visited* September 11, 2010; MuseDoma, “Executive Summary of ICANN Application”, *available at* http://musedoma.museum/exec_summary.html, *site visited* September 9, 2010.

⁵⁹ MuseDoma, “TLD Application for .mus, .muse, .musea, and others,” Description of TLD Policies, Response to Question E17, *available at* <http://www.icann.org/en/tlds/mus1/e1.html>, *site visited* October 21, 2010.

⁶⁰ IANA, IANA Report on Establishment of the .museum Top-Level Domain, 30 October 2001, *available at* <http://www.iana.org/reports/2001/museum-report-30oct01.html>, *site visited* September 11, 2010.

⁶¹ MuseDoma, “The story of the dot,” *available at* <http://about.museum/background/>, *site visited* October 7, 2010.

MuseDoma stated that “[b]y its restriction to genuine museums, the domain validates and verifies the legitimacy of museums around the world.”⁶² In evaluating MuseDoma’s application for the .museum TLD, ICANN noted that one of its strengths lay in “the notion of authenticity that the .museum TLD will bring to the registrants.”⁶³ Regarding the ease of finding information, MuseDoma stated that “The structure of the .museum name space makes it easy for non-specialists to locate museums, even without knowing their precise names.”⁶⁴ This claim appears to refer to the domain naming conventions adhered to within .museum. These naming conventions require that the .museum name “contain sufficient information to provide users with an idea of the museum's disciplinary focus, its location, or both” and must be at least three levels.⁶⁵ Thus, field.museum is not allowed, but chicago.field.museum is allowed. According to Cary Karp, the President and CEO of MuseDoma, the hierarchical name structure ensures “that all participating museums can be reasonably certain about getting suitable names with a minimum of dispute” in an equitable manner and that the resulting names are readily understood by users.⁶⁶ He also argues that users can restrict web searches to the .museum TLD as a means of refining their searches and thus effectively improving search engine performance.⁶⁷ In its

⁶² MuseDoma, “What will a .museum name give you?,” *available at* <http://about.museum/benefits.htm>, *site visited* September 8, 2010.

⁶³ ICANN, “Summary of Application of Museum Domain Management Association,” at §C.2., *available at* <http://www.icann.org/en/tlds/report/mus1.html>, *site visited* September 9, 2010.

⁶⁴ About.museum, “What will a .museum name give you?,” *available at* <http://about.museum/benefits.htm>, *site visited* September 8, 2010.

⁶⁵ MuseDoma, “Frequently Asked Questions: Naming Conventions and Policy,” *available at* <http://www.musedoma.org/faqnam.html>, *site visited* September 8, 2010.

⁶⁶ Cary Karp, “The Further Adventures of the .museum Top-level Internet Domain,” *available at* <http://www.cultivate-int.org/issue9/musenic/>, *site visited* September 8, 2010. *See also*, MuseDoma Press Release, “New Policies for Registration of Names in the .Museum Top-Level Domain,” *available at* <http://about.museum/policy/new.0218.html>, *site visited* September 8, 2010.

⁶⁷ Cary Karp, “The Further Adventures of the .museum Top-level Internet Domain,” *available at* <http://www.cultivate-int.org/issue9/musenic/>, *site visited* September 8, 2010.

summary of public comments regarding MuseDoma’s application, ICANN concluded that the “.museum TLD would offer a significant database of information that [is] readily accessible and recognizable.”⁶⁸

44. Benefits also were expected to flow to museums—especially smaller institutions that at the time did not have an online presence—from the building of an online community. In its application, MuseDoma noted that “[t]he Internet remains an alien phenomenon despite ubiquitous assertions of its globality. Museums that have yet to establish themselves in this community make frequent mention of the need for a sectoral point of attachment to it.”⁶⁹

MuseDoma proposed to fill that need by creating an online focal point for museums and museum professionals. “The dedicated domain provides all museums — regardless of their area of specialization, size of collections, or level of funding — with equal opportunities for visibility on the Internet.”⁷⁰ And, “[A]s the domain grows an array of further services designed specifically for the .museum community will become available.”⁷¹ One such service is an index of museums (available at <http://index.museum>), which provides hyperlinks to the museums that have

⁶⁸ ICANN, “Summary of Application of Museum Domain Management Association,” § D.2., available at <http://www.icann.org/en/tlds/report/mus1.html>, site visited September 9, 2010.

⁶⁹ MuseDoma, “TLD Application for .mus, .muse, .musea, and others,” Description of TLD Policies, Response to Question E1, October 11, 2000, available at <http://www.icann.org/en/tlds/mus1/e1.html>, site visited October 7, 2010.

⁷⁰ About.museum, “What will a .museum name give you?,” available at <http://about.museum/benefits.htm>, site visited September 8, 2010.

⁷¹ About.museum, “What will a .museum name give you?,” available at <http://about.museum/benefits.htm>, site visited September 8, 2010.

.museum domain names.⁷² However, we have been informed that .museum no longer updates this index.⁷³

45. Domain name registration statistics can shed some light on whether the benefits anticipated at the time of delegation were achieved. First, consider the percentage of museums that have chosen to register domains on .museum. Although no official, comprehensive list of museums exists, there are tens of thousands of museums in the world. ICOM stated that 30,000 museums worldwide would participate in International Museum Day in 2010,⁷⁴ and the American Association of Museums indicates that there are 17,500 museums in the US alone.⁷⁵ In MuseDoma's application for the sponsored TLD, it stated that "40,000 institutions, organizations, and entities may qualify."⁷⁶ Despite the large number of museums, index.museum indicates that only 556 different entities have registered one or more domain names.⁷⁷ Thus, only a very small fraction of museums, as low as perhaps 1.4 percent (556/40,000) have registered a .museum domain name.

⁷² Cary Karp, "The Further Adventures of the .museum Top-level Internet Domain," *available at* <http://www.cultivate-int.org/issue9/musenic/>, *site visited* September 8, 2010.

⁷³ Interview with Cary Karp, President and CEO of MuseDoma, September 2, 2010.

⁷⁴ The International Council of Museums reported, for example, that 30,000 museums across the world would sponsor activities in honor of International Museum Day in 2010. (ICOM, "International Museum Day – 18 May 2010," *available at* http://icom.museum/press/2010_IMD_DP_eng.pdf, *site visited* September 10, 2010.)

⁷⁵ American Association of Museums, "Museums FAQ," *available at* <http://www.aam-us.org/aboutmuseums/abc.cfm>, *site visited* 6 September 2010.

⁷⁶ ICANN, TLD Application for .mus, .muse, .musea, and others, § E12, *available at* <http://www.icann.org/en/tlds/mus1/e1.html>, *site visited* September 11, 2010.

⁷⁷ There are 1,214 domains registered in .museum (according to the .museum zone file downloaded September 2, 2010). However, some museums have registered multiple domain names.

We also note that a German dentist also appears to have registered twenty domain names in .museum. (See, <http://nmn.nuernberg.museum>, *site visited* September 8, 2010.) This appears to be an anomaly.

46. The low rate of registrations has several possible causes. First, some museums may not be aware of the gTLD's existence. Second, museums without an Internet presence and for which MuseDoma hoped to provide an entryway onto the Internet may believe that the benefits from having an Internet presence, generally, or from having a presence on .museum, specifically, are less than the cost.^{78, 79} Third, museums that were registered on another gTLD may not have believed there would be benefits from being on the .museum gTLD, either because they expected user traffic to be low, or because they did not see an incremental benefit to having a dedicated online community. The International Council of Museums maintains a database of "on-line" museums (*i.e.*, museums that have websites) which indicates there are approximately 1,500 online museums in the US alone (although this list of online museums is very likely incomplete).⁸⁰ If the ratio of online museums to all museums is the same in the rest of the world as it is in the U.S., then there are at least 2,570 museums with online presences. Thus, of the museums with an Internet presence, only about 22 percent (556/2,570) have a presence on .museum.

47. The ways in which museums have used their registrations on .museum also provide some information about the likely benefits derived from the gTLD. To investigate whether museums register solely on .museum or use .museum as a complement to other gTLDs, we examined a

⁷⁸ We cannot distinguish between these two possibilities with the data at present available to us.

⁷⁹ A qualified museum can register a .museum domain for two years for 160 Euro or US\$200, depending on the registrar chosen. See <https://www.domainregistry.de/museum.html>, <http://museum.tuonome.it/>, and http://www.domainbank.net/domains/domains_tlds_museum.php, sites visited October 24, 2010.

⁸⁰ International Council of Museums, "Museums in the USA," available at <http://museumca.org/usa/alpha.html>, site visited September 6, 2010. We do not believe that this is a complete list of online museums in the US. For example, the Northeastern Nevada Museum is a museum that has a website but does not appear in the ICOM database. See also, International Council of Museums, "Virtual Library, museums pages," available at <http://icom.museum/vlmp/>, site visited September 8, 2010.

sample of .museum domain name registrants. Using the list of 556 registrants and their respective domain names found on index.museum, we drew a ten-percent random sample of the museum registrants. This resulted in 59 museums and 114 associated .museum domains.⁸¹ Of the 114 domains, 58 returned errors, 28 redirected to other domains, and 28 remained on the .museum page.⁸² Of the 28 sites that remained on the .museum page, five sites were inactive, five sites contained the same content as other non-.museum websites associated with the museum, and three sites contained the same content as each other.

48. In summary, of the 114 registered domains, 55 percent (63 domains) had no content or returned errors, 32 percent (36 domains) redirected to other sites or duplicated information found elsewhere, and 13 percent (15 domains) had museum content that was not available on domains registered in other gTLDs. The .museum gTLD could be providing value even if every .museum site redirected to another site because it could still serve various certification and navigation functions (*e.g.*, a visitor reaching a .org site via a .museum site might have greater confidence that the site is operated by a major institution). However, less than half of the sampled sites either provide information directly or redirect to other sites providing information. The fact that the majority of sampled sites offer no usable content suggests that .museum is not generating significant benefits.

49. Lastly, although a highly imperfect measure, the amount of traffic on .museum second-level domains supports the conclusion that the benefits generated by .museum are not substantial. According to Alexa.com, of the top million second-level domain names worldwide, only ten are

⁸¹ Our random sample included Oxford University, which registered four museums, each of which had a different domain name. We counted this as four different museums.

⁸² It should be noted that, even if one sees a large number of redirects (as opposed to sites with unique content), it does not imply that the benefit of the new domain from which traffic is redirected is low.

in .museum.⁸³ It should be noted that some of these rankings overstate the traffic gathered by any single museum because the naming conventions in .museum allow third-level domain names but Alexa tracks only second-level domain names. For instance, Alexa.com assigns a traffic rank of 154,356 to art.museum.⁸⁴ However, ashmolean.art.museum and metropolitan.art.museum are both registered along with over 100 other museum sites having domains of the form YY.art.museum.⁸⁵ This aggregation implies that we cannot say with certainty how many .museum websites receive significant traffic. However, even the aggregated rankings are low.

50. The low registration rates, lack of information provided by many of those sites that are registered, and limited traffic strongly suggest that .museum has generated limited benefits. As a check on this hypothesis, we contacted museum personnel to determine if they perceived there to be significant benefits from .museum.⁸⁶ The two museums that responded to our inquiry indicated that they had registered on .museum to preserve their options and/or to protect the museum's name.⁸⁷ One also stated that there had been hope in the museum community that

⁸³ By way of reference, 1966batmobile.com (a site devoted to the car used in the Batman and Robin television series) ranks 553,654, and sites ranked close to 1,000,000 include vegdaily.com (a vegetarian news aggregation site), greekproducts.com (a business-to-business website to facilitate the exchange of information between buyers and sellers of Greek food products), and jerseycentral.org (a community blog devoted to the discussion of sports jerseys). (http://www.alexa.com/search?q=1966batmobile.com&r=site_siteinfo&p=bigtop October 24, 2010.)

⁸⁴ Alexa traffic data for the top one million websites, data accessed August 15, 2010.

⁸⁵ The .museum zone file indicates there are 112 domains registered at the third level whose second level designation is art.museum. (.museum zone file dated September 2, 2010.) *See also*, <http://index.museum/generic.php?domain=art.museum>, *site visited* October 24, 2010.

⁸⁶ We attempted to contact a sample of six museums, two each in the US and England and one each in Hong Kong and Australia. Only two museums responded to our inquiry.

⁸⁷ The Oxford Museum of Natural History and the Ashmolean Museum responded to our inquiry.

.museum would become the default gTLD for museums, but that the museum's main website was located on the .org gTLD because it is more established and all of the major museums use it.

51. Lastly, the certification role of .museum and the gTLD's relationship to The International Council of Museums raises a broader issue regarding the role of this type of restriction.

Community-based gTLDs that use the gTLD to serve as a certification or validation of the sites as true or trustworthy representatives of the community raise an important issue about the selection of the community representative. In some circumstances, a gTLD might develop a reputation that allows it to serve as a form of certification (this reputation would derive from the registry operator's policies). In other cases, Internet users might rely on the fact that ICANN has delegated operation of a gTLD as a signal that ICANN considers that registry operator to be an appropriate representative of the community. For example, users may assume that .museum must be operated by an enterprise with a legitimate claim to represent museums. Thus, the benefits to the Internet community from community-based gTLDs will very likely depend, in part, on ICANN's delegation process.

52. ICANN's delegation process includes a consideration of multiple applications for the same gTLD. When multiple qualified applications for the same or confusingly similar strings are submitted, ICANN refers to this as string contention.⁸⁸ Contentious applicants are "encouraged to reach a settlement or agreement among themselves that resolves the contention."⁸⁹ If that is unsuccessful, a community-based applicant may select a community priority evaluation, in which a Community Priority Panel will evaluate the applications based on four criteria: community establishment, nexus between proposed string and community,

⁸⁸ *Proposed Final Applicant Guidebook*, § 1.1.2.8.

⁸⁹ *Proposed Final Applicant Guidebook*, § 4.1.3.

registration policies, and community endorsement.⁹⁰ The process just described applies to instances where there are competing applications, but not when there is only one application to a particular community TLD. Hence, in a case in which there was only a single application for particular gTLD (and it was not confusingly similar to another string), users would be mistaken if they interpreted ICANN's delegation decision as an endorsement of a particular registry operator.

2. .aero

53. The Société Internationale de Télécommunications Aéronautiques (SITA) submitted a sponsored gTLD application on September 29, 2000.⁹¹ SITA's primary objective is "to foster all telecommunications and information processing required in the operation of the air transport industry with the aim of promoting in all countries safe and regular air transport."⁹² SITA stated that the creation of a gTLD to "foster and develop the remarkable growth and availability of air transport at affordable prices" would benefit the air transport community.⁹³ Registrants would be restricted to the air transport community, which includes airlines, aerospace companies, airport authorities and governmental organizations.⁹⁴ ICANN and SITA signed the .aero gTLD

⁹⁰ *Proposed Final Applicant Guidebook*, § 4.2.3.

⁹¹ IANA, "IANA Report on Establishment of the .aero Top-Level Domain," December 19, 2001, available at <http://www.iana.org/reports/2001/aero-report-19dec01.html>, site visited September 9, 2010; SITA, "Top Level Domain Application: Sponsoring Organization's Proposal," available at <http://www.icann.org/en/tlds/air1/Sponsoring%20Organization's%20Proposal.htm>, site visited September 9, 2010. The application was submitted for the ".air" TLD originally.

⁹² SITA, "Top Level Domain Application: Sponsoring Organization's Proposal," available at <http://www.icann.org/en/tlds/air1/Sponsoring%20Organization's%20Proposal.htm>, site visited September 9, 2010.

⁹³ SITA, "Top Level Domain Application: Sponsoring Organization's Proposal," available at <http://www.icann.org/en/tlds/air1/Sponsoring%20Organization's%20Proposal.htm>, site visited September 9, 2010.

⁹⁴ SITA, "Top Level Domain Application: Description of TLD Policies," available at <http://www.icann.org/en/tlds/air1/18Oct-Description%20of%20TLD%20Policies.htm>, site visited October 21, 2010.

Sponsorship Agreement on December 17, 2001,⁹⁵ and SITA launched the .aero domain on March 18, 2002.⁹⁶

54. SITA stated that the gTLD would “offer the opportunity to identify all the major partners of the industry in a proactive and controlled manner” and it would have a positive impact on the development of e-business solutions by industry partners.⁹⁷ Consumers and employees in the industry would be able quickly to locate any airline or airport’s website for information on reservations, schedules, and aircrafts. In addition, the new TLD would provide

the opportunity for innovation to automate transactions within the travel industry and to take full advantage of the emerging wap and mobile technologies. It would be beneficial for airport procedures, such as tracing lost luggage, flight reservation, check-in, cancellations, browse related information and access to WAP applications. The “.air” will also allow for increased security when accessing ATC related services and applications by the concerned community.⁹⁸

55. The .aero experience with airport codes as second-level domain names indicates that airports have not perceived significant benefits from the gTLD. In April 2004, SITA pre-registered the three-letter IATA codes for airports for their respective holders following a recommendation from the Dot Aero Council.⁹⁹ More than 13,000 three-letter IATA codes were

⁹⁵ IANA, “IANA Report on Establishment of the .aero Top-Level Domain,” December 19, 2001, available at <http://www.iana.org/reports/2001/aero-report-19dec01.html>, site visited September 9, 2010.

⁹⁶ .aero Press Release, “.aero the domain of aviation launched by SITA,” March 18, 2002, available at <http://www.information.aero/news/2002-03-18-01>, site visited September 9, 2010.

⁹⁷ SITA, “Top Level Domain Application: Description of TLD Policies,” available at <http://www.icann.org/en/tlds/air1/18Oct-Description%20of%20TLD%20Policies.htm>, site visited October 21, 2010.

⁹⁸ SITA, “Top Level Domain Application: Description of TLD Policies,” available at <http://www.icann.org/en/tlds/air1/18Oct-Description%20of%20TLD%20Policies.htm>, site visited October 21, 2010.

⁹⁹ SITA also reserved the two-letter IATA codes for airlines, and those are still reserved today. (“All 2 character airline codes, all 3 letter location codes allocated to municipal areas and all 3 letter airline codes of IATA airlines have been pre-registered and activated in .aero.” .aero Press Release, June 15, 2004, available at <http://www.information.aero/news/2004-06-15-01>, site visited September 10, 2010.)

reserved.¹⁰⁰ Airports wishing to register their respective codes in .aero could request a transfer of the domain name, but no other entities could gain access to those domain names. Some airports did request a transfer, and three years later, in July 2007, more than 210 airports had received transfers of their respective codes.¹⁰¹ In July 2007, SITA announced that it would release any unclaimed airport codes, eighteen months hence, making them available to any entity that was eligible to register a domain name in .aero.¹⁰² Between the time the release was announced and the time at which it was carried out, approximately 25 additional airports asked for a transfer of a three-letter domain name. The airport codes were released on December 1, 2008.¹⁰³ In July, 2009 SITA reported that ten more of the reserved three-letter codes were registered by airports between December 1, 2008 and February 28, 2009.¹⁰⁴ SITA also noted that “[t]he highest number of registrations effected after the codes were released has been within the registrant groups of aviation suppliers and service providers, airlines, and aerospace companies.”¹⁰⁵

IATA (International Air Transport Association) assigns unique alpha-numeric codes to IATA-member airlines as well as airports. (IATA, “Airline Coding Directory (ACD),” *available at* <http://www.iata.org/ps/publications/Pages/acd.aspx>, *site visited* September 11, 2010.)

¹⁰⁰ The number reserved was determined using a list of reserved codes on the .aero website. (.aero Press Release, “Deadline for airports,” *available at* http://www.information.aero/registration/policies/Release_of_reserved_airport_codes, *site visited* September 11, 2010.)

¹⁰¹ .aero Press Release, “Deadline for airports,” *available at* http://www.information.aero/registration/policies/Release_of_reserved_airport_codes, *site visited* September 11, 2010.

¹⁰² .aero Press Release, “SITA to release 3-letter airport codes and reserved names,” *available at* <http://www.information.aero/news/2007-07-25-08>, *site visited* September 11, 2010.

¹⁰³ .aero Press Release, “December 1st - Deadline for airports to register IATA codes on .aero,” November 04, 2008, *available at* <http://information.aero/news/2008-11-04-08>, *site visited* September 8, 2010.

¹⁰⁴ .aero Press Release, “Airports codes released,” *available at* <http://www.information.aero/news/2009-07-01-07>, *site visited* September 8, 2010.

¹⁰⁵ .aero Press Release, “Airports codes released,” *available at* <http://www.information.aero/news/2009-07-01-07>, *site visited* September 8, 2010.

56. In short, although there are thousands of airports around the world, and SITA reserved all of its three-character IATA codes, totaling over 13,000 pre-registered domain names, only about 210 airports registered their codes prior to the announcement that they would be released, only about 25 registered the codes after the announcement that they would be released, and only ten registered them after the release occurred.¹⁰⁶ What accounts for airports' low level of registration of their codes in the .aero domain?

57. The principle of revealed preference indicates that many airports do not believe that .aero registrations generate benefits greater than their costs. The costs of registering an .aero domain, which lasts for a minimum of two years, varies by registrar.¹⁰⁷ Examination of three U.S. registrars shows that the cost of registering an .aero domain currently ranges from \$130 to \$198 for a two-year registration.¹⁰⁸ There do not appear to be any additional fees for an airport to register its reserved three-character .aero domain. Hence, the costs of registration appear to be low, which indicates that even the perceived benefits of defensively blocking use of the domain names by other entities are low. Similarly, the low rate of registration of sites to redirect the visitors to existing sites suggests that the benefits of such redirection are less than the costs of registering the domain name and creating and operating a redirecting website. It is our understanding that the cost of operating a site for redirection is quite low.¹⁰⁹ Thus, the low level

¹⁰⁶ Some non-airports have registered 390 of the codes. (.aero Press Release, "Airports codes released," available at <http://www.information.aero/news/2009-07-01-07>, site visited September 8, 2010.)

¹⁰⁷ .aero, "New registrations," available at <http://www.information.aero/registration/faq/new>, site visited September 8, 2010.

¹⁰⁸ See, e.g., Domain Bank, EnCirca, and 101domain.

¹⁰⁹ The costs of operating a website purely for redirecting users to another website appear to be minimal. A recommended way of redirecting from website to another is to use an HTTP redirect. When a web browser contacts a server that is configured with an HTTP redirect and requests the website, the server directs the browser to the new address. Because this is part of the HTTP

of use of redirecting sites suggests that airports do not perceive there to be high costs associated with the dilution of their current, non-.aero sites as navigational tools. If they did, they would have been expected to create redirecting sites on .aero.

58. In summary, registration data suggest that both the affirmative and defensive benefits of .aero registrations are low.

3. Findings common to .aero and .museum

59. Both .aero and .museum are aimed at large communities of website visitors: air travelers and museum goers, respectively. We are unaware of any major marketing efforts aimed at getting potential site visitors to use either of these gTLDs as a navigational tool. Indeed, based on anecdotal evidence, we suspect that very few potential site visitors even are aware that these TLDs exist, let alone know what the eligibility requirements are for organizations seeking second-level domain names on them.¹¹⁰ The experiences of .aero and .museum suggest that sponsored gTLDs that restrict second-level domains to a collection of similar organizations whose web sites are of interest to large communities of potential site visitors are unlikely to create significant benefits in the absence of significant efforts to educate potential site visitors.

60. That said, before concluding that there would be minimal benefits associated with new gTLDs with business models based on restricting the type of organization that could register a second-level domain name, it should be noted that .gov has been successful in the sense that it

protocol, there do not appear to be any costs above and beyond the costs of registering the redirect-from domain and hosting the HTTP redirect to that domain. (W3C Quality Assurance, “Tips for Webmasters,” available at <http://www.w3.org/QA/Tips/reback>, site visited September 8, 2010.) For instructions on forwarding a domain name, see <http://help.godaddy.com/article/422>.

¹¹⁰ Proponents of these gTLDs might argue that they serve to improve the accuracy of search engines, but tags and other search engine techniques could serve the same function in a low-cost way.

has a recognized meaning among many members of the public. We lack the data to study the issue, but plausible explanations include the fact that .gov, as one of the original gTLDs, has been in existence much longer than either .aero and .museum, that the U.S. federal government has undertaken efforts to promote the use and recognition of .gov, that at least some members of the public interact more frequently with government web sites than with those associated with either air travel or museums, and that the certification role may be more important for government sites than many other types.

61. It should also be noted that, if ICANN were to delegate hundreds or even thousands of gTLDs, then web site visitors might begin to think about and use gTLDs in a new way, placing greater reliance on them as certification and navigation tools.

F. RESTRICTIONS ON THE TYPE OF CONTENT

62. Lastly, a gTLD could create a differentiated product by limiting the type of content allowed on its second-level domains, which would enable Internet users to rely on the gTLD to find specific types of content.¹¹¹ One example of such content restrictions would be a gTLD that allowed only sites containing content related to a specific geographic area. We did not conduct a case study of this type of gTLD, but we note that our study of .mobi raises some relevant points. For instance, as with other types of restrictions at the TLD level, there is a question of whether there are substitute mechanisms that could achieve the same end at lower cost. Some second-level domain names, for example, serve the same function (*e.g.*, nyc.com). And there may be other solutions, such as websites that query the site visitor's access device for information about

¹¹¹ In theory, a gTLD could be used to make it easier for web users to avoid certain content. There is an important difference between putting a particular type of content in one place (TLD) to make it easier to find and putting a particular type of content in one place to make it easier to avoid. If filters that block specific TLDs are perceived by website operators as detrimental to their interests, then the website operators will have incentives to avoid the filtered TLD. Hence, other means of filtering would likely be necessary to provide consumer protections.

its location and then filter content as appropriate for that location. There may, however, be a benefit from gTLDs targeted at specific geographic areas or cultural communities that have a value that these other techniques cannot create. Specifically, such TLDs could provide psychic benefits of community recognition and respect.

IV. EXTERNAL COSTS

63. Absent policies to prevent external costs, new gTLDs could potentially impose several types of such costs on the Internet community and society more broadly, including:¹¹²

- *Misappropriation of Intellectual Property.* Costs related to misappropriation of intellectual property rights include the costs of domain watching, defensive registrations, litigation or other measures to end misappropriation, and costs due to misappropriation that is not blocked (e.g., lost profits due to sales of counterfeit goods or brand dilution). Throughout this paper, defensive registrations refer to registrations undertaken to protect legitimate trademark or intellectual property rights from misuse, not registrations undertaken as the “defense” of one’s business against increased competition on the merits.¹¹³
- *Domain Navigation Dilution because Consumers have More Places to Look.* The introduction of additional gTLDs may increase the costs of Internet navigation by increasing the number of potential domains over which a user may search. To the extent that such effects arise, they can dilute the value of existing domain names as navigation devices. The costs associated with such dilution include the costs of defensive registrations undertaken to offset dilution and the costs due to dilution that cannot be mitigated.

¹¹² Some community members have expressed concern about the possibility of root instability due to the introduction of many new gTLDs. If there were a significant possibility of root instability, then such effects could be considered a potential external cost. Whether additional gTLDs would trigger root instability is a technical matter that is beyond the scope of the present report but we note that, according to ICANN, its plan for processing applications for new gTLDs “incorporates a natural limit to the number of applications that can be processed through the system at any specific time.” (ICANN, “Delegation Rate Scenarios for New gTLDs,” October 2010, *available at* <http://www.icann.org/en/topics/new-gtlds/delegation-rate-scenarios-new-gtlds-06oct10-en.pdf>, *site visited* December 1, 2010, at 2; *see also* ICANN, “Summary of the Impact of Root Zone Scaling,” October 2010, *available at* <http://www.icann.org/en/topics/new-gtlds/summary-of-impact-root-zone-scaling-06oct10-en.pdf>, *site visited* December 1, 2010.)

¹¹³ More broadly, as discussed in our earlier report, there are strong reasons for *not* counting as an external cost the fact that product-market rivals of a company that had a highly effective company-specific gTLD might find that they faced more vigorous competition.

- *Harm to Internet Users from Increased Cybersquatting.* In addition to harm in the form of increased search costs consumers may suffer more direct harm from increased Cybersquatting. This direct harm may result from malware, phishing, and the unknowing purchase of counterfeit goods.
- *Reduced Investment by Intellectual Property Owners.* There may also be indirect harms from the loss of intellectual property owners' incentives to invest in that intellectual property due to concerns that some of the benefits of that investment would be misappropriated.
- *Losses from Failed gTLDs.* If a new gTLDs failed and ceased operation, external costs might be imposed on the Internet community. Registrants in a failed gTLD might be stranded, unable easily to move their websites (on which they may have based their business) to other TLDs due to embedded links. More generally, Internet users might face increased clutter on the Internet if links fail to resolve.

Of course, the extent to which such costs actually occur will depend on the nature of the gTLDs involved and the policies adopted by ICANN and the registries.

64. Some gTLDs have in the past attempted to reduce costs associated with misappropriation, dilution, and reduced investment incentives by instituting rules and procedures to protect companies' intellectual property rights. Because the approaches to these issues have differed across gTLDs, a comparative analysis of the experiences of different gTLDs introduced in the past can shed light on how effective different procedures have been in protecting intellectual property rights while facilitating legitimate use of different domain names. It is important to observe that "stronger" intellectual property protections may, in some cases, offer greater protection of intellectual property rights but also stifle legitimate uses. In other words, stronger protections can sometimes reduce both external costs and total social benefits. For example, measures that make blocking the use of domain names too easy can have the effect of limiting the legitimate use of domain names to compete with the holders of other domain names or to use the domains to offer benefits in ways that are totally unrelated to the intellectual property owner's use of the name and do not infringe on the owner's intellectual property rights.

65. Below, we use case studies of the intellectual property protection measures utilized by .info, .biz, .mobi, and .name to examine the effects of these different measures.¹¹⁴

66. All four of the gTLDs that we studied are covered by the Uniform Domain Name Dispute Resolution Policy (UDRP), but these gTLDs used different procedures at startup to protect trademarked names and one gTLD, .name, offers ongoing protection through its “Name Watch Service.” The Name Watch Service allows trademark owners to register alphanumeric strings and provides the subscriber with an alert if another party registers the string. The service does not notify an applicant that its name appears on the watch list, nor does the service include dispute resolution mechanisms.¹¹⁵

¹¹⁴ Here, we briefly address the relevance of market power for the assessment of benefits and costs. To date, there has been considerable confusion about these issues. This confusion appears to have arisen, in part, because of the failure to distinguish between defensive registrations and affirmative registrations. Absent introduction of the gTLD in question, its price is effectively infinite. Hence, introduction of a new gTLD at *any* finite price weakly improves the welfare of parties that have an *affirmative* demand for domain names on that gTLD. However, the welfare of parties that have a *defensive* demand for domain names on the new gTLD may be *harmed* by its introduction.

It is important to recognize that the standard concept of monopoly power and the role of substitutes are of little relevance to the assessment of the costs associated with defensive registrations. This is so because, when determining whether to pay to register a domain name for defensive purposes, different gTLDs are very unlikely to be substitutes. Stated plainly, blocking the misappropriation of a trademark on one gTLD by registering a domain name containing a given trademark does *not* block misappropriation of that trademark on another gTLD. This relationship holds whether or not users making affirmative registrations consider the two gTLDs to compete with one another or act as substitutes. Consequently, we did not conduct empirical studies of market power.

¹¹⁵ In addition to UDRP, some of the restricted or sponsored registries have additional procedures to ensure compliance with registration policies. These policies do not appear to be focused on trademark owners’ rights. (WIPO Arbitration and Mediation Center, “New Generic Top-Level Domains: Intellectual Property Considerations (2005 Report),” *available at* <http://www.wipo.int/amc/en/domains/reports/newgtld-ip/#6>) *site visited* August 31, 2010 (hereafter, *WIPO IP Report*), ¶¶ 55-56.) For a complete discussion of Intellectual Property Protection and the 2000 gTLD expansion see *WIPO IP Report*, § 7, ¶¶ 53-94. “[U]nder ICANN’s experimental approach several different such trademark protection mechanisms were introduced at almost the same time, often under considerable time pressure. This led to considerable confusion among actual and potential registrants, registrars, and the broader community during the launch of the new gTLDs. While introductory IP protection mechanisms

A. TRADEMARK PROTECTION IMPLEMENTED BY DIFFERENT gTLDs

67. We begin by considering the start-up trademark protection procedures adopted by the four gTLDs studied. There are large differences across these gTLDs in terms of the use of “sunrise” periods for trademark owners, whether documentation was required to establish trademark ownership before sunrise domain name registration, the collection and dissemination of information regarding potential trademark claims against proposed domain names, and the ability granted to trademark owners to block others from registering a domain without having to register it themselves.

1. .info

68. The .info registry, Afilias, adopted start-up procedures that included a Sunrise Registration Period and Sunrise Challenge Period. During the Sunrise Registration Period, trademark owners could register domain names that were identical to the text of a current trademark registration of national effect that was issued prior to October 2, 2000.¹¹⁶ Although sunrise registration was intended to be restricted to trademark owners, the .info start-up procedure did not include a mechanism to verify that registrants were legitimate trademark holders. Instead, any person or company was allowed to register a domain name in .info without providing proof of their right to the identical trademark. Registrations were subject to challenge during the Sunrise Challenge Period, which followed the Sunrise Registration Period.

were developed by the gTLD operators themselves, the WIPO Arbitration and Mediation Center was involved in their implementation for the purpose of administered [sic] resulting disputes.” (*WIPO IP Report*, ¶ 56.)

¹¹⁶ WIPO, “End Report on Case Administration under the Afilias Sunrise Registration Challenge Policy for .info” available at (<http://www.wipo.int/amc/en/domains/reports/info-sunrise/report/index.html>), site visited August 31, 2010 (hereinafter, *WIPO .info Report*), § 2. The .info sunrise registration period ran for one month, from July 25, 2001 through August 27, 2001.

69. During the .info Sunrise Challenge Period, any entity could initiate a challenge procedure to a registered domain name on one of several grounds.¹¹⁷ Both challengers and respondents had to pay fees to the arbitration provider, which were partially or fully refundable to the prevailing party.¹¹⁸ Because it was discovered that many sunrise registrations were of generic names rather than trademarks, but were going unchallenged by any third party, Afiliias revised its policy to allow the Registry itself to issue challenges, called “challenges of last resort.”¹¹⁹ WIPO was designated as the exclusive dispute resolution provider for sunrise challenges. Successful challengers could ask either for transfer of the domain name or for its cancellation.

70. Afiliias received 80,951 sunrise applications and awarded a total of 51,764 unique second-level domain names.¹²⁰ WIPO received 15,172 challenges, of which 1,579 were filed by third parties during the regular Sunrise Challenge Period and 13,593 were challenges of last resort.¹²¹

Table 3 provides a summary of the challenge results. Of the challenges that proceeded to a

¹¹⁷ The challenger had to show that the registrant had not complied with the sunrise registration rules, in other words, it had to be the case that “(i) the registrant had no current trademark registration, or (ii) its trademark registration was not of national effect, or (iii) its trademark registration did not issue prior to October 2, 2000, or (iv) the domain name was not identical to the textual elements of its trademark.” (*WIPO .info Report*, § 2.)

¹¹⁸ *WIPO .info Report*, § 6. As the Challenge Period policy was originally conceived, challenges were permitted by any party, regardless of whether the Challenger owned the trademark. Challengers who did not own trademarks were able successfully to challenge registrations and receive decisions of transfer without being required to verify that they themselves owned the relevant trademark. Afiliias issued “Revised Policy and Rules” to address this issue. Under the revised policy, challengers were required to provide proof of trademark ownership.

¹¹⁹ The registry challenge period followed the challenge period for the general public. (*WIPO .info Report*, § 2.)

¹²⁰ *WIPO IP Report*, ¶ 57.

¹²¹ *WIPO .info Report*, § 3. WIPO does not provide a breakdown of the grounds under which the 13,593 challenges of last resort were made so we have no specific information on how many domain names were challenged because they were ‘generic’; however, the *WIPO .info Report* suggests that the majority of registry challenges were made on ‘generic’ grounds. If we assume all the registry challenges were on generic grounds, then there were 1,579 challenges to the 38,171 “non-generic” domain names awarded (51,764 – 13,593) and the challenge rate was 4.1 percent.

decision, challengers won 96 percent of the regular sunrise challenges and 99 percent of the challenges of last resort, for a total of 14,216 successful challenges.

Table 3: .info Sunrise Challenges and Outcomes¹²²

	Total	In Favor of Challenger	In Favor of Registrant	Terminated
Total	15,172	14,216	142	814
Regular Sunrise	1,579	1,196	55	328
Challenges of Last Resort	13,593	13,020	87	486

71. In addition to the 14,216 successful challenges, Afiliás cancelled 7,000 of the sunrise registrations because the applicants failed to provide proper documentation of trademark ownership when requested to do so by Afiliás. Combining the registrations cancelled due to lack of documentation and those successfully challenged, about 22,000 sunrise registrations (43 percent of the total) were registered without proper trademark rights.¹²³ Because there is no guarantee that every non-trademarked name was challenged, an even higher percentage of the sunrise registrations likely lacked the required trademark rights.

72. The fact that trademarks of well-known companies were involved in challenges to a lesser extent than were generic words or geographical terms may be due to a variety of factors, including the lack of requirement that a sunrise applicant provide evidence of a valid trademark on the desired term and the fact that the outcome of disputes regarding well-known trademarks would be more predictable, thus reducing (but not eliminating) the likelihood that someone other

¹²² *WIPO .info Report*, § 5. For regular sunrise challenges, terminations were usually due to challenger’s failure to pay required fees. For challenges of last resort, most terminations were due to withdrawal of the challenge by Afiliás. (*WIPO .info Report*, § 5.)

¹²³ *WIPO IP Report*, ¶ 70.

than the trademark owner would try to register the corresponding domain name.¹²⁴ In summary, the problems associated with the initial .info registrations were generally not that trademarks were being infringed but that registrants did not following the Sunrise Registration Period rules and attempted to grab a non-trademarked domain name during that period.

2. **.biz**

73. NeuLevel, the .biz registry operator, adopted a startup procedure that differed significantly from the startup procedure Afilias adopted for .info.¹²⁵ NeuLevel's procedure included an unrestricted early registration period, a trademark watch system for trademark owners who registered with the system, and a procedure for trademark owners to challenge early registrations. After the start-up period, the watch service ended and trademark owners used UDRP procedures to challenge possibly infringing domain names.

74. Unlike Afilias' start-up procedure, NeuLevel's procedure did not include a Sunrise Registration Period to be used exclusively for trademark owners to register their marks. Instead, anyone could apply to register a domain name during the three-month start-up .biz phase. If there were multiple requests for the same name, NeuLevel assigned the domain name to a randomly chosen applicant. This policy appears to have led to multiple applications by the same registrant for the same domain name to increase the probability of securing the name. Of

¹²⁴ In theory, the fact that fees to the arbitration provider were partially or fully refundable to the prevailing party might have influenced expectations regarding a trademark owner's response if someone other than the trademark owner tried to register the corresponding domain name.

¹²⁵ See, WIPO, "End Report on Case Administration under the Start-Up Trademark Opposition Policy for .biz," (hereinafter, *WIPO .biz Report*) for a complete description of the .biz policy.

approximately 280,000 domain names applied for during the start-up phase, over 46,000 received multiple applications from the same applicant.¹²⁶

75. NeuLevel also operated a *de facto* trademark watch service during the start-up period. Trademark owners could, for a fee, register an “IP Claim” during the start-up period.¹²⁷ There was no limitation on the number of IP Claims that could be filed pertaining to any particular mark.¹²⁸ Thus two companies with identical marks valid in different industries or different countries could file Claims for the same mark. Over 80,000 IP Claims were filed.¹²⁹ There was no verification of any Claimant’s right to the trademark for which the Claim was filed. Those rights would only be examined if the Claimant later filed an opposition to a domain-name registration of the same name. If an applicant attempted to register a .biz domain name that was subject to one or more IP Claims, NeuLevel notified the applicant about the claims and ascertained whether the applicant planned to continue with the registration. If the applicant chose to continue with the registration despite the IP Claims, the Claimants were notified.

76. Once notified of the planned registration, an IP Claimant could initiate dispute proceedings under NeuLevel’s Start-up Trademark Opposition Policy (STOP). In cases where there were multiple IP Claim requests for the same trademark, NeuLevel randomly assigned priority levels to each Claimant. These priority levels determined the order in which Claimants would be allowed to file a STOP challenge. STOP proceedings were administered by either WIPO or NAF, with IP Claimants being permitted to select the dispute resolution provider.

¹²⁶ “*Evaluation of the New gTLDs: Policy and Legal Issues*,” Summit Strategies International, July 10, 2004 (hereinafter, *Summit New gTLDs Report*) at 38.

¹²⁷ *WIPO .biz Report*, § 2.

¹²⁸ *WIPO .biz Report*, § 2.

¹²⁹ *Summit New gTLDs Report* at 38.

Regardless of which provider was selected, all disputes were decided by a one-member panel, and the only remedy available was transfer of the domain name to the Claimant (*i.e.*, cancellation of the domain name registration was not an option).¹³⁰ Under STOP, the Claimant had to show that the domain name registered was identical to its trademark, that the applicant had no legitimate interest or right to the domain name, and that the registration or use of the domain name was made in bad faith.¹³¹ If the Claimant prevailed, then the domain name was transferred. If the Claimant did not prevail, then the Respondent could face additional challenges from lower-priority Claimants, unless the Respondent had proven that it had a legitimate claim to the domain name.¹³² If a legitimate claim had been proven then additional challenges were precluded.

77. Of the 2.4 million applications in the start-up phase (covering 280,000 unique domain names), 1.3 million contained names matching an IP Claim. After the applicants were notified of an IP Claim, approximately 62,000 applicants proceeded with registration. Subsequently, IP Claim holders filed about 670 STOP actions with WIPO or NAF, covering 688 domain names.¹³³

¹³⁰ WIPO, “End Report on Case Administration under the Start-Up Trademark Opposition Policy for .biz, Annex 1: Start-Up Trademark Opposition Policy for .biz (Revised 9/17/01)” (hereinafter, *STOP*), ¶¶ 4(d), 4(e), and 4(i).

¹³¹ *STOP*, ¶¶ 4(a)(i) through 4(a)(iii).

¹³² *WIPO .biz Report*, § 4.

¹³³ *WIPO .biz Report*, § 6. *WIPO .biz Report* provides a more detailed discussion on the two rounds of STOP cases and the distinction between each round. NAF data are from NAF “Domain Name and Dispute Proceedings and Decisions” searchable database, available at <http://domains.adrforum.com/decision.aspx>, site accessed October 5, 2010) (hereafter *NAF Dispute Database*). See also, *Summit New gTLDs Report* at 36 and 39. According to the *Summit New gTLDs Report*, applicants abandoned their application in 198,085 cases and proceeded to registration in 61,629 cases where there was an IP Claim. (*Summit New gTLDs Report* at 37.) In other words, the simple presentation of an IP Claim caused ¾ of the applicants to abandon registration of a domain. Subsequently, only a small number of STOP actions were filed, which indicates that cybersquatters did not obtain large numbers of valuable websites that legitimately belonged to other trademark owners. (*Summit New gTLDs Report* at 37.)

We note that the *Summit New gTLDs Report* states that 801 STOP claims were filed with either WIPO or NAF. We were unable to replicate that number. Table 4 reflects our examination of the *NAF dispute database* and the *WIPO .biz Report*.

The small number of STOP actions filed does not indicate that the potential problem of infringement of trademark rights is small. Rather, the large number of registrations abandoned after notification indicates that the process likely was effective in preventing what might otherwise have been infringing domain names.¹³⁴

78. Table 4 summarizes the challenges and outcomes for WIPO- and NAF-administered challenges under STOP.

Table 4: .biz STOP Challenges and Outcomes¹³⁵

	Total Cases	Total Domains	In Favor of Challenger	In Favor of Registrant	Terminated or Withdrawn
WIPO	338	355	107	159	71
NAF	332	333	178	135	19
TOTAL	670	688	285	294	90

79. As shown in an analysis by WIPO, IP Claimants were much less likely to win STOP actions than they were to win UDRP claims:

The outcome of STOP proceedings administered by the Center differs from those of proceedings under the UDRP. Of the 338 STOP complaints, 107 (31.66%) were decided in favor of the Complainant, while 159 (47.04%) were denied and 71 (21.00%) cases were terminated. One case was suspended (0.30%) pending the outcome of a court action relating to the disputed domain name. In comparison, of the 990 UDRP complaints received within the same period (December 2001 to September 2002), 661 (66%) were decided in favor of the Complainant, 137 (14%) were denied, and 192 (20%) were withdrawn or terminated.¹³⁶

80. WIPO attributes the relatively high rate of complaint denials under STOP to several factors: (1) a large number of the STOP complaints covered generic or descriptive terms, and

¹³⁴ According to the *Summit New gTLDs Report*, applicants abandoned their application in 198,085 cases and proceeded to registration in 61,629 cases where there was an IP claim. (*Summit New gTLDs Report* at 37.) Thus after receiving notification of an IP claim, 3/4 of the notified applicants abandoned registration of a domain without further process and cost.

¹³⁵ *WIPO .biz Report*, § 9; *NAF Dispute Database*.

¹³⁶ *WIPO .biz Report*, § 9.

thus it was difficult to prove that the registration was in bad faith; (2) difficulty in proving bad faith in use because the complaints had to be filed so early, before the Registrants had generally begun using the domain names; (3) the domain name and trademark were not identical (required under STOP but not UDRP); and (4) complaints were filed even though the Registrant itself had a trademark right in the domain name.¹³⁷

3. **.mobi**

81. During the .mobi Sunrise Period, which ran from June 12, 2006 to September 22, 2006, trademark owners were allowed to register domain names that were identical to their trademark, where the trademarks were current, in effect prior to July 11, 2005, and of national effect.¹³⁸ Sunrise registrants were not required to provide proof that they satisfied the sunrise registration conditions when registering, but .mobi conducted partial audits to monitor compliance and compliance with the Sunrise Registration conditions also could be challenged by a third party during the Sunrise Challenge Period following sunrise registration.¹³⁹ Challengers who sought transfer of a domain name were required to prove legitimate trademark ownership by providing a certified copy of the trademark when they filed their challenge.¹⁴⁰ Even if it did not hold a legitimate trademark, a challenger could have a domain name cancelled if the registrant had not complied with the sunrise registration conditions. Thus, as in .info and .biz, .mobi sunrise challenges afforded trademark owners an opportunity to challenge the illegitimate use of their trademarks and potentially to recover the use of the domain name.

¹³⁷ *WIPO .biz Report*, § 9.

¹³⁸ WIPO, “End Report on Case Administration under the Sunrise Challenge Policy for .mobi and the Premium Name Trademark Application Rules for .mobi,” (hereinafter, *WIPO .mobi Report*), § 2.2.

¹³⁹ *WIPO .mobi Report*, § 2.5.

¹⁴⁰ *WIPO .mobi Report*, § 2.3.

82. In addition to the potential problem of trademarks being registered by non-trademark owners, the .mobi registry had reserved more than 5,500 generic names as “Premium Names” to be auctioned.¹⁴¹ To protect against a trademark owner’s mark being reserved as a generic Premium Name and potentially sold to non-trademark owners, trademark owners were allowed to apply for domain names from the Premium Names list if they could provide evidence that they satisfied all of the sunrise registration conditions and had used the mark in the previous five years. WIPO was the sole arbitrator for sunrise challenges and the consideration of Premium Name applications.

83. There were 18 “properly filed challenges” during the Sunrise Challenge Period. With 13,000 domain names having been registered during the sunrise period, this amounts to a challenge rate of 0.14 percent.^{142, 143} As seen in Table 5, 11 of these challenges, or 69 percent of those that proceeded to a decision, were won by the challenger.

Table 5: .mobi Sunrise Challenges and Outcomes¹⁴⁴

	Total	In Favor of Challenger	Terminated	Withdrawn
Total	18	11	5	2

4. .name

84. The .name TLD is a restricted gTLD for the registration of personal names. These names can be registered at either the second (*e.g.*, last.name) or third levels (*e.g.*, first.last.name),

¹⁴¹ *WIPO .mobi Report*, § 1.

¹⁴² Blog.mobi, “Landrush | A Review,” available at <http://blog.mobi/dotmobi/2006/10/landrush-a-review.html>, site visited September 10, 2010.

¹⁴³ *WIPO .mobi Report*, § 2.3. Some challenges were received for registrations following the sunrise period. These were referred to .mobi’s normal dispute resolution process.

¹⁴⁴ *WIPO .mobi Report*, § 2.5.

although initially only third-level names were allowed. The .name registry, Global Name Registry,¹⁴⁵ provided initial and ongoing protection¹⁴⁵ to trademark owners, although it did not employ a sunrise registration period for trademark owners.¹⁴⁶ As a result, trademark owners are only allowed to block anyone else from registering second- or third-level domains that infringe their legitimate trademark.¹⁴⁷ Multiple parties can block the same domain names because the blocks are not active domains but rather prohibitions on the domain names being registered by anyone.

85. Individuals who try to register a blocked name are notified of the block and can negotiate with the holder(s) of the block or challenge the hold. According to one report,¹⁴⁸

During the start-up period, the Registry received 1,212 [blocks], and 257 NameWatch Service submissions. The Consent Process [whereby an applicant asks an entity blocking registration for voluntary consent to allow use of the domain] was used 15 times, leading to approval in about half of these cases. At present [as of 2004], there are 1,461 [blocks] and 132 NameWatch Service subscriptions.

At the time of the report cited above (2004), 82,163 domains were registered in the .name gTLD.¹⁴⁹ According to the report's authors, there had been no UDRP cases filed involving a .name domain.¹⁵⁰ This could mean that .name is less attractive for cybersquatters because of low utilization of the gTLD by Internet users, the harm to trademark owners from the registration of their trademarks by others is small, the challenge system is too complex or costly, the restrictions

¹⁴⁵ Verisign is currently the .name registry operator.

¹⁴⁶ Trademark owners would not have been able to register their brands on .name as the gTLD is reserved for personal names.

¹⁴⁷ The .name registry calls these blocks on use "Defensive Registrations." We prefer to use the term "block" as it eliminates the confusion between defensively registering a domain name as we use the phrase in this report and purchasing a "Defensive Registration."

¹⁴⁸ *Summit New gTLDs Report* at 52.

¹⁴⁹ *Summit New gTLDs Report* at 58.

¹⁵⁰ *Summit New gTLDs Report* at 54.

on registration and use (*i.e.*, personal names for non-commercial purposes) discourages or prevents would-be cybersquatters from profiting from the commercial use of .name domain names, or the system of blocks works.

86. The expense of utilizing the .name blocking system may be an issue. Currently, EnCirca, a domain name registrar, offers “Premium” blocks for \$1,995 for 10 years. A premium block will block anyone from registering a name at either the second or third levels.¹⁵¹ For example, purchasing a premium block on BRAND would prevent anyone from registering yyy.BRAND.name or BRAND.yyy.name. EnCirca also offers Standard blocks for 10 years for \$500. A standard block would prevent a specific two-level trademark from being used as a domain name, such as estee.lauder.name. The Standard block apparently would not prevent george.lauder.name, but the Premium block would prevent george.chanel.name.

5. Summary

87. Table 6 summarizes key intellectual property protection mechanisms utilized by each of the four gTLDs that we examined.

¹⁵¹ Encirca web site, *available at* http://www.encirca.com/mm5/merchant.mvc?Screen=PROD&Store_Code=E&Product_Code=2, *site visited* September 6, 2010.

Table 6: Summary of Challenge Procedures

TLD	Sunrise Registration Period	Require Trademark for Sunrise Registration	Sunrise Challenge Procedure	Ongoing Protection
.info	Yes	Yes, but no verification	Yes	UDRP
.biz	Yes	No	IP Claims and STOP	UDRP
.mobi	Yes	Yes, with partial compliance audits	Yes	UDRP
.name	No	n.a.	n.a.	UDRP, Blocks

B. LESSONS FROM CASE STUDIES TO EVALUATE IP PROTECTION MECHANISMS

88. The case studies highlight two types of abusive registrations: (a) registrations of second-level domains containing generic or non-trademarked terms during a period reserved for trademark registrations, and (b) registrations of trademarked names by registrants that have no legitimate claim to the name. The first type of situation creates equity concerns but tends not to raise economic efficiency concerns to the extent that secondary markets function well (*i.e.*, even if the “wrong” party obtained the second-level domain name initially, it could be expected to sell that domain to another party if that party could make higher-value use of the domain).¹⁵²

89. The .info, .biz., .mobi, and .name experiences show that there are a range of effective mechanisms that incorporate the principle that the method of preventing the second type of abusive registrations must balance IP protection against the interests of third parties who have

¹⁵² In contrast, even well-functioning secondary markets cannot eliminate the economic efficiency losses associated with distortions in trademark owners’ investment incentives when the second type of situation arises.

legitimate interest in registering a domain name.¹⁵³ These mechanisms include watch lists, opportunities for defensive registrations, and sunrise periods with sufficient verification procedures.

90. The .info sunrise registration experience highlights two issues related to an intellectual property protection model. First, the lack of verification of trademark ownership at the time of registration allowed a high volume of abusive registrations, translating to a high volume of challenges. Second, the lack of mechanism for dealing with generic terms required a mid-course revision in the Sunrise Challenge policy and forced the registry operator to expend time and resources to challenge early registrations of generic terms.¹⁵⁴ These flaws in the .info registration protocol allowed thousands of early registrations (approximately 22,000) to be made by registrants who did not hold the proper rights, necessitating thousands of costly challenges that could, and should, have been avoided.¹⁵⁵

91. The .biz registry allowed trademark owners to establish an IP Claim on domain names for a fee. One key difference between the .info sunrise approach and the .biz IP Claim approach lies in the incentives for abusive registrations. The .biz approach reduces the incentive for abusive registrations relative to the .info approach because establishing an IP Claim does not automatically establish rights to the domain. Establishing an IP Claim merely causes the registry to notify the Claimant when there is an attempted registration and offers the Claimant the option of pursuing a STOP proceeding should the applicant continue. Analysis of the .biz challenges (see Table 4 above) suggests the approach was successful in limiting inappropriate registrations

¹⁵³ For a statement of this principle, see *WIPO IP Report*, ¶¶ 118-124.

¹⁵⁴ For a description of other elements of the .info Sunrise registration and challenge policies that created confusion, see, *WIPO IP Report*, ¶¶ 73-76.

¹⁵⁵ *WIPO IP Report*, ¶ 70.

and subsequent costly inefficient challenges: NeuLevel received applications for approximately 280,000 domain names and 670 STOP proceedings were initiated – a challenge rate of 0.29 percent.¹⁵⁶ Judging by the large number of applications that were abandoned after the applicant was notified of an IP Claim, many more than 670 challenge proceedings might have been required (at perhaps considerable cost) if the IP Claims system had not been in place.

92. The .mobi registry operator employed a Sunrise Registration Period and Sunrise Challenge period similar that was employed in .info, but .mobi incorporated internal audits to confirm trademark ownership and compliance with the registry conditions before allowing registrations or challenges. Again, relative to the .info model, the .mobi model appears to have been successful in minimizing abusive registrations: .mobi received a total of just 18 challenges under the .mobi Sunrise challenge policy¹⁵⁷ compared to more than 13,000 second-level domains registered during the Sunrise Registration Period.¹⁵⁸ The challenge rate in .mobi was less than 0.14 percent.

93. The .name registry employed yet another IP protection method. The operator of .name, Global Name Registry, Ltd. (GNR), offers both a “name watch” service that alerted subscribers when someone attempted to register an identical string and a blocking opportunity that allowed a trademark holder to prevent the registration of their trademark.¹⁵⁹ GNR received 1,212 blocks

¹⁵⁶ *Summit New gTLDs Report* at 37.

¹⁵⁷ *WIPO .mobi Report*, § 2.3.

¹⁵⁸ Blog.mobi, “Landrush | A Review,” available at <http://blog.mobi/dotmobi/2006/10/landrush-a-review.html>, site visited September 10, 2010.

¹⁵⁹ For additional detail on the process of defensive registrations and the methods for challenging those registrations, see, *WIPO IP Report*, ¶¶ 100-102.

(referred to as Defensive Registrations by .name) between August 15, 2001 and December 14, 2001; later increasing to 1,461.¹⁶⁰

94. Our case studies found that there have been four different mechanisms used to protect IP owners: Sunrise registration periods, pre-launch IP Claims/Watch lists, pre-launch Blocks, and *ex post* enforcement opportunities. These four mechanisms had varying degrees of success and created different tradeoffs for applicants and trademark owners. The next section looks at the response of trademark owners to new TLDs based on their registration of specific brands across TLDs.

V. CURRENT REGISTRATION PATTERNS

95. In this section, we examine how domain-name registrants, especially brand owners, utilize the current set of gTLDs. This examination provides insight into how brand owners might use future gTLDs, both affirmatively and defensively. Although brand owner's reactions to new gTLDs cannot be predicted with certainty based on past behavior (especially because new gTLDs may differ substantially from existing ones in their uses, popularity, or intellectual property protection mechanisms), some conclusions regarding likely brand owner reactions can be drawn.

A. DATA

96. Trademark owners must protect the use of their trademarks else they can lose the right to their exclusive use.¹⁶¹ Even short of losing exclusive use, trademark owners presumably acquired their marks because they believed the marks to be valuable, and after acquisition many

¹⁶⁰ *WIPO IP Report*, ¶ 98.

¹⁶¹ Joseph P. Liu, "Overview of Trademark Law," available at <http://cyber.law.harvard.edu/metaschool/fisher/domain/tm.htm#2>, site visited November 10, 2010.

trademark owners have invested to build the value of their trademarks. Trademark owners therefore have incentives to protect their investment. Under trademark law, protection is primarily the responsibility of the owner, not a governmental authority. Such protection involves trademark watch activities to monitor and identify the registration of trademarks that are potentially confusingly similar, as well as the use of the trademark (or a confusingly similar one) by others not only on the Internet but also on goods or services that are sold in any marketplace. All of these activities are costly. The introduction of new gTLDs will trigger defensive registrations and impose associated costs on trademark owners if they feel the need to register in additional gTLDs to protect their intellectual property rights,¹⁶² or to prevent fraud or counterfeiting. Although a company that obtains its own gTLD (.BRAND) may be able to establish second-level domains associated with the registry as the only official Internet location for the sale of authorized goods or provision of company information, this would not obviate the company's need to register in other TLDs or otherwise protect its intellectual property rights and combat counterfeiting.¹⁶³ In addition, because of the cost of applying for and operating a gTLD, companies that own multiple brands (*e.g.*, LVMH Moët Hennessy or General Motors) might not apply for a .BRAND TLD for each brand and thus gTLDs would not be an adequate substitute for second-level domain names in a gTLD or ccTLD. Thus, the introduction of new gTLDs will very likely impose some additional costs on trademark owners.

¹⁶² It is our understanding that copyright and trademark law require that the IP owner take affirmative steps to defend its rights else those rights may be lost. Defensive registration is not the only means a company would have to defend its rights, but all defensive methods impose costs on the trademark holder.

¹⁶³ As just observed in the previous footnote, it is our understanding that copyright and trademark law require that the IP owner take affirmative steps to defend its rights else those rights may be lost. This would very likely require the copyright or trademark owner to continue domain-watching activities, potentially including defensive registrations, in any TLD whose registration was not closed or where IP protections were not strong.

97. The size of the costs imposed on trademark owners will depend on several factors. To illustrate these factors, it is useful to consider a hypothetical situation in which a company has one brand that it is protecting and the brand is the same as the company name. To protect against registrations of the exact brand/company name, the annual cost triggered by new gTLDs is equal to:

$$\begin{array}{ccccccc}
 \textit{Cost to} & & \textit{No. of} & & \textit{Proportion of} & & \textit{Average Cost of} \\
 \textit{Trademark} & = & \textit{new} & \times & \textit{New gTLDs that} & \times & \textit{Registration in} \\
 \textit{Owner} & & \textit{gTLDs} & & \textit{Pose Risks} & & \textit{gTLDs that Pose} \\
 & & & & & & \textit{Risks}
 \end{array}$$

98. In this framework it is easy to see that, all else equal, external costs to trademark owners imposed by new gTLDs increase with the number of new gTLDs, the proportion that have a dangerous probability of leading to fraudulent uses of a company's protected intellectual property rights, and the cost per registration. Different trademark owners will have different opinions on the proportion of new gTLDs that pose risks of infringement. For example, the greater is the value of a company's trademark, the greater is the risk of infringing activity (because the loss associated with it is higher) and the more the trademark owner would be willing to spend to protect it. More generally, the probability of fraudulent or infringing use would increase with the openness of new gTLDs' registration policies and the popularity of new gTLDs among users, and decrease with the strength of IP protection protocols adopted by the new gTLDs' registries. At one extreme of openness of registration would be a TLD like .com, where any entity can register any available second-level domain name, while at the other end would be a TLD devoted to a single company (.BRAND) that did not allow registrations from any external entity. Although the operator of a closed .BRAND gTLD could conceivably register second-level domain names that infringed on other companies' rights, a closed gTLD devoted to a single company would likely present few infringement problems because of the ease

of identifying and locating the perpetrator of the infringing activity. Companies that apply for a TLD using their own brand or company name, and that do not face string contention, are thus unlikely to generate large external costs.

99. The preceding paragraphs describe the factors determining the costs associated with protection of a single trademark. Several factors can increase greatly the cost of protection achieved through defensive registrations. First, many companies have not just one trademark, but dozens or hundreds. Protecting all of them through registrations across many gTLDs would increase the cost of protection relative to the cost of protecting a single trademark. For a company with multiple brands or trademarked phrases that it attempts to protect, these net defensive registration costs would be multiplied by the number of protected brands and phrases. Second, if trademark owners want to protect against the use of their brands by typosquatters, this can greatly increase the costs of defensive registration because of the hundreds or thousands of common typographical errors that could be made.¹⁶⁴ Third, infringement or fraudulent use would not necessarily be limited to second-level domain name registrations of the exact trademark. For example, a company may want to protect against domain names such as

¹⁶⁴ Moore and Edelman (2010) found that popular brands were targeted by hundreds or even thousands of typosquatting sites, the great majority of which (80 percent) employed pay-per-click ads to generate revenue, often including pay-per-click ads to go to the likely intended website. (In other words, mistyping “expedia.com” leads to a pay-per-click website containing a pay-per-click advertisement for “expedia.com.”) These typosquatting sites cause marketing costs for brand owners, through either pay-per-click advertisements or affiliate marketing payments for redirecting traffic to the intended site, and in some cases, brands have defensively registered typographical errors of their brands and redirected them to their main website. Finally, some typosquatting sites redirect traffic to a brand’s competitor, though this is much less common than typosquatting sites that directly generate revenue through advertising or affiliate marketing arrangements. (Tyler Moore and Benjamin Edelman (2010), “Measuring the Perpetrators and Funders of Typosquatting,” mimeo, *available at* <http://www.benedelman.org/typosquatting/typosquatting.pdf>, *site visited* September 17, 2010.)

“buyBRANDhere.TLD,” “wesellBRAND.TLD,” or “BRANDtoyou.TLD.”¹⁶⁵ Although this may involve defensive registrations, it also would involve additional domain-watching expenses because ICANN’s proposed Trademark Clearinghouse will be employed only as a notification service for exact trademark matches.

100. Of course, there may also be benefits to trademark holders derived from the presence of new gTLDs. Specifically, by making navigation easier for some users, the new gTLDs might increase the volume of traffic to a trademark holder’s sites. In addition, to the extent that a company established a .BRAND TLD as the company’s official presence on the Internet, the value of cybersquatting and typosquatting sites on other TLDs would decline and therefore the incentive to engage in cybersquatting and typosquatting would decline. Trademark owners appear to recognize some of the potential benefits of new gTLDs. In a recent survey, 46 percent of trademark owners said that they would apply for or might apply for a gTLD.¹⁶⁶ And of those who indicated they would or might apply, 94 percent said they would apply for a single string corresponding to their main brand.¹⁶⁷

101. To examine questions related to how companies currently use various gTLDs, we examined the main websites of 200 different brands drawn from the top 500 global brands as

¹⁶⁵ We restrict attention here to the need to protect against actual trademark violations or misappropriation of a trademark to sell counterfeit goods, and not fair use of a trademark. We understand that a second-level domain such as “ihateBRAND.TLD” on which a consumer catalogued his problems with the BRAND’s customer service personnel would be allowable under the trademark laws. The cost of preemptively registering second-level domain names such as ihateBRAND across all new gTLDs, would not be a defensive registration cost in our framework.

¹⁶⁶ Adam Smith, “Brave new world: How the trademark community is preparing for new gTLDs,” *World Trademark Review*, December/January 2011.

¹⁶⁷ *Id.*

ranked by Brand Finance.¹⁶⁸ We selected the top and bottom 100 brands on the list (*i.e.*, brands ranked 1-100 and 401-500) for our study. For each brand, we identified the domain name of its main website and the TLD on which its main website was located.¹⁶⁹ We then examined whether that same second-level domain name was registered in the following TLDs: .com, .net, .org, .biz, .info, .mobi, .us, .au, .cn, .de, .uk, .nz, .za, .co, and .me.¹⁷⁰ We also examined how the second-level domain names in other TLDs were being used. Specifically, we examined whether the domains in other TLDs:

- were being used by a company unaffiliated with the brand owner;
- were redirecting to the brand-owner's main website or mirroring the same content;
- were being used by the brand-owner and contained unique content; or
- appeared to have been registered by some other company for purposes of cybersquatting—*e.g.*, through the display of pay-per-click advertising.

102. By selecting what are reported to be the most valuable global brands and others that are of somewhat lesser value, we hope to see whether owners of somewhat less valuable brands

¹⁶⁸ The BrandFinance Global 500, 2010, *available at* http://www.brandirectory.com/league_tables/table/global_500, *site visited* August 24, 2010.

Note that website content can change frequently; the content currently provided on these websites may be different from the content on the day that we accessed the site. We visited these websites between August 22 and September 11, 2010.

¹⁶⁹ We first looked for a website with a domain name that is an exact match with the brand name (after removing spaces and all non-hyphen punctuation marks). In some cases, the trademark owner used a variation on the brand name for the domain name; for example, the main website associated with Johnson & Johnson is JNJ.com, and for The Home Depot, it is HomeDepot.com. If the brand had a .com website, we designated that as the primary website, unless it redirected to another location, returned an error, or was clearly not the primary website. In these instances, which occurred only for some non-US brands, we were able to locate and identify the primary website on a ccTLD.

¹⁷⁰ We chose .cn, .de, and .uk because they are three of the most widely used ccTLDs. We chose .au, .nz, .us, and .za because their respective countries use English as the official language, which made it easier for us to analyze web site content. We chose .co and .me because they are marketed as generic TLDs rather than focusing on their respective countries.

behave differently than owners of more valuable brands. The observed pattern might give us insight into whether defensive registrations are a problem only for the most valuable of brands (which is not to minimize the potential problem for those brands) or whether the problem is more widespread.

103. We begin by reporting some broad summary statistics indicating the overall popularity of the TLDs that we sampled and the presence of domains in those TLDs. In Table 7 below, we first report the number of registered second-level domain names for each gTLD studied and .us, according to their respective zone files.¹⁷¹ Currently, .com has more than 89 million registered second-level domain names, more than six times the number of registrations in the next closest gTLD, .net. We examined each of our 200 brands in these TLDs' zone files, and found that a very high percentage of them were registered in the different TLDs, ranging from 170 (85 percent) in .us to 199 (99.5 percent) in .com. When we examined the associated websites, however, we found that not all had content. We designated a domain as having content if there was any content on the site itself or if it redirected to another site with content, without regard to whether the content was legitimate company information or opportunistic, *e.g.*, a pay-per-click advertising site. We found a big range in the share of registered domains with content. In .com, 192 of the brands we examined (96 percent) had content of some type, but in .biz, only 94 (47 percent) had content. The older gTLDs, .net and .org, had a higher percentage of sites with content (66.5 percent and 61.5 percent) than the newer gTLDs (ranging from 47 percent for .biz to 57 percent for .info). Finally, we examined the sites with content to determine whether the site appeared to be active and associated with the brand owner rather than being inactive or

¹⁷¹ With the exception of .us, we were unable to obtain zone files for the ccTLDs. Note that zone files can change on a daily basis. We examined zone files that were downloaded between August 23-26, 2010.

containing opportunistic content. We found that the percentage of .com sites that were active and contained content associated with the brand owner remained high at 179 sites (89.5 percent). But the share of active, brand-related sites on the other gTLDs was quite low, ranging from 43 sites (21.5 percent) for .org to 63 sites (31.5 percent) for .net.

Table 7: Summary of Domain Registrations by TLD

	Registered Domains	Domains in Sample	Registered Domains in Sample	Domains with Content	Domains Attributed to Brand Owner with Commercial Content
	[a]	[b]	[c]	[d]	[e]
.COM	89,010,161	200	199	192	179
.NET	13,240,472	200	194	133	63
.ORG	8,475,875	200	185	123	43
.BIZ	2,074,115	200	180	94	50
.INFO	6,664,672	200	179	114	54
.MOBI	969,558	200	183	102	-
.US	1,637,224	200	170	105	-

Notes: [a] Registered domains based on TLD zone files.
 [b] Total domains in sample of top brands.
 [c] Domains in sample that were registered in zone file.
 [d] Registered domains in sample that either stayed on page or redirected to content, including commercial, opportunistic, or inactive content.
 [e] Registered domains attributed to brand owner that stayed on page or redirected to commercial content. Excludes opportunistic and inactive content.

Sources: TLD zone files; The BrandFinance Global 500 2010, available at http://www.brandirectory.com/league_tables/table/global_500, site accessed August 24, 2010; Various websites.

1. Prevalence of registrations across multiple TLDs

104. We examined the webpage associated with each possible combination of our 200 brands and the TLDs in our sample and categorized those sites as follows:

- *Stayed on Page with Content* indicates that the page did not automatically redirect to a page on a different second-level domain and the page contained content of some type, whether associated with the brand or not. Redirections within a second-level domain, such as from SECONDLEVEL.TLD to HOME.SECONDLEVEL.TLD were treated as if the user stayed on the same page.

- *Redirected to a Different Page* indicates that the page automatically redirected to a different second-level domain, either within the same TLD or in a different TLD.
- *Site not Available* captures instances where error messages were returned when we attempted to access the site, including instances where the site was not found or the page could not be displayed

105. We note first that for the brands in our study, second-level domains registered in .com are much more likely to contain content, much less likely to redirect to other sites than are second-level domains registered in any other TLD studied, and much less likely to return unavailable sites. (See Table 8.)

Table 8: Summary of Page Characteristics, All Domains Sampled

TLDs for Which We Have Zone Files				
	Registered Domains	Stayed on Page With Content	Redirected to Different Page	Site Not Available
COM	199	90%	7%	4%
NET	194	42%	26%	31%
ORG	185	43%	24%	34%
BIZ	180	28%	24%	48%
INFO	179	34%	30%	36%
MOBI	183	37%	19%	44%
US	170	35%	26%	38%
TLDs for Which We Do Not Have Zone Files				
	Domains Reviewed	Stayed on Page With Content	Redirected to Different Page	Site Not Available
AU	200	45%	19%	36%
CN	200	53%	23%	25%
DE	200	57%	29%	14%
UK	200	59%	19%	23%
NZ	200	32%	23%	46%
ZA	200	48%	20%	33%
CO	200	46%	19%	36%
ME	200	34%	15%	52%

Note: Stayed on page with content includes sites that are under construction and other sites with minimal content. Site not available includes cases where (i) the web browser could not find the site, (ii) the web browser could not display the page, (iii) the requested URL could not be retrieved, or (iv) other similar error messages were returned.

Sources: The BrandFinance Global 500 2010, available at http://www.brandirectory.com/league_tables/table/global_500, site accessed August 24, 2010; Various websites.

The brands studied appear to be using the .com TLD differently than they are using other TLDs. Because so few of the .com registered names fail to resolve to a page, the registrants are using (rather than just registering) the .com domains at a much higher rate than domains in other TLDs. Registrants are also using the .com domain more intensively for conveying content to the user, and less intensively for purposes of gathering traffic and funneling it elsewhere. This indicates

that, despite the addition of other gTLDs and the availability of ccTLDs, the .com domain remains the default domain for the great majority of the brand owners we examined.

106. Next, we summarize information on the extent to which the brands in our study register across multiple gTLDs. We examined the pattern of registration across five gTLDs: .com, .net, .org, .info, and .biz.¹⁷² Table 9 shows that of the 200 brands studied, an overwhelming majority, 91 percent, are registered in .COM, but the instances of registration in other TLDs is much lower, ranging from 50 percent in .ORG to 68 percent in .BIZ.

Table 9: Summary of Registrations

	.COM	.NET	.ORG	.BIZ	.INFO
Top 100 Brands	97	72	65	75	80
Brands 401-500	84	44	34	61	49
Ratio	87%	61%	52%	81%	61%

Note: A domain was determined to be registered by a brand if: (a) content on the site indicated it was owned by the brand, or (b) site returned an error, was inactive, or contained opportunistic content, and data from Whois indicated the domain was registered by the brand.

Sources: The BrandFinance Global 500 2010, available at http://www.brandirectory.com/league_tables/table/global_500, site accessed August 24, 2010; Various websites.

All of the brands that are not registered in .com are held by companies with headquarters outside of the United States, and their main websites appear to be registered in their respective ccTLDs. For example, NTT Group, which owns the NTT brand and which Brand Finance ranks 28th, is a Japanese telecommunications company whose main website is www.ntt.co.jp.

¹⁷² We chose these gTLDs because they have the largest numbers of domain name registrations, and registration is relatively open.

107. Table 9 shows that less valuable brands register fewer domains than do the most valuable brands. The ratio of registrations of the top 100 brands to registrations of brands 401-500 measures the rate of decay of brand registration as brands decline in value. (See third row of Table 9.) The rate of decay is much faster for gTLDs other than .com, although even in the case of .com the owners of the less valuable brands register the corresponding second-level domains only 87 percent as often as do the owners of the more valuable brands. The lower rate of registration of top brands in the non-.com gTLDs than in .com and the significant rate of registration decay for less valuable brands in the non-.com gTLDs indicates that many brand owners will not feel compelled to register their brands in new gTLDs if those new gTLDs offer no worse trademark protections and no better opportunity for gathering traffic than existing gTLDs.

108. We found that the brands that are registered in .com are registered in an average of 2.7 of the four other gTLDs that we examined. Registration across gTLDs varies by brand value, with the top brands registering in an average of 3.0 other gTLDs and less valuable brands registering in an average of 2.2 other gTLDs. We also found that the brands registered in .com have working sites on an average of 3.7 of the nine ccTLDs that we surveyed.¹⁷³

109. Although registration on 2.7 of the four gTLDs we checked seems high, we found that many of these non-.com registrations do not support commercial content relevant to the brand or company. Table 10 below presents the results of an analysis where we have excluded registrations that yield blank pages or errors, contain opportunistic content, or redirect to opportunistic content. Using this tighter selection criterion, we found that the brands that are registered in .com are registered in an average of 1.2 of the four other gTLDs and have working

¹⁷³ Note that we did not check registration of the brands in these ccTLDs.

sites on an average of 3.6 of the nine ccTLDs that we surveyed. As is the case with registrations of sites with any type of content, the lower-value brands register in fewer non-.com gTLDs, on average, than higher-value brands.

Table 10: Summary of Registrations, Sites with Commercial Content

	.COM	.NET	.ORG	.BIZ	.INFO
Top 100 Brands	97	41	28	26	36
Brands 401-500	82	22	15	24	18
Ratio	85%	54%	54%	92%	50%

Note: A domain was determined to be registered by a brand if content on the site indicated it was owned by the brand.

Sources: The BrandFinance Global 500 2010, available at http://www.brandirectory.com/league_tables/table/global_500, site accessed August 24, 2010; Various websites.

110. To explore further the prevalence of multiple registrations, we looked in greater detail at the use of .biz and .info, both of which were created to serve as substitutes for .com. The results are presented in Table 11 below.

Table 11: Summary of Registrations in .Biz and .Info, Sites with Commercial Content

	Total Domains	Registered in .Biz or .Info		
		Both	One	Neither
Top 100 Brands				
.COM is Primary	94	20	19	55
.CC is Primary	6	1	1	4
Brands 401-500				
.COM is Primary	77	14	10	53
.CC is Primary	23	2	0	21

Note: A domain was determined to be registered by a brand if content on the site indicated it was owned by the brand. Excludes inactive sites.

Sources: The BrandFinance Global 500 2010, available at http://www.brandirectory.com/league_tables/table/global_500, site accessed August 24, 2010; Various websites.

The majority of brands in our sample do not register in either .biz or .info. This lack of registration is especially pronounced for less valuable brands whose primary websites are on ccTLDs. This pattern suggests that less valuable brands with natural “homes” outside of .com see little benefit from registering elsewhere and funneling traffic to their primary sites, as well as relatively little danger of trademark infringement or customer confusion.

111. Notwithstanding the results just discussed, the prevalence of brands with registrations in multiple TLDs implies that it is valuable to examine how the brand owners utilize those registrations, particularly to the extent that one can characterize the utilization as either defensive or affirmative. We now turn to that analysis.

2. Uses of registrations across multiple TLDs

112. Registrations of the same second-level domain name in different gTLDs or ccTLDs could be either defensive registrations or attempts to gather traffic from different web user

communities. To distinguish between these possibilities, we consider the relationship between the brand's primary web site and other second-level domains. If the non-primary sites are registered but return errors or have no content, that would suggest that the registrant has engaged in a purely defensive registration. That is, the brand was registered (or otherwise obtained) to prevent others from using it; the brand owner is not even attempting to redirect traffic to its main website. Alternatively, if the non-primary websites redirect or have original content, then the registrant is attempting to gather traffic. The primary purpose of registration still could be defensive, but the fact of redirection or original content seems to indicate there may be some benefits that may offset some of the defensive registration costs.

113. Table 8 above, which is presented again below, provides summary usage statistics for all of the domains that we sampled. *Stayed on Page with Content* and *Redirected to Different Page* continue to have the same meaning as described above. *Site not Available* captures instances where error messages were returned when we attempted to access the site, including instances where the site was not found or the page could not be displayed.

Table 8: Summary of Page Characteristics, All Domains Sampled

TLDs for Which We Have Zone Files				
	Registered Domains	Stayed on Page With Content	Redirected to Different Page	Site Not Available
COM	199	90%	7%	4%
NET	194	42%	26%	31%
ORG	185	43%	24%	34%
BIZ	180	28%	24%	48%
INFO	179	34%	30%	36%
MOBI	183	37%	19%	44%
US	170	35%	26%	38%

TLDs for Which We Do Not Have Zone Files				
	Domains Reviewed	Stayed on Page With Content	Redirected to Different Page	Site Not Available
AU	200	45%	19%	36%
CN	200	53%	23%	25%
DE	200	57%	29%	14%
UK	200	59%	19%	23%
NZ	200	32%	23%	46%
ZA	200	48%	20%	33%
CO	200	46%	19%	36%
ME	200	34%	15%	52%

Note: Stayed on page with content includes sites that are under construction and other sites with minimal content. Site not available includes cases where (i) the web browser could not find the site, (ii) the web browser could not display the page, (iii) the requested URL could not be retrieved, or (iv) other similar error messages were returned.

Sources: The BrandFinance Global 500 2010, available at http://www.brandirectory.com/league_tables/table/global_500, site accessed August 24, 2010; Various websites.

114. First, consider the TLDs for which we have access to the zone files. The prevalence of situations in which the site is not available suggests that the benefits of many site registrations are principally that other parties are prevented from using the domains to engage in trademark misappropriation. These situations also suggest that the potential benefits associated with using these sites either affirmatively to drive new traffic or defensively to counter the dilution of

existing sites due to the additional gTLDs are low. We base this conclusion on the fact that the costs of using a site to redirect to the brand's primary site is relatively low.¹⁷⁴ Hence, the fact that the brand owner does not set up a site to redirect to others indicates that the owner perceives the benefits of redirection to be low. These benefits could be low either because the brand owner does not expect to gain a significant number of additional visitors through the redirection or because the brand owner does not want to "train" consumers to turn to the domain in question as the starting point of their web navigation.

115. Table 8 also indicates that ccTLDs can be more valuable to brand owners than broad gTLDs such as .net, .biz, and .info. Comparing the gTLDs and ccTLDs in Table 8 shows that web sites on the ccTLDs tended to stay on the page with content more frequently than did sites on the gTLDs other than .com. In addition, the percentage of instances where the web site corresponding to the domain name is not available is generally lower for the ccTLDs than for the non-.com gTLDs. This difference is particularly pronounced for the ccTLDs in our sample corresponding to larger economies: .cn, .de, and .uk. A notable exception to this pattern is .us, which has a "Not Available" rate similar to the non-.com gTLDs. Although only suggestive, this pattern would be consistent with the hypothesis that brand owners derive incremental value from being on sites that are not U.S.-centric.

¹⁷⁴ Registrars often provide URL forwarding services with the registration of a domain name. (See, GoDaddy.com, "Forwarding or Masking Your Domain Name," available at <http://help.godaddy.com/article/422>, site visited October 21, 2010.) This service is offered free of charge by many registrars. (See, Domain.com, "Domain Services," available at <http://www.domain.com/domains/tools.php>, site visited October 21, 2010; Namecheap, "Register a Domain," available at <http://www.namecheap.com/learn/domain-registration/domain-features.asp>, site visited October 21, 2010.)

116. Next, Table 12 provides information similar to that in Table 8 except that the sample is restricted to those domains for which we could verify that the corresponding brand owner is the domain registrant.¹⁷⁵

Table 12: Summary of Page Characteristics, Domains Registered to Sampled Brands

	Registered Domains	Stayed on Page With Content	Redirected to Different Page	Site Not Available
COM	181	95%	4%	1%
NET	116	24%	38%	38%
ORG	99	21%	35%	43%
BIZ	136	18%	28%	54%
INFO	129	21%	34%	45%

Note: A domain was determined to be registered by a brand if: (a) content on the site indicated it was owned by the brand, or (b) site returned an error, was inactive, or contained opportunistic content, and data from Whois indicated the domain was registered by the brand. Stayed on page with content includes sites that are under construction and other sites with minimal content. Site not available includes cases where (i) the web browser could not find the site, (ii) the web browser could not display the page, (iii) the requested URL could not be retrieved, or (iv) other similar error messages were returned.

Sources: The BrandFinance Global 500 2010, available at http://www.brandirectory.com/league_tables/table/global_500, site accessed August 24, 2010; Various websites.

117. Comparing the data in Tables 8 and 12, the verified sites undertake both redirection and have unavailable sites a greater percentage of the time. The latter observation in particular

¹⁷⁵ We were unable to determine the ownership of several of these domains with certainty. This occurred when a website contained content that clearly was not related to the brand (e.g., pay-per-click advertisements, sometimes with a copyright notice from a company other than the brand owner), but whois data indicated that the domain had been registered by the brand owner. These domains were excluded from our analysis.

supports the conclusion that many registrations in non-.com gTLDs are defensive registrations with little perceived potential for generating affirmative benefits to the brand owners.¹⁷⁶

118. For completeness, Table 13 below provides information on page usage broken out between the top 100 brands and brands 401-500.

Table 13: Characteristics of Domains Registered to Top Brands

	Registered Domains	Stay on Page with Content			Redirected to			Site Not Available
		Original or Unique Content	Content Same as Content on Primary	Opportunistic or Inactive	Primary Site	Secondary Site	Opportunistic or Inactive Site	
Top 100 Brands								
COM	97	97%	-	0%	3%	0%	0%	0%
NET	72	15%	1%	3%	28%	13%	1%	39%
ORG	65	6%	5%	8%	29%	3%	2%	48%
BIZ	75	1%	4%	7%	25%	4%	1%	57%
INFO	80	1%	4%	9%	33%	8%	1%	45%
All gTLDs	389	29%	3%	5%	22%	5%	1%	35%
Brands 401-500								
COM	84	93%	0%	0%	4%	1%	0%	2%
NET	44	7%	11%	14%	25%	7%	0%	36%
ORG	34	3%	9%	15%	26%	6%	6%	35%
BIZ	61	7%	10%	10%	18%	5%	2%	49%
INFO	49	2%	12%	18%	12%	10%	0%	45%
All gTLDs	272	32%	7%	10%	15%	5%	1%	30%

Note: Domain registration was determined using content on site or Whois information. Opportunistic or inactive sites contain sponsored listings or advertisements from the domain registrar, or are under construction or otherwise contain minimal content. Original or unique content sites include: (i) primary sites, (ii) sites targeted to a specific audience, and (iii) other affiliated sites that contain content different from content on primary site. Site not available includes cases where (i) the web browser could not find the site, (ii) the web browser could not display the page, (iii) the requested URL could not be retrieved, or (iv) other similar error messages were returned.

Sources: The BrandFinance Global 500 2010, available at http://www.brandirectory.com/league_tables/table/global_500, site accessed August 24, 2010; Various websites.

¹⁷⁶ We note that although the percentage of registrations that appear to be defensive is high, that is not the same thing as having high costs of defensive registrations. The overall cost of defensive registration is driven by the total number of defensive registrations.

B. IMPLICATIONS

119. Although they must be viewed with appropriate caveats, these studies suggest several findings:

- There is value in giving trademark holders the ability to block the use of trademarked terms beyond a sunrise period. This conclusion follows from the observation that, in many cases, it appears that trademark holders are interested in preventing other parties from using domains containing trademarks but the trademark holders are not interested in affirmatively using those domains. Hence, the problem is not remedied simply by letting trademark holders have a right of first refusal during a start-up registration period.
- The incidence of defensive registrations in gTLDs declines as brands become less valuable. This pattern suggests that significant costs may be borne only by the holders of the most valuable brands.
- Brand owners' registrations outside of their main gTLD (usually .com) appear to be primarily defensive in nature, although some effort is made to gather and redirect traffic.
- The holders of the most valued brands registered those brands in about 60 percent of the available gTLDs. Registration is less likely in gTLDs that have restrictions on the use of websites or identity of registrants. Thus, going forward, the gTLDs most likely to attract defensive registration by owners of valuable brands are standard gTLDs with open registration policies.
- Brands with a natural home outside of .com are even less likely to register in multiple gTLDs, including those without registration restrictions. Thus, the problem of defensive registrations may be greatest for U.S. brands. However, this may change if new gTLDs focused on different countries emerge.

VI. CONCLUSION

120. By definition, a new gTLD will benefit the community if the *incremental* benefits generated by introduction of the gTLD outweigh the *incremental* costs that it triggers.

Incremental benefits refer to the benefits created by a new gTLD relative to alternatives. The case studies—particularly .mobi—demonstrate that, in at least some instances, there can be viable alternative means of achieving the stated objectives of a gTLD application and,

consequently, the incremental benefits of the new gTLD might be low.¹⁷⁷ The case studies also highlight the fact that, at the time an application for delegation of a new gTLD is submitted, the magnitudes of both incremental benefits and incremental costs will very likely be uncertain and will vary by application. The case studies also demonstrate that there is a range of processes and policies that can be implemented to reduce the costs associated with the misappropriation of trademarks and other intellectual property. The lessons from the experiences with different intellectual property protection regimes in the gTLDs introduced to date can usefully inform future decisions about intellectual property protection mechanisms. Lastly, the registration behavior we examined in community-based gTLDs and the registration behavior by brand owners provides useful information about the value of new gTLDs and the value to brand owners of registering in different TLDs.

¹⁷⁷ The existence of substitutes is important to the evaluation of both benefits and costs. For example, the incremental costs of misappropriation may be lower than they first appear because a large number of third-level names already can be used to engage in misappropriation. The incremental costs come from the possibility that second-level domains have more powerful effects than third-level domains.