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Revisiting Vertical Separation of Registries and Registrars

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1. INTRODUCTION AND SCOPE

This report describes CRA research, performed on behalf of ICANN, on the economic relationship between the registry and registrar functions. Current registry agreements prohibit registries from acquiring more than 15% of a registrar, but that has not always been the case. At ICANN's formation, the .com, .net, and .org generic top-level domains ("gTLDs") were operated by a single, vertically integrated, firm that combined the registry and registrar functions in one business.¹ While this structure had successfully supported the tremendous initial growth of the public internet, prices for second-level domains remained high. In this environment, a broad consensus developed that additional competition in the registry and registrar functions could help reduce prices and better support the continued development of the public internet.

ICANN's founding is deeply connected to this policy goal of fostering competition in the registry and registrar functions. The *White Paper* that preceded ICANN identified four principles that were described as "critical" to the success of an entity charged with the management of internet names and addresses: (1) stability; (2) competition; (3) private, bottom-up coordination; and (4) representation.² The *White Paper* stated that "[w]here possible, market mechanisms that support competition and consumer choice should drive the management of the Internet because they will lower costs, promote innovation, encourage diversity, and enhance user choice and satisfaction."³ In these early discussions, the consensus view was that "competition in the DNS structure as it stands today is . . . possible at both the registry (or wholesale) level, and the registrar (or retail) level. Increasing competition at the retail level involves only adding additional sellers of names to be recorded in existing registries; as a result, it generates relatively minor stability concerns. For this reason, adding new competition at the retail level was the first substantive goal that ICANN quickly accomplished after its formation."⁴

¹ The development of country code top-level domains (ccTLDs) has occurred in parallel to the development of the gTLDs. Today about one-third of registered domains are on ccTLDs (See data on "European Domain Names," <http://www.euoperegistry.com/>, accessed on September 10, 2008 and ICANN, "Registry Operator Monthly Reports," February 2008, <http://www.icann.org/en/tlds/monthly-reports/>). This report is focused on the structure of the gTLD segment.

² The *White Paper* was a policy statement published by the Department of Commerce on June 10, 1998. See *Management of Internet Names and Addresses*, 63 *Fed. Reg.* 31741 (1998), available at http://www.ntia.doc.gov/ntiahome/domainname/6_5_98dns.htm.

³ *Management of Internet Names and Addresses*, 63 *Fed. Reg.* 31741 (1998), available at http://www.ntia.doc.gov/ntiahome/domainname/6_5_98dns.htm.

⁴ Testimony of Vinton G. Cerf, House Committee on Energy and Commerce Subcommittee on Telecommunications and the Internet, February 8, 2001, available at <http://www.icann.org/correspondence/cerf-testimony-08feb01.htm>.

ICANN's policies regarding the relationship between registries and registrars have evolved over time. ICANN's first step in creating a competitive registrar market was to require, in 1999, that the incumbent registry/registrar, NSI, allow non-affiliated registrars the same level of access to its registry system as NSI's own registrar.⁵ As a means of ensuring that non-affiliated registrars could compete on an equal footing, ICANN also required that NSI maintain an operational firewall between its registry and registrar businesses.⁶ In addition, the 1999 agreement between ICANN and NSI provided incentives for ownership separation between the registry and registrar divisions. In the 2001 revision to the .com agreement, there is a provision requiring legal separation of the registry and registrar functions, but not ownership separation.⁷ Registry agreements subsequently negotiated in 2005 require ownership separation of the registry and registrar functions.⁸ We discuss these policy developments in detail in Section 3.

ICANN's policy of fostering registrar competition has been extraordinarily successful. ICANN estimates that registrar competition reduced gTLD domain name registration fees by 80%, saving registrants more than \$1 billion annually.⁹ ICANN has also fostered additional registry competition by supporting the launch of new gTLDs. ICANN's Generic Names Supporting Organization ("GNSO") has developed a set of policy recommendations, approved by ICANN's board in June 2008, for the introduction of additional gTLDs with the potential to further promote competition among registries.¹⁰

While ICANN's approach has generally supported and stimulated registrar competition, economic theory and practical experience in many other industries have shown that *mandating* ownership separation can sometimes hinder, rather than foster, effective market competition. Absent restrictions on integration, highly competitive markets often exhibit a mix

⁵ ICANN-NSI Registry Agreement, November 10, 1999, paragraph 21(B), available at <http://www.icann.org/nsi/nsi-registry-agreement-04nov99.htm>.

⁶ ICANN announcement, 1 March 2001, <http://www.icann.org/announcements/icann-pr01mar01-1.htm>.

⁷ ".com Registry Agreement," May 25, 2001, ¶ 23C, available at <http://www.icann.org/tlds/agreements/verisign/registry-agmt-com-25may01.htm>, accessed July 11, 2008.

⁸ Registry agreements negotiated in 2005 and subsequently contained the language "Registry Operator shall not acquire, directly or indirectly, control of, or a greater than fifteen percent ownership interest in, any ICANN-accredited registrar." See for example, ".net Registry Agreement," June 29, 2005, available at <http://www.icann.org/tlds/agreements/net/>, accessed July 11, 2008.

⁹ See <http://www.icann.org/tr/english.html>, accessed December 6, 2007. For anecdotal evidence on the impact of competition on prices, see for example, CNET Reviews, "Pick a registrar, any registrar – even a cheap one," August 16, 2004, available at http://reviews.cnet.com/4520-6028_7-5333873-1.html, accessed December 6, 2007. See also, OECD, "Generic Top Level Domain Names: Market Development and Allocation Issues," July 2004, pp. 25-27, available at <http://www.oecd.org/dataoecd/56/34/32996948.pdf>, accessed December 6, 2007.

¹⁰ For further details on this policy process, see "New gTLD Program," available at <http://www.icann.org/en/topics/new-gtld-program.htm>, accessed August 8, 2008.

of structures, with some firms integrating downstream into retail distribution while others specialize in either upstream or downstream production. A form of this choice is the “make-or-buy” decision. Experience has shown that the experimentation and innovation that often result when firms are free to operate without vertical restrictions can produce significant benefits for consumers. ICANN’s policies may affect multiple aspects of registry and registrar services, including service variety, innovation, and prices of domain name registrations. With this in mind, ICANN has asked CRA to consider the impact of the vertical separation requirement in current TLD agreements on the current public internet and to evaluate whether continued application of the requirement to new and existing gTLDs would be beneficial to consumers (registrants). In particular, we have been asked to consider the potential effects on registrants of maintaining the current vertical separation requirement for all registries, eliminating or altering the requirement for some (but not all) registries, or eliminating or altering the requirement for all gTLDs.

We find that there can be various, sometimes subtle, economic incentives for a registry to discriminate among registrars in a manner that harms consumers (registrants). Those incentives are especially clear and strong when a registry is operating under a binding price cap. Under those circumstances, vertical separation and equal access requirements are useful tools for limiting the possibility of such harmful discrimination.

For registries not operating under a binding price cap, the arguments in favor of vertical separation and equal access requirements are less clear cut. We would recommend that ICANN take steps towards relaxing one or both of these requirements. Any such liberalization of the vertical separation and equal access requirements should be taken gradually, as these sorts of reforms are difficult to reverse.

Two proposed business models may lend themselves to service as test cases for relaxing the current constraints on registry/registrar relations. We would encourage ICANN to bring these two models up for discussion with the broader (registry, registrar, and registrant) community.

- In a single-organization TLD, in which the registry and registrants are one and the same, the registry is unlikely to try to extract excess rents from registrants, and there are presumably internal controls on any such temptation that are likely to be more effective than an external regulation. Moreover, such single-organization TLDs may be particularly likely to benefit from efficiencies of integration. For instance, such a TLD, perhaps set up to coordinate confidential internal business processes, may well find it inefficient to be served by a third party registrar. For these TLDs, it seems worth considering what the likely impacts would be if the regulations requiring vertical separation and equal access were suspended. However, as we discuss below, defining “these” TLDs may not be straightforward.
- Under a hybrid model, a registry would be allowed to own a registrar, just so long as the registrar did not serve the registry that owns it (or that it owns). Equal access

would continue to be enforced under this model. This model would provide some opportunities for innovation or efficiency enhancing investments, but fewer than would be expected in an integration in which the registrar services its registry. At the same time, the risks of harm to competition from vertical integration would be tempered. This model also seems worth consideration by ICANN and the community of registrars and registries.

If ICANN should decide to go ahead with these test cases, it should actively monitor the performance of these new TLDs. If, after a reasonable period of time, ICANN is satisfied that competition is not being harmed – or, better, if it concludes that competition has been enhanced by their introductions, it may then want to consider relaxing one or both of the vertical separation and equal access requirements for a somewhat broader pool of TLDs.

While conducting our research, we interviewed a diverse group of decision makers representing registrars, gTLD and ccTLD registries, domain name investors, and large corporations, conducting a total of 18 interviews between February and June 2008.

This report is organized as follows. Sections 2 and 3 review ICANN's vertical separation requirements today, and in the past. Section 4 summarizes available data on gTLD registry and registrar services. Section 5 summarizes interview findings on the expected costs and benefits of relaxing the vertical separation requirement. Section 6 summarizes the economic principles for this analysis. Section 7 considers two possible test cases for allowing vertical integration. Conclusions are presented in Section 8. Appendix A reviews the fundamental economic principles at work when final products (here registrations) require the provision of both registrar services and registry services, and issues of access for registrars to the registry arise. In particular it considers the impact of policy tools including vertical separation, price caps, and equal access requirements.

2. ICANN'S CURRENT POLICY TOWARD GTLD REGISTRY SERVICES

Current gTLD agreements have two requirements that are especially relevant to an analysis of policy toward registries. First, ICANN's registry agreements with unsponsored gTLDs establish a maximum price that the registry may charge registrars to register new domain names within the TLD. Second, ICANN's current agreements with most gTLDs (sponsored as well as unsponsored) prohibit the registry from owning more than 15% of a registrar

serving that gTLD (i.e., a form of ownership separation applies to most gTLDs).¹¹ We summarize these restrictions in this section.

2.1. PRICE CAPS ON GENERIC TOP-LEVEL DOMAINS

2.1.1. Un-sponsored gTLDs

ICANN's current agreements with the un-sponsored gTLD registries for .com, .info, .biz, .org, .name, .net, and .pro, establish an initial maximum price that the registry can charge registrars to register a new domain name or to renew an existing name.¹² These agreements also describe a process to increase the initial maximum price over time.

The price cap ("Maximum Price") established in the agreements for .com, .info, .biz, .org, and .name is \$6.00 for both new registrations and renewals and is allowed to increase by a set percentage rate annually (7% over the highest price charged in the previous year for .com and 10% for most other un-sponsored gTLDs).¹³ The agreement for .net set an initial price

¹¹ The exceptions appear to be .aero and .pro. ICANN's agreements with .aero and .pro are from 2004, before a number of significant changes in ICANN's standard registry agreement (discussed in section 4 below). See ICANN's agreement with SITA for .aero, available at <http://www.icann.org/tlds/agreements/sponsored/sponsorship-agmt-05nov04.htm> and ICANN's agreement with Registry Services for .pro, available at <http://www.icann.org/tlds/agreements/un-sponsored/registry-agmt-amendment1-05oct04.htm>.

¹² See .com Registry Agreement, March 1, 2006, Section 7.3 (d); .info Registry Agreement, December 8, 2006, Section 7.3(a); .biz Registry Agreement, December 8, 2006, Section 7.3(a); .org Registry Agreement, December 8, 2006, Section 7.3 (a); .name Registry Agreement, August 15, 2007, Section 7.3(a); .net Registry Agreement, June 29, 2005, Section 7.3(a); .pro Registry Agreement, May 3, 2002, Appendix G. The agreements are available at <http://www.icann.org/registries/agreements.htm>.

¹³ As of January 1, 2007, the .info, .biz, and .org registries were authorized to increase their prices to 1.1 times the initial price cap. See, for example, *.org Registry Agreement* (December 8, 2006), Section 7.3(a) ("Commencing on 1 January 2007, the Maximum Service Fee charged during a calendar year for each annual increment of a new and renewal domain name registration and for transferring a domain name registration from one ICANN-accredited registrar to another, may not exceed the Maximum Service Fee during the preceding calendar year multiplied by 1.10.") See also *.info Registry Agreement* (December 8, 2006); *.biz Registry Agreement* (December 8, 2006), Section 7.3(a).

The registry agreement for .name, which became effective on August 15, 2007, states that it is allowed to increase its price by 10 percent beginning on October 1, 2007. See *.name Registry Agreement* (August 15, 2007), Section 7.3(a).

cap of \$3.50 for new registrations and renewals, subject to an authorized 10% annual increase,¹⁴ and the agreement for .pro set an initial price cap of \$6.00 to register or renew a third level domain name and \$6.50 for a second level domain name.¹⁵

The equal access provisions of these registry agreements stipulate that the registry must charge the same service fee to all ICANN-accredited registrars.¹⁶ The registry can give volume and marketing discounts so long as it gives all ICANN-accredited registrars an equal chance to obtain these discounts.¹⁷

The registry agreement for .com states that it is allowed to increase its price by 1.07 times the lower of the initial price cap or the highest price charged in the previous year. See *.com Registry Agreement* (March 1, 2006), Section 7.3(d)(ii) ("For each calendar year beginning with 1 January 2007, [the Maximum Price shall be] the smaller of the preceding year's Maximum Price or the highest price charged during the preceding year, multiplied by 1.07; provided, however, that such increases shall only be permitted in four years of any six year term of the Agreement. In any year, however, where a price increase does not occur, Registry Operator shall be entitled to increase the Maximum Price by an amount sufficient to cover any additional incremental costs incurred during the term of the Agreement due to the imposition of any new Consensus Policy or documented extraordinary expense resulting from an attack or threat of attack on the Security or Stability of the DNS, not to exceed the smaller of the preceding year's Maximum Price or the highest price charged during the preceding year, multiplied by 1.07).

¹⁴ This excludes a \$0.75 transactional fee paid to ICANN, leading to a maximum allowable fee of \$4.25 in 2006. The registry agreement for .net states that it is allowed to increase its price by 10 percent over the highest price charged during the prior calendar year. See *.net Registry Agreement* (July 1, 2005), Section 7.3(a).

¹⁵ *.pro Registry Agreement, Appendix G* (April 23, 2004), Sections 1 and 2. The .pro registry also has price caps on certain additional services. For instance, it can charge up to \$49 for an initial registration or a renewal of the second level redirect registration service, allowing a company that registers a third-level .pro name to redirect to a second level .pro name.

¹⁶ See, for example, *.org Registry Agreement* (December 8, 2006), Section 7.3(a). ("The same Service Fee shall be charged to all ICANN-accredited registrars for new and renewal domain name registrations.") See also *.info Registry Agreement* (December 8, 2006), Section 7.3(a); *biz Registry Agreement* (December 8, 2006), Section 7.3(a); *.name Registry Agreement* (August 15, 2007), Section 7.3(a); *.com Registry Agreement* (March 1, 2006), Section 7.3(e).

¹⁷ *Id.* (Volume discounts and marketing support and incentive programs may be made if the same opportunities to qualify for those discounts and marketing support and incentive programs are available to all ICANN-accredited registrars.)

Figure 1: Un-sponsored gTLD Price Caps and Current Maximum Fees as of July 2008

TLD / Registry Operator	2007 Cap	2007 Max. Price	Effective Date of 2007 Increase	2007 % Increase	2008 Cap	2008 Max. Price	Effective Date of 2008 Increase	2008 % Increase	Annual % Increase Allowed
.COM / VeriSign	\$6.42	\$6.42	10/15/2007	7.0%	\$6.87	\$6.86	10/1/2008	6.9%	7%
.NET / VeriSign	\$3.85	\$3.85	10/15/2007	10.0%	\$4.24	\$4.23	10/1/2008	9.9%	10%
.ORG / PIR	\$6.60	\$6.15	10/18/2007	2.5%	\$6.77	\$6.75	11/9/2008	9.8%	10%
.INFO / Afiliis	\$6.60	\$6.15	10/15/2007	2.5%	\$6.77	\$6.75	11/1/2008	9.8%	10%
.BIZ / NeuStar	\$6.60	\$6.42	10/19/2007	7.0%	\$7.06	\$6.42	N/A	0.0%	10%
.NAME / Global Name Registry	\$6.00	\$6.00	N/A	N/A	\$6.60	N/A	N/A	N/A	10%
.PRO / RegistryPro	\$6.50	\$6.50	N/A	N/A	\$6.50	\$6.50	N/A	N/A	See Note (2) below.

Sources: Registry Agreements and registry correspondence with ICANN.

Notes:

(1) Unless otherwise specified, prices apply to one-year registrations and renewals of second-level domain names. Prices are maximum prices. Registries may offer volume discounts, meaning that per-unit prices actually paid by registrars may be lower than those indicated here.

(2) 2008 prices are announced prices that have not yet been implemented. Registry operators must notify ICANN of fee increases at least 6 months prior to the effective date of the increase. Thus, price changes planned for October 2008 were announced in April 2008. The exception is .PRO for which prices may only be adjusted subject to an amendment to the registry agreement.

(3) Prices and price caps do not include ICANN transaction fees, which are set annually as part of ICANN's budget process.

(4) The .PRO price cap indicated above applies to second-level registrations and renewals. The price cap for third-level registrations and renewals is \$6.00.

(5) Annual % increase allowed is per Registry Agreement.

2.1.2. Sponsored gTLDs

ICANN defines a sponsored gTLD as follows:

A sponsored gTLD (sometimes called an sTLD) is a specialized gTLD that has a sponsor representing a specific community that is served by the gTLD. The sponsor thus carries out delegated policy-formulation responsibilities over many matters concerning the gTLD.¹⁸

There are no maximum price restrictions in ICANN's agreements with the sponsoring organizations for the gTLDs .aero, .asia, .cat, .coop, .jobs, .mobi, .museum, .tel, and .travel. Registration fees also appear to be higher for these domains than for the un-sponsored gTLDs. For instance, the registration fee for .aero is currently \$30.¹⁹ The .jobs website

¹⁸ ICANN, "About gTLDs," available at <http://www.icann.org/en/registries/about.htm>, accessed August 14, 2008.

¹⁹ <http://www.nic.aero/registrars/faq/general> (accessed on June 18, 2008).

states that a .jobs domain name costs approximately \$135.²⁰ The .coop registry charges fees based on the length of registration. They range from \$70 for a one year registration to \$52 per year for a 10-year registration.²¹ MuseDoma, the registry for .museum, currently charges approximately \$100 for a domain name registration.²² One important reason for the higher registration fees in sponsored gTLDs is the lower registration volumes in these TLDs. Since registry operation is associated with scale economies, lower registration volumes imply higher per-unit average costs, and perhaps also marginal costs, compared to larger TLD operators.

2.2. OWNERSHIP SEPARATION

Most of ICANN's current registry and sponsorship agreements prohibit the registry from also acting as a registrar in the same TLD.²³ Section 7.1(b) from the .com registry agreement is typical:

*Registry Operator shall not act as a registrar with respect to the TLD. This shall not preclude Registry Operator from registering names within the TLD to itself through a request made to an ICANN-accredited registrar.*²⁴

In addition, most of ICANN's current registry and sponsorship agreements preclude the registry from owning or acquiring more than 15% of an ICANN-accredited registrar.²⁵ Again, section 7.1(c) from the .com registry agreement is typical, stating that the registry operator:

²⁰ <http://www.goto.jobs/faq.asp> (accessed June 18, 2008).

²¹ *coopTLD Registrar Accreditation Agreement*, Section 3.11. See <http://www.nic.coop/downloads/registrars/RegistrarAccred.pdf> (accessed June 18, 2008).

²² <http://about.museum/register/faq.html> (accessed June 18, 2008). The .museum registry agreement allows MuseDoma to directly manage up to 5,000 domain names. We understand that the registry sometimes provides .museum registrations "for free" as part of bundle of membership services. See .museum Registry Agreement, November 3, 2007, available at <http://www.icann.org/en/tlds/agreements/museum/agreement-03nov07.htm>, accessed August 14, 2008.

²³ The sponsorship agreement with .aero appears to be an exception. See .aero TLD Sponsorship Agreement, November 5, 2004, available at <http://www.icann.org/tlds/agreements/sponsored/sponsorship-agmt-05nov04.htm>, accessed July 21, 2008.

²⁴ See .COM Registry Agreement, March 1, 2006, Section 7.1 (b), available at <http://www.icann.org/tlds/agreements/verisign/registry-agmt-com-01mar06.htm>, accessed March 13, 2008. Language in the current agreements for .info, .museum, and .asia varies from this standard. See for example, .info Registry Agreement, December 8, 2006, Section 7.1 (b), available at <http://www.icann.org/en/tlds/agreements/info/registry-agmt-08dec06.htm>, accessed August 7, 2008.

²⁵ The sponsorship agreement with .aero again appears to be an exception, as does the registry agreement with .pro, which does not contain language comparable to section 7.1(c) of the .com agreement.

*shall not acquire, directly or indirectly, control of, or a greater than 15 percent ownership interest in, any ICANN-accredited registrar.*²⁶

The sponsorship agreements for .coop, .asia, .mobi, and .tel leave some room for exceptions. The agreements for .coop, .mobi, and .tel state: “Registry Operator shall not acquire, directly or indirectly, control of, or a greater than fifteen percent ownership interest in, any ICANN-accredited registrar, without ICANN's prior approval in writing, which approval shall not be unreasonably withheld.”²⁷ The agreement for .asia states: “Registry Operator shall not acquire, directly or indirectly, control of, or a greater than fifteen percent ownership interest in, any ICANN-accredited registrar without ICANN's prior consent in writing.”²⁸

In addition to these provisions, current gTLD registry agreements also require the registry to provide “nondiscriminatory access” to the Shared Registration System (SRS) for all registrars, including software, technical support, dispute resolution, and access to registration data.²⁹

2.2.1. Interpretation of the Ownership Separation Requirement

In practice, some of the smaller registries continue to have close relationships with a single registrar. For instance, the .coop registry is operated by Mid-Counties which also serves as its primary registrar.³⁰ The .pro registry is now owned by Hostway, a registrar.³¹ CORE, an association of registrars, operates the .museum and .cat registries.³²

²⁶ See .com Registry Agreement, Section 7.1 (c), available at <http://www.icann.org/tlds/agreements/verisign/registry-agmt-com-01mar06.htm>, accessed March 3, 2008. We note that, unlike section 7.1(b), section 7.1(c) is not limited to registrars operating in the .com TLD.

²⁷ See .coop Registry Agreement, Section 7.1(c), available at <http://www.icann.org/tlds/agreements/coop/coop-agmt-01jul07.htm>

²⁸ See .asia Registry Agreement, Section 7.1(c), available at <http://www.icann.org/tlds/agreements/asia/asia-agreement-06dec06.htm>

²⁹ See for example, .com Registry Agreement, March 1, 2006, Section 7.1, available at <http://www.icann.org/tlds/agreements/verisign/registry-agmt-com-01mar06.htm>, accessed March 25, 2008.

³⁰ When it was first organized, .coop had a similar relationship with the registrar Poptel. See Summit Strategies International, “Evaluation of the New gTLDs: Policy and Legal Issues,” July 10, 2004, pp. 114 – 115, <http://www.icann.org/tlds/new-gtld-eval-31aug04.pdf>, accessed on June 17, 2008.

³¹ Hostway, “Hostway to Acquire .PRO Registry,” February 12, 2004, <http://beta.hostway.com/press-releases/2004/0212.html>, accessed on September 5, 2008.

³² Summit Strategies International, “Evaluation of the New gTLDs: Policy and Legal Issues,” July 10, 2004, pp. 114 – 115, <http://www.icann.org/tlds/new-gtld-eval-31aug04.pdf>, accessed on June 17, 2008.

The current restriction on registry ownership of registrars does not appear to preclude registries from owning resellers that purchase domain names at wholesale from accredited registrars. Notably, VeriSign previously owned a digital brand management entity, DBMS, which acted as a reseller for Tucows, a large registrar.³³ Although we are not aware of any other examples of such relationships, registry ownership of resellers represents a potential loophole in ICANN's registry agreement terms that could have unintended effects. For example, a registry that owns a reseller may have an economic incentive to discriminate in favor of the registrar that supplies its affiliated reseller by providing that registrar with better access to released names.

3. HISTORY OF ICANN'S APPROACH TOWARD REGISTRAR ACCESS TO REGISTRY SERVICES

The history of structural separation at ICANN is closely connected with the negotiations between ICANN and the organizations that operate gTLD registries. Initially, the only registry operator working with ICANN was Network Solutions, Inc. ("NSI"), which had been selected by the National Science Foundation to operate .com, .net and .org in 1993.³⁴ The registry agreement with NSI for .com, .net, and .org was renewed by ICANN in November 1999.³⁵ During the period 1993 – 1999, NSI acted as both registry and registrar for these TLDs. NSI was then acquired by VeriSign in March 2000,³⁶ and VeriSign subsequently divested 85% of its registrar business to a private equity firm in October 2003.³⁷ During the period from 1999 – 2005, ICANN's policies governing the relationship between the registry and registrar functions evolved, as several new gTLDs, with new registry operators, were launched, and

³³ See <https://dbm.verisign.com/dbms-portal/welcome.dbm.jsessionid=7bqQHZfPdrPdnbH5Ln6flkSz8cHvK9Sh2BkvQTkgGr2ntXK22CJ3I-1705014654>, accessed March 13, 2008. VeriSign sold DBMS to the registrar Melbourne IT in April 2008. See Melbourne IT, "Melbourne IT to Acquire VeriSign's Digital Brand Management Business for US\$50M," April 30, 2008, available at <http://corporate.melbourneit.com.au/news/newsfile.php?docid=269>, accessed August 8, 2008.

³⁴ ICANN, "Cooperative Agreement between N.S.I. and US Government," Article 3, <http://www.icann.org/nsi/coopagmt-01jan93.htm>, accessed on June 10, 2008. NSI seems to have held the contract to run the DISA NIC registration process. See Section P of their proposal to the NSF, "Transition Plan for Registration Services," http://web.archive.org/web/20010314213207/www.networksolutions.com/en_US/legal/internic/nsf-solicitation/sectionP.html, accessed on June 10, 2008.

³⁵ ICANN, "ICANN-NSI Registry Agreement," November 10, 1999, <http://www.icann.org/nsi/nsi-registry-agreement-appf-04nov99.htm>, accessed on June 18, 2008.

³⁶ CNET news.com, "VeriSign Buys Network Solutions in \$21 Billion Deal," March 7, 2000, http://news.cnet.com/VeriSign-buys-Network-Solutions-in-21-billion-deal/2100-1023_3-237656.html, accessed on June 18, 2008.

³⁷ CNET news.com, "VeriSign Sells off Domain Registrar," October 16, 2003, <http://news.cnet.com/2100-1025-5092316.html>, accessed on June 18, 2008.

the ICANN-VeriSign agreement was re-negotiated. Meanwhile, caps on the prices paid by registrars for VeriSign's registry services have remained virtually unchanged since their introduction in the 1999 NSI agreement. The introduction of multiple new gTLDs with diverse policies and target audiences has introduced considerable variation in registry pricing across gTLDs. In this section, we summarize the history of these registry agreements and explain how the agreements have evolved over time from full integration of the registry and registrar functions to full ownership separation of those functions. We also examine the evolution of price cap requirements over time.

3.1. NOVEMBER 1999 NSI REGISTRY AGREEMENT

Under the November 1999 agreement between ICANN and NSI, NSI committed to create a multiple registrar system (known as the "Shared Registration System," SRS) and to provide independent registrars equal access to that system. The agreement stipulated that "NSI will ensure [...] that the revenues and assets of the registry are not utilized to advantage NSI's registrar activities to the detriment of other registrars."³⁸ NSI also agreed to create an operational firewall between its registry business and its registrar business "that prevented any information flow from its registry business to its registrar business that was not equally available to all competitive registrars."³⁹ The agreement provided that, as of January 2000, registrars would pay NSI \$6 for each domain name registration or renewal.⁴⁰ Finally, the agreement encouraged ownership separation, stating that NSI could extend the term of the agreement from four years to eight years by selling its registrar business during the first 18 months after the effective date of the agreement.⁴¹

In April 1999, the SRS began a test bed period with a group of five registrars before opening to all registrars.⁴² This period allowed NSI to resolve any technical problems found in the SRS and let ICANN refine the procedures for registrars to gain access to the SRS. By the end of 1999, 93 registrars were accredited by ICANN.⁴³

³⁸ ICANN-NSI Registry Agreement, November 10, 1999, paragraph 21(B), available at <http://www.icann.org/nsi/nsi-registry-agreement-04nov99.htm>.

³⁹ ICANN announcement, 1 March 2001, <http://www.icann.org/announcements/icann-pr01mar01-1.htm>.

⁴⁰ ICANN-NSI Registry Agreement, November 10, 1999, paragraph 20 and Appendix B, available at <http://www.icann.org/nsi/nsi-registry-agreement-04nov99.htm>.

⁴¹ ICANN-NSI Registry Agreement, November 10, 1999, paragraph 23, available at <http://www.icann.org/nsi/nsi-registry-agreement-04nov99.htm>.

⁴² ICANN, "Registrar Accreditation: History of the SRS," <http://www.icann.org/registrars/accreditation-history.htm>, accessed on June 20, 2008.

⁴³ ICANN, "ICANN Accredits Ten New Domain Name Registrars," December 21, 1999, <http://www.icann.org/en/announcements/icann-pr21dec99.htm>, accessed on October 23, 2008.

3.2. INTRODUCTION OF NEW gTLDs IN NOVEMBER 2000

In May 1999, ICANN charged the Domain Name Supporting Organization (DNSO) with studying whether and how to increase the number of gTLDs.⁴⁴ Preliminary position papers were published by Working Group C of the DNSO⁴⁵ in November 1999.⁴⁶ One question addressed in the position papers was whether or not there should be a requirement that registries be shared – that is, whether more than one registrar should have access to the registry, with all registrars on equal terms. The shared registry requirement was generally supported, although one or two papers argued there could be legitimate rationales for an integrated registry-registrar, where a single registrar would have access to the registry.⁴⁷ One paper stated:

For example, a TLD devoted to North American aboriginals, as was proposed to WG-C, may want to ensure that specific tribal names are only assigned to legitimate members of that tribe. Or a privacy-enhanced gTLD, which was also proposed in comments to WG-C, may want to dictate certain technical parameters and protect the integrity of its data. Either requirement might best be implemented by integrating the registry-registrar function. This should be an option available to applicants.⁴⁸

In March 2000, the DNSO issued its final report, recommending that a limited number of additional gTLDs be authorized.⁴⁹ In August 2000, ICANN issued a request for proposals for companies interested in operating the new gTLDs.⁵⁰ In November 2000, it published an evaluation of the proposals it had received.⁵¹ Evaluation criteria included “The enhancement

⁴⁴ IANA, “IANA Report on the Establishment of the .museum Top Level Domain,” October 30, 2001, <http://www.iana.org/reports/2001/museum-report-30oct01.html>, accessed on June 16, 2008.

⁴⁵ Working Group C of the DNSO took on the responsibility to study the introduction of new gTLDs. IANA, “IANA Report on the Establishment of the .museum Top Level Domain,” October 30, 2001, <http://www.iana.org/reports/2001/museum-report-30oct01.html>, accessed on June 16, 2008.

⁴⁶ DNSO, “Interim Report of Working Group C of the Domain Name Supporting Organization,” October 23, 1999, <http://www.dnsso.org/dnsso/notes/19991023.NCwgc-report.html>, accessed on June 16, 2008.

⁴⁷ DNSO, “Interim Report of Working Group C of the Domain Name Supporting Organization,” October 23, 1999, <http://www.dnsso.org/dnsso/notes/19991023.NCwgc-report.html>, accessed on June 16, 2008.

⁴⁸ DNSO, “Interim Report of Working Group C of the Domain Name Supporting Organization,” October 23, 1999, at Position Paper B, <http://www.dnsso.org/dnsso/notes/19991023.NCwgc-report.html>, accessed on June 16, 2008.

⁴⁹ ICANN, “Report (Part One) of Working Group C (New gTLDs) Presented to Names Council,” March 21, 2000, <http://www.icann.org/dnsso/wgc-report-21mar00.htm>, accessed on June 16, 2008.

⁵⁰ IANA, “IANA Report on the Establishment of the .museum Top Level Domain,” October 30, 2001, <http://www.iana.org/reports/2001/museum-report-30oct01.html>, accessed on June 16, 2008.

⁵¹ ICANN, “Report on New TLD Applications,” November 9, 2000, <http://www.icann.org/tlds/report/>, accessed on June 16, 2008.

of competition for registration services.”⁵² Amongst bidders for unsponsored gTLDs, such as .biz, some envisioned shared registries and others envisioned a single integrated registry-registrar.⁵³ ICANN also reviewed proposals for what were then called ‘specialty’ gTLDs (now ‘sponsored’),⁵⁴ such as .museum. The competition criterion was generally not applied in the evaluation of the specialty applications. ICANN argued that “[their] limited size and scope limits their potential impact on Internet stability and competition.”⁵⁵ ICANN’s evaluation documents indicate, however, that consideration of registrar competition was appropriate for those specialty gTLDs that had “both a commercial function and a large group of targeted users.”⁵⁶

Each of the four bidders selected to operate a general purpose TLD in November 2000⁵⁷ had proposed to provide equal access to the registry to all registrars.⁵⁸ Importantly, the unsponsored registry agreements for .info, .biz, .name, and .pro (finalized in 2001 and 2002) required legal, but not ownership, separation of registry and registrar functions. The relevant provision of these agreements was subsection 3.5, “Fair Treatment of ICANN-Accredited Registrars,” which states:

Registry Operator shall not act as a registrar with respect to the Registry TLD. This shall not preclude Registry Operator from registering names within the domain of the Registry TLD in compliance with Subsection 3.6. This also shall not preclude an affiliate of Registry Operator from acting as a registrar with respect to the Registry TLD, provided that Registry Operator

⁵² ICANN, “Report on TLD Applications: Application of the August 15 Criteria to Each Category or Group,” November 9, 2000, <http://www.icann.org/tlds/report/report-iiib1a-09nov00.htm>, accessed on June 16, 2008.

⁵³ ICANN, “Report on TLD Applications: Application of the August 15 Criteria to Each Category or Group,” November 9, 2000, <http://www.icann.org/tlds/report/report-iiib1a-09nov00.htm>, accessed on June 16, 2008.

⁵⁴ Also called limited purpose or sponsored TLDs.

⁵⁵ ICANN, “Report on TLD Applications,” November 9, 2000, available at <http://www.icann.org/tlds/report/report-iiib2-09nov00.htm>, accessed July 16, 2008.

⁵⁶ ICANN, “Report on TLD Applications: Application of the August 15 Criteria to Each Category or Group,” November 9, 2000, <http://www.icann.org/tlds/report/report-iiib2-09nov00.htm>, accessed on June 16, 2008.

⁵⁷ The general purpose registries were awarded to JVTeam (.biz), Afiliis (.info), Global Name Registry (.name), and RegistryPro (.pro). See ICANN, “Second Annual Meeting and Organizational Meeting of the ICANN Board,” November 16, 2000, <http://www.icann.org/minutes/prelim-report-16nov00.htm#00.89>, accessed on June 16, 2008.

⁵⁸ ICANN, “Report on TLD Applications: Application of the August 15 Criteria to Each Category or Group,” November 9, 2000, <http://www.icann.org/tlds/report/report-iiib1a-09nov00.htm>, accessed on June 16, 2008.

*complies with the provisions of Subsections 3.5.4 [requiring equal access] and 3.5.5 [barring cross subsidies].*⁵⁹

Each of the three specialty gTLDs selected in the 2000 round⁶⁰ proposed to limit registrations to specific registrants.⁶¹ Registrars are not discussed explicitly in the proposal evaluations for the specialty gTLDs, but the subsequent agreements with ICANN state that the sponsor should select ICANN-accredited registrars to operate in the TLD but could, subject to ICANN approval, use other means of registering names during a “start-up” period lasting up to six months.⁶²

ICANN emphasized that “the goals and legal considerations for unsponsored TLD agreements are considerably different than those for sponsored TLDs.”⁶³ While the four unsponsored agreements finalized in 2001 defined a set of “registry services” and specified the maximum prices that registries could charge registrars for each service, no such price

⁵⁹ ICANN, “Proposed Unsponsored TLD Agreement,” Section 3.5.3, February 26, 2001, available at <http://www.icann.org/tlds/agreements/unsponsored/registry-agmt-26feb01.htm>, accessed July 17, 2008.

When Public Interest Registry took over the .org registry in 2003, its new agreement also contained this same provision. See ICANN, “Proposed .org Registry Agreement,” August 19, 2003, section 3.5.3, <http://www.icann.org/tlds/agreements/org/registry-agmt-19aug03.htm>, accessed on June 16, 2008.

⁶⁰ Specialty TLDs were awarded to Museum Domain Management Association (.museum), Société Internationale de Télécommunications Aéronautiques (.aero), and Cooperative League of the USA dba National Cooperative Business Association (.coop). See ICANN, “Second Annual Meeting and Organizational Meeting of the ICANN Board,” November 16, 2000, <http://www.icann.org/minutes/prelim-report-16nov00.htm#00.89>, accessed on June 16, 2008.

⁶¹ ICANN, “Report on TLD Applications: Application of the August 15 Criteria to Each Category or Group,” November 9, 2000, <http://www.icann.org/tlds/report/report-iiib2-09nov00.htm>, accessed on June 16, 2008.

⁶² Specifically, the agreement states: “The Sponsor shall ensure that all Registry Services are provided through one or more ICANN-Accredited Registrars, except to the extent that (a) Attachment 2 delegates to Sponsor the authority to provide or to arrange for the provision of [Eligibility and Name Selection] ENS Services by means other than ICANN-Accredited Registrars or (b) the start-up plan in Attachment 8 provides for a different means of providing Registry Services. Attachment 8 states “Sponsor may, during the launch of a specific industry sector, elect an alternate method of registering domain names other than utilizing authorized ICANN-Accredited Registrars if such alternate registration method (1) lasts no more than six months after the launch of registration for the specific industry sector, with registrations during this period being for periods no longer than two years, (2) provides for the fair and random transfer of all Registered Names within the sector to authorized ICANN-Accredited Registrars within six months from the date of registration, (3) is determined by Sponsor, after consultation with the relevant sub-community, to be in the best interest of the specific industry sector, and (4) is expressly consented to by ICANN (such consent not to be unreasonably withheld).”, ICANN, “.aero TLD Sponsorship Agreement,” Effective December 17, 2001 and amended November 5, 2004, <http://www.icann.org/tlds/agreements/sponsored/sponsorship-agmt-05nov04.htm>, accessed on June 17, 2008.

⁶³ ICANN, “Melbourne Meeting Topic: New TLD Agreements,” February 26, 2001, available at <http://www.icann.org/meetings/melbourne/new-tld-agreements-topic.htm>, accessed July 16, 2008.

caps were imposed on the sponsored gTLDs.⁶⁴ Generally, the sponsored gTLD agreements delegated authority to the sponsoring organization for overseeing prices and other terms offered by the registry operator to accredited registrars. The .aero agreement is specific in stating that prices charged by the registry operator should be determined based on the following principles:

“[...] any revenues received by Registry Operator or any affiliated entity in connection with Registry Services are used solely to defray the cost of providing Registry Services or otherwise operating the Sponsored TLD, with allowance for accumulation of reasonable operating reserves. To ensure that all revenues received by the Registry Operator are used solely for the benefit of the community, the Sponsor has the obligation to review and authorize, in a manner consistent with Subsection 4.2, the prices charged by the Registry Operator. In addition, the Sponsor shall not permit the Registry Operator to charge fees for renewal of registrations of Registered Names that exceed the fees then charged for initial registrations of Registered Names.”⁶⁵

3.3. MARCH 2001 VERISIGN REGISTRY AGREEMENT

During early 2001 ICANN and VeriSign re-negotiated the agreements governing the .com, .net, and .org registries. On March 1, 2001, ICANN announced that it had reached an agreement with VeriSign that did not require ownership separation for VeriSign’s registry and registrar businesses but did require “structural separation.”⁶⁶ According to ICANN,

The rationale is that ownership separation is no longer necessary or useful in promoting competition, so long as the structural separation is effective in accomplishing the basic purpose. A relevant fact in this regard is that the registry agreement that has been developed for other global TLDs requires only structural, not ownership, separation of registrar functions from registry functions. This reflects ICANN’s belief that there is little if any additional competitive value under today’s market circumstances in forbidding the registry operator from

⁶⁴ For an overview of the unsponsored TLD agreements negotiated in 2001, see ICANN, “Melbourne Meeting Topic: New TLD Agreements,” February 26, 2001, available at <http://www.icann.org/meetings/melbourne/new-tld-agreements-topic.htm>, accessed July 16, 2008. The list of registry services defined in current unsponsored registry agreements varies based on each registry’s service portfolio, although all agreements specify price caps for domain name registrations and renewals. See <http://www.icann.org/registries/agreements.htm> for details.

⁶⁵ ICANN, “.aero TLD Sponsorship Agreement,” Attachment 2, ¶ 11, November 20, 2001, available at <http://www.icann.org/tlds/agreements/aero/sponsorship-agmt-att2-20nov01.htm>, accessed July 17, 2008.

⁶⁶ ICANN announcement, 1 March 2001, <http://www.icann.org/announcements/icann-pr01mar01-1.htm> (accessed 5 November 2007).

also being a registrar, so long as it is done in such a way so as not to discriminate against other competitive registrars.⁶⁷

Thus the terms of the VeriSign agreement, with respect to the relationship between registry and registrars, were modified to better correspond to the terms of the registry agreements for the general purpose TLDs approved in November 2000. ICANN's rationale for the proposed revisions cited the rapid increase in registrar competition since the 1999 agreement, resulting in 180 accredited registrars and registration prices falling to under \$15 from a previous level of \$70 for a two-year registration. VeriSign's share of total registrations had declined to approximately 50%.⁶⁸ ICANN also noted that

ICANN has received no substantial complaints about discriminatory access to the registries operated by VeriSign, and there is no indication or evidence that has come to the attention of ICANN that VeriSign has not fully and effectively erected a complete firewall that prevents any discriminatory information flow to its registrar business.⁶⁹

The new proposed terms were put out for public comment. In a letter to VeriSign summarizing the public response, dated March 31, 2001, ICANN stated:

Obviously, the common ownership of registries and registrars is a matter of concern to some in the community, particularly where the registries and registrars enjoy significant market shares. We believe that the combination of strict firewall protections, structural separation (operation of the registrar business through a separate subsidiary), and the potential that repeated or uncorrected violations of these requirements could result in the termination of the right to continue to operate the registries in question sufficiently reduce the risk of the competitive problems that have been raised. Nevertheless, some might argue that termination is such an extreme sanction that ICANN would be reluctant to employ it. Thus, we have agreed that there should be a separate and additional set of specific monetary sanctions, up to some reasonable cap, for violations of these separation requirements. Obviously, the amount of the financial sanction should be proportional to the violation and other relevant facts, including the number of prior violations (if any).⁷⁰

⁶⁷ ICANN announcement, 1 March 2001, <http://www.icann.org/announcements/icann-pr01mar01-1.htm> (accessed 5 November 2007).

⁶⁸ ICANN, "Melbourne Meeting Topic: Proposed Revisions to VeriSign Agreements," March 1, 2001, available at <http://www.icann.org/meetings/melbourne/proposed-verisign-agreements-topic.htm>, accessed July 16, 2008.

⁶⁹ ICANN, "Melbourne Meeting Topic: Proposed Revisions to VeriSign Agreements," March 1, 2001, available at <http://www.icann.org/meetings/melbourne/proposed-verisign-agreements-topic.htm>, accessed July 16, 2008.

⁷⁰ ICANN, letter from Lynn to Sclavos, March 31, 2001, <http://www.icann.org/correspondence/lynn-letter-to-sclavos-31mar01.htm>, accessed on June 17, 2008.

A revised .com registry agreement requiring legal, but not ownership, separation between the .com registry and registrars was signed in May 2001.⁷¹ Subsection 23(C) states:

Registry Operator shall not act as a registrar with respect to the Registry TLD. ...This also shall not preclude an affiliate (including wholly-owned subsidiaries) of Registry Operator from acting as a registrar with respect to the Registry TLD, provided that Registry Operator complies with the provisions of Subsection 23(E).

3.4. INTRODUCTION OF NEW gTLDs IN MARCH 2005

In 2002 and 2003, VeriSign faced multiple lawsuits and an FTC investigation, all stemming from allegations that its registrar, Network Solutions, Inc. (“NSI”), had mailed notices of impending domain name expirations to customers of other .com registrars.⁷² On October 16, 2003, just 3 weeks after the FTC investigation settled, VeriSign announced that it had sold its registrar business – renamed Network Solutions in January 2003 – to a private equity firm, retaining a 15% ownership stake in Network Solutions.⁷³

On October 31, 2003, ICANN’s board issued a resolution instructing ICANN’s management to embark on the development of a strategy and “streamlined” process for introducing new gTLDs.⁷⁴ In December 2003, ICANN launched the application process for new sponsored TLDs.⁷⁵

In December 2004, ICANN launched the Request for Proposals (“RFP”) process for .net.⁷⁶ Similar to the RFP for new sponsored gTLDs, the .net RFP explained that bidders should support enhanced competition in registration services but did not address the legal and

⁷¹ ICANN, “.com Registry Agreement,” May 25, 2001, <http://www.icann.org/tlds/agreements/verisign/registry-agmt-com-25may01.htm>, accessed on June 16, 2008. The agreement includes an Appendix Y listing various penalties for violations of the agreement. ICANN, “Revised VeriSign .com Registry Agreement, Appendix Y,” April 16, 2001, <http://www.icann.org/tlds/agreements/verisign/registry-agmt-appy-com-16apr01.htm>, accessed on June 17, 2008.

⁷² New York Times, “VeriSign’s Marketing is Subject of F.T.C. Investigation,” August 7, 2002, <http://query.nytimes.com/gst/fullpage.html?res=9C07E6DD1E3BF934A3575BC0A9649C8B63>, accessed on June 17, 2008.

⁷³ Verisign, Inc., “Form 10-Q,” September 30, 2003, p. 19, <http://sec.gov/Archives/edgar/data/1014473/000119312503081854/d10q.htm>, accessed on June 16, 2008.

⁷⁴ ICANN, “ICANN Board Resolutions in Carthage, Tunisia,” October 31, 2003, available at <http://www.icann.org/en/announcements/advisory-31oct03.htm>, accessed August 14, 2008.

⁷⁵ ICANN, “New sTLD Application,” December 15, 2003, <http://www.icann.org/tlds/new-stld-rfp/new-stld-application-part-15dec03.htm>, accessed on June 17, 2008.

⁷⁶ ICANN, “.Net Request for Proposals,” December 10, 2004, <http://www.icann.org/tlds/dotnet-reassignment/net-rfp-final-10dec04.pdf>, accessed on June 17, 2008.

ownership relationships between registrars and registries.⁷⁷ The evaluation of the six RFPs received for .net rated the criterion pertaining to registry-registrar relations as a “medium priority criterion,” behind technical competence and registry operations.⁷⁸

In March 2005, draft agreements for the .travel and .jobs domains were published with a provision requiring separate ownership of registries and registrars.⁷⁹ Subsection 7.1 of the final agreements for .travel and .jobs, published in May 2005, states in part:

(b) Registry Operator Shall Not Act as Own Registrar. Registry Operator shall not act as a registrar with respect to the TLD. This shall not preclude Registry Operator from registering names within the TLD to itself through a request made to an ICANN-accredited registrar.

(c) Restrictions on Acquisition of Ownership or Controlling Interest in Registrar. Registry Operator shall not acquire, directly or indirectly, control of, or a greater than fifteen percent ownership interest in, any ICANN-accredited registrar.⁸⁰

When VeriSign executed the .net registry agreement a few months later, the new agreement contained this same provision.⁸¹ Subsequent re-negotiations of the registry agreements for older TLDs (both sponsored and unsponsored) have also contained versions of this provision,⁸² with some minor variations.⁸³

⁷⁷ ICANN, “New sTLD Application,” December 15, 2003, <http://www.icann.org/tlds/new-stld-rfp/new-stld-application-part-15dec03.htm>, accessed on June 17, 2008 and ICANN, “.Net Request for Proposals,” December 10, 2003, <http://www.icann.org/tlds/dotnet-reassignment/net-rfp-final-10dec04.pdf>, accessed on June 17, 2008.

⁷⁸ Telcordia, “ICANN .net RFP Evaluation Final Report,” March 2005, p. 56, <http://www.icann.org/tlds/dotnet-reassignment/net-rfp-finalreport-28mar05.pdf>, accessed on June 17, 2008.

⁷⁹ ICANN, “Proposed .travel Registry Agreement,” March 24, 2005, <http://www.icann.com/tlds/agreements/travel/proposed-travel-agmt-24mar05.pdf>, accessed on June 17, 2008.

⁸⁰ ICANN, “.travel Registry Agreement,” May 5, 2005, <http://www.icann.com/tlds/agreements/travel/travel-agreement-12apr06.htm>, accessed on June 17, 2008 and ICANN, “.jobs Registry Agreement,” May 5, 2005, <http://www.icann.org/tlds/agreements/jobs/jobs-agreement.htm>, accessed on June 16, 2008.

⁸¹ ICANN, “.net Registry Agreement, July 1, 2005, <http://www.icann.org/tlds/agreements/net/net-registry-agreement-01jul05.html>, accessed on June 18, 2008.

⁸² ICANN, “.biz Registry Agreement,” December 8, 2006, <http://www.icann.org/tlds/agreements/biz/registry-agmt-08dec06.htm>; ICANN, “.name Registry Agreement,” August 15, 2007, <http://www.icann.org/registries/agreements.htm>; ICANN, “.ORG Registry Agreement,” December 8, 2006, <http://www.icann.org/tlds/agreements/org/registry-agmt-08dec06.htm>; ICANN, “.com Registry Agreement,” March 1, 2006, <http://www.icann.org/tlds/agreements/verisign/registry-agmt-com-01mar06.htm>

As with previous sponsored gTLD agreements, the new agreements arising out of the 2003 application round did not impose any price caps on registry services. Price caps for unsponsored gTLDs have remained in place (subject to gradual adjustments) since their inception in the 1999 NSI agreement.⁸⁴

4. USAGE OF GTLD REGISTRY AND REGISTRAR FUNCTIONS TODAY

Figure 2 shows registrar shares of registered gTLD domain names as of February 2008. The largest registrar, GoDaddy, accounts for 27% of gTLD domain names, followed by eNom with 9%, Network Solutions with 7%, and Tucows with 6%.⁸⁵ The ten largest registrars account for 66% of gTLD domain names, the remaining share being split among 862 accredited registrars.⁸⁶ On the whole, the gTLD registrar industry appears unconcentrated, with a Herfindahl-Hirschman Index of 952.⁸⁷

⁸³ For instance, as noted in footnote 26 above, the agreements for .asia, .coop, .mobi, and .tel modify Section 7.1(c) to allow a greater ownership stake in a registrar, subject to ICANN approval. The agreements for .info, .museum, and .asia all modify section 7.1(b) to reserve some names for direct registration by the registry operator. See for example, “.museum Registry Agreement,” November 3, 2007, Section 7.1 (b), available at <http://www.icann.org/tlds/agreements/museum/agreement-03nov07.htm>; “.coop Sponsored TLD Agreement, July 1, 2007, Section 7.1(c), available at <http://www.icann.org/tlds/agreements/coop/coop-agmt-01jul07.htm>.

⁸⁴ For example, the current .ORG registry agreement allows for a 10% annual increase in the Maximum Service fee, while the .COM registry agreement grants an annual increase of 7%. See <http://www.icann.org/registries/agreements.htm> for an overview of current registry agreements for sponsored and unsponsored gTLDs.

⁸⁵ GoDaddy's share includes domain names registered with its subsidiary, Wild West Domains.

⁸⁶ As of October 2008, the number of registrars had increased to more than 900.

⁸⁷ Note that (with the exception of GoDaddy's ownership of Wild West Domains) the reported shares do not account for cases where one registrar owns multiple registrar accreditations. ICANN estimated in 2007 that there were 315 distinct registrars and affiliated registrar groups, of which 286 were individual registrars not affiliated with a group and 29 were groups of affiliated registrars.

Figure 2: Registrar Share of Total Registered gTLD Domain Names as of February 2008

Registrar	Domain Names	Share of Total Domain Names
Go Daddy Software	26,658,225	26.7%
eNom, Inc.	8,461,634	8.5%
Network Solutions, LLC	6,783,725	6.8%
Tucows, Inc.	6,341,940	6.4%
MelbourneIT Ltd.	5,050,568	5.1%
Schlund+Partner AG	4,179,755	4.2%
Moniker Online Services	2,711,341	2.7%
Register.com, Inc.	2,627,451	2.6%
Direct Information Pvt Ltd.	1,849,378	1.9%
Key Systems GmbH	1,456,541	1.5%
Dotster, Inc.	1,244,107	1.2%
Intercosmos Media Group	1,209,997	1.2%
Fabulous.com Pty Ltd.	1,208,639	1.2%
OnlineNIC, Inc.	1,203,273	1.2%
Domain Discover	1,027,497	1.0%
<i>All Other</i>	<i>27,826,258</i>	<i>27.9%</i>
TOTAL	99,840,329	100.0%

Total number of registrars: 872
HHI 952

Source:

ICANN Monthly Registry Reports, February 2008.

Notes:

(1) Includes domain names registered in the COM, NET, ORG, INFO, BIZ, ASIA, JOBS, MOBI, CAT, COOP, MUSEUM, NAME, and TRAVEL top-level domains.

(2) Registrars are identified by their unique IANA IDs. Registrar ownership of multiple IANA IDs is not reflected in the data, with one exception - see note (4) below.

(3) Only registrars with at least 1.0% of registered domain names are shown separately above.

(4) GoDaddy Software includes the registrar Wild West Domains, which GoDaddy owns.

(5) Direct Information Pvt. Ltd. operates under the business name Public Domain Registry.

(6) Key Systems GmbH's registrar division is Domain Discount 24.

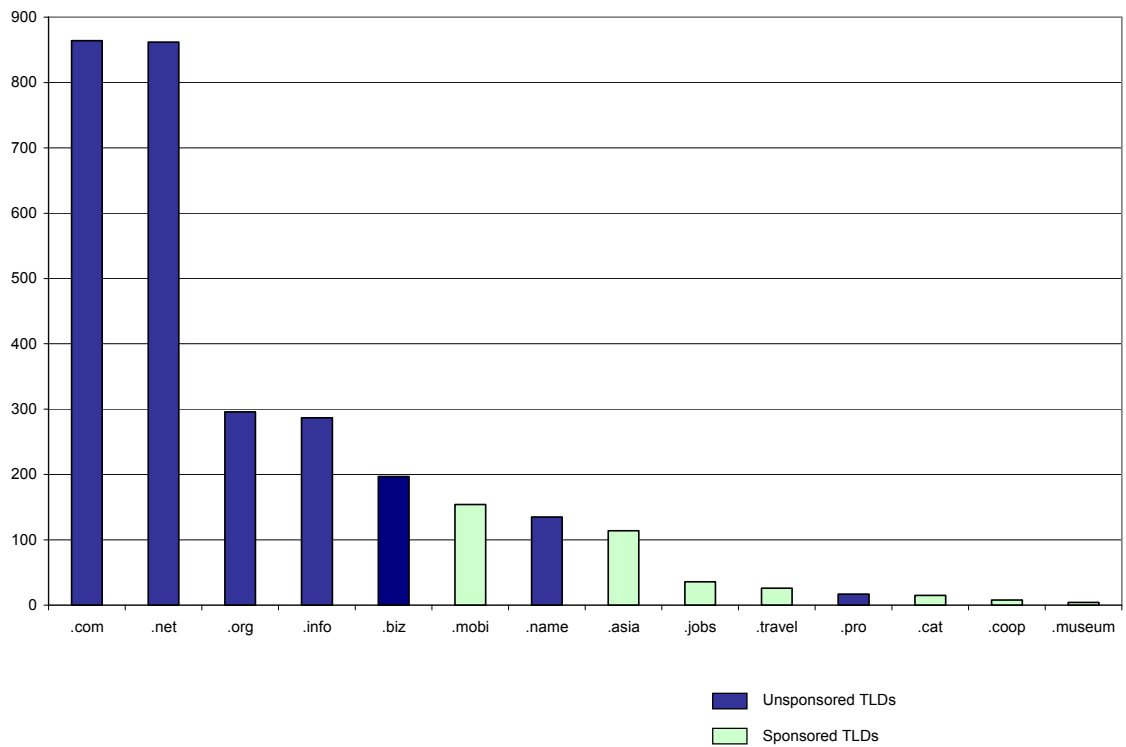
(7) The Intercosmos Media Group runs the registrar DirectNIC.

Figure 3 shows the number of operational registrars for each of the 14 gTLDs approved to date. The figure shows that there are hundreds of registrars active in several gTLDs. It also shows that, with some exceptions, there are more registrars active in the unsponsored gTLDs than in the sponsored gTLDs. There are exceptions: .pro, an unsponsored gTLD that is restricted to licensed and credentialed professionals, has very few registrars. On the other hand, .asia, a sponsored gTLD which only opened for general registration in March 2008,⁸⁸ already has more than 100 registrars. Similarly, the sponsored domain .mobi, which is

⁸⁸ ".Asia Domains," <http://www.asiaregistry.com/domains/domains-asia.html?gclid=CiWL8s2lhJQCFSaiiQodMyAgVw>, accessed on June 20, 2008.

targeting websites that will be readable on mobile devices,⁸⁹ also has more than 100 registrars. It is evident that registries targeting a narrow base of potential registrants (and hence with more stringent registration requirements) are served by considerably fewer registrars than those targeting the wider Internet community. In the extreme, the .museum and .coop sponsored registries are both served by fewer than 10 registrars. This pattern is consistent with concerns expressed by some of our interviewees that targeted TLDs have experienced difficulties in garnering interest from registrars.

Figure 3: Number of Operational Registrars, February 2008



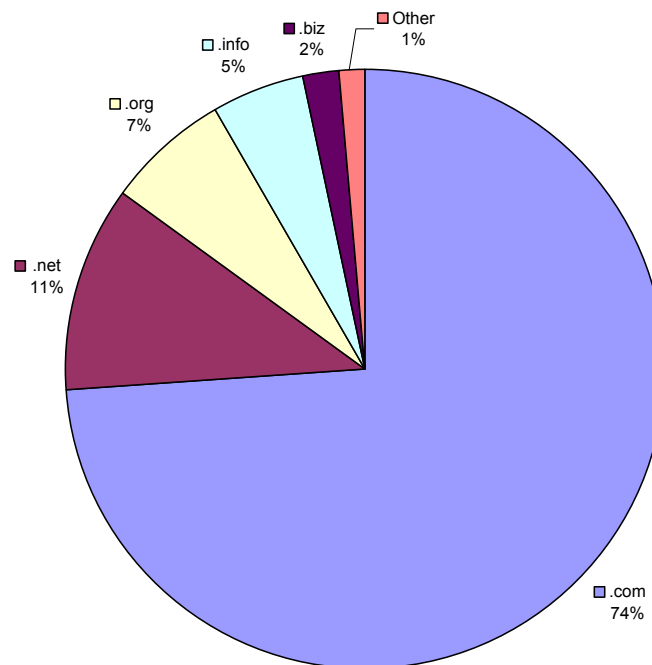
Source: ICANN Registry Operator Monthly Reports, February 2008

Figure 4 shows the distribution of second level domain names by gTLD. Nearly eight years after the launch of the first ‘new’ gTLDs, the original three gTLDs, and .com in particular, continue to dominate total registrations. Of a total of 99.8 million domain names registered

⁸⁹ “meet the .mobi domain and the company behind it, dotmobi,” <http://mtld.mobi/company>, accessed on June 20, 2008.

on gTLDs, 74% are in .com, and another 18% are in .net and .org.⁹⁰ In total, the newer domains have achieved a share of approximately 8% of domain names. .info accounts for most of the domains within the newer gTLDs, with a 5% share of total domains, and .biz and .mobi (not shown, but with nearly 1% of domains) account for most of the rest. The remaining newer gTLDs account for less than 1% of domains registered on gTLDs.

Figure 4: Percent of Domain Names by gTLD, February 2008



Source: ICANN Registry Operator Monthly Reports, February 2008

5. IMPACT OF VERTICAL SEPARATION ON THE REGISTRY AND REGISTRAR FUNCTIONS

In this section, we summarize and discuss the different views on vertical separation expressed by our 18 interviewees. We also explore the strengths and weaknesses of these viewpoints from an economic perspective.

⁹⁰ There are another 49 million domain names registered on ccTLDs. The largest ccTLDs - .de, .uk, and .cn – are comparable in size to .net and .org. .com's share of domain names on all TLDs, including ccTLDs, is 49%. (see "European Domain Names," <http://www.europeregistry.com/>, accessed on September 10, 2008 and ICANN, "Registry Operator Monthly Reports," February 2008, <http://www.icann.org/en/tlds/monthly-reports/>).

5.1. OWNERSHIP SEPARATION REDUCES THE RISK OF DISCRIMINATION

Interviewees generally agreed that there is at least a substantial risk, or the prospect of harmful perceptions, that registries that own registrars would have incentives to discriminate against unaffiliated registrar competitors.⁹¹ In addition, registrars may have little interest in serving a gTLD owned by another registrar, fearing that discrimination would leave them at a disadvantage.⁹² Discrimination could take on multiple forms. For example, registries could offer lower prices to their affiliated registrar, provide better operational support services to their registrar, or give the affiliate better access to registry systems and deleted domain names. A “thick” integrated registry would have access to information on registrants of unaffiliated registrars that it could share with its registrar.⁹³ A vertically integrated registry may also institute requirements making it difficult for competing registrars to obtain approval to provide registrations in the TLD.⁹⁴

As mentioned previously, current registry agreements with ICANN contain language that prohibits discrimination in the provision of operational access to the registry. Several interviewees emphasized the link between ownership separation and this equal access requirement, arguing that the main intent of ownership separation was to help ensure equal treatment of all registrars operating in the TLD gTLD. Consequently, if the vertical ownership separation requirement were eliminated, equal treatment would need to be more rigorously enforced.⁹⁵ Successful enforcement of (and compliance with) non-discrimination and equal access requirements would become more difficult and costly in an environment of common ownership.⁹⁶

Thus interviewees in general supported the view that ownership separation significantly reduces or eliminates the risk of discrimination against independent registrars. Even if integrated registries maintained legal and operational separation between their registrar and registry entities and ensured equal access to unaffiliated registrars, some interviewees argued that there would still be a “perception” in the registrar community that affiliated registrars were being treated more favorably.⁹⁷ If registrants shared this perception, they may prefer to register names with the registry-owned registrar (because they believe they will obtain better service), making it difficult for other registrars to compete in the gTLD. This

⁹¹ Interviews with industry executives.

⁹² Interviews with industry executives.

⁹³ Interviews with industry executives.

⁹⁴ Interviews with industry executives.

⁹⁵ Interviews with industry executives..

⁹⁶ Interviews with industry executives.

⁹⁷ Interviews with industry executives.

view presumes 1) that registrants are aware of registrars' relationships with registries, and 2) that registrants are unable to observe and compare service quality across different registrars prior to becoming customers (and hence are unable to determine whether or not equal access requirements are being properly followed). *If* these assumptions are correct, then "perception" would have an adverse effect on the ability of unaffiliated registrars to compete with an integrated registry-registrar. In this regard, we have not come across any evidence that following the introduction of registrar competition in 1999, registrants favored Network Solutions solely based on its status as an integrated registrar.

5.2. SOME PROPOSED NEW gTLD BUSINESS MODELS WOULD BE INCOMPATIBLE WITH VERTICAL SEPARATION

During the course of our interviews, it became clear that some TLD applicants are likely to propose new business models that would require the registry to also operate as a registrar.⁹⁸ For example, a corporation striving to use its brand name TLD as a sales channel would likely prefer to have complete control over what domain names are registered in the TLD and may also want to keep some registrations confidential, for example if the company is planning to launch a new product that has yet to be announced. The operator of a TLD such as ".search" could register domain names representing popular keywords such as "phone.search" and charge advertisers (in this case telecommunications providers and related businesses) to have their listings included on the websites.⁹⁹ In this business model, the registry may want to ensure that only a specific selection of domain names are registered and would likely want to be the sole registrant of domain names in the TLD in order to collect all advertising revenues. ICANN will need to critically examine the impact on innovation and competition in the domain name space if such proposals were turned down.

5.3. VERTICAL INTEGRATION COULD PROMOTE GROWTH OF NEW gTLDs

One argument in favor of registry-registrar integration is that registrars may have weak incentives to devote resources to new gTLDs, especially those targeting a narrow registrant base, leaving these TLDs with limited access to the retail channel.¹⁰⁰ To motivate the cost of servicing an additional top level domain, registrars typically require a "threshold" volume of potential registrants, and if they believe that registration volume will be limited, they may opt

⁹⁸ Interviews with industry executives.

⁹⁹ Interviews with industry executives.

¹⁰⁰ See ICANN GNSO, "Final Report – Introduction of New Generic Top-Level Domains," August 8, 2007, available at <http://gns0.icann.org/issues/new-gtlds/pdp-dec05-fr-parta-08aug07.htm>, accessed March 28, 2008. Interviews with industry executives. See also, Summit Strategies, "Evaluation of the new gTLDs: Policy and Legal Issues," July 10, 2004, p. 113, available at <http://www.icann.org/tlds/new-gtld-eval-31aug04.pdf>, accessed April 3, 2008.

not to operate in the TLD.¹⁰¹ Furthermore, sponsored TLDs such as .coop and .aero have registrant verification and compliance requirements that create additional costs for registrars. While there were over 800 registrars serving .com in February 2008 and 287 for .info, the sponsored TLDs .museum and .coop had only 4 and 8 registrars, respectively.¹⁰² The .aero registry operator reported in 2003 that “the introduction of registration restrictions [...] presents registrars with new challenge [sic] how to best offer the registration services in a top level domain with relatively complex eligibility and name restriction rules.”¹⁰³

Although we have not evaluated this argument closely, it does have some apparent weaknesses. Firstly, a small number of registrars operating in a TLD (or even a single registrar) may be sufficient to adequately serve registrants, particularly in gTLDs aimed at a limited part of the registrant community, although if the number were sufficiently small there could be a failure of registrar competition that would adversely affect the TLD and its registry. Secondly, even in the absence of an ownership relationship, it is not clear why a registry could not subsidize registrar service for its TLD. Finally, some of our interviewees emphasized that there are a number of other factors, unrelated to the separation requirement, which could explain why some new TLDs have been unsuccessful in growing registration volume, such as insufficient financing or an inappropriate business model.¹⁰⁴ As mentioned previously, .mobi is one example of a targeted TLD that has a relatively large number of accredited registrars.

5.4. VERTICAL INTEGRATION COULD FACILITATE REGISTRY INNOVATION

Ownership separation may work to disadvantage new or narrowly focused registries by making innovation in registry services harder to implement.¹⁰⁵ Large registrars that serve a TLD may effectively have “veto power” over registry proposals for new marketing strategies or applications. If the registry’s volume is too small to justify the cost to registrars of implementing the proposal, the registry may be forced to abandon it. For example, a non-profit sponsored registry operator may want to offer a new facility to its registrant community purely as a public service, while for-profit registrars would have no economic incentive to implement such a proposal. In some instances, registrars have apparently responded to innovations proposed by the smaller registries by claiming that they would not implement the changes unless VeriSign could be persuaded to adopt the proposed innovation.¹⁰⁶ For

¹⁰¹ One interviewee cited a threshold of 500,000 registered domain names.

¹⁰² Monthly Registry Operator reports for February 2008, <http://www.icann.org/tlds/monthly-reports/>.

¹⁰³ SITA, “Proof of Concept Report – Phase 3,” January 17, 2003, p. 3, available at <http://www.icann.org/tlds/agreements/aero/poc-sita-17jan03.pdf>, accessed April 2, 2008.

¹⁰⁴ Interviews with industry executives.

¹⁰⁵ Interviews with industry executives.

¹⁰⁶ Interviews with industry executives.

example, according to one interviewee, many elements of the initial registry proposals for .mobi and .tel were abandoned due to opposition from registrars.¹⁰⁷ As a result, smaller registries may be unable to successfully differentiate their services and compete more effectively with VeriSign in ways that would potentially benefit registrants.

There was, however, significant disagreement on the effect of the separation requirement on innovation levels of existing larger registries.¹⁰⁸ Some executives believed that eliminating ownership separation would directly reduce innovation at the registry level by reducing incentives to invest in new methods to improve Internet stability and security.¹⁰⁹

5.5. CONSOLIDATION

Eliminating the 15% restriction may encourage registrars to acquire registries. Some of the industry executives we spoke to believed that registrars are more likely to be acquirers than registries.¹¹⁰ Large registrars (such as eNom, GoDaddy, and Network Solutions) generally have much larger market capitalization than registries and would likely be in a stronger financial position to make acquisitions.¹¹¹ As mentioned previously, large registrars have entered into a number of joint ventures with registries in recent years. Such business relationships could expand and become more common among TLDs in the absence of an ownership separation requirement.

5.6. INCENTIVES FOR COMPLEMENTARY SERVICES

In re-thinking the ownership separation requirement, it is also important to consider the impact of vertical integration on the range of complementary services that registrars currently provide, such as web hosting, web design, and email. Provision of these services may be motivated by a wish to differentiate from rival registrars, and/or by a wish to find follow-on revenue streams that will enable a registrar to under-price rivals for registrar service. A vertically integrated registry may have weaker incentives to offer these services, or (aside from incentives) may naturally as a single organization engage in less experimentation than a flourishing competitive market. Integrated registries such as the ccTLD registries for Ireland and Germany do not offer complementary services.

¹⁰⁷ Interviews with industry executives.

¹⁰⁸ Interviews with industry executives.

¹⁰⁹ Interviews with industry executives.

¹¹⁰ Interviews with industry executives.

¹¹¹ Interviews with industry executives.

6. SUMMARY OF ECONOMIC PRINCIPLES

Appendix A summarizes the economic principles we use in analyzing the impact of a vertical separation requirement in an industry with price caps and downstream equal access requirements. It briefly explains the logic of registry price caps (or negotiated limits on prices in registry agreements) but then discusses two important downsides—one that is fundamentally about the registry market alone, and one that concerns the relationship with registrars. First, it briefly explains how price caps can sometimes diminish the quality of service and inhibit innovation. New, innovative services will only be introduced if the regulated firm expects to earn a sufficient return on its investment. Price caps, if they are set too low, or apply too broadly, can prevent a sufficient return and deter desirable investment.

The Appendix then discusses how price caps, equal access rules and ownership separation interact. It notes that separation rules in general can sometimes disrupt the efficient flow of information and resources across organizations, making expansion, innovation, and even maintenance of existing facilities, more costly and less effective. It also notes that, contrary to their intended effect, these rules can sometimes cause *higher* prices to final consumers. While a binding price cap presumably lowers price given other conditions, there are indirect effects that can sometimes go the other way. Specifically, in the presence of such a price cap, it may become necessary to impose vertical separation requirements, and in some cases those requirements can increase prices—perhaps to a level higher than would result with vertical integration and no price cap. This is because the second firm that is supplying the complementary function(s) also earns a margin, and, in some market conditions, the inefficiency introduced by this “double margin” on the complementary service can more than offset the lower price on the bottleneck facility. Appendix A, Sidebar II: “Economics of the Registry and Registrar Functions” contains an example showing how prices to final consumers may be higher or lower with ownership separation, depending on fundamental economic variables, such as the level of the price cap, the margin earned on services provided by the regulated firm, and the elasticity of demand for services provided by the complementary segment.

In addition, prices to final consumers may be higher with ownership separation if the regulated firm would be an especially efficient supplier of the complementary function.

7. POSSIBLE TEST CASES FOR VERTICAL INTEGRATION

The potential benefits of vertical integration briefly identified in Section 6 offer a clear argument in favour of a relaxation of the vertical separation requirement where the competitive concerns described above are not strong and there is no price cap. We would

encourage ICANN to consider a full liberalization of this requirement. Recognizing that such a sweeping reform may not be feasible and that such a reform, once taken, would be difficult to reverse, we have identified two models that could serve as test cases for vertical integration. To the extent these models prove successful in enhancing TLD competition and consumer welfare, ICANN could then initiate steps to permit vertical integration in other gTLDs.

7.1. SINGLE OWNER TLDs

A single owner TLD would be a new model where the registry and registrants are one. An example would be a large company interested in having its own TLD for use by its employees. For this business model, a requirement that registry and registrar functions be separated would be especially inefficient. Why require a .BIGCO, as an example, to go through a third party to register its employees as users? In addition to the inefficiency of such a structure, there could also be security concerns, especially if equal access requirements were also in force. What if a rival to the single owner obtained ICANN accreditation as a registrar?

The existing vertical separation and equal access requirements are particularly inappropriate for this potential new business model. Without suspending those requirements, it seems unlikely there will be many if any candidates for such TLDs.

Of course, if ICANN suspends vertical separation and equal access requirements in this limited case, it will be critical to develop a bright-line definition of a qualifying single owner TLD. If not, there will be a strong incentive for registries with a broader and more commercial intent to try to qualify as single owner TLDs. Certainly TLDs that are being operated as a money-making venture should be excluded from this category.

7.2. HYBRID INTEGRATED TLDs

Under the hybrid model, a single entity would be allowed to own a registrar and operate a registry, so long as it did not provide registrar services to that registry. Similarly, a registry operator could own a registrar so long as the registrar did not serve that registry. Possible benefits to such a model could be opportunities for registrars and registries to diversify their operations in the domain name industry. There could also be a marketing benefit if the acquiring firm could market the new registry/registrar to its existing customer base. As detailed below, the proposed model would seem to reduce the largest potential risk of registry/registrar integration – namely the risk of discrimination against independent registrars. At the same time, it would also reduce the potential benefits of integration – innovative business models, increased incentives to provide registrar services to new gTLDs, and reduced double margins.

On the face of it, the proposal would reduce the risk of discrimination against independent registrars. An acquired registry would need to look to these independent registrars for its registrants. But a different sort of risk could develop. Some of the potential benefits to the integrated enterprise – specifically the marketing opportunities arising from shared customer information – could be used to disadvantage independent registrars, possibly in a manner that violates the equal access requirements now in place.

The potential consumer welfare benefits of integration would also be reduced under this model. Because the registrars serving the acquired registry would be independent, each would independently set their margin for their services. The potential for innovation in registry services by small registries trying to distinguish themselves from their larger rivals would also be reduced as the acquired registry would still need to sell its ideas to third party registrars.

While the proposed hybrid model might make business sense to certain registrars or registries seeking to diversify within the industry, the limited potential for welfare benefits from such integration means that ICANN must be careful to manage the risks that could arise from the practice.

8. CONCLUSIONS

The creativity of the registrar industry in designing and packaging complementary services suggests that it may well have been a wise choice for ICANN to regulate only the registry level and insist on competition at the registrar level. The question today is whether and at what pace the degree of regulation can be relaxed going forward.

Drawing on our review of the economic principles and the history of the gTLDs, we encourage ICANN to re-examine the economic case for the separation requirement, and in particular to consider whether it might be possible to relax the requirement, initially only in limited cases. Recognizing that it is difficult to pull back once regulations have been pulled back, we would encourage ICANN to move slowly, but deliberately and in consultation with the industry, towards permitting integration of registry and registrar services under many, but not all, circumstances.

For registries operating under a price cap, the current regime of vertical separation and equal access requirements should be maintained. There can be various, sometimes subtle, economic incentives for a registry to discriminate among registrars in a manner that harms consumers (registrants). Those incentives are especially high when a registry is operating under a binding price cap. Under those circumstances, vertical separation and equal access requirements are useful tools for managing registry incentives.

For registries not operating under a binding price cap, the arguments in favor of vertical separation and equal access requirements are less clear cut. ICANN may want to consider taking steps towards relaxing one or both of these requirements under certain, limited, conditions.

Two proposed business models may lend themselves to service as test cases for relaxing the current constraints on registry/registrar relations. We would encourage ICANN to bring these two models up for discussion with the broader registry and registrar community.

Single organization TLDs, in which the registry and registrants are one and the same, would seem particularly likely to benefit from the greater efficiencies of integration. In addition, it is not clear that such a TLD, perhaps set up to coordinate confidential business processes, would want to or could efficiently be served by a third party registrar. For these TLDs, it seems worth considering what the likely impacts would be if the regulations requiring vertical separation and equal access were suspended. Several challenges spring to mind and merit further discussion. For one, what drawbacks are there, if any, to excluding one class of TLD from the equal access requirements? For another, is it possible to determine a bright line definition of a single organization TLD? An example may help. Suppose a for-profit corporation, BIG Company, wanted to set up a registry, .BIGCO. If it was intended for use by BIG Company's personnel only, .BIGCO would seem to clearly fall in to this category. But what if BIG Company suppliers wanted to register domains on the registry? Would the analysis be different if BIG Company customers wanted to register domains on the registry or if BIG Company sought to conduct business through its registry? Are there ways to define a single organization TLD so that commercial applications are excluded?

Another possible test case is a hybrid model in which the vertical separation requirement is relaxed to allow a registry to own a registrar, just so long as the registrar does not serve the registry that owns it (or that it owns). Equal access would continue to be enforced under this model. This model would offer some opportunities for innovation or efficiency enhancing investments, but fewer than would be expected in an integration in which the registrar services its registry. At the same time, the risks of harm to competition from vertical integration would be tempered. This model also seems worth consideration by ICANN and the community of registrars and registries.

If ICANN should decide to go ahead with these test cases, it should be ready actively to monitor the performance of these new TLDs. If, after a reasonable period of time, ICANN is satisfied that competition is not being harmed – or, better, if it concludes that competition has been enhanced by their introductions, it may then want to consider relaxing one or both of the vertical separation and equal access requirements for a somewhat broader pool of TLDs.

APPENDIX A

ECONOMIC PRINCIPLES FOR ANALYSIS OF POLICY WITH A “BOTTLENECK” FACILITY: PRICE CAPS, EQUAL ACCESS REQUIREMENTS, AND STRUCTURAL SEPARATION

The appropriate policy toward whether, and if so how, to ensure that would-be complementors such as registrars have access to a platform or “bottleneck” facility such as a registry is often controversial. The concerns are strongest, the stakes are highest, and the otherwise appealing policy of limiting price can contribute to the risk of access problems when the platform is a true bottleneck—that is, has market power. Whether a particular registry has market power, and if so whether it has a “substantial” amount of market power, is not analyzed here. Rather, we analyze the role of controls on “vertical” relationships, here between registries and registrars, and how the presence of a price control or cap can affect the analysis.

The fundamental motivating concern is that the owner of a bottleneck facility may profitably choose to charge an excessive price to access the facility, unless it is prevented from doing so by regulation or contract. To prevent excessive prices, a “price cap” or similar restriction that limits the price for access to the bottleneck facility is often utilized. But a price cap is easily evaded if the bottleneck firm is integrated into the complementary segment and no other rules constrain its conduct. Most starkly, the bottleneck firm could simply refuse to provide access to rival firms, and instead could provide the entire complementary segment through its own affiliate, thereby extending its monopoly power into the complementary segment. Facing no competition in the complementary segment, the bottleneck firm could charge a high price for the complementary service (while nominally complying with the cap on its bottleneck facility) and effectively evade the intended constraint on the price paid by final consumers.

A common policy response to this concern has been to require that the bottleneck firm provide access to rivals in the complementary segment on the same terms and conditions that it provides access to its own affiliate. While “equal access” requirements can work reasonably well in some environments, they can be difficult to enforce, especially when (1) the terms and conditions of access are difficult to observe and monitor, and (2) access requires on-going cooperation with the bottleneck firm. When these conditions hold, ensuring that the quality of access is truly “equal” can often be quite difficult. With weak enforcement, a bottleneck firm could choose to favor an affiliate and exclude or weaken unaffiliated rivals that might be more efficient and/or offer more value to consumers.

Structural separation is a common policy response when an equal access rule is judged ineffective. Two forms of structural separation—legal separation and full ownership separation—are sometimes considered.

Legal separation requires that the bottleneck facility be a different legal entity than the firms competing in the complementary segment, although the bottleneck facility and the complementary business may both in turn be owned or controlled by a third entity. Thus legal separation contemplates common corporate control of the bottleneck facility and the complementary service, but it imposes a distinct legal structure on the relationship. Legal separation can make it easier to monitor the terms and conditions of access. For example, if the bottleneck facility controls access to information that is competitively sensitive to the complementary segment, legal separation can facilitate protection of that information. Similarly, because relations between legally separate entities are more likely to be recorded explicitly, there may be enhanced transparency if complaints later surface.

Full ownership separation requires not only that the bottleneck firm and firms in the complementary segment be distinct legal entities, but also requires that they be unaffiliated. In particular, common ownership or control of a bottleneck firm and a (separate) firm providing complementary services is not permitted. Full ownership separation addresses the concern that when a third party owns both the bottleneck facility and a complementary affiliate, there remains an economic incentive to exclude or weaken unaffiliated rivals in the complementary segment. It seeks to control the *incentive* for a bottleneck registry to partner with one registrar, discriminate against other registrars, and thus extract more profit from registrants; the incentive (from the registry's point of view) requires either common ownership or some means by which the favored registrar would steer part of its excess profits back to the registry, and the hope is that the latter would be visible and constrained by the rules against affiliation.

COSTS AND BENEFITS OF PRICE CAPS, EQUAL ACCESS REQUIREMENTS, AND STRUCTURAL SEPARATION

The appropriate policy toward a bottleneck facility is controversial because the available policy tools—"price caps," "equal access" rules and "structural separation" requirements—can themselves impose significant costs and discourage or prevent transactions that might otherwise benefit consumers. Further, economic analysis of the relationship between a bottleneck facility and complementary segments shows that whether integration of the bottleneck and complementary functions is beneficial or harmful to final consumers depends importantly on specific characteristics of the industry, such as the level of the price cap, the margin earned on services provided by the bottleneck facility, and the elasticity of demand for services provided by the complementary segment. Without attempting a full analysis of the issues here, we describe some important economic costs and benefits associated with policies when:

- (1) by regulation or contract, bottleneck services are subject to a binding price cap,
- (2) the prices of services provided by the complementary segment are unregulated,
- (3) the bottleneck facility must provide equal access, and
- (4) full ownership separation between the bottleneck facility and the complementary segment is required.

We then consider the same scenario when there is not a binding price cap on the bottleneck service.

The potential benefit of successful policy for a bottleneck facility is increased use of the facility and the consequent increase in consumer (and total) welfare, along with the improvements in efficiency and innovation that often accompany competition. Standard economic analysis shows that when a single firm controls access to an essential facility, that firm will charge prices that are higher than those that are optimal from the perspective of society as a whole.¹ The high prices cause consumers to purchase less access to the facility than they would at lower prices, which in turn reduces total social welfare. The magnitude of the welfare loss depends on the demand for the bottleneck facility and the cost to provide access to the facility, but in general it becomes larger as the margin between the price charged for access and the marginal cost to provide access grows. Sidebar I: “Welfare Loss with Monopoly Pricing of a Bottleneck Facility” contains an example calculation of the welfare loss that results from excessive prices charged to access a bottleneck facility.

One example of a successful policy for a bottleneck facility is long distance telephone service in the United States.² In 1984, ownership of the local telephone network (the bottleneck facility) was separated from the long distance network (the potentially competitive complementary function), and the local network operators were prohibited from offering long

¹ See for example: Cabral, Luis M. B., *Introduction to Industrial Organization*, MIT Press (2000), pp. 78-79.

² Another widely cited example of increased competition in complementary services after ownership separation is the delivery and sale of natural gas in the United Kingdom. In 1995, the Gas Act required legal separation of gas transport and residential supply, and in 1997, British Gas voluntarily divested its gas supply services and its pipeline network. See, for example, US Energy Information Administration, “Natural Gas Privatization in the United Kingdom,” chapter 5 in *Privatization and Globalization of Energy Markets*, August 2000, <http://www.eia.doe.gov/emeu/pgem/ch5p.html>. It is not clear which of the actions taken during 1995 – 1997 contributed to the subsequent surge in competitive gas supply in the U.K., but by 2001, 38% of British consumers had switched their gas supplier, average rates were estimated to have declined by 18%, and the number of residential suppliers had increased to 27%. Ofgem, “Fact Sheet: Competition in Gas and Electricity Supply, Separating Fact from Fiction,” undated, http://www.ofgem.gov.uk/Media/FactSheets/Documents1/1070-factsheet0102_29jan.pdf and David Hawdon and Nicola Stevens, “Regulatory Reform of the UK Gas Market – The Case of Storage Auction,” June 2001, p. 4.

distance service.³ In addition, price caps and equal access requirements were imposed on the local networks.⁴ Following this policy change, between 1984 and 1989, long distance rates fell by an average of 40%.⁵

Notwithstanding the considerable benefits from the policies used to promote long distance competition in the U.S., there is some evidence that the benefits might have been greater with a different policy mix. Crandall and Hazlett, for example, posit that Canada's long distance market developed effective competition more rapidly than the U.S. in part because Canada did not preclude the local telephone companies from offering long distance.⁶

A different policy mix might have led to greater benefits because there are also a number of potential costs of rules directed toward a bottleneck facility. Here, we focus on two specific costs that may be especially relevant to the registry and registrar functions: reduced innovation and higher prices from double margins

First, the combination of price caps, equal access rules, and ownership separation can sometimes diminish the quality of service and inhibit innovation. New, innovative services will only be introduced if the bottleneck facility expects to earn a sufficient return on its investment. Price caps, if they are set too low, or apply too broadly, can prevent a sufficient return and deter desirable investment. In addition, equal access rules and ownership separation can sometimes disrupt the efficient flow of information and resources across organizations, making expansion, innovation, and even maintenance of existing facilities, more costly and less effective. Pittman, for example, argues persuasively that the privatization of British Rail failed in large part because efficient investment in rail facilities was not possible with ownership separation of rail cars and tracks,⁷ and a number of scholars think the lagging development of broadband facilities in the U.S. is best explained by rules

³ Modification of Final Judgement in *United States v. AT&T*, 552 F.Supp. 131 (DDC 1982); Ingo Vogelsang and Bridger Mitchell, *Telecommunications Competition – The Last Ten Miles*, AEI Press, 1997, pp. 62-69.

⁴ Modification of Final Judgement in *United States v. AT&T*, 552 F.Supp. 131 (DDC 1982).

⁵ "The Long-Distance Boom Shows No Signs of Fading," *New York Times*, May 22, 1989, <http://query.nytimes.com/gst/fullpage.html?res=950de5da1e38f931a15756c0a96f948260>.

⁶ Canadian incumbent carriers were required to provide equal access to long-distance competitors. Robert W. Crandall and Thomas W. Hazlett, "Telecommunications Policy Reform in the United States and Canada," in *Telecommunications Liberalization on Two Sides of the Atlantic* (eds. Martin Cave and Robert W. Crandall), 2001, pp. 13-19.

⁷ Russell Pittman, "Structural Separation and Access Pricing in the Railways Sector: Sauce for the Goose Only?", 2004, p. 5. See also, Simon Cowan, "Regulatory Reform: Lessons Learned from the UK." TIPS 2001 Annual Forum, 10-12 September, 2001, pp. 9 – 10.

that required network operators to provide equal access, including to new broadband facilities.⁸

Second, and contrary to their intended effect, these rules can sometimes cause *higher* prices to final consumers. While a binding price cap presumably lowers price given other conditions, there are indirect effects that can sometimes go the other way. Specifically, in the presence of such a price cap, it may become necessary to impose vertical separation requirements, and in some cases those requirements can increase prices—perhaps to a level higher than would result with vertical integration and no price cap. This is because the second firm that is supplying the complementary function(s) also earns a margin, and, in some market conditions, the inefficiency introduced by this “double margin” on the complementary service can more than offset the lower price on the bottleneck facility. Sidebar II: “Economics of the Registry and Registrar Functions” contains an example showing how prices to final consumers may be higher or lower with ownership separation, depending on fundamental economic variables, such as the level of the price cap, the margin earned on services provided by the bottleneck facility, and the elasticity of demand for services provided by the complementary segment.

In addition, prices to final consumers may be higher with ownership separation if the bottleneck firm would be an especially efficient supplier of the complementary function. Thus Crandall and Hazlett suggest that one possible explanation for the more rapid development of competition in Canada is that the local phone companies were a lower cost competitor in long distance service.⁹

Allowing the registry to charge whatever price it wants for registry service, while retaining an equal access requirement and full ownership separation, would likely increase registry profits while reducing consumer welfare (see Sidebar I). Removing that single constraint alone would have no more than a limited impact on the costs of vertical separation that are identified above. Incentives for improvements and innovations in registry services would increase if the price, and thus the profits, of those services were allowed to rise. But the sorts

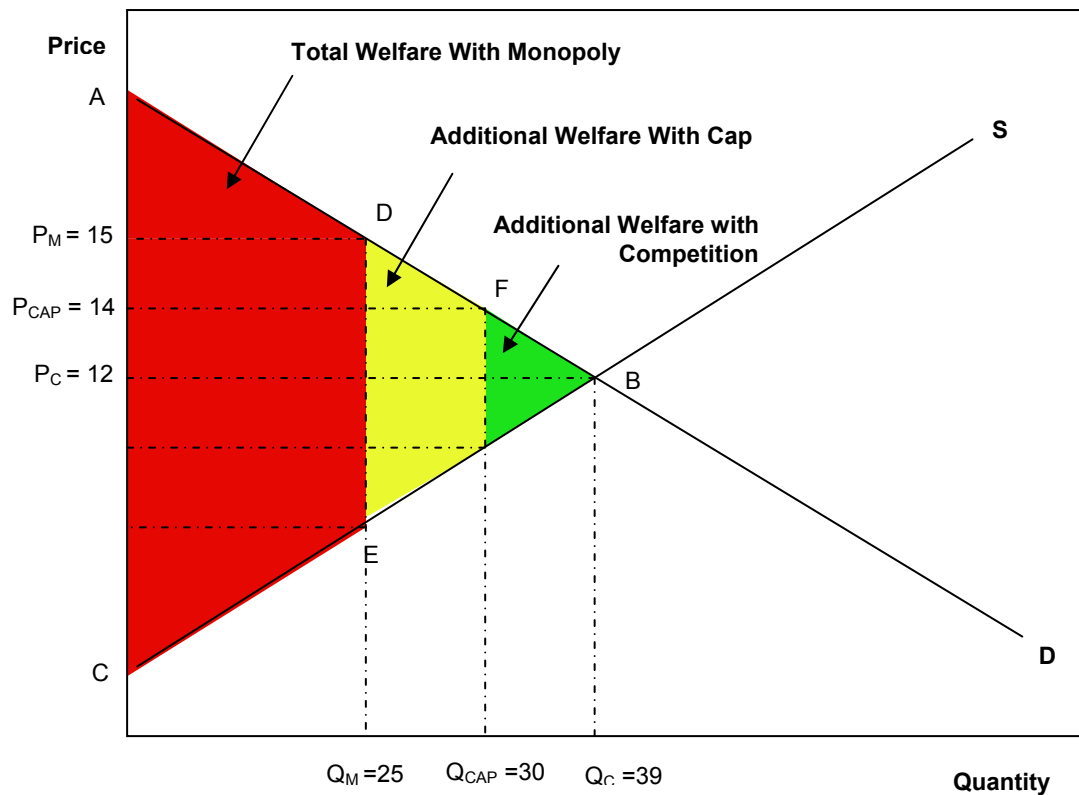
⁸ See, for example, Jerry Hausman and Gregory Sidak, “Did Mandatory Unbundling Achieve Its Purpose? Empirical Evidence from Five Countries,” *Journal of Competition Law and Economics*, Vol. 1, No. 1, pp. 173-245, 2005; Robert W. Crandall, “Debating U.S. Broadband Policy: An Economic Perspective.” The Brookings Institution, Policy Brief #117, March 2003; Thomas Hazlett, “Rivalrous Telecommunications Networks With and Without Mandatory Sharing,” AEI-Brookings Joint Center for Regulatory Studies Working Paper, March 2005. However, some researchers have presented evidence supporting a positive relationship between so-called “unbundling” regulation and broadband provision. See for example, George Ford and Lawrence Spiwak, “The Positive Effect of Unbundling on Broadband Deployment,” Phoenix Center Policy Paper No. 19, September 2004; OECD, “Broadband Growth and Policies in OECD Countries,” June 2008, pp. 41, 50, 53.

⁹ Robert W. Crandall and Thomas W. Hazlett, “Telecommunications Policy Reform in the United States and Canada,” in *Telecommunications Liberalization on Two Sides of the Atlantic* (eds. Martin Cave and Robert W. Crandall), 2001, p. 16.

of innovations that could occur only, or most efficiently, with integration would still be lost. The impact of a registry price increase on the profits and incentives for innovation of unaffiliated registrars would be no better than neutral and could be negative, depending on the elasticity of customer demand and registrars' abilities to pass through the price increases. The inefficiencies stemming from the double margin on registrar services could increase if upstream margins increased and registrars were able to pass along the higher prices to consumers. To address these inefficiencies and weak incentives for innovation requires relaxation of the vertical separation requirement, which can then increase the risks of monopoly pricing of the bottleneck facility and downstream discrimination.

APPENDIX A SIDEBAR I: WELFARE LOSS WITH MONOPOLY PRICING OF A BOTTLENECK FACILITY

When an a bottleneck facility is controlled by an unregulated monopoly, prices for access to the facility are higher and total welfare is lower than with price caps. This basic economic result is illustrated in the diagram below.



The diagram shows a hypothetical set of supply and demand curves for domain name registration services. The demand function is defined as $Q_D = 100 - 5P$ where Q_D represents demand for registry services (such as domain name registrations and renewals) and P represents the price of those services. Similarly, the supply function is defined as $Q_S = -10 + 4P$ where Q_S represents the quantity of registration services supplied at each price. We first consider the scenario of perfect competition in registry services. Registries would set a price equal to the marginal cost of providing registry services ($P_C = 12$). At this price, registrants purchase a quantity of registry services represented by $Q_C = 39$.¹⁰ Consumer (registrant) welfare in this scenario is measured by the area of triangle P_CAB , approximately equal to 151. Producer (registry) welfare, or profit, is the area of triangle P_CBC , approximately equal to 189. Total welfare is the sum of these two rectangles, or 340.

In an alternative scenario where the registry has an unregulated monopoly in the provision of registry services, the registry maximizes profits by setting a price $P_M = 15$. At this higher price, registrants purchase a smaller quantity of registry services than under the competitive scenario, $Q_M = 25$. Registrant welfare decreases to the smaller triangle AP_MD , approximately equal to 63, whereas registry profits increase to the area CP_MDE , roughly equal to 234. Also note that compared to the competitive scenario, total welfare has been reduced an amount represented by the yellow and green shaded areas (approximately equal to 297).

Imposing a price cap on the monopolist registry operator leads to an increase in total welfare, as represented by the yellow shaded area in the diagram. By setting the price cap $P_{CAP} = 14$ below the monopoly price but above the price that would prevail under perfect competition, registrant welfare increases. At price P_{CAP} , registrars purchase registry services up to the quantity $Q_{CAP} = 30$ and registrar welfare increases by the area P_MDFP_{CAP} whereas total registry profits decline. Total welfare is roughly equal to 323, registrar welfare is 90, and registry profits amount to approximately 233.

APPENDIX A SIDEBAR II: ECONOMICS OF VERTICAL INTEGRATION OF THE REGISTRY AND REGISTRAR FUNCTIONS

Here, we illustrate the economics of vertical integration with a hypothetical numerical example that examines prices paid by registrants with integrated as compared to non-integrated registry and registrar services.

¹⁰ For simplicity, we ignore registrars and assume registries sell directly to registrants. The principles illustrated here continue to apply when domain names are sold through registrars.

Suppose that the marginal cost of registry service is \$2 and the price is regulated not to exceed \$6.¹¹ Suppose also that the marginal cost of registrar service in this TLD is \$3 and competition among registrars yields a price of \$4 for registrar service, so that a registrant who consumes the bundle of registry and registrar service is charged $\$6 + \$4 = \$10$, if the registry prices at the \$6 cap.¹²

Will a registry that does not also provide registrar services choose to price at that cap, or will it set a price below \$6? If it cut its price by, say, 30 cents and set a price of \$5.70, the total price paid by registrants would be $\$5.70 + \$4 = \$9.70$, a 3% reduction relative to the \$10 price.¹³ Because the registry's 30 cent price cut represents a $\$0.30/(\$6 - \$2) = 7.5\%$ cut in its gross margin (price minus marginal cost), it will only choose to cut price if that yields at least a 7.5% increase in volume, requiring a demand elasticity for registrations in this TLD of at least $7.5\% \div 3\% = 2.5$.¹⁴ Thus a *non-integrated* registry will only price below the cap if the demand elasticity exceeds 2.5.

By contrast, an integrated registry-registrar would have a marginal cost of $\$2 + \$3 = \$5$, or half of the \$10 price for registry plus registrar services. The gross margin for the integrated registry-registrar is therefore \$5. A 30 cent reduction in price, starting from the \$10 price, would represent a 6% ($\$0.30$ divided by $\$5.00$) decline in gross margin. In this case, it would be profitable to cut price if the elasticity of demand exceeds $6\% \div 3\% = 2.0$. Thus an *integrated* registry will only price below the cap if the demand elasticity exceeds 2.0.

Comparing the two cases, it is evident that there is a range of demand elasticities where an integrated registry-registrar would price below the cap, but a non-integrated registry would not.¹⁵ In the specific example used here, that range of elasticities is between 2 and 2.5. For demand elasticities below 2, both integrated and non-integrated firms will price at the cap. For elasticities above 2.5, both integrated and non-integrated firms will price below the cap,

¹¹ There are a number of sound economic reasons why the price might exceed the marginal cost of registry service, including the need to recover fixed costs. We discuss the price caps that apply to a number of gTLDs elsewhere in this study.

¹² In practice, the registrant may not "see" the \$6 paid to the registry, but only the total \$10 paid to the registrar, to whom the \$6 is a cost. This does not fundamentally affect the analysis here.

¹³ We assume the 30 cent decline in the price of registry services is fully passed through to registrants. Economists normally expect (approximately) complete pass-through when marginal cost in a highly competitive industry, such as registrar services, uniformly declines.

¹⁴ Elasticities of demand for most goods and services are negative. For expositional convenience, here and throughout the report we drop the negative sign when referencing the elasticity of demand.

¹⁵ More precisely, this conclusion applies to an integrated registry-registrar that captures all of the registrar business, and its registrar rivals (if any) make no sales. The analysis is more complex if registrar rivals make some sales, but the basic intuition – that an integrated firm may have an incentive to charge less than a non-integrated firm – remains correct with this more complex set of facts.

although the integrated firm will tend to prefer a lower price than the non-integrated firm. These relationships are summarized in the table below.

Elasticity range	Registry Pricing	
	Integrated Registry	Non-Integrated Registry
Less than 2.0	P_{CAP}	P_{CAP}
2.0 - 2.5	$< P_{CAP}$	P_{CAP}
Greater than 2.5	$< P_{CAP}$	$< P_{CAP}$

This analysis shows that for a range of demand elasticities—here those between 2.0 and 2.5—integration of the registry and registrar functions would result in lower prices for registrants (and it would also do so for higher elasticities). At the same time, integration could exclude or displace registrars that are not affiliated with the registry. For instance, if the integrated firm chose to implement its preference for a lower overall price by pricing registry services at \$6, and selling the bundle of registry and registrar services for \$9, independent registrars would experience a “margin squeeze” and could be driven from the market. Nonetheless, registrants would benefit from the reduced prices, even if some competing registrars were forced to exit.¹⁶

Alternatively, if the demand elasticity is below 2, an integrated registry-registrar would prefer a price *higher* than \$10. If the registry’s agreement with ICANN prevents it from pricing registry services above \$6, and competition from other registrars prevents it from pricing registrar services above \$4, what might the integrated registry-registrar do to achieve a package price higher than \$10 to registrants? One method would be for it to prevent or hinder independent registrars from undercutting the higher price, either by simply refusing to deal with them or by offering them lower quality access.

An important and fundamental difference between this latter scenario, where the elasticity is less than 2, and the former scenario, where the elasticity is between 2 and 2.5, is that registrants are harmed by the exclusion of independent registrars in the latter, but not in the former.¹⁷

¹⁶ Given this range of elasticities, the integrated registry would maximize profit by charging a bundle price of \$9 even if less efficient registrar competitors exited the market. In other words, the result that registration prices are lower with an integrated registry-registrar holds even in the absence of downstream competition.

¹⁷ Another closely related difference is that the integrated firm benefits from less efficient independent registrars in the latter scenario, whereas in the former scenario, the integrated firm benefits from more efficient independent registrars (and hence lower downstream prices).