Generic / sponsored Top Level Domain

Feasibility Report

Document Control

Filename / version	Author	Release date	Change history / status
BusDev FeasRpt TLD v01	C Nicholls		First draft
BusDev FeasRpt TLD v02	C Nicholls		Contains feedback from NZRS Board
BusDev FeasRpt TLD v03	C Nicholls		Contains feedback from Keith Davidson
BusDev FeasRpt TLD v04	C Nicholls	30 Aug. 2007	Contains feedback from Debbie Monahan
BusDev FeasRpt TLD v10	C Nicholls	13 Sep. 2007	FINAL - Contains feedback from TBSR

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1 Glossary

Type	TLD
TLD	A Top Level Domain (e.g. .com).
ccTLD	A Country Code top-level domain, which is an Internet top-level domain generally used or reserved for a country or a dependent territory (e.g. ,nz). ccTLDs are defined in the ISO3166 list (http://www.iso.org/iso/en/prods-services/iso3166ma/02iso-3166-code-lists/index.html)
gTLD	Generic Top Level Domain: Most TLDs with three or more characters are referred to as "generic" TLDs, or "gTLDs". They can be subdivided into two types, "sponsored" TLDs (sTLDs) and "unsponsored" TLDs (uTLDs). **For the purpose of this report, both generic / sponsored g/sTLDs are referred to as gTLDs (e.g. .info).**
Sponsored TLD	A Sponsored TLD is a specialized TLD that has a sponsor representing the narrower community that is most affected by the TLD.
Unsponsored TLD	An Unsponsored TLD operates under policies established by the global Internet community directly through the ICANN process.
ICANN	Internet Corporation for Assigned Names and Numbers ICANN is responsible for the global coordination of the Internet's system of unique identifiers. These include domain names (like .org, .museum and country codes like .UK), as well as the addresses used in a variety of Internet protocols. Computers use these identifiers to reach each other over the Internet. ICANN's global stakeholders meet regularly to develop policies that help to ensure the Internet's ongoing security and stability. The technical work of ICANN is referred to as the IANA function; the rest of ICANN is mostly concerned with defining policy.
GAC	ICANN Governmental Advisory Committee *From Wikipedia*: After an extensive build-up that saw speculation that the United Nations might signal a takeover of ICANN, the World Summit on the Information Society in Tunisia in November 2005 agreed not to get involved in the day-to-day and technical operations of ICANN. However it also agreed to set up an international Internet Governance Forum, with a consultative role on the future governance of the Internet. ICANN's Government Advisory Committee or GAC, is currently set up to provide advice to ICANN regarding public policy issues and has participation by many of the world's governments.
IANA	Internet Assigned Numbers Authority The Internet Assigned Numbers Authority (IANA) is the entity that oversees global IP address allocation, DNS root zone management, and other Internet protocol assignments. It is operated by ICANN. Prior to the establishment of ICANN for this purpose, IANA was administered primarily by Jon Postel at the Information Sciences Institute at the University of Southern California, under a contract USC/ISI had with the United States Department of

Type	TLD
	Defense, until ICANN was formed to assume the responsibility under a United States Department of Commerce contract.
WIPO	The World Intellectual Property Organization (WIPO) is a specialized agency of the United Nations. It is dedicated to developing a balanced and accessible international intellectual property (IP) system, which rewards creativity, stimulates innovation and contributes to economic development while safeguarding the public interest.
UDRP	Uniform Domain-Name Dispute Resolution Policy Drafted cooperatively between ICANN and WIPO, this policy attempts to address the issue of domain name ownership resolution for gTLDs. This policy essentially attempts to provide a mechanism for rapid, cheap and reasonable resolution of domain name conflicts, avoiding the traditional court system for disputes by allowing cases to be brought to one of a set of bodies that arbitrate domain name disputes. According to ICANN policy, a domain registrant MUST agree to be bound by the UDRP - they cannot get a domain name without agreeing to this

2   Executive Summary

The purpose of this feasibility report is to evaluate the opportunities for **.nz** Registry Services (NZRS) to build or acquire another (non-country) generic or sponsored top level domain (TLD).

Approach

This report contains the findings of an analytical review, covering:
- costs, economics, risks, timelines, and other influencing factors.
- the impact of a new gTLD on NZRS.
- whether or not NZRS can make an acceptable financial return from a gTLD investment.

Note that key stakeholders from InternetNZ and The Office of the Domain Name Commissioner have been consulted as part of the process of developing this report.

Report structure

The report is structured into the following sections:
- **Part 1:** context and impacts on NZRS.
- **Part 2:** financial viability of a gTLD and implications.
- **Appendices**: containing background information, including ICANN processes, previous gTLD applications, industry commentary, business drivers and some strategic industry analysis.

Conclusions and Recommendations

This report **concludes** that, even while NZRS could likely build and / or partner for the right capabilities to run a gTLD, the risk – return profile is likely to be very unattractive (i.e. high risk for low return).

This paper **recommends** to TBSR that:
- NZRS does not proceed with this gTLD review to the next stage.
- NZRS does not invest in a new gTLD as the investment would be too large and high risk with poor returns.

This paper **notes that**:
- there may be an opportunity for NZRS to partner with a consortium of other providers and share the investment risk, but this would need to be assessed if / when the opportunity arose.
- deliverables from the terms of reference for this report were only partially completed.

The following two tables provide a summary of the key findings from the report:

SWOT analysis:

Strengths	Weaknesses

• Registry management experience and skills
• Market credibility as an established provider
• Neutral branding
• Access to infrastructure and support experience
• Access to policy experience
• (Some) cash on hand / No debt
• Ability to borrow against future earnings
	• Distance of New Zealand from the market
	• US is current home to all gTLDs
	• Need a corporation based in the USA
	• At least 2 years in USA to lobby ICANN and GAC
	• Higher costs relative to ccTLDs
	• ICT infrastructure requirements very high
	• New investment vehicle required
	• New:
	    o policy
	    o dispute resolution
	    o global marketing effort
	• Would not be a natural monopoly
	• High up-front cost
	• Long lead-time
	• Low probability of success (ICANN and financial)

Opportunities	Threats
• Input costs may fall, but so too may revenue opportunities • Share risk / return with other providers and scope opportunity in more detail • Test market using 'xyz.nz' (only if able to meet .nz policy requirements) • Enter market via 'xyz.com' i.e. as a 2LD within '.com' (could be worth more than the same gTLD)	• Web 2.0 and / or other directory services decrease relevance of TLDs • IDNs are expected to be a major disruption • '.com' appears to be continuing to increase in value faster than gTLDs • Large entrenched incumbent operators who would be expected to fight hard to retain market share • Risk of having to support a liability moving forward if uptake is not achieved.

Requirements, risks, mitigations and implications:

Activity	Item	Current	Required	Risk / Issue	Mitigations	Implications
Technical	**Platform**	SRS	EPP	SRS won't scale well beyond 1m using replication	Build EPP solution	Build risk >$2m cost.
					Partner for EPP (e.g. Afilias)	Partner risk Lower cost / return profile.
	Resiliency	Adequate for NZ	Higher standards than what NZ telco's can provide (e.g. 3xISP)	High cost, requires more resilient ICT capabilities	Either back end Afilias, or develop new high transaction strength solution	High cost.
	DNS	Required	Required, but stronger (more expensive) solution required (e.g. more offshore DNS)			Higher cost.
	IDN	Maori IDN working group is considering IDNs for .nz	Required potentially for many languages (per the recently approved IDN list)	IDNs expected to become a major disruption. Mainly a policy implementation issue in which NZRS has no experience e.g. multiple language tables and scripts.		Higher cost.
	Database escrow	Not required	Required by ICANN			Higher cost.

Activity	Item	Current	Required	Risk / Issue	Mitigations	Implications
Policy	**Fit for purpose**	Written for NZ context only	New (tighter) policy per ICANN rules. Dispute resolution goes to WIPO			Higher cost, more complex processes.
Financial	**Funding**	$0	~$10m to $12m costs for first 2 years. Could be as high as $40m NZD over 5 years.			Very large investment required.
	Invoicing	Direct Debit	Uncertain	Likely increased credit / debt management obligations		Higher cost.
Economic	**Market Strength**	Natural Monopoly	Competitive operator, key inputs controlled by ICANN	Beaten off by competition, interference from ICANN		Higher risk.
	Market uptake	NA	Generate new demand for a new gTLD	The chosen gTLD may become obsolete	Other directory services may be required.	Investment in new gTLD may need to be written off.
Operations	**Operating Liability**	Limited liability	Uncertain requirements			

Activity	Item	Current	Required	Risk / Issue	Mitigations	Implications
	USA / other country base (may be required as most[1] gTLDs are based in USA)	NZ based only	New country, new laws, new culture, new location, new corporation, etc.	Lack of local knowledge and expertise, lack of credible track record in chosen country.	Consider partnership with local established operator.	May result in trust / control / predictability issues.
	Call centre	Not required	Multi-lingual, multi-time zone operation			Higher cost.
	Channel management	Less than 100 registrars	Around 2-3k registrars to manage	Increased operational burden		Higher cost.
Structure	**4 NZRS staff plus 5 in policy**	Suitable for NZ operations	New investment vehicle and larger org. structure required	Management expertise and sourcing of the right people		Lack of appropriate management applied to investment
Politics	**Political obligations**	Obligation to INZ, NZOC and to ICANN	Obligation to (most likely more) shareholder(s), partners, ICANN, USA and other governments	Cultural differences, increased overheads	Additional resource and / or partnerships	Higher cost.

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[1]   An example of a potential exception is NeuLevel for .biz , a JV between NeuStar and Melbourne IT (based in Australia).

Activity	Item	Current	Required	Risk / Issue	Mitigations	Implications
	Brand and reputation	Natural monopoly status and healthy government relations	Change to competitive operator in global market. Little or no political support.			
Proposal	**Lead time**	NA	~ 5-7 years	Run out of funding before up and running		Higher risk.
	Sunrise / Landrush management	NA	Careful management of IP and government naming rights	If not managed appropriately, commercial liability risk / dispute resolution costs are high	Get external legal / audit / process management resource	Expensive resource (e.g. PWC, Deloitte) for process management, audit and / or compliance
	Resourcing	NA	Legal, marketing, policy, ICT, channel / distribution.			Higher cost.

3 Part 1: Impacts of a new gTLD on NZRS

Part 1 of this feasibility report looks at the impacts of a new gTLD on NZRS, as per the original terms of reference (provided in the appendices to this report). The section begins with an industry context using Porter's Five Forces analysis[2], and ends with a look at the impacts on NZRS from various perspectives, including technical, policy, political, financial, economic, structural and operational.

3.1 Industry Context

This industry context review uses the Porter's Five Forces framework to assess industry structure and the context within which NZRS operates. The analysis covers supplier power, barriers to entry, degree of rivalry, buyer power, and threat of substitutes.

3.1.1 Supplier Power

Prognosis: Moderate to strong

There are a number of key inputs required to successfully run a gTLD:
- technical capability,
- financial assurance, and
- favourable policy decisions from ICANN.

While easy to source a technology firm, getting the DNS service up to ICANN SLA standards is expensive and may be best served using an Afilias or a VeriSign back-end. A point to note about this situation is the supplier is also a competitor (i.e. the offer both wholesale and retail services). For the large cost of setting up and running a compliant gTLD operation, volume is very important to suppliers.

It is noted here and in other parts of the report that the ICANN sourcing process is both problematic and political.

3.1.2 Barriers to Entry

Prognosis: High

A new gTLD application is likely to require around $12m NZD for the application and first 2 years of operation. This investment could grow to $40m over 5 years. The ICANN process requires a very long lead-time[3], and the success of the application is never assured. ICANN provide brief windows of opportunity when the door is opened to new applications, and from here a new application enters a process that can take anywhere between 4 (.eu best case) to 7 (and .travel is still going) years.

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2   http://www.quickmba.com/strategy/porter.shtml. See also Appendices for figure.
3   Note that while the new gTLD application process (currently under development – e.g. a recent ICANN RFP for process development at URL: http://www.icann.org/announcements/announcement-06sep07.htm) is expected to be more streamlined, the delivery date for approval of this new process is highly uncertain and could be between 2 and 4 years away.

For a new gTLD entrant, set-up of the gTLD (most likely in a new country) would require: a new brand, people, policy, process, structure, etc. This sourcing process, alongside the long term risk application process, makes the barriers to entry for a new gTLD high.

From a distribution perspective, NZRS currently deals with less than 100 registrars, while a global network for a new gTLD may require over 2000 registrars. While the threat of retaliation is low for a small DNS operation, if the gTLD was seen to be a success and take market share away from market leaders, it could expect to see some form of competitive response from incumbent firms.

3.1.3   Degree of Rivalry

Prognosis: Moderate to High

There appears to be a fairly comfortable oligopoly between VeriSign, Afilias and ISOC. The TLD market can be roughly divided into gTLD and ccTLDs:
- The larger gTLDs are dominated by three players, VeriSign (.com), Afilias (.info) and ISOC (owner of .org).
- The ccTLD market is geographically fragmented, driven by each government's desires for operational independence and retention of some control over the Internet. While a few ccTLDs are outsourced to the larger players, such as Afilias, many countries choose to 'in-source' the operation of their ccTLD.

New entrants would likely struggle to compete for market share against these giants. If a strong competitive response was initiated, buyers may be inclined move away from the chosen gTLD to another gTLD that is more favourable to them. Because of the large fixed operating (and hence very low marginal cost) of operating a global DNS, and the high exit cost (in terms of having an obligation to support customers regardless of profitability), marginal pricing could become a common strategic response.

3.1.4   Buyer Power

Prognosis: Weak

There are many buyers relative to suppliers and they are globally dispersed (i.e. low concentration), with weak bargaining leverage. While their information is relatively high about the TLD market (at least readily available on the Internet), they face relatively high switching costs once they have established an online presence. This is because they face losing their customer base by changing their URL. Buyers are relatively price insensitive at the current price point for TLDs.

Currently there are little realistic substitute options available, but this may change rapidly due to advances in other competing directory service technologies. The following needs have been identified for organizations and individuals using TLDs:
- For organizations:
  - Web 2.0 and other ways of filtering content are likely to be viewed as complementary new channels to market for companies wanting to target their services.
  - TLDs do currently help companies to retain some form of online identity that can be shown to be similar, yet somehow differentiated from their competitors.

- It may make sense for other TLDs to be opened up to allow for more organizations to stake their unique claim in the online world.
- For individuals:
  - Likely to want to use large providers such as Google, MSN and Yahoo for uploading and hosting of content and services.
  - The importance of the role played by content aggregators and filtering services will to increase over the foreseeable planning horizon.
  - For downloading content and consumption of services, the use of TLD to locate content and services will decrease in importance.
  - Users may continue to use TLDs as further validation of organizational identity and as stronger online organizational authentication.

3.1.5 Threat of Substitutes

Prognosis: Moderate to High

TLDs may lose favour to other directory service applications. While the DNS may continue to operate as an integral component of the Internet, there appears to be an increasing risk that it will become another obscure component of the technology stack used only by machines to navigate the Internet. People may choose to switch to a different set of directory service applications that can be provided instead of or alongside TLDs.

3.2   Impacts on NZRS

The following analyses the impacts on NZRS, including technical, policy, economic, financial, operational, structural, political, and the impact of the proposal itself (lead time, risk, etc.).

3.2.1 Technical Impacts

The following technical impacts on NZRS have been considered:
- **Platform**: SRS won't scale well beyond 1m using replication, and it is likely that EPP would need to be built at a cost of around $2m.
- **Resiliency:** While adequate for NZ, ICANN maintain higher standards for new gTLDs than New Zealand telecommunications infrastructure can provide (e.g. 3xISP). This implies a higher cost solution in the form of more resilient ICT capabilities.
- **DNS**: A stronger (more expensive) solution required (e.g. more offshore DNS).
- **IDN**: IDN required potentially for many languages. IDNs are expected to become a major disruption. This will be mainly a policy implementation issue e.g. multiple language tables and scripts.
- **Database escrow:** Would be required by ICANN to ensure ongoing supportability of the new gTLD in the event of a registry operation failure.

3.2.2 Policy Impacts

The gTLD registry policies will be different to the current InternetNZ policies. The current .nz policy has been written for NZ context only. New (tighter) policy per ICANN rules would be required, and the dispute resolution would be mandated under WIPO using the Uniform

Domain-Name Dispute Resolution Policy (UDRP)[4]. Global expertise would be required to help NZRS develop this policy capability. In addition to this, during Sunrise and Landrush phases of the gTLD launch, a strong audit / compliance capability would need to be used to ensure compliance to ICANN processes.

3.2.3 Economic Impacts

Currently, NZRS (via InternetNZ) has a natural monopoly over registrations for the .nz domain. With a new gTLD, NZRS would become another competitive operator in a global market-place, with key inputs (such as pricing) controlled by ICANN. The competitive threats are much higher, as is the risks of political interference from ICANN.

With a new gTLD, NZRS would be required to switch to a 'marketing lead' organization in order to generate demand for its new gTLD. There is a risk that the chosen gTLD may become obsolete, and that other directory services may become more important to Internet users. This would lead to any investment in new gTLD needing to be written off.

A feature of an online registry management system, where many of the major ICT components can be ring-fenced and outsourced by the operator to a third party, is a high percentage of fixed costs relative to the total cost profile. Registry operations are therefore highly sensitive to uptake assumptions. The following figure attempts to illustrate this point:
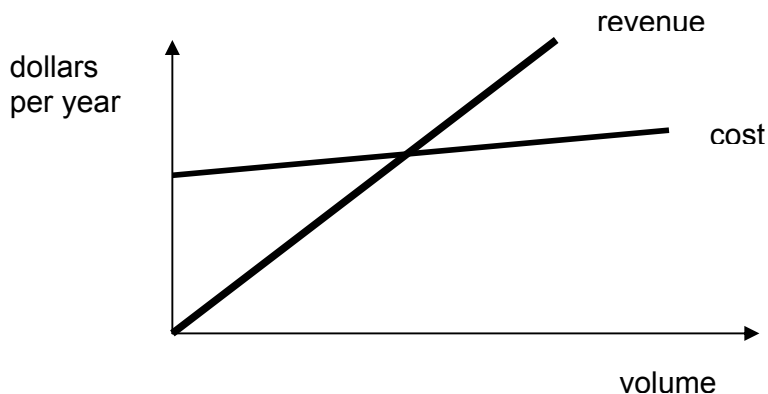
Figure 1: Online systems are highly sensitive to volume variations

It should be noted that is that **.nz** is a natural monopoly, and if volumes were to change dramatically (e.g. more than 20% + / -, say) then pricing would most likely be adjusted accordingly to ensure appropriate cost recovery. This 'natural monopoly' and ability to move pricing should be differentiated from operating a new gTLD where it is expected that ICANN would have much more say and control over the pricing framework.

The following figure summarises a high level review of published pricing, revenue, costing and volume information from .org, .uk, .eu, .nl, .au and **.nz** TLD registry operators. Note that these figures are estimates only, often taking data for each operator over different periods in time to other TLD operators, and that accounting variations specific to each country have not been factored in. With these caveats in mind, it can be seen from the

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[4]   Once the policy is developed, operating according to UDRP is expected to not drive a large operating cost increment.

figure below that both the total annual cost and revenue curves appear to show a strong correlation to the number of active domains registered.

Figure 2: Margin – volume analysis for .nz, .org and .uk TLDs

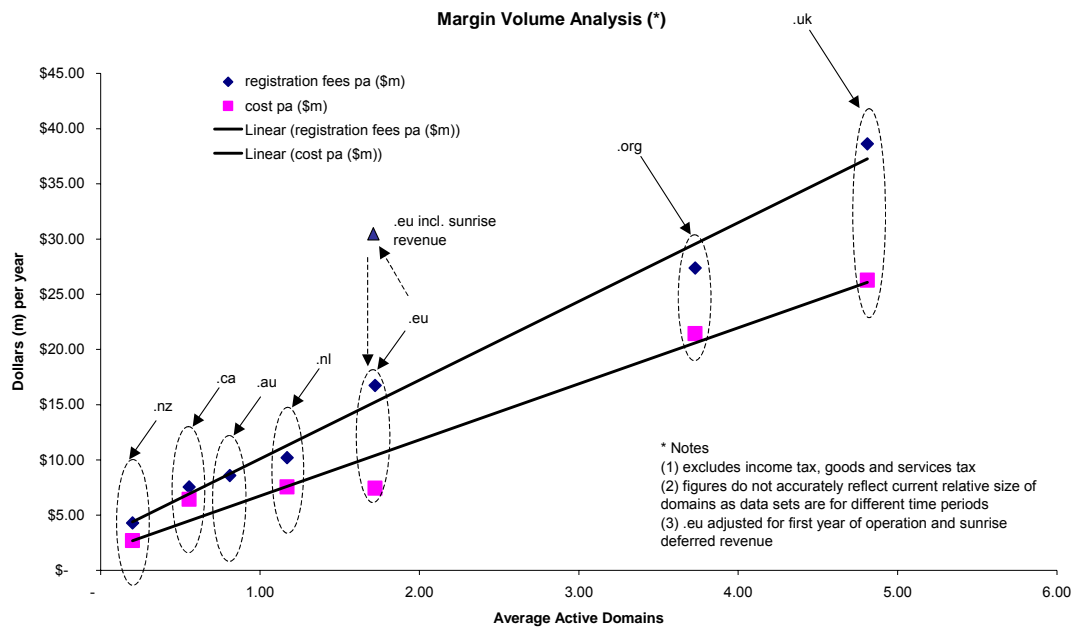An outlier in the above revenue curve is the .eu ccTLD. It should be noted that the accounting information supplied was for the first year of operation, which included both the sunrise and landrush phases of the TLDs creation. An adjustment to remove the deferred revenue accumulated in this first year of operation puts the .eu revenue back on the best fit linear approximation curve.

Noteworthy relating to the above figure is the per domain annual pricing chargeable by both .org and .uk, at around 7-to-8NZD. This is around 33-to-37% of what NZRS currently charges (around 21NZD but declining), and is closely aligned to the current pricing regime enforced by ICANN as part of their TLD letting process (.info at 5.75USD is a recent example[5]). The following figure shows the price per unit (in NZD) charged by each of these registry operators. Note that similar to before, this information is based on estimated figures only, often taking data for each operator over different periods in time to other TLD operators, and that accounting variations specific to each country have not been factored in. Also, prices continue generally to fall, so **.nz**, for example priced last year at $21 per year, is now $18 per year. The 'average' price paid last year for **.nz**, estimated using average volume and the annual accounting information, was $21.50:

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5   http://www.afilias.info/registrars/become_a_registrar/Forms/registry-registrar_agreement_2007-02-12.pdf

Price per Domain per Year (NZD)
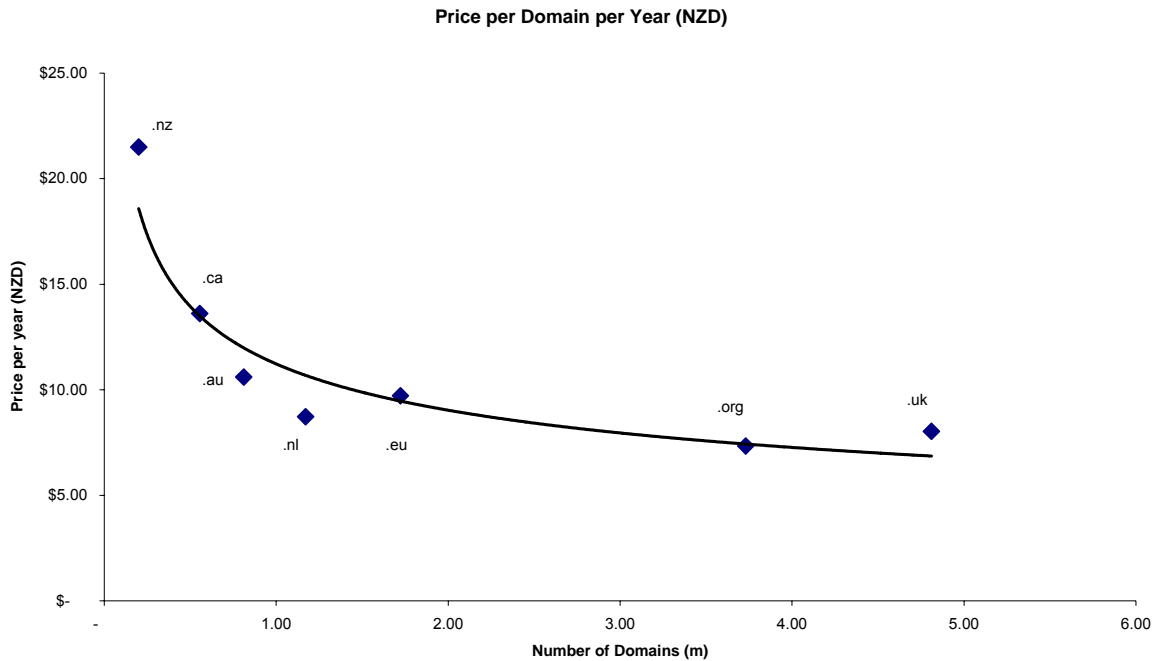
Figure 3: Price per unit charged by registry operators

Assuming an ICANN imposed TLD price limit constraint of around 7-to-8 NZD per active domain would mean that the break-even point on annual operating costs would be around 0.5-to-1 million active domains. This, however, ignores the set-up costs and the initial ICANN consultation period required to obtain a TLD. It also ignores the up to $2 USD per domain name variable fee that ICANN would impose (cf .jobs and .travel at $2 USD)[6].

3.2.4 Financial Impacts

All recently launched gTLDs have generally under-performed on expectations. .info and .biz have under-performed the least, largely due to being able to offer alternative options to losers of the .com naming race. From ICANN's October 2000 TLD application process, there were 188 un-validated applications, 47 validated proposals, 7 accepted proposals that went through to 'go-live', and 2 that are economically viable. Of the 7 that survived the process and are still running, none have met original uptake expectations. The following figure shows the relative number of TLD concepts through to go-live for the October 2000 ICANN application process.

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6   ICANN agreements can be found at www.icann.org. Examples range from 0.15 USD for .tel, 0.25 for .info (the maximum capped rate), 0.75 for .mobi, 1.00 for .cat, and 2.00 USD for .travel and .jobs.

ICANN October 2000 Process

Concept[1]
188

Application[2]
47

Presen-
tation

Approval

Go-live
7

economic
2

.info
.biz

.name
.pro
.aero
.coop
.museum
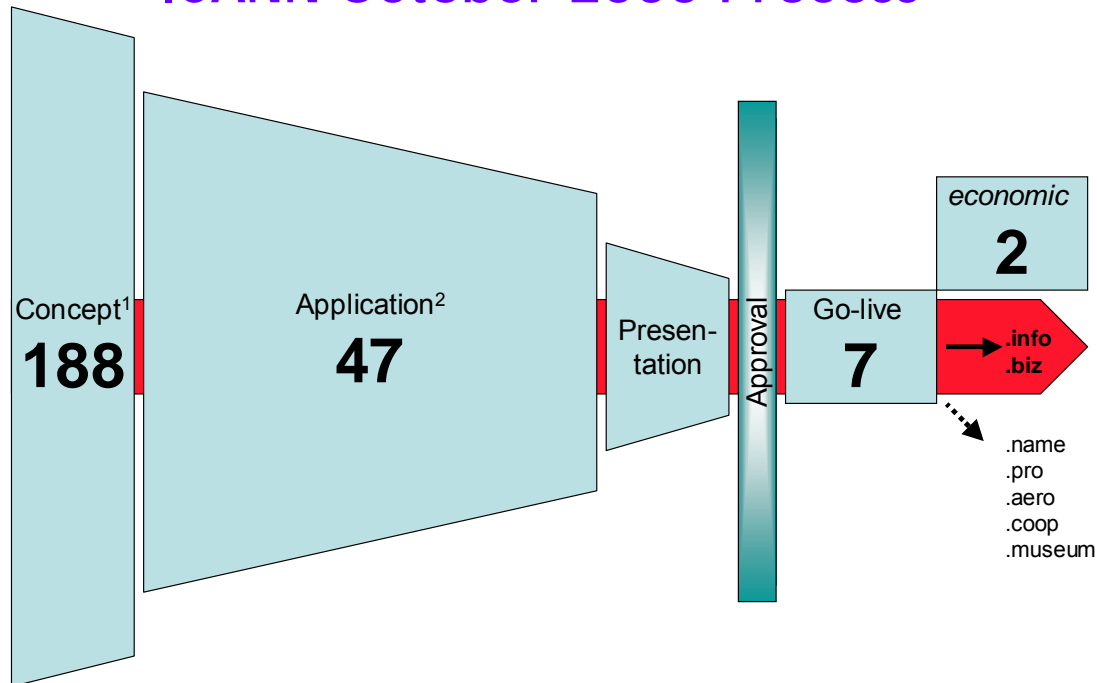
Notes in diagram refer to
1: http://www.icann.org/tlds/tld-applications-lodged-02oct00.htm
2: http://cyber.law.harvard.edu/icann/pressingissues2000/briefingbook/tld-application-chart.html

Figure 4: ICANN TLD application process from October 2000

It is estimated that a new gTLD application lead-time could be somewhere between 5 and 7 years and cost somewhere between $6m and $12m NZ dollars. While the total investment would depend on the scale of the operation (e.g. "niche" versus mass market), the use of .eu as a comparison is made below to show what the potential costs might be for an investment in a new gTLD. .eu has been chosen as the example largely because of its readily available public accounting information (compared to privately held commercially sensitive information of the gTLD operators).

While this is an example of a larger scale operation, .eu is a ccTLD and therefore most likely lacks many of the marketing, policy and additional costs associated with a gTLD application. For this reason this report assumes it to be a fair estimate of what the likely costs and break-even volumes would be for a new gTLD. Given its ccTLD status, however, it is expected to be far too optimistic in terms of domain name uptake.

When considering the .eu analysis, the following list of features / limitations should be noted:
- For a new gTLD, there are overheads in dealing with each country for protected names. This would be a new requirement for NZRS to interact with governments.
- While .eu has been used as an example of cost, lead-time, etc. this is actually a best case scenario, for the following reasons:

- o a ccTLD is not a gTLD and there are different rules and regulations between the two (gTLD rules and regulations being tighter, with more onus on the gTLD operator for compliance).
        - o .eu would be an example of fastest possible time, and may even be unrealistic for a gTLD given that a gTLD would not have the political support from a government.
        - o .eu was most likely cheaper because it leveraged existing (government) governance, infrastructure and services.
        - o .eu costs do not include market research costs associated with finding, evaluating and securing a promising gTLD.
        - o uptake for .eu has been very strong due to trademark assertions, EU market growth and brand strength.
- If .eu is to be used as a point of comparison, it should be moderated by delaying uptake and (at least) quartering the revenue. The following cumulative cost / revenue figure illustrates this point:

NZRS Estimated Cumulative Revenue / Cost for new gTLD (NZD millions)
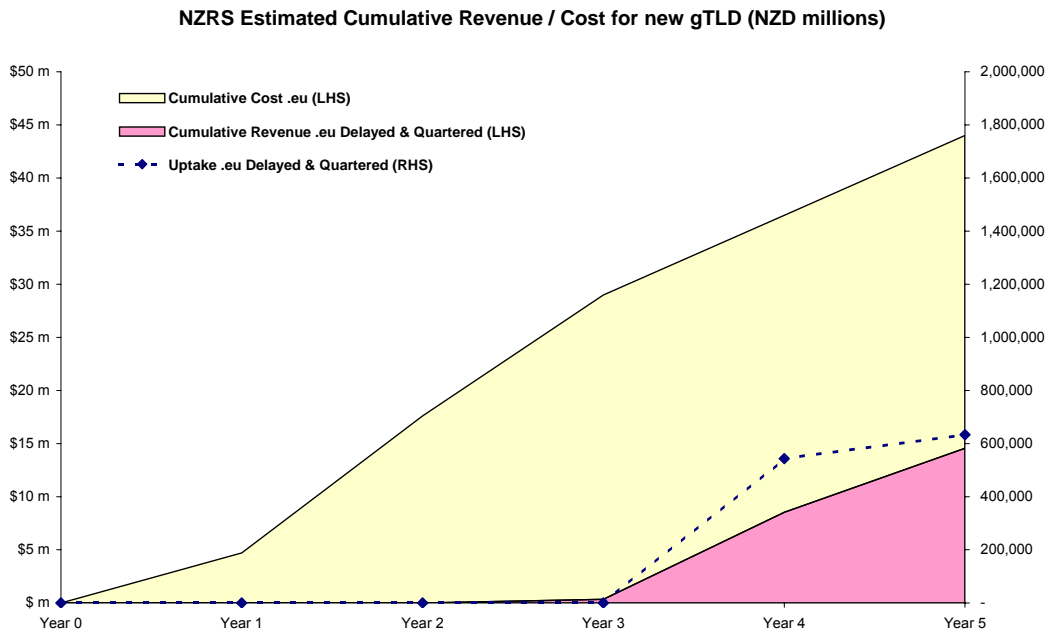
Figure 5: Cumulative cost / revenue estimates for a new gTLD based on .eu financials

There are likely to be ICANN imposed price constraints and an associated minimum volume threshold for a gTLD in order for it to be economic to NZRS. The threshold uptake is estimated at between 0.5 and 1.5 million domain names per year on average. In summary, NZRS could be liable for up to $10m to $12m costs for the new gTLD application and operating the gTLD for the first ~2 years. These costs could grow to $40m NZD over 5 years.

3.2.5   Operational Impacts

NZRS currently is a limited liability company operating within New Zealand under New Zealand legislation. As part of setting up a new gTLD, NZRS would most likely be obliged to set up offices in either USA and / or another country (note that all current gTLDs are based in USA).

The operational impacts of a new country, new laws, new culture, new location, new corporation, etc. should not be underestimated. Lack of local knowledge and expertise, and a lack of credible track record in the chosen country could all lead to operational misadventure, increasing the risk of a loss on investment. In order to mitigate these risks, a partnership with established operator(s) would most likely need to be considered. This may, however, result in trust and control issues, and also brings into question what value NZRS would add to the partnership (given the size and existing market share of most of the established providers).

From a customer / channel management perspective, a multi-lingual, multi-time zone call-centre operation would be required, as would an increased capability on channel management. NZRS currently interacts with less than 100 registrars while a new gTLD operation would required the management of upwards of 2000 registrars. These factors would result in an increased operational burden on NZRS.

3.2.6   Structural Impacts

A new gTLD would be a global product / service. Because of the fundamental differences between the current NZ operation and a new gTLD (e.g. policy, dispute resolution, market, competition, etc.) a new investment / operating vehicle would be required.

NZRS currently operate 4 staff, and pay for a further 5 staff housed within the .nz policy division. While this is suitable for New Zealand operations, a new investment vehicle would require a larger organizational structure. This would have implications on management resource / expertise and the sourcing of appropriately skilled people. The key risk to NZRS and the new gTLD would be a lack of appropriate management applied to the investment.

3.2.7   Political Impacts

Currently, NZRS has obligations to INZ, NZOC and ICANN. With a new gTLD, NZRS' obligations would be extended to cover more stakeholders, including potentially additional shareholder(s), operational partners (cf VeriSign / Afilias), more channel partners, ICANN gTLD processes and policies, USA and other governments. There would be a number of cultural differences to overcome as a result of operating in many different jurisdictions, and there would be an increase in operational overheads.

From a branding and reputation perspective, NZRS would move from being a 'trusted' natural monopoly supplier with relatively healthy government relations (via InternetNZ), to a competitive operator in global market with little or no political support.

3.2.8 Impacts of the Proposal

Application Steps and Timeline:

Various process steps are required in order to establish a gTLD. Generally, these steps need to happen sequentially. The following table lists the steps and provides approximate timelines:

Phase of TLD application and launch	Elapsed Time (months)
Articulating the concept	*12*
Application, incl. policy development, lobbying, channel and marketing costs	*36*
Presentation	*6*
Approval	*6*
Go-live	*6*
Sunrise (to placate the IP constituency)	*3*
Landrush (opening public applicants)	*3*
Real-Time (continues after the launch)	
Total elapsed time	*72 (i.e. 5 yrs)*

The above table provides an expected lead time for TLD applications. Other less successful applications have taken longer. .travel for example, took around 9 years. Note that while .eu was relatively quick at around 4 years, it is a ccTLD (implying it had less compliance costs associated with it) and has received strong support from the European Council. The following table helps to confirm the estimate of around 5-7 years as being realistic:

gTLD name	ICANN application date	Date of sun-rise	Current status	Approx. elapsed time to go-live (years)	Comments
.arts	1997	NA		12+	Part of failed IAHC
.firm	1997	NA		12+	Part of failed IAHC
.nom	1997	NA		12+	Part of failed IAHC
.rec	1997	NA		12+	Part of failed IAHC
.store	1997	NA		12+	Part of failed IAHC
.web	1997	NA		12+	Part of failed IAHC
.aero	2000	2002	Live	4	
.asia	?	2007	About to be launched	2+	
.berlin	2005	NA		4+	
.biz	2000	2001	Live	3	
.cat	2003	2006	Live	5	
.coop	2000	2002	Live	4	
.geo	2000	NA		9+	One of 188 in 2000
.info	1997	2001	Live	6	One of 7 in 2000
.jobs	2000	2005	Live	7	One of 188 in 2000
.kids	2000	NA		9+	One of 188 in 2000
.mail	2000	NA		9+	One of 188 in 2000
.mobi	2000	2005	Live	7	One of 188 in 2000

gTLD name	ICANN application date	Date of sun-rise	Current status	Approx. elapsed time to go-live (years)	Comments
.museum	2000	2001	Live	3	
.name	2000	2002	Live	4	
.post	2000	NA		9+	
.pro	2000	2004	Live	6	
.site	2000	NA		9+	
.tel	2000	2007	Live	9	One of 188 in 2000
.travel[7]	2000	2007	Live	9	One of 188 in 2000
.xxx	2000	NA		9+	Revoked by ICANN

Average time from inception to go live of the above list: ~7.6 years. Average excluding the 1997 applications: ~ 6.3 years.

Notes:
- Excludes the six original gTLDs .com, .edu, .gov, .mil, .net, and .org.

Assumptions:
- Added 2 years prior to official ICANN application date to cover market research, planning, policy development, ICANN socialisation and business approval stages, etc.

Sources:
- Wikipedia: http://en.wikipedia.org/wiki/Generic_top-level_domain
- IANA: http://www.iana.org/gtld/gtld.htm
- ICANN: list of pre-validated submissions from 2000

With an expected lead time of around 5-7 years, there is a risk that NZRS would run out of funding before the new gTLD was up and running. Both the Sunrise and Landrush phases of the launch would require careful management of intellectual property and government naming rights. If this was not managed appropriately, the commercial liability risk / dispute resolution costs would be high. The implications for NZRS are that they would need external legal / audit / process management resource, which is typically expensive (e.g. PWC, Deloitte).

Vagaries of the ICANN process:

The gTLD letting process appears to be currently relatively arbitrary, and is modified as required in response to political or special interest group pressures. As a summary to the ICANN application process, while it is relatively easy to operate a registry (for example, InternetNZ could simply by an Afilias 'tail-end'), there is a large amount of regulatory and policy effort required to get a gTLD up and running. There is, for example, a lot of effort in processing, auditing and resolving IP claims, property rights, appeasement, etc. Also, the process can be subjected to political and lobby group pressure, depending on the nature of the gTLD being requested and the impact that it may have on existing entities from a range of commercial, political and human rights perspectives.

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[7]   Interestingly, .travel was 'officially' registered by IANA in 2005, but did not go live until around June 2007

Money would have to be spent on reserving country names, ccTLD names, International Domain Names (IDN), and even place names and colloquialisms for place names. While some gTLDs may be less political / controversial than others, the process would still have to be followed. In addition to this, there is no international law around the ICANN process, and both ICANN and GAC are answerable under US Law for certain aspects of their TLD application process. It should be noted that the ISCO rfc process also plays a role. I.e. the overall process is very problematic.

Because the policy function would be so different, it would most likely be appropriate to pull in a group of experts with recent experience in the ICANN / GAC policy development process. International experience in this area would be critical. The following is also relevant to the application process:

- All current gTLDs are based in the US, and InternetNZ would most likely require a US corporation to be set up and based in the USA.
- During the application process, someone would need to be stationed in the US for likely at least 2 years to lobby both ICANN and the GAC.
- gTLDs have a higher fixed compliance cost relative to ccTLDs, plus a higher ICANN fixed + variable fee component (up to $2 USD per domain name[8]).
- Investing and running a gTLD would require a completely new vehicle. This is because a gTLD vis-à-vis our current .nz ccTLD would require a new form of registry, policy, dispute resolution process, and be operating in a different (global) environment requiring a lot more marketing effort. Unlike .nz, a gTLD would not be a natural monopoly.

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[8]   Refer for example .jobs ICANN agreement at URL: http://www.icann.org/tlds/agreements/jobs/proposed-jobs-agmt-24mar05.pdf

4   Part 2: Financial viability of a gTLD and implications

It is the view of this report that NZRS (or a new investment vehicle specifically created by InternetNZ) would be extremely unlikely to be able to make money out of a gTLD investment, for all the reasons previously stated in Part 1 of this report. There are two areas that NZRS could play:

(1) gTLD **ownership** (with either a minority or controlling stake) of the gTLD registry function.

(2) **Operation** of a gTLD registry.

This paper concludes that option (2) is not realistic, as this would simply be a technology / operational play, and VeriSign and Afilias are already extremely dominant and competent in this space. However, even with option (1) gTLD ownership, it is noted that all new gTLDs have under performed on expectations, and only .info and .biz have remained economically viable because of their able to offer losers of the .com TLD naming race options to put their organisation's brand online.

The option for a moderated gTLD (cf .pro, .travel, .museum) domain has been considered and assumed to be less attractive than an un-moderated domain. This is because there would be much lower demand for the domain, without the commensurate amount of cost savings, and the authentication requirement would be both costly and have a credibility impact on the operations of the gTLD.

While there may be an opportunity for InternetNZ to partner with a consortium of providers and share the investment risk, the question must be asked, "would a partnership arrangement change the fact that gTLD investments have pretty much all been a failure?" While a partnership model may help to lower the overall risk / return profile, the specifics of such an opportunity would have to be carefully assessed at the time the opportunity was presented to NZRS.

Note that a non gTLD alternative was considered in this report to create a second level domain within .com (e.g. xyz.com). It was determined, however that this option was impractical due to most seven letter .com 2LD possibilities having been already taken or captured by domain name 'tasters' and 'monetisers'. This market is already heavily competed and over-subscribed and does not fit well with NZRS current market positioning.

A final observation to be made is that if NZRS is looking to lower its technology risk by reducing its reliance on the TLD technology, then an investment into a new gTLD would not achieve this objective.

In summary, even while NZRS could likely build / partner for the right capabilities to run a gTLD, the risk – return profile is likely to be very unattractive (i.e. high risk for low return).

Appendix 1: Background

This section contains the background to the NZRS feasibility study into registry management opportunities. It defines the term top level domain (TLD), considers NZRS drivers relevant to investing in a new generic TLD (gTLD), provides an overview of the Internet Corporation for Assigned Names and Numbers (ICANN) proposed new gTLD policy and procedures, tracks key events in previous gTLD applications, looks at the likely economic performance indicators of new gTLDs, summarises some key industry opinions about the creation of new gTLDs, and looks at NZRS's capabilities suited to acquiring new gTLD registry management services.

A 1.1 Key Definitions pertaining to TLDs

Most TLDs with three or more characters are referred to as 'generic' TLDs, or 'gTLDs'. They can be subdivided into two types, 'sponsored' TLDs (sTLDs) and 'unsponsored' TLDs (uTLDs). In the 1980s, seven gTLDs (.com, .edu, .gov, .int, .mil, .net, and .org) were created. Domain names may be registered in three of these (.com, .net, and .org) without restriction; the other four have limited purposes. In 2001 & 2002 four new unsponsored TLDs (.biz, .info, .name, and .pro) were introduced. The other three new TLDs (.aero, .coop, and .museum) were sponsored.

Generally speaking, an unsponsored TLD operates under policies established by the global Internet community directly through the ICANN process, while a sponsored TLD is a specialized TLD that has a sponsor representing the narrower community that is most affected by the TLD. The sponsor thus carries out delegated policy-formulation responsibilities over many matters concerning the TLD.

A Sponsor is an organization to which some policy making is delegated from ICANN. The sponsored TLD has a Charter, which defines the purpose for which the sponsored TLD has been created and will be operated. The Sponsor is responsible for developing policies on the delegated topics so that the TLD is operated for the benefit of a defined group of stakeholders, known as the Sponsored TLD Community, that are most directly interested in the operation of the TLD. The Sponsor also is responsible for selecting the registry operator and to varying degrees for establishing the roles played by registrars and their relationship with the registry operator. The Sponsor must exercise its delegated authority according to fairness standards and in a manner that is representative of the Sponsored TLD Community.

These classifications of TLDs are distinct from a country code top-level domain (ccTLD), which is an Internet top-level domain generally used or reserved for a country or a dependent territory. ccTLD identifiers are two letters long, and all two-letter top-level domains are ccTLDs. Creation and delegation of ccTLDs is performed by the Internet Assigned Numbers Authority (IANA) (e.g. **.nz**, .uk, .eu).

The following is an incomplete list of TLDs by type[9].

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[9] Note that a more complete list of TLDs can be found at IANA's web site: http://data.iana.org/TLD/tlds-alpha-by-domain.txt

Type	TLD
Unsponsored	.biz .com .edu .gov .info .int .mil .name .net .org
Sponsored	.aero .cat .coop .jobs .mobi .museum .pro .tel .travel
Infrastructure	.arpa .root
Startup phase	.asia
Proposed	
Deleted / retired	.nato
Reserved	.example .invalid .localhost .test

In another view, taken from a presentation made by the French Internet Association at the June 2007 ICANN conference in San Juan, the TLDs are separated into sponsored, unsponsored, restricted-chartered and unrestricted-unchartered, as follows[10]:

	Sponsored	Unsponsored
Restricted Chartered	.aero .cat .coop .jobs .mobi .museum .pro .tel .travel	.biz .edu .gov .int .mil .name
Unrestricted Unchartered		.net .org .com .info

The following figure shows the relative mix of TLDs and their growth in recent years (source: VeriSign's June 2007 Domain Name Industry Brief).
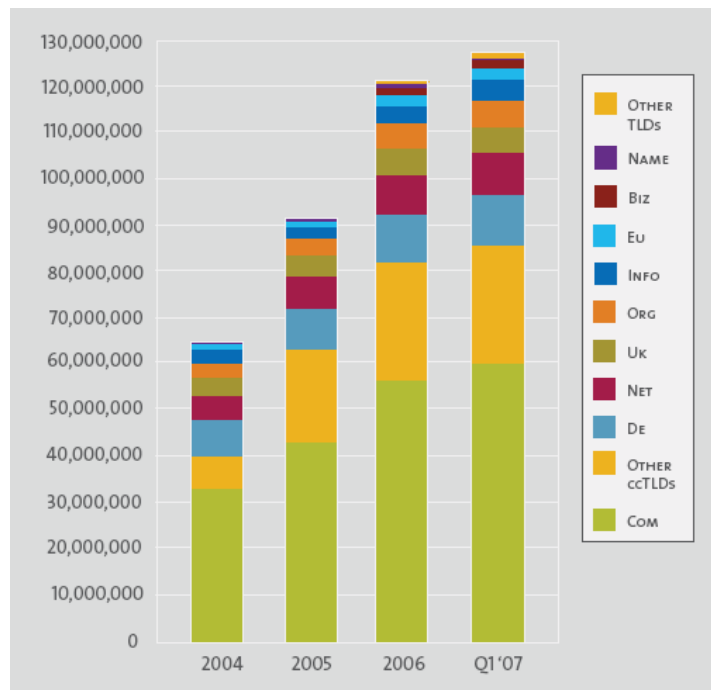

Figure 6: TLD growth by TLD type

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10   http://sanjuan2007.icann.org/files/sanjuan/dotparis-at-ALAC-ICANN-San-Juan-2007-06-26.pdf

A 1.2   NZRS drivers for owning / operating a TLD

NZRS has been operating and managing the Shared Registry System (SRS) and the Domain Name System (DNS) for the **.nz** space since October 2002. As part of the recent TBSR project[11], it was recommended that a number of feasibility reports be commissioned to consider ways to broaden NZRS service base and potentially reduce its reliance on the **.nz** technology. Given NZRS's existing registry management experience, and the fact that NZRS now has 5 years of operating experience under its belt, it was felt that an investigation into other TLD ownership / management opportunities should be undertaken.

A 1.3   NZRS and DNC operational overview

The Internet Society of New Zealand Incorporated (InternetNZ) has responsibility within New Zealand for the **.nz** domain name space and has established a shared registry system for the management of **.nz** domain name registrations and the operation of the Domain Name System (DNS)[12]. This Shared Registry System (SRS) is operated by New Zealand Registry Services (NZRS).

NZRS is a limited liability company, 100% owned by InternetNZ. It was established in May 2002 to operate and manage the registration of **.nz** domain names and the operation of the DNS in the **.nz** domain name space. There is a contract between InternetNZ and the registry governing the requirements for running the register.

The SRS is the computer system used by NZRS to operate and manage the domain name register. The SRS is designed to allow a competitive registrar market for domain name registrations. Under the SRS, there is a single register for registering domain names and associated technical and administrative information. The registration of domain names and modification of information associated with that name on the register can only be done by authorised registrars. There is no direct relationship or communication between the registry and registrants.

The SRS consists of software that enables authorized registrars[13] to interface with the register through a secure means (using digitally signed XML messages) and deliver a range of efficient and effective business services to their registrants. Some of the key services that can be provided through the SRS include the following:
- WHOIS
- Query
- Create / Update / Cancel Domain
- Transfer Domain
- Release Domain
- Update Registrar

While NZRS own both the registry and the ICT infrastructure, the management and development of the ICT infrastructure is currently outsourced. The vendor supplying NZRS cites the following capabilities in their services to NZRS[14]:

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[11]   NZRS Technical and Business Systems Review Project, Doug Mercer, 30th September 2006 (TBSR Requirements v1.2)

[12]   NZRS web site: http://www.nzrs.net.nz/downloads/Detailed_Requirements_Specification.pdf

[13]   Registrar: "A business entity that registers domains with the Registry, and manages them, on behalf of Registrants."

[14]   SRS vendor web site: http://catalyst.net.nz/var/cm/NZRS.php

- non-vendor centric technologies – i.e. open source
- full data replication and total redundancy for 24x7 operations
- supports production, pre-production and test environments
- high levels of security, full non-repudiation, and digital certification.

The SRS vendor's outsourced services to NZRS include:
- Application Support and Maintenance
- System Hosting and Administration - including remote administration
- Hardware monitoring support
- Network monitoring and support
- End-to-end management and support
- Operational management.

The following figure provides an overview of the relationship between the Registrant (end user requiring the domain), the Registrar (entity authorized by the Domain Name Commissioner to provide domain name registration services), and the NZRS SRS and DNS.
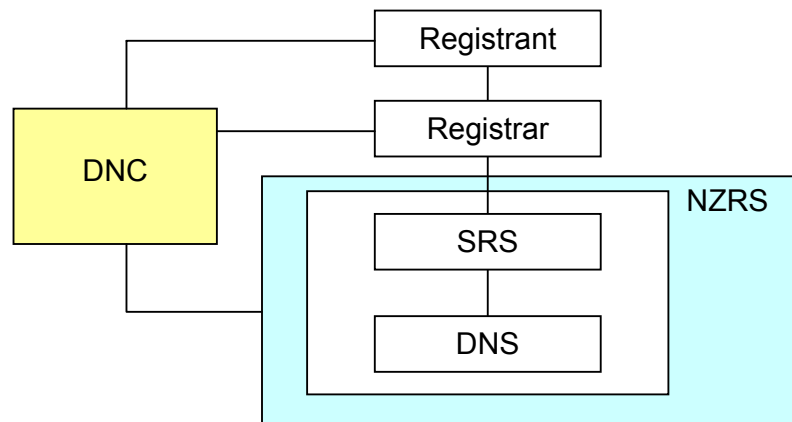
Figure 7: Relationship between Registrant, Registrar and the NZRS SRS & DNS

From a contractual and accountability perspective, the Domain Name Commissioner has a relationship between all three parties, the Registrant, Register and NZRS. The Domain Name Commissioner (DNC) is responsible for the day to day oversight of the **.nz** domain name registration and management system[15]. Under the **.nz** SRS, authorised registrars can register and manage **.nz** domain names directly with the registry. Registrars are authorised by the DNC. Complaints relating to registrations are handled by the DNC. The DNC is an operational office of InternetNZ. From a governance perspective, NZRS is governed via the InternetNZ Board, while governance over the registry function is via the Office of the Domain Name Commissioner.

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[15] Domain Name Commissioner web site: http://www.dnc.org.nz/

A 1.4   Sensitivity to volumes

A feature of an online registry management system, where many of the major ICT components can be ring-fenced and outsourced by the operator to a third party, is a high percentage of fixed costs relative to the total cost profile. Registry operations are therefore highly sensitive to uptake assumptions. The following figure attempts to illustrate this point:

Figure 8: Online systems are highly sensitive to volume variations

In the **.nz** registry situation, for example, the ICT vendor accepts much of the **operating risk** and is likely to follow the 'cost' curve in the above figure (this reflects the fact their contract is heavily centered around t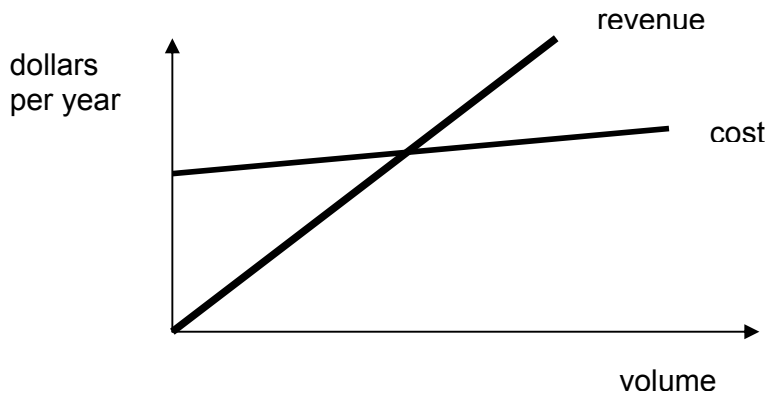ime and materials cost recovery), reflecting a cost plus margin approach to recovery. Meanwhile, both InternetNZ and NZRS take more of the **business risk** of running the registry, including setting the pricing of services to the registrars and forecasting demand uptake, and hence they are likely to more closely follow the revenue curve in the above figure.

The caveat to this is that **.nz** is a natural monopoly, and if volumes were to change dramatically (e.g. more than 20% + / -, say) then pricing would most likely be adjusted accordingly to ensure appropriate cost recovery. This 'natural monopoly' and ability to move pricing should be differentiated from operating a new gTLD where it is expected that ICANN would have much more say and control over the pricing framework (discussed in more detail later in this report).

A 1.5   ICANN

This section outlines a brief history of the Internet, and the role that ICANN plays within the Internet. It outlines the key ICANN principles, and the TLD letting process administered by ICANN. It explains the life-cycle phases of a TLD start-up, and provides highlights from previous gTLD applications including .asia, .xxx, .info and .jobs.

As a summary to the ICANN application process, while it is relatively easy to operate a registry (for example, InternetNZ could simply by an Afilias 'tail-end'), there is a large amount of regulatory and policy effort required to get a gTLD up and running. There is, for example, a lot of effort in processing, auditing and resolving IP claims, property rights, appeasement, etc.

Money would have to be spent on reserving country names, ccTLD names, International Domain Names (IDN), and even place names and colloquialisms for place names. While some gTLDs may be less political / controversial than others, the process would still have to be followed. In addition to this, there is no international law around the ICANN process, and both ICANN and GAC are answerable under US Law for certain aspects of their TLD application process. It should be noted that the ISCO rfc process also plays a role. I.e. the overall process is very problematic.

There may be scope for NZRS to engage an international expert such as Becky Burr (http://icannwiki.org/Becky_Burr). An expert such as Becky Burr may assist in helping InternetNZ estimate the time, effort and cost of an ICANN application for a gTLD. Because the policy function would be so different, it would most likely be appropriate to pull in a group of experts with recent experience in the ICANN / GAC policy development process. International experience in this area would be critical.

A 1.5.1 :   Brief history[16]

In 1972, the United States Defense Systems Information Agency created the Internet Assigned Numbers Authority (IANA). IANA was responsible for assigning unique 'addresses' to each computer connected to the Internet. In 1973, the Internet Protocol (IP) addressing system became the standard for locating all networked computers.

In 1985, the Domain Name System (DNS) was implemented and seven initial gTLD names were introduced by IANA: .com, .net, .org, .edu, .gov, .mil, and .int. In addition to the seven gTLDs, more than 200 country code TLDs (ccTLD) were also approved (see ISO 3166).

Dramatic expansion of the Internet in the 1990s (the dotCOM "boom") created a perceived compression in the domain marketplace. .com was the defacto standard domain, but with over 20,000,000 registrations, it was increasingly difficult for registrants to obtain memorable, intuitive and short names.

During the same time, the Internet Corporation for Assigned Names and Numbers, or ICANN – the successor to IANA – began stimulating competition in the registrar space by accrediting a large number (over 100) of new registrars. Many of these registrars considered expansion of the TLD space as a means of competing with the previous monopoly provider. Hence, a movement began to add TLDs to the root.

In September of 2000, ICANN released a request for proposals for new TLDs. In October of 2000, 47 applications were received and in November, ICANN selected seven new TLDs: .info, .biz, .name, .pro, .aero, .coop, and .museum. These new gTLDs have now all been launched, with .info achieving the highest uptake in terms of total volume and general usage (apparent reasons for this are discussed in more detail later in this report).

A 1.5.2 :   ICANN principles

The ICANN Governmental Advisory Committee (GAC) has recently published an update to their principles related to the introduction, delegation and operation of new generic top level domains (gTLDs) [17].

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[16]   Source: Afilias report: Afilias Global Registry Services, 'New TLD Domain Launch Perspectives', An Executive White Paper, June 2005

[17]   from the ICANN web site: http://gac.icann.org/web/home/gTLD_principles.pdf

According to the ICANN principles document, a gTLD is a top level domain not listed in the ISO 3166 two-letter country code list (note that .eu is listed in the IANA ccTLD database as a country code TLD). In setting their principles, GAC re-iterate ICANN's core principles (the following are abbreviated):

- Preserving and enhancing the operational stability, reliability, security and global interoperability of the Internet
- Respecting the creativity, innovation, and flow of information made possible by the Internet
- Delegating coordination / policy roles as appropriate to other responsible entities
- Broad / informed participation
- Promote and sustain competition wherever possible and beneficial in the public interest
- Open and transparent policy development mechanisms
- Neutral and objective decision making with integrity and fairness
- Balancing the speed of decision making between needs of the Internet and ensuring informed input from those entities most affected
- Accountability
- Duly take into account governments' or public authorities' recommendations.

The following are the summarized ICANN GAC public policy aspects related to new TLDs.

Introduction of new TLDs
1. New gTLDs should respect
   a. the provisions of the Universal Declaration of Human Rights[18]
   b. sensitivities regarding terms with national, cultural, geographic and religious significance
2. ICANN should, unless by prior agreement, avoid country, territory or place names, and country, territory or regional language or people descriptions
3. Must take proper account of prior third party rights, in particular trademark rights as well as rights in the names and acronyms of inter-governmental organizations (IGOs)
4. In the interests of consumer confidence and security, should not be confusingly similar to existing TLDs. To this effect also, no two letter gTLDs should be introduced.

Delegation of new TLDs
1. Evaluation and selection procedure to respect principles of fairness, transparency and non-discrimination
2. Ensure the security, reliability, global interoperability and stability of the DNS, and promote competition, consumer choice, geographical and service provider diversity
3. Applicant registries for new TLDs should pledge to
   a. block at no cost 2LDs of the new gTLD upon demand of governments, public authorities or IGOs
   b. ensure procedures to allow governments, public authorities or IGOs to challenge abuses of names with national or geographic significance at the second level of any new gTLD

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[18] see http://www.un.org/Overview/rights.html

4. Applicants should publicly document any support they claim to enjoy from specific communities
5. Applicants should identify how they will limit the need for defensive registrations and minimize cyber-squatting that can result from bad-faith registrations and other abuses of the registration system

Operation of the new TLDs

1. A new gTLD operator/registry should ensure adequate security and stability of both the TLD itself and the overall DNS, including the development of 'best practices'
2. ICANN and the new gTLD operator/registry should establish clear continuity plans for maintaining the resolution of names in the DNS in the event of registry failure
3. ICANN should continue to ensure that registrants and registrars in the new gTLDs have access to an independent appeals process in relation to registry decisions related to pricing changes, renewal procedures, service levels.
4. ICANN should be transparent and open, allowing for adequate public comment during any material changes to new gTLD operations, policies or contract obligations.
5. GAC WHOIS principles are relevant to new gTLDs (expanded below).

GAC WHOIS principles[19]

The GAC believes that the gTLD WHOIS service should have the capability to serve a number of legitimate uses, including, but not limited to:

1. Supporting Internet network operators responsible for the operation, security, and stability of the Internet;
2. Assisting government and non-government entities in investigations and in enforcing laws and regulations, such as in cases that involve the misuse and abuse of the Internet
3. Facilitating enquiries and subsequent steps to conduct trademark clearances and to counter intellectual property infringement, misuse and theft
4. Building user confidence in the Internet and e-commerce by helping users identify contact details of entities online
5. Allowing users to determine the availability of domain names
6. Assisting businesses, financial institutions, and other organizations in protecting their business interests, combating fraud, complying with relevant laws, and safeguarding the interests of their customers and consumers.

Principles Applicable to WHOIS Data

The GAC believes that the gTLD WHOIS service should provide data about domain name registrants and registrations, subject to ICANN's conditions and procedures intended to promote legitimate use, in a manner that:

1. Satisfies the scope of public policy aspects and concerns outlined in Section 3 above
2. Supports the stability and security of the Internet, from both a technical and public trust perspective
3. Facilitates continued, timely and global access to accurate WHOIS data

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[19] Taken from Internet Governance Project web site
http://internetgovernance.org/pdf/DraftGACWhoisPrinciples.pdf

4. Complies with applicable national laws associated with privacy, consumer protection, trade practices, intellectual property rights, and any relevant global agreement on these subjects.

A 1.5.3 :   TLD letting process

This section covers the published process of applying for and creating a new gTLD. As the section after this shows, however, this 'published' process can be subjected to political and lobby group pressure, depending on the nature of the gTLD being requested and the impact that it may have on existing entities from a range of commercial, political and human rights perspectives.

New gTLDs have previously been established based on proposals that were submitted to ICANN during specific application periods[20]. Applications received during these rounds were evaluated against previously-published criteria, and those applicants who were successful went on to sign TLD Registry Agreements with ICANN.

There is no gTLD application process open at this time, but work is underway to lead to announcement of a new gTLD application round. A policy development process is in progress with the aim of creating a standing policy that will guide future introduction of new gTLDs[21]. Any new gTLD application process will be subject to the new policy.

The Generic Names Supporting Organization (GNSO) is responsible for creating policy applicable to gTLDs. The GNSO's constituencies and Council members work to arrive at consensus policy recommendations which, if adopted by the GNSO Council, are passed on to the ICANN Board of Directors. If approved by the Board, the policy is adopted and implemented by staff. Note that GNSO has recently published a 'final report' concerning the Introduction of New Generic Top-Level Domains (gTLD)[22], but at the time of writing of this feasibility report it had not yet been approved by ICANN.

As yet no dates have been set for a new gTLD application process, with ICANN stating that the "time frame for this is dependent on the outcome of the policy development process". It is expected that a detailed request for proposal (RFP) will be published prior to commencement of any application period. The RFP will provide complete applicant and string criteria requirements, and applications will be assessed against these published criteria. The following flow chart taken from the recent GSNO gTLD report shows an overview of the gTLD letting process.

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[20]   Materials from the previous application processes are available at http://www.icann.org/tlds/app-index.htm (2000) and http://www.icann.org/tlds/stld-apps-19mar04/ (2003-4).
[21]   Information on this process can be found at http://www.icann.org/topics/gtld-strategy-area.html
[22]   http://gnso.icann.org/drafts/pdp-dec05-fr-a-18jun07.pdf

DRAFT v2a - New gTLD Application Evaluation Process

For discussion purposes only

Application submission (Day 0-10)

Applications submitted → Applications complete? → Applications posted

Initial evaluation (Day 11-85)
Note: to include a public ICANN meeting

Public comment on applications

Applicant criteria → Technical/Financial/Operational qualifications

String criteria → Technical issues? → Objections filed?

Draft Initial Evaluation Report (IER)

Public comment on Draft IER

Final Initial Evaluation Report (IER)

Any issues? — No → Entry into contract and IANA process for delegation

Yes

Extended evaluation

Technical/Financial/Operational qualifications

ICANN technical evaluation panel

External dispute resolution process

Draft Extended Evaluation Report (EER)

Public comment on Draft EER

Final Extended Evaluation Report (EER)

Entry into contract and IANA process for delegation into root zone ← No — Any issues? — Yes → End

From the report itself, the key recommendations are as follows:

- Fair, transparent and non discriminatory
- Must not infringe on existing rights of others
- Must not cause any technical instability
- Not contrary to generally accepted legal norms relating to morality and public order
- Applicants must be technically capable of running a registry operation for the purpose that the applicant sets out
- Applicants must have appropriate financial and organizational operational capability
- Applicants are to be assessed in 'rounds' until the scale of demand is clear
- There is to be a renewal expectancy
- Registries must use ICANN accredited registrars (note that ICANN's Registrar Accreditation Agreement has been in place since 2001[23]. Detailed information about the accreditation of registrars can be found on the ICANN website. The accreditation

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[23]   Refer http://www.icann.org/registrars/ra-agreement-17may01.htm

process is under active discussion but the critical element of requiring the use of ICANN accredited registrars remains constant.)

- An application will be rejected if it is determined, based on public comments or otherwise, that there is substantial opposition to it from among significant established institutions of the economic sector, or cultural or language community, to which it is targeted or which it is intended to support.

Further details around the gTLD recommendations made within the report, and the implementation guidelines are listed in the appendices to this report.

Technical checks [24]

As part of the gTLD allocation process, a technical check is also performed. A brief outline of this technical review process, as outlined by the Internet Governance Project, is as follows:

Currently, change requests from registries are sent to ICANN (specifically IANA) for processing. Once it is determined that the changes meet IANA's technical requirements and they are approved by the ICANN Board, the request is forwarded to the U.S. Department of Commerce for review and approval. If the Commerce Department approves, the Root Zone Maintainer (RZM), currently VeriSign, edits and generates the revised RZF. The RZF is then loaded by the Root Zone Distributor (RZD) (also VeriSign at this time) to the Distribution Master Name Server. Once there, it can be retrieved by the other root server operators located around the world.

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[24] Taken from an Internet Governance Project paper: Securing the Root: A Proposal for Distributing Signing Authority: http://internetgovernance.org/pdf/SecuringTheRoot.pdf

A 1.5.4 :   Dispute resolution

All gTLD disputes go to the World Intellectual Property Office (WIPO) for resolution. ICANN's 'Uniform Domain-Name Dispute Resolution Policy' is applicable across all gTLDs[25]. Additional dispute resolution policies may apply to specific circumstances only in individual TLDs. These are also listed below. The UDRP has been adopted by ICANN-accredited registrars in all gTLDs (.aero, .biz, .cat, .com, .coop, .info, .jobs, .mobi, .museum, .name, .net, .org, .pro, .tel and .travel). Dispute proceedings arising from alleged abusive registrations of domain names (for example, cyber squatting) may be initiated by a holder of trademark rights. The UDRP is a policy between a registrar and its customer and is included in registration agreements for all ICANN-accredited registrars.

A 1.5.5 :   Phases of a gTLD application and approximate lead time

Various process steps are required in order to establish a gTLD. Generally, these steps need to happen sequentially. The following table lists the steps and provides approximate timelines:

Phase of TLD application and launch	Elapsed Time (months)
Articulating the concept	*12*
Application, incl. policy development, lobbying, channel and marketing costs	*36*
Presentation	*6*
Approval	*6*
Go-live	*6*
Sunrise (to placate the IP constituency)	*3*
Landrush (opening public applicants)	*3*
Real-Time (continues after the launch)	
Total elapsed time	*72*

The above table provides an expected lead time for TLD applications. Other less successful applications have taken longer. .travel for example, took around 9 years. Note that while .eu was relatively quick at around 4 years, it is a ccTLD (implying it had less compliance costs associated with it) and has received strong support from the European Council. The following table helps to confirm the estimate of around 5-7 years as being realistic:

gTLD name	ICANN application date	Date of sun-rise	Current status	Approx. elapsed time to go-live (years)	Comments
.arts	1997	NA		12+	Part of failed IAHC
.firm	1997	NA		12+	Part of failed IAHC
.nom	1997	NA		12+	Part of failed IAHC
.rec	1997	NA		12+	Part of failed IAHC
.store	1997	NA		12+	Part of failed IAHC
.web	1997	NA		12+	Part of failed IAHC
.aero	2000	2002	Live	4	
.asia	?	2007	About to be launched	2+	
.berlin	2005	NA		4+	

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[25]   Refer to: http://www.icann.org/udrp/

gTLD name	ICANN application date	Date of sun-rise	Current status	Approx. elapsed time to go-live (years)	Comments
.biz	2000	2001	Live	3	
.cat	2003	2006	Live	5	
.coop	2000	2002	Live	4	
.geo	2000	NA		9+	One of 188 in 2000
.info	1997	2001	Live	6	One of 7 in 2000
.jobs	2000	2005	Live	7	One of 188 in 2000
.kids	2000	NA		9+	One of 188 in 2000
.mail	2000	NA		9+	One of 188 in 2000
.mobi	2000	2005	Live	7	One of 188 in 2000
.museum	2000	2001	Live	3	
.name	2000	2002	Live	4	
.post	2000	NA		9+	
.pro	2000	2004	Live	6	
.site	2000	NA		9+	
.tel	2000	2007	Live	9	One of 188 in 2000
.travel[26]	2000	2007	Live	9	One of 188 in 2000
.xxx	2000	NA		9+	Revoked by ICANN

Average time from inception to go live of the above list: ~7.6 years. Average excluding the 1997 applications: ~ 6.3 years.

Notes:
  • Excludes the six original gTLDs .com, .edu, .gov, .mil, .net, and .org.
Assumptions:
  • Added 2 years prior to official ICANN application date to cover market research, planning, policy development, ICANN socialisation and business approval stages, etc.
Sources:
  • Wikipedia: http://en.wikipedia.org/wiki/Generic_top-level_domain
  • IANA: http://www.iana.org/gtld/gtld.htm
  • ICANN: list of pre-validated submissions from 2000

The following figure shows the relative number of TLD concepts through to go-live for the October 2000 ICANN application process.

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[26]   Interestingly, .travel was 'officially' registered by IANA in 2005, but did not go live until around June 2007

ICANN October 2000 Process
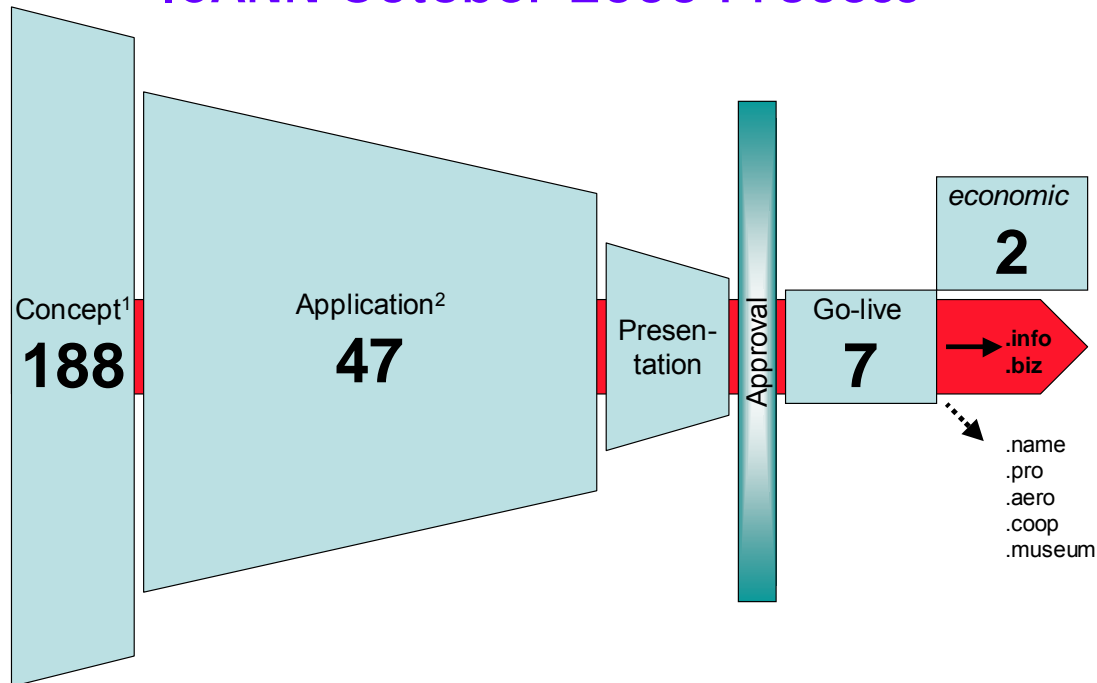
Figure 9: ICANN TLD application process from October 2000

From ICANN's October 2000 TLD application process, there were 188 un-validated applications, 47 validated proposals, 7 accepted proposals that went through to 'go-live', and 2 that are economically viable. Of the 7 that survived the process and are still running, none have met original uptake expectations.

The following is also relevant to the application process:

- All current gTLDs are based in the US, and InternetNZ would most likely require a US corporation to be set up and based in the USA.
- During the application process, someone would need to be stationed in the US for likely at least 2 years to lobby both ICANN and the GAC.
- gTLDs have a higher fixed compliance cost relative to ccTLDs, plus a higher ICANN fixed + variable fee component (up to $2 USD per domain name[27]).
- ICT infrastructure requirements for gTLD providers is higher than New Zealand telecommunications infrastructure can currently support – e.g. resiliency requirements stipulate three alternative physical supply links into the Internet.
- Investing and running a gTLD would require a completely new vehicle. This is because a gTLD vis-à-vis our current .nz ccTLD would require a new form of registry, policy, dispute resolution process, and be operating in a different (global)

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[27] Refer for example .jobs ICANN agreement at URL: http://www.icann.org/tlds/agreements/jobs/proposed-jobs-agmt-24mar05.pdf

environment requiring a lot more marketing effort. It would not be a natural monopoly.

The following is an example of Sunrise and Landrush phases taken from the recent .eu launch managed by EURid[28]

Sunrise: during this period, only holders of prior rights for a name could apply for that name as a .eu domain. Trademarks or company names are two examples of prior rights that could be claimed. For the first half of Sunrise, only holders of trademarks and public bodies could apply for domain names, while during the latter half, phased registration was also opened to holders of other prior rights, such as company names and trade names.

Landrush: Four hours after .eu's public debut, the registry had already registered some 700 000 domain names. This number continued to rise with the number of .eu registrations hitting the 1 million mark that same day. The latter half of the year saw a steady growth in the number of domain name registrations, with .eu passing 2 million in late June, and gave the registry an opportunity to develop and mature its activities in several areas as it moved to a more conventional business model.

A 1.5.6 : Summation of previous proposals

The following provides a brief overview of some previous gTLD applications (.info, .eu and .biz in production,.xxx under negotiation with ICANN and .asia approved and pre-sunrise) and observations made by industry experts relating to the letting of these new gTLDs. The chart below shows the size of .info, .eu and .biz TLDs in relation to the rest of the TLD market.
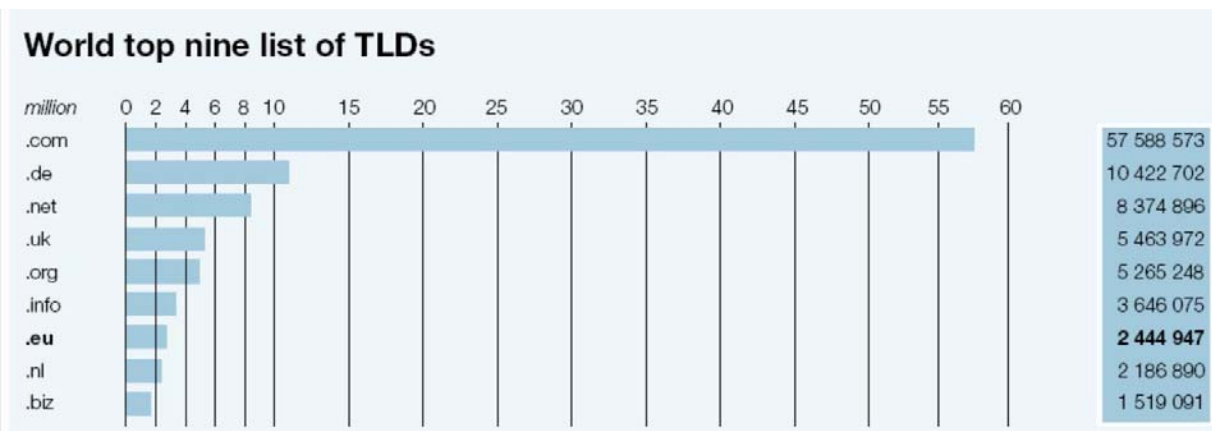
Figure 10: World top nine list of TLDs (taken from the EURid Annual Operating Report 2006)

It should be noted that the following is necessarily a limited list of examples. As noted earlier, from ICANN's October 2000 TLD application process, there were 188 un-validated applications, 47 validated proposals, 7 accepted proposals that went through to 'go-live', and 2 that are economically viable (.info and .biz). Examples of unsuccessful attempts include: .ads, .africa, .biz (x4), .cash, .dir, .dot, .dubai, .event, .fin, .find, .firm, .geo, .health, .i, .kids, .law, .mall, .mas, .mus, .nom, .one, .per, .pid, .post, .union, .web, .xxx.

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28   http://www.eurid.eu/images/Documents/About_EURid/yearinreview2006.pdf

.info

Value proposition: Takes the heat of .com, and may better suit organizational branding
Pricing: USD $5.75 per domain (~$7.60NZD)

The .info domain is the most popular of seven new generic top-level domains (gTLD) that were approved in November, 2000 by the Internet Corporation for Assigned Names and Numbers (ICANN). Since it launched in July of 2001, .info has grown to over 3,500,000 registrations, 60% of which are active, and over 850,000 of which are dedicated .info sites[29]. In their white paper report, Afilias cite the following factors a leading to the 'successful' launch of a new TLD.
- Intuitive/Appealing/Familiar concept
- Registrar acceptance and support
- Standards-based technology
- Aggressive channel marketing

For Afilias, successful aspects of the .info launch were as follows:
- Internet stability was preserved
- **Standards-based technology** requiring little (or no) customization by the registrar
- A **generic but intuitive TLD name** was used that made uptake more successful
- Broad adoption by **distribution channel**: distribution is the single biggest challenge for new products, domains included. For domains, a sound name coupled with operational simplicity and registrar-friendly policies is required in order to gain access to the world's markets. Upon launch in 2001, .info was available through 88 registrars, accounting for a bit less than 90% of all gTLD registrations. Currently, 169 registrars carry .info, accounting for about 97% of the market
- **Competitive pricing**: .info pricing was approved by ICANN at the time the domain was approved, with a registry price of $5.75 per domain per year. At launch, this was the lowest gTLD price in the market (.com sells for $6.00). Since .info was in the same range as other gTLDs, with a slight advantage, registrars understood how to position it competitively, helping it to succeed.

Key measures of success for .info have been:
- Overall uptake of domain registrations
- Level of global (non US) interest
- Domain usage in advertising
- Domain renewals

Issues remaining to be resolved for new gTLDs are as follows:
- **Technical Issues** remain for those who must support new domains, e.g. restricted fields, restrictions on length of field, filtering (e.g. SPAM filters) against new domains
- **Internationalised Domain Names** (IDNs): 'Punycode,' is a recently adopted international standard for converting characters such as international characters such as ö, ç, or Φ into ASCII. Punycode requires language tables and web browser capability.

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[29]   Afilias Global Registry Services, 'New TLD Domain Launch Perspectives', An Executive White Paper, June 2005

- **User Awareness**: end user understanding of the role that new and existing gTLDs play in the Internet.

On a more cynical note, here is a comment posted to the GSNO email archives from a disillusioned teacher in the UK (Richard Henderson of Berkhamsted) expressing his disappointment over his failed attempts to secure good names under the .info TLD[30]:

> *"What became clear from the **.info** launch was that the ICANN Agreement with Afilias had been so loosely written, that - unless the Registry applied its own pre-emptive screening process, the Sunrise provisions effectively allowed anyone in the world to apply for any or all good names, without checks to see if those Trademark claims were fraudulent.*
>
> *There had been an expectation of at least one Afilias Director that the Registry would set in place the checks necessary to weed out the obviously fraudulent applications, but no such protocol materialized - so the Sunrise phase was an open invitation to anyone who wanted to, to abuse the process, and wreck the Landrush phase which was to follow it (because by reserving the name in the Sunrise, the name was then no longer available in the Landrush).*
>
> *The ICANN Agreement with the Registries did have one safeguard - it stipulated that Trademark applications HAD to provide credible data in to meet the criteria of 4 specific data fields : Trademark name, Trademark number, Trademark date, Trademark Country. However, in the event, Afilias failed to implement this rule in the Agreement, and allowed Trademarked names to be registered, even if the data fields had "NONE" inserted, or ridiculous dates like 2040, or Trademark Numbers like 12345678 or 00000000.*
>
> *To this extent, Afilias failed to fulfill the obligations of their Agreement with ICANN, to the clear detriment of thousands of consumers who as a result lost their paid 'chance' to acquire the names in the Landrush phase. This failing on the part of Afilias was compounded by the fact that Afilias was a cartel of registrars, whose companies were also taking money for pre-registrations, as well as submitting ineligible names in Sunrise which negated the prospects of their own pre-registrants."*

The above commentary appears to elude to an issue around potential conflicts of interest during the Sunrise phase for .info, whereby the registrars were both gatekeepers of the pre-registration process, and submitting their own pre-registration names in order to sell or make money out of these at some later point.

.xxx

The .xxx example is a useful insight into the problematic issues surrounding interpretation of the ICANN process. It should be noted that there is a form of change control around each version of application process. .xxx, for example, is still running against an earlier process that is less robust than the current process. NZRS needs to consider the new (to

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[30] http://gnso.icann.org/mailing-lists/archives/ga/msg00899.html

be ratified by ICANN) process, as this will be retained moving forward for any new round of gTLD applications.

ICM Registry are currently negotiating with ICANN for the rights to manage the .xxx gTLD. While this particular gTLD is highly controversial, it helps to highlight key issues in the ongoing debate about who gets to decide what is an appropriate gTLD, and just how the process should best be run. In order to get to a point of being able to 're-present' their proposal to the ICANN Board, the ICM Registry has had to agree to the following constraints:

- Prohibit child pornography
- Engage independent third parties, such as the Internet Watch Foundation, to proactively monitor registrant compliance with registry policies, while leaving ICANN with the right to disapprove ICM's choice of monitoring service providers
- Develop industry best practices designed to protect children online and empower parents and other users to avoid content they do not wish to see
- Create and support an 'International Forum for Online Responsibility'
- Reserve geographic and names that have religious or cultural 'sensitivity'.

In the case of .xxx, there appear to be have been new functions added (not necessarily by choice) into ICANN's brief relating to content regulation have given rise to concern expressed by other industry players (refer also to section A 1.7 Other views on new gTLDs):

- Use of the ICANN registry contract to invoke a form of global legislation, e.g.
  - Content regulation and filtering
  - Taxation to fund development of appropriate tools and quality control measures specifically designed for content filtering
  - Moral awareness programmes
- Selection and placement of suitable content watchdogs
- Determining cultural and religious boundaries on a global basis.

The ICM Registry have been reported to say that "with this contract ICANN takes (another) step away from its technical coordination mandate and adds an element of content regulation to its policy portfolio, alongside trademark/copyright protection."

A more positive spin to the public policy component of ICANN can be taken from ISOC's chairman Fred Baker in an interview with the Italian magazine Internet News: "in some ways it is a public policy maker. That is the reason it has a Government Advisory Council to help it make wise public policy decisions. ICANN seeks significant technical and policy input from a variety of sources to make these decisions. It sees itself as the current guardian of the root zone of the DNS, and of certain aspects of Internet operation. It gets a lot of abuse for the decisions it makes, and at times that abuse may be deserved. But its charter is to set policy for the root zone from a position of public trust, which implies that it gives freedom to operate in ways that don't hurt the Internet, and withholds that freedom when there is a perception that withholding it is better for the Internet."[31]

What these events highlight relevant to NZRS's gTLD feasibility investigations is that
1. the governance regime around the letting of a gTLDs is subject to global and lobby group influence

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[31]   http://www.isoc.org/pubs/int/bakerinterview.shtml

2. the gTLD letting process appears to be relatively arbitrary, and can and is modified as required in response to political or special interest group pressures

.eu

Value proposition: Internet presence across European Union
Pricing: EURO $5 per domain (~$10NZD)

.eu is a recent ccTLD representing the European Union. This is a useful showcase of a recent TLD launch that has published both recent annual account information, and an analysis of the launch phase. .eu has come from relative obscurity to be Europe's third largest top level domain during 2006. The .eu top level domain has within just a few months of the general launch in April 2006 become the third largest top level domain in Europe, only surpassed by .DE (Germany) and .uk (The UK) and it is still growing.

A caveat to the following analysis is that .eu is primarily a ccTLD, not a gTLD. .eu has also had the backing and financial support of the European Commission, making it a much faster and streamlined process than other gTLDs have experienced. ccTLDs are currently the fastest growing sector of the market, driven largely by two main reasons:

- Geographic / country web presence and association
- Niche applications – e.g. .nu (Swedish for 'new'), .tv, .pr (public relations / press release), .is (here is, why is, etc.)

Cost of the launch
.eu is a large scale operation, and (subject to the below limitations) its recent launch provides useful information to inform this feasibility study of what to expect when launching a new gTLD. The following table provides a summary of EURid's key cost components involved in the start-up and ongoing costs for the .eu registry.

Cost category	Description
ICANN application process	Sponsorship of the ICANN application process
Staff and ICT infrastructure	ICT Infrastructure, comprising operational DNS infrastructure and the actual registration system
	EURid staff – tripling in volume over 2006 to 32 full time equivalents
	Development and administration of Commission Regulation (EC) 874/2004 of 28 April 2004, also known as the Public Policy Rules.
Physical presence and channel infrastructure	Accredited Registrars – setup and maintenance of relationships for 1500 registrars in 45 countries
	Head Office in Belgium
	Regional Offices in Stockholm, Prague, Italy (city tba)
	Communications via public website and registrar communications channels (emails, newsletters, webinars, Extranet)
Sunrise phase costs	Processing 340,000 applications from 25 countries, and validating 200,000 of these during the sunrise phase.
	Management of the dispute resolution process by the Czech Arbitration Court including 729 initiated and 445 settled cases
	Performing a post sunrise phase audit

The next table provides an analysis of key accounting information published by EURid for both 2005 and 2006 financial years (Jan through December). This information has been mapped to 'one time' and 'recurring' cost categories in order to estimate a three year average break-even operating volume for the registry. Note that none of the European Commission (and prior to this the European Council) costs relating to the creation of .eu and the ICANN application process have been included in the following figures. Neither have any marketing costs been included that may be expected to be required for a new gTLD.

Cost analysis	2005 ($m euros)	2006 ($m euros)	One time ($m euros)	Recurring ($m euros)
P&L Operating costs				
General costs	1.705	1.119	1.705	1.119
Human resources	.536	1.797	.536	1.797
Operating expenses	.234	1.035	.234	1.035
Assets				
Computers, furniture		.797	.797	
Liabilities (*)				
Provisions (incl PWC sunrise)	4.069		4.069	
Total	6.544	4.748	7.341	3.951
Amortised costs (3yrs)			2.936	3.951

(*) note that it is unclear from the accounting information how much of this liabilities figure would be a 'true' cost to EURid by way of PWC validation versus registrar reimbursement. This analysis assumes 100% 'true' cost.

.eu domain pricing was recently halved by EURid from 10 to 5 euros[32] (~$10 NZD). Very roughly, if all the costs (both one-time and recurring) in the above table are added together, and the one time charges are written-down over three years by multiplying by 40% (which includes the annual cost of capital), the annual recovery required is around 6.9m euros. With pricing at 5 euros per year, the average break-even volume for EURid over 3 years is therefore ~1.4m domains.

Limitations of this comparison:
While the information from the .eu launch is highly transparent, accessible and current, the following list of limitations should be noted:
- For a new gTLD, there are overheads in dealing with each country for protected names. This would be a new requirement for NZRS to interact with governments.
- While .eu has been used as an example of cost, lead-time, etc. this is actually a best case scenario, for the following reasons:
  - a ccTLD is not a gTLD and there are different rules and regulations between the two (gTLD rules and regulations being tighter, with more onus on the gTLD operator for compliance).
  - .eu would be an example of fastest possible time, and may even be unrealistic for a gTLD given that a gTLD would not have the political support from a government.

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[32] http://www.managingip.com/default.asp?Page=9&PUBid=198&ISS=22812&SID=663124

- o .eu was most likely cheaper because it leveraged existing (government) governance, infrastructure and services.
- o uptake for .eu has been very strong due to trademark assertions, EU market growth and brand strength.
- If .eu is to be used as a point of comparison, it should be moderated by delaying uptake and (at least) quartering the revenue. The following cumulative cost / revenue figure illustrates this point:
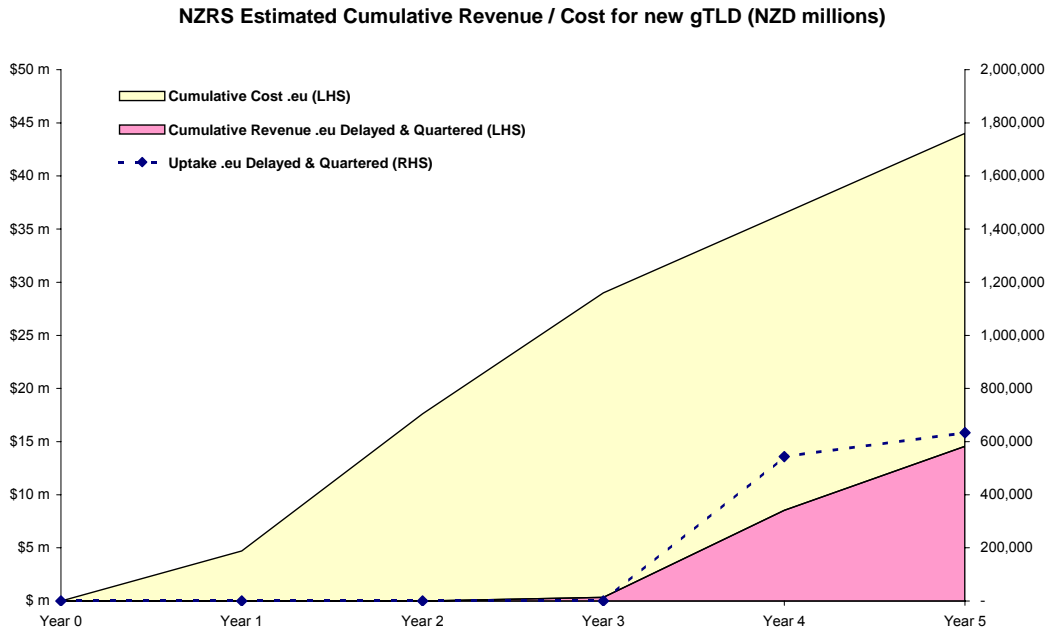
NZRS Estimated Cumulative Revenue / Cost for new gTLD (NZD millions)

Figure 11: Cumulative cost / revenue estimates for a new gTLD based on .eu financials

While this could be a larger scale operation than any proposal put forward by NZRS / InternetNZ for a gTLD, it most likely lacks a lot of the marketing, policy and additional costs associated with a gTLD application. For this reason it may be a fair estimate of what the likely costs and break-even volumes would be for a new gTLD.

.biz

Value proposition: Nothing personal, just business (marketing strap-line from web site)
Pricing: USD $5.30 per domain (~$7NZD)

The .biz TLD is not as open as the .info, since it is intended for business. In particular, it is designed for ecommerce businesses and to take the pressure off of .com. While anyone can get a .com address, the .biz domains are to be restricted in that they "must be used or intended to be used primarily for bona fide business or commercial purposes." Thus, the only sites using the .biz TLD should be involved in business of some kind.

The registry for .biz is NeuLevel.biz (www.nic.biz), the first active .biz address. According to its Registration Restrictions (www.neulevel.biz/countdown/registrationRestrictions.html), a bona fide business use consists of one or more of the following:

1. to exchange goods, services, or property of any kind
2. in the ordinary course of trade or business
3. to facilitate
      (a) the exchange of goods, services, information, or property of any kind; or,
      (b) the ordinary course of trade or business.

One intent of the .biz restrictions is that cyber squatters will not be allowed to just sit on a domain name in the hopes of reselling it to the highest bidder. Nor will NeuLevel let .biz domains be used to only provide information, especially negative information, about a company.

.asia

Value proposition: Asian coverage (like a .com, but for Asia. Expected to be similar to .eu, except .asia is an sTLD, not ccTLD)
Pricing: tba
Sunrise: October 9, 2007

Businesses and other groups located in Asia will now have an alternative to the generic .com top-level domain, when .asia is launched in stages, beginning on 9th October this year. With over 409 million internet users in Asia[33], the new TLD should provide naming opportunities to the world's largest and fastest-growing internet population.

The TLD will be launched in three phases so that businesses can ensure that they will secure their trademarks rather than risk cyber squatters getting them first and holding these companies to ransom. On 9th October, companies will be allowed to secure registered trademark domains, and governments will also be able to register .asia web addresses. On 13th November, the TLD will be opened up to companies who have already secured their trademarks to register additional domain names which are specifically related to their businesses; at the same time, registered companies with an official presence in Asia will also be able to register their domain names, even if they are not trademarked. Finally, in February 2008, the TLD will be opened to the public.

.asia will be operated by Afilias (www.afilias.com). From the VeriSign web site[34]:

.ASIA Announces Official Launch Dates, Pioneer Program; Auction and Validation Agents Selected

> *The DotAsia Organization has announced an updated launch schedule, online auction and validation agents, and a new program to award domain names based on content.*

> *The Sunrise Phase 1 Period (government reserved names) is now scheduled to start October 9 and continue through Land Rush. The Sunrise Phase 2A "Early Bird" Period for trademark holders will also open October 9, and close October 30. Sunrise Phase 2B (general registered marks) and Sunrise 2C (extended*

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[33] Refer to news article at Domain Monster URL: http://news.domainmonster.com/asia_tld_launch/

[34]

   http://www.verisign.com/Resources/Digital_Brand_Management_Services_Resources/Digital_Branding_Bulletin/page_042695.html#01000015

protection) will be open November 13, 2007 to January 15, 2008, as will Sunrise 3 (Registered Entity Names). The Land Rush Period is now scheduled to begin in February, followed by first-come, first-served general registrations in March 2008.

The registry is partnering with Pool.com to provide its online auction platform for Sunrise and Landrush; joining Deloitte Touche Tohmatsu as principal worldwide verification agent; and teaming with Abu-Ghazaleh Intellectual Property (AGIP) for Middle Eastern and North African applicants.

The registry has also introduced a new program designed to award domain names based on relevant content and business plans. Applicants for the Pioneer Domains Program will also be required to submit a deposit in most cases, which will be refunded if the registry does not award the domain name in question.

The program has three categories: "Community Pioneer," which is open to individuals, businesses and other organizations that wish to apply for generic words; "Global Brand Pioneers," for "well-established brand owners to develop active and relevant Web sites and services;" and "Partner Pioneers," which is designed for accredited registrars, technology and service providers to promote the .ASIA extension.

While the Sunrise period is designed to provide comprehensive protective measures for trademark owners, the registry says the Global Brand Pioneers category "offers proactive brand holders who are committed to the Asia community the .ASIA domains that best match their mark and businesses." While the registry says the Pioneer Domains Program is not designed to replace the Sunrise process, it has not clear what the advantages would be for companies to apply through the program versus the Sunrise process. The deadline for submissions is August 31, 2007

A 1.5.7 : Expectation versus reality - reflections on ICANN's new TLDs

The following commentary, relevant to this report, is largely taken from a blog site run by John Levine[35] on his views regarding the recent launches of the three sponsored TLDs .aero, .museum, and .coop and the four unsponsored TLDs approved at the same time, .biz, .info, .name, and .pro. He highlights two key lessons that he took from the process, as follows:

If you build it, they won't care:

All of the new TLDs offered a range of estimates of how many registrations they'd get, at 10%, 50%, and 90% confidence level. Their confidence was misplaced, since none of them have come close to their least optimistic 90% confidence level. The closest is .info which predicted between 3 and 11 million registrations and actually has 2.38m (4.9m, July 2007[36]). The farthest is .pro which predicted between 3 and 15 million and actually has 4900, but it's a special case due to being stuck in limbo for several years when its sponsor ran out of money.

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[35] Refer to John Levine's blog at URL: http://weblog.johnlevine.com/ICANN/tldreflec.html?seemore=y
[36] Refer to Registrar stats at URL: http://www.registrarstats.com/Public/ZoneFileSurvey.aspx

*You can fairly say that .info and .biz with 1.28m (1.8m, July 2007) registrations vs. predicted 3.8 to 30m are successes, but **pretty pale versions of success since each is in practice no more than a clone of .com where people go if there's nothing good available in .com**. It's hard to think of a well known domain in either other than mta.info, the New York City transit authority. Neither has come close to catching up with .org with 4.4m (6m, July 2007) or .net with 6.8m (10.2m July 2007). The next biggest is .name where I counted 142,000 domains against a predicted 7 to 58m. Although my numbers may be a bit low since they sell individual names, it's unlikely they're anywhere close to recovering the $7.5M the proposal said they were investing. The three sponsored domains, as I've noted before, each have only 5% of the minimum they projected.*

The comparison between .aero and .travel is most interesting. The new .travel domain has an aggressive campaign to sell domains to members of trade organizations, and they say they already have over 10,000 registrations, twice what .aero has, even though they haven't formally launched yet. A little spot checking showed an awful lot of .travel domains landing on a registrar's parking page, suggesting they're defensive trademark registrations, but we'll see soon enough.

*In any event, it's clear that **with the exception of .com clones, selling new TLD domains to prospective registrants is somewhere between hard and impossible**.*

Domains are not directories

The .museum and .aero domains both made attempts to build a directory structure into the domain. The .museum domain has a lot of geographic names and keywords you can string together to guess a name, like strong.museum.history.museum, and a wildcard record so if you guess wrong, they show you a web page with suggestions of names you might be looking for. It's not awful, but nobody I know is likely to type getty.museum into their browser address bar rather than getty museum into their Google search box.

The airline industry already has a lot of widely used short names, including two-letter codes for airlines and three letter codes for airports. About 25.000 two- and three-letter codes are reserved for airlines and airports that might want them. Again this is not an inherently awful idea, but again that's not how people look for airlines and airports. Only 41 out of nearly a thousand two-letter airline codes are claimed, and under 500 of 9500 three-letter airport codes. Bret Fausett noted the Little Rock Ark. airport went to the effort of registering littlerockairport.aero but didn't bother to claim their reserved lit.aero.

The .travel domain seems to have recognized this, too, and plans to provide a searchable directory in which .travel registrants are invited to list themselves. I still doubt that it'll supplant Google, but it's easier to make a case for an industry-specific directory than to expect people to remember the naming rules for a directory-like TLD.

A 1.6   High level economic analysis of TLD registry management

The following figure summarises a high level review of published pricing, revenue, costing and volume information from .org, .uk, .eu, .nl, .au and **.nz** TLD registry operators. Note that these figures are estimates only, often taking data for each operator over different periods in time to other TLD operators, and that accounting variations specific to each country have not been factored in (refer to appendices for more detail on the assumptions and tables of figures). With these caveats in mind, it can be seen from the figure below that both the total annual cost and revenue curves appear to show a strong correlation to the number of active domains registered.
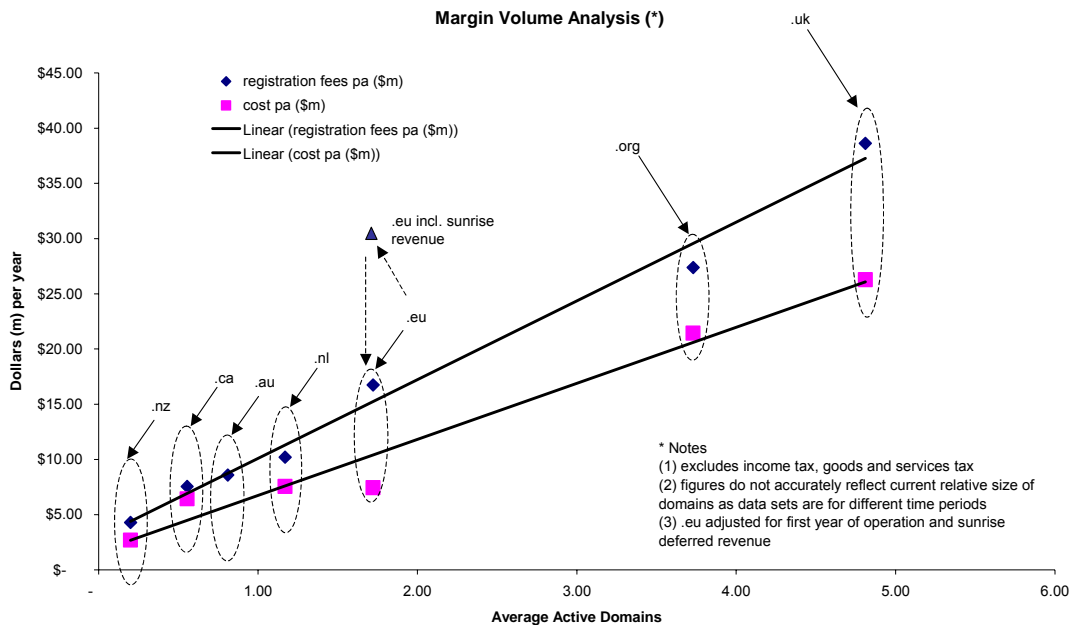

Figure 12: Margin – volume analysis for .nz, .org and .uk TLDs

An outlier in the above revenue curve is the .eu ccTLD. It should be noted that the accounting information supplied was for the first year of operation, which included both the sunrise and landrush phases of the TLDs creation. An adjustment to remove the deferred revenue accumulated in this first year of operation puts the .eu revenue back on the best fit linear approximation curve.

Noteworthy relating to the above figure is the per domain annual pricing chargeable by both .org and .uk, at around 7-to-8NZD. This is around 33-to-37% of what NZRS currently charges (around 21NZD but declining), and is closely aligned to the current pricing regime enforced by ICANN as part of their TLD letting process (.info at 5.75USD is a recent example[37]). The following figure shows the price per unit (in NZD) charged by each of these registry operators. Note that similar to before, this information is based on estimated figures only, often taking data for each operator over different periods in time to other TLD operators, and that accounting variations specific to each country have not been factored in. Also, prices continue generally to fall, so **.nz**, for example priced last year at $21 per

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[37]   http://www.afilias.info/registrars/become_a_registrar/Forms/registry-registrar_agreement_2007-02-12.pdf

year, is now $18 per year. The 'average' price paid last year for **.nz**, estimated using average volume and the annual accounting information, was $21.50:

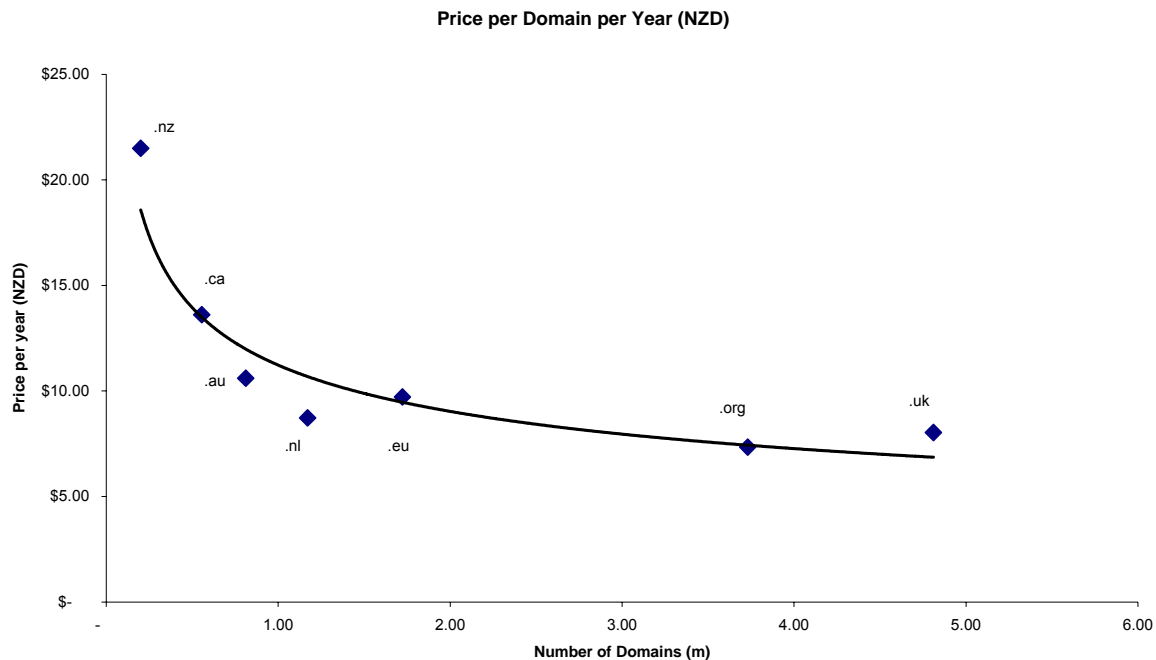**Price per Domain per Year (NZD)**

Figure 13: Price per unit charged by registry operators

Assuming an ICANN imposed TLD price limit constraint of around 7-to-8 NZD per active domain would mean that the break-even point on annual operating costs would be around 0.5-to-1 million active domains. This, however, ignores the set-up costs and the initial ICANN consultation period required to obtain a TLD. It also ignores the up to $2 USD per domain name variable fee that ICANN would impose (cf .jobs and .travel at $2 USD)[38].

A 1.7   Other views on new gTLDs

This section provides some views from industry leaders on the creation of new gTLDs, including views taken from the Internet Governance Project, the Internet Society, World Wide Web Consortium, and the Internet Engineering Task Force. A high level summary of the views expressed is as follows:

- The U.S. government still plays a strong role in decision making at ICANN
- ICANN is capable of 'mission creep' into content regulation (witness .xxx)
- Public and regulatory policy is able to be enforced via ICANN's private contracts, which can be problematic and taxing to potential registrar operators
- The ICANN regime is felt to be somewhat arbitrary and political
- Any constraints on the number of new gTLDs able to be created is primarily a business issue, not a technical issue.
- TLD as filters

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[38]   ICANN agreements can be found at www.icann.org. Examples range from 0.15 USD for .tel, 0.25 for .info (the maximum capped rate), 0.75 for .mobi, 1.00 for .cat, and 2.00 USD for .travel and .jobs.

- o TLDs should not be used for content or application filtering due to a large number of issues, including technical, language variations, freedom of speech, and classification of the content itself.
- o If TLDs are used for content filtering, Internet fragmentation may be caused by segregating content-based speech and creating frameworks susceptible to public and / or private sector censorship.
- o Content filtering could best be implemented via shared content reviewing services, with the ability of those accessing information to select and utilise ratings assigned by such reviewers.
- There is a degree of cynism from the industry that the only people who benefit from new gTLDs are ICANN and registry operators.
- The DNS will not necessarily last for ever, and could conceivably be replaced by a system of national registrars, thus presumably making the concept of gTLDs irrelevant.

A 1.7.1 :   Internet Governance Project

This section contains a brief synopsis from the Internet Governance Project about perceptions of problems inherent within content regulation as implied by the usage of TLDs, the role of governments in setting policy and regulation, ICANN's institutional structure and the impact that all these inputs are purported to have on the gTLD letting process[39].

In their paper 'Triple X, Internet Content Regulation and the ICANN Regime'[40], the Internet Governance Group discuss a range of topical issues facing ICANN, governments and commercial operators and express their views on what makes a good (at least not bad) approach to public policy regulation. Some of these are summarized below:
- There is a somewhat entrenched regime of ICANN enforcing regulation through private and narrowly scoped contracts between itself and its registry operators
- While governments can get to have a say in what is ultimately delivered into the Internet TLD name space, they have to do it in a way that conforms to ICANN's processes
- This may not be as bad, however, as letting governments decide on public / human rights policy without using some form of ICANN-style decision making framework. The reason for this is that not all governments are "democratic" and respectful of human rights in their approach to decision making.
- The .xxx example has shown evidence of 'mission creep' for ICANN to include content regulation. This could be very dangerous to freedom of expression on the Internet if it is extended into other TLD applications.
- The ICANN regime is "highly arbitrary and unpredictable". By way of example, the ICM Registry backing the .xxx TLD spent in the order of $2m USD in legal fees without actually reaching the end goal of having their domain name approved.
- There is still a strong tie between the U.S. government and ICANN, allowing the U.S. to exert strong political pressure on the ICANN decision making process.

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[39] From a paper published by the Internet Governance Project: Triple X, Internet Content Regulation and the ICANN Regime, January 2007

[40] Internet Governance Project: Triple X, Internet Content Regulation and the ICANN Regime, January 2007. http://internetgovernance.org/pdf/new-xxx-contract.pdf

A 1.7.2 :   Fred Baker, ISOC Chairman[41]

From a published transcript of an interview performed by Italian magazine Internet News with Fred Baker in 2004, the following key points were made on the creation of new gTLDs:

- When pressed for an exact number of gTLDs, the IETF said that there is no technical reason to choose one number over another – i.e. there is no technical limit.
- The limit is essentially a business issue – i.e. how many gTLDs are simultaneously viable as businesses? Likely to be on the order of tens, perhaps hundreds, but not thousands.
- The Internet should retain an architecture that allows for hierarchy and scaling
- There have been proposals to replace the DNS with a directory-based system, which may be viable; but the DNS as it stands is not the only way to do this.
- gTLDs could be removed from the system entirely, and people could get their names from national registrars.
- Whatever system we choose must scale to the size of the Internet

A 1.7.3 :   IETF rfc 3675 Issues with web filtering

The following views are taken from a paper submitted by D. Eastlake Motorola Laboratories to the IETF in 2004[42]:

- With regards to web filtering, everyone has different views on how to define the content in order to be able to filter it (e.g. what is sexually explicit in one country or state may not be in another, and these views may / will also change over time)
- Content filtering on TLD could also lead to restrictions on freedom of speech on the Internet. For example, organizations discussing birth control, AIDS prevention, the social problem of prison rape, etc., could be coerced into moving to an adult domain. Once there, they would be stigmatized and easily blocked by schools, libraries, companies, and other groups using filtering software.
- From a technical perspective, the systems required for content classification and labeling would be very cumbersome on the DNS
- There are many languages in the world (around 6000) each of which have different meanings for similarly spelt words.
- There is little or no ability to control what names point at a web site. For example, a .xxx web site could be re-directed to a .KIDS web site, and vice versa. Policing this would be very difficult.
- There are protocol difficulties, including for example the ability using SMTP to change to "from" to a total separate name.
- Filtering on IP address is not granular enough to provide effective content filtering, neither is it practical with IPV4 as there are not enough addresses left to enable this. IPV6 filtering would result in technically unachievable routing table sizes.
- While PICS (Platform for Internet Content Selection) would seem the most appropriate way to implement filtering, this is not seen to be any better than implementing censorship via national government firewalls.
- Any labeling system will be susceptible to compromise by intrusion and changing of the labeling information.

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[41] Internet Society (ISOC), provides leadership in addressing issues that confront the future of the Internet, and is the organization home for the groups responsible for Internet infrastructure standards, including the Internet Engineering Task Force (IETF) and the Internet Architecture Board (IAB). http://www.isoc.org/isoc/

[42] IETF rfc 3675 : .sex Considered Dangerous, D. Eastlake, Motorola Laboratories, Feb 2004

- The concept of a plethora of independent reviewers, some of which might be governmental agencies, and the ability of those accessing information to select and utilize ratings assigned by such reviewers, is possible.

A 1.7.4 :   Ian Jacobs ,W3C

In his article[43], Jacobs provides the following arguments against creating TLDs and using them as a form of either content or access device filtering. Jacobs is a member of the World Wide Web Consortium, whose mission is to

To lead the World Wide Web to its full potential by developing protocols and guidelines that ensure long-term growth for the Web.

From Jacob's article, the following is an overview of why TLDs do not allow effective filtering:

> *On the surface, the primary reason for creating a top-level domain such as ".xxx" is to allow software to filter content more easily that some might deem offensive to themselves or their children. Top-level domains do not allow effective filtering for the following reasons*
> - *no guarantee that all "offensive" material will be confined to these domains. Policing the Internet to ensure that no such material appears outside of ".xxx" is difficult and costly due to complications of International law and the sheer size of the Internet*
> - *Similarly, creating ".mobile" provides no guarantee that all material in the ".mobile" domain will be well-suited for mobile devices*
> - *trust derives from reliability and persistence, which are social issues, not technological issues. Arbitrary boundaries undermine persistence over time, as technology and society evolve*
> - *Many entities with an established presence in existing domains such as ".com" would be unlikely to "pack up and move" to ".xxx"; this would be disruptive to their business. Instead, they would likely purchase a new domain name in ".xxx" and maintain their ".com" presence (e.g., by redirecting requests to the .com name to .xxx). Filters based on the name alone (as opposed to information available through the transfer protocol) would miss the connection*
> - *Anyone can register a domain name and map it to an arbitrary IP address. This is likely to fool TLD based filtering mechanisms*
> - *definition of what is offensive obviously differs greatly from country to country, from year to year, and from person to person*

A 1.7.5 :   Free Speech Coalition (FSC)[44]

FSC maintains an ongoing involvement in lobbying the US Government and other interested parties for the prevention of the creation of the .xxx TLD. While the lobbying in itself is case specific and could be perceived to be largely driven by attempts to protect the status quo for a number of large incumbent suppliers of online pornographic services, it

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[43]   World Wide Web Consortium (W3C), http://www.w3.org/2004/03/28-tld 'Why Using TLDs for Filtering is Ineffective, Harmful, and Unnecessary', 2000

[44]   Free Speech Coalition (FSC), is a US trade association of the adult entertainment industry. http://www.freespeechcoalition.com/

serves to highlight more generic issues associated with the launch of new gTLDs. Some of these issues (expressed more generically) are as follows:

- the apparent influence of the United States of America on day-to-day internet governance
- a gTLD in itself is not able to resolve content filtering issues, although this is often sold as a benefit
- it is a commonly held perception that it is often difficult to find a compelling need for a new gTLD other than for financial profit of registry operators and their investors
- it is also a commonly held perception that new gTLDs may weaken the ubiquity of the Internet by segregating content-based speech and creating frameworks susceptible to public and / or private sector censorship
- gTLDs are susceptible to external regulation, either by ICANN, or by imposed regulatory bodies as specified by the TLD allocation process (e.g. .xxx and the IFFOR governed by directors from outside the online pornographic industry).
- New gTLDs create uncertainty for organizations with existing online operations in terms of brand name, copyright and intellectual property, and can encourage the less attractive human behavioral element of 'cyber-squatting'.

A 1.8   gTLD options available to NZRS

There are likely to be 2 key areas that NZRS (or a new investment vehicle specifically created by InternetNZ) could play. These 2 areas can be differentiated by the amount and type of risk acceptable to NZRS. Ownership includes the overall **business risk**, while operating includes **operational risk**. The following high level options (not mutually exclusive) help to further illustrate this point:

(3) gTLD ownership (with either a minority or controlling stake) of the gTLD registry function. This would imply that NZRS takes on some, if not all of, the **business risk** associated with the gTLD registry function, and either
    a. buy an existing gTLD
    b. applies for a new gTLD from IANA / ICANN

(4) Operation of a gTLD registry. This would imply that NZRS takes on some, potentially all, of the **operating risk** by either:
    a. Entering into further outsourcing arrangements with ICT market (sourcing process required), and / or
    b. Building internal TLD registry management capabilities in terms of commercial, operations and services – e.g. help desk support, ICT infrastructure, etc.

A 1.9   NZRS capabilities

Drawing from the preceding NZRS, INZ and DNC operational overview, this section shows that NZRS has a number of competencies enabling the potential extension of NZRS into other registry services. These competencies are listed in the following table:

Capability	Description
Registry management	Ability to effectively manage registries.
Market credibility as an	5 + years of NZRS operating the **.nz** domain (since May 2002), with INZ

Capability	Description
established provider	responsible for operating **.nz** for 10 years since 1996
Neutral branding	Not associated with any major brand other than InternetNZ. Relatively low market profile as NZRS sits behind the public facing Registrants.
Access to infrastructure and support experience	While not technically operating the SRS and DNS, NZRS potentially has access to appropriate knowledge and systems experience.
Access to policy experience	Potential access to knowledge resource within the Domain Name Commissioner.
Cash on hand	NZRS has around $5m of current assets that could be used to fund an investment into registry management services.
Ability to borrow against future earnings	Strong business model with forward positive looking cash flows, enabling NZRS to borrow investment funds if necessary

A 1.10   Background Section Summary

This background section has highlighted that:
- The governance regime around the letting of a gTLD is subject to global and lobby group influence.
- The gTLD letting process appears to be currently relatively arbitrary, and can and is modified as required in response to political or special interest group pressures.
- There are likely to be price constraints and an associated minimum volume threshold for a gTLD in order for it to be economic to NZRS. The expected minimum threshold based on recent price constraints imposed by ICANN is around 0.5-to-1 million active domains, ignoring the set-up costs, the initial ICANN consultation period required to obtain a TLD, and any associated marketing / promotional costs.
- Recent margin-volume estimates based in the .eu experience indicate break even volumes are around 1.5m million domain names for this scale of operation, and include an estimate of the set up costs and part of the ICANN application process. Note that these estimates were based on the recent .eu ccTLD application and most likely exclude the full cost of the ICANN process (i.e. excludes costs borne by the EC) and would not include any marketing or promotional costs.
- Assuming break-even volumes are achieved, NZRS could be liable to pay ICANN up to $3m US dollars license fee per year (cf $2 US for .jobs per name).
- Dispute resolution: NZRS would have to use the Uniform Domain-Name Dispute Resolution Policy (UDRP), and this would have financial bearing on any gTLD application requiring new policy capability.
- Domains are not directories: there are risks around using the DNS as a technology for filtering web content (e.g. geographic, subject matter, political and sovereignty). The reason for this is that there is much recent evidence of more effective ways to filter on content. The DNS may be at the sunset phase of its useful technology life (cf the fax machine life cycle from early 80's to early 00's).
- Examples of other content based filtering applications are intelligent client-side software, or realms within larger content suppliers such as trademe (http://www.trademe.co.nz/), or Second Life (http://secondlife.com/), as examples.

- all new gTLDs have generally under performed on expectations, and only .info and .biz have been economic as they are able to offer losers of the .com TLD naming race options to put their brand online.
- ccTLDs are reported to be currently the fastest growing part of the TLD market.

Given the size and potential risk of the investment required in any new gTLD, it would appear sensible to presume that if a new gTLD is determined by NZRS to be a worthy investment, some form of partnership with other established provider(s) is necessary. The specifics of any such partnership would have to be evaluated at the time the opportunity was presented to NZRS.

Appendix 2: Business Drivers And Requirements

This section defines what business NZRS is in, what questions need to be answered in order to determine whether or not a new gTLD is a good investment, takes a look at a generic business strategy model and maps the NZRS business onto this model, considers the changing nature of web interactions and content filtering, and looks at what organizations and individuals are expected to need from the online channel, performs a high level competitor / supplier analysis of the current market, and ends with a SWOT analysis summary of the gTLD market opportunities for NZRS.

The conclusions to be taken from this section and results of the SWOT analysis are as follows:

- If InternetNZ / NZRS were to invest in a new gTLD, it would be a global product / service.
- Any organization design work should take into consideration Michael Porter's guiding principles around the ability for organizations to operate multiple strategies simultaneously. I.e.:
    - If two different generic strategies are required, then two completely separate entities and cultures and brands are required.
    - If the same generic strategy is required, then the same company assets and branding could potentially be leveraged, depending on the particulars of the investment opportunity.
- Web 2.0 is driving a number of changes to the way people share, trade and collaborate with each other.
- However, TLDs are also part of the Internet's embedded current navigational framework – the DNS.
- DNS is the current choice of technology to implement registry management capabilities for NZRS.
- For organizations:
    - Web 2.0 and other ways of filtering content are likely to be viewed as complementary new channels to market for companies wanting to target their services.
    - TLDs do currently help companies to retain some form of online identity that can be shown to be similar, yet somehow differentiated from their competitors.
    - It may make sense for other TLDs to be opened up to allow for more organizations to stake their unique claim in the online world.
- For individuals:
    - Likely to want to use large providers such as Google, MSN and Yahoo for uploading and hosting of content and services.
    - The importance of the role played by content aggregators and filtering services will to increase over the foreseeable planning horizon.
    - For downloading content and consumption of services, the use of TLD to locate content and services will decrease in importance.
    - Users may continue to use TLDs as further validation of organizational identity and as stronger online organizational authentication.
- Competitor / partners:

- While there other Web 2.0 etc. style content filtering and directory services that can be provided instead of or alongside existing TLD directory services, these are not analysed to any great amount of detail in this report.
- The TLD market can be roughly divided into gTLD and ccTLDs.
  - The larger gTLDs are dominated by three players, VeriSign (.com), Afilias (.info) and ISOC (owner of .org).
  - The ccTLD market is geographically fragmented, driven by each government's desires for operational independence and retention of some control over the Internet. While a few ccTLDs are outsourced to the larger players, such as Afilias, many countries choose to 'in-source' the operation of their ccTLD.

The following Strengths, Weaknesses, Opportunities and Threats (SWOT Analysis) are identified:

Strengths	Weaknesses
Registry management experience and skills Market credibility as an established provider Neutral branding Access to infrastructure and support experience Access to policy experience (Some) cash on hand Ability to borrow against future earnings	Distance of New Zealand from the market US is current home to all gTLDs Need a corporation based in the USA 2 years in US to lobby ICANN and GAC Higher costs relative to ccTLDs ICT infrastructure requirements very high New investment vehicle required New policy, DR, global, marketing effort Would not be a natural monopoly High up-front cost Long lead-time Low probability of success.
Opportunities	Threats
Input costs may fall, but so too may revenue opportunities Share risk / return with other providers and scope opportunity in more detail Test market using 'xyz.nz' Enter market via 'xyz.com' i.e. as a 2LD within '.com' (could be worth more than the same gTLD)	DNS becomes just another part of technology stack, and therefore less relevant Web 2.0 and other directory services may make TLDs less relevant IDNs expected to be a major disruption '.com' appears to be increasing in value faster than gTLDs Large entrenched incumbent operators who would be expected to fight hard to retain market share

A 2.1   What business is NZRS in?

From their web site[45] InternetNZ works to keep the Internet open and uncaptureable, protecting and promoting the Internet for New Zealand. They also manage the .nz DNS through their subsidiary company NZRS. This in turn assists with the 'navigability' of the global Internet infrastructure. The DNS is the current choice of technology to implement this capability.

A 2.2   What questions need to be answered?

In order to determine whether or not a new gTLD is a good investment, what needs to be considered next is:

- whether or not the concept of the DNS as a technology will remain fit-for-purpose over the foreseeable business planning horizon, i.e.:
  - how long is the window of opportunity, both in terms of getting into a new gTLD (e.g. how many TLDs can the market absorb?) and in terms of exit strategies (i.e. for what length of time is the gTLD market expected to continue to grow and prosper before industry consolidation and / or switch to a new type of Internet directory technology)
- related to the previous point, whether, if the DNS were to be surpassed by a new technology,
  - would there still be a need for the same number of registry operators, or would there be a consolidation in the marketplace of registry operators? If there was a consolidation, who would most likely survive?
  - would the existing registry operators be the ones to stay in control of the registry systems, or would a new group of registry service operators move forward into the registry management space (e.g. Google, MSN, etc.)
- if NZRS were to invest in a new gTLD, then
  - what is the capability of the New Zealand-based operation to scale offshore into an international context?
  - what would be the primary driver(s) for doing this? E.g. financial returns and/or public good?

A 2.3   Michael Porter's Generic Strategies

At this point of the analysis, it is worth introducing some generic business strategy concepts from Michael Porter, and applying these to the NZRS situation. Michael Porter is a world-renowned business strategist, with a prolific number of publications on the topic of strategy and competition. In many of his books[46], Porter makes reference to what he defines as a company's determinants of profitability. Within his framework for profitability, he states that if the primary determinant is the overall attractiveness of the industry within which the company operates, the secondary determinant is its position within that industry.

A company can position itself by leveraging its strengths. Porter argues there are essentially two key strengths that a company can have: cost advantage and differentiation. When these strengths are put into the context of the business 'scope' (i.e. industry wide or narrow), they result in three generic strategies. The three generic strategies of

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45   Refer InternetNZ web site at URL: http://www.internetnz.net.nz/
46   For example, Competitive Strategy: Techniques for Analyzing Industries and Competitors, or Competitive Advantage: Creating and Sustaining Superior Performance by Michael E. Porter.

differentiation, overall cost leadership and focus are described in slightly more detail as follows:

- Differentiation: selling products or services with unique attributes that are valued more highly by customers than other competing products or services
- Cost Leadership: being the low cost producer in an industry for a given level of quality.
- Focus: concentrate on a narrow segment, and within that segment attempt to achieve either a cost advantage or differentiation.

The following table positions Porter's Generic Strategies in terms of target scope and advantage (key strength):

Target scope	Advantage (key strength)	
	Low Cost	Product Uniqueness
Broad (Industry Wide)	Cost Leadership Strategy	Differentiation Strategy
Narrow (Market Segment)	Focus Strategy (low cost)	Focus Strategy (differentiation)

According to Porter, a company attempting more than one of these strategies at the same time can become 'stuck in the middle' and under-achieve on all attempted strategies. This may be due to a number of factors, including dilution of management attention, and loss of brand clarity and positioning with customers. By separating the strategies into different having different policies and event different cultures, a company is less likely to become 'stuck in the middle'[47].

A 2.3.1 : Mapping TLD DNS operations to the generic strategy framework

The .nz ccTLD DNS and registry is a local NZ natural monopoly. It is a narrow market segment of the wider global Internet DNS business. Mapping the business of TLD DNS to Porter's Generic Strategies can be done in the context of both local and global views, as follows:

- **Local view** (NZ based): Operation of the .nz ccTLD falls under the control of InternetNZ. Excluding the event of government intervention, InternetNZ will remain the governing body and as such has a monopoly over the registry function within New Zealand. It has 100% market share of what it does in New Zealand. The monopoly status afforded to it most likely would put InternetNZ and NZRS into the broad (industry wide) differentiation strategy category.
- **Global view**: Operation of the .nz ccTLD fits most closely into the focus strategy (narrow geographic segmentation), and given the natural monopoly status enjoyed by InternetNZ to run the .nz domain, most likely fits into the differentiation segment of the focus strategy.

These classifications can be summarized in table form as follows:

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47   For further discussion on this topic, refer to the QuickMBA tuturial at URL:
      http://www.quickmba.com/strategy/generic.shtml

Target scope	Advantage (key strength)	
	Low Cost	Product Uniqueness
Broad (Industry Wide)	Cost Leadership Strategy	*NZ View*: Differentiation Strategy
Narrow (Market Segment)	Focus Strategy (low cost)	*Global View*: Focus Strategy (differentiation)

The conclusions to be drawn from this application of Porter's framework are as follows:

- If InternetNZ / NZRS were to invest in a new gTLD, it would be a global product / service. This would imply that the current .nz strategy should be considered from a global context (i.e. one of focus with differentiation) in order to better understand where InternetNZ and NZRS' current skill sets and brand profile are positioned in relation to the rest of the world.
- Any organization design work should take into consideration Porter's guiding principles around the ability for organizations to operate multiple strategies simultaneously. I.e.:
  - If two different generic strategies are required, then two completely separate entities and cultures and brands are required.
  - If the same generic strategy is required, then the same company assets and branding could potentially be leveraged, depending on the particulars of the investment opportunity.

A 2.4   The changing nature of web interactions

The following section on Web 2.0 (XML based technology) helps to illustrate a growing trend in how people are using the Internet. If this trend is to continue, it may have significant ramifications for the current concepts of gTLDs and the role they play in the classification and filtering of web content, branding and services.

A 2.4.1 :   Web 2.0

Web 2.0 is a phrase coined by O'Reilly Media in 2003[48] and popularized by the first Web 2.0 conference in 2004 refers to a perceived second generation of web-based communities and hosted services - such as social-networking sites, wikis and folksonomies - which facilitate collaboration and sharing between users[49].

O'Reilly Media titled a series of conferences around the phrase, and it has since become widely adopted. Although the term suggests a new version of the World Wide Web, it does not refer to an update to Web technical specifications, but to changes in the ways systems developers have used the web platform. According to Tim O'Reilly,

> *"Web 2.0 is the business revolution in the computer industry caused by the move to the Internet as platform, and an attempt to understand the rules for success on that new platform."*

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[48]   http://radar.oreilly.com/archives/2006/05/controversy_about_our_web_20_s.html
[49]   Wikipedia, Web 2.0: http://en.wikipedia.org/wiki/Web_2#_note-0

Extensible Markup Language (XML) has been one of the main enablers for a Web 2.0 approach, allowing the separation of content from form. Originally users were constrained by the design of their web sites as the content was embedded in the HTML form of the web site. XML removes this constraint by allowing content to be "embedded" and then updated within a pre-defined context, and / or the context to be modified around the content. XML facilitates automated data exchange. This has given birth to an era of more flexible / customizable content management and greater end user control. Web 2.0 postulates the concept of the Internet 'self learning' and us teaching and optimizing the public facing side of the web through our own individual actions.

O'Reilly provides examples of companies or products that embody these principles in his description of his four levels in the hierarchy of Web 2.0-ness[50]:

- **Level 3 applications:** the most "Web 2.0" oriented, which could only exist on the Internet, deriving their power from the human connections and network effects that Web 2.0 makes possible, and growing in effectiveness the more people use them. O'Reilly's examples were: eBay (cf **Trademe** in New Zealand), craigslist, Wikipedia, del.icio.us, Skype, dodgeball and Adsense.
- **Level 2 applications:** which can operate offline but which gain advantages from going online. O'Reilly cited Flickr, which benefits from its shared photo-database and from its community-generated tag database.
- **Level 1 applications:** also available offline but which gain features online. O'Reilly pointed to Writely (now part of Google Docs & Spreadsheets) and iTunes (because of its music-store portion).
- **Level 0 applications:** which would work as well offline. O'Reilly gave the examples of MapQuest, Yahoo! Local and Google Maps. Mapping applications using contributions from users to advantage can rank as "level 2".
- **Non-web applications:** like email, instant-messaging clients and the telephone.

Web 2.0 is driving a number of changes to the way people share, trade and collaborate with each other. Web 2.0 may drive changes into the heart of our existing social fabric including, for example, intellectual property, copyright, authorship, identity, ethics, aesthetics, governance, privacy and commerce.

A 2.4.2 : Content filtering

Web 2.0 potentially has profound implications for the way people manage web navigation and content filtering. For example, the Web 2.0 Director supplied by 'eConsultant' has over 1200 web 2.0 sites/services/links in over 50 categories[51].

Further confirmation of a converging industry viewpoint that Web 2.0 is changing the way we live and interact online can be taken from a blog site run by Ross Dawson, CEO of Advanced Human Technologies[52]. The following is an extract from his blog:

> *The primary focus recently has been on the explosion of user generated content, with Wikipedia, MySpace, YouTube and many others just the*

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[50] Tim O'Reilly (2006-07-17). Levels of the Game: The Hierarchy of Web 2.0 Applications. O'Reilly radar.
[51] Refer to the eConsultant web site at URL: http://web2.econsultant.com/content-filtering-services.html
[52] Refer to Ross Dawson's blog at URL: http://www.rossdawsonblog.com/weblog/archives/2006/09/post_2.html

vanguard of an immense wave of content creation, unleashed by accessible tools of production and sharing. We are moving towards a world of infinite content, further unleashed by the vast scope of content remixing and mashups.

With massively more content available, we need the means to filter it, to make the gems visible in vastness of the long tail. Fortunately, Web 2.0 is in fact just as much about user filtered content as about user generated content.

As far more people participate in the web, as technologies such as blogging, social networking, photo sharing and more become easier to use, the collective ability of the web to filter content is swiftly growing, and will more than keep pace with the growth in content.

Dawson goes on to cite the common user filtering mechanisms as:
- **Clicks** indicate popularity of specific content within a site (with many caveats).
- **Links** are stronger and more valid votes on the value of content.
- **Ratings** provide explicit opinions on quality.
- **Tags** describe content with words, locations etc.

In Dawson's view, there are two primary ways of implementing user filtering: taking data from across the web, and from within one site.

Filtering on data from across the web:
- Google's PageRank (www.google.com) is an example of web-wide user filtering, where people's aggregated linking behaviors enable people to find relevant content.
- Technorati more explicitly shows how many blogs link to other blogs or blog posts, to indicate their authority.
- Techmeme (www.techmeme.com) draws on the timing and relationship of new links to uncover current conversations.

Filtering on data from within one site:
- Amazon.com's (www.amazon.com) book recommendations kicked off site-specific user filtering, notably by identifying related titles.
- Slashdot (www.slashdot.org) was for several years the primary site that enabled communities to select stories and rate each others' commentary.

Examples of other user driven content filtering services include Digg.com (www.digg.com), Reddit (www.reddit.com), Meneame, and Shoutwire (www.shoutwire.com). Content sites such as YouTube, Flickr, MySpace, and Odeo all embed user filtering as core features of their services.

Social search engines such as Eurekster and Yahoo!'s Search Builder indicate the next level of sophistication of search, enabling filtering aggregation of specific communities rather than the web at large. Tools such as Last.FM and Yahoo!'s Launchcast will, with permission, use extremely detailed personal taste profiles to provide content filtering for individuals.

What is clear from this section is that new mechanisms will emerge that draw on people's web activities, tagging, specific communities, and combine these perspectives in various

ways to create more refined user filtering. This filtering will increasingly be designed to be relevant to people with particular interest profiles.

A 2.5 <u>What organizations want</u>

Generally, organisations want to
- Achieve objectives as outlined by shareholders and / or key stakeholders.
- Typically, one such objective is to make a satisfactory risk-related return on investment.
- In order to do this, organizations need to
  o be able to be easily reached
  o maintain and uphold claims over branding and intellectual property rights and other resources they deem essential to their effective operations. Often this involves keeping control over the channels to market, and not having to be reliant on other firms resulting in brand dilution.
  o manage risk appropriately

In addition to personal face-to-face contact, organisations have many ways to stay in touch, and these are increasing as technology enables new ways of customer interactions to occur. By way of example, the following table shows some channel options available in the old world and now in the current world, highlighting how much channel access and delivery options have increased over recent times:

Technology	Old world	Current world
Mail	Post pick up Post box pick up Physical delivery	Post pick up Post box pickup Physical delivery Street receiver lodgment Virtual box services Hybrid mail / email services
Telephone	Direct dialing	Direct dialing PSTN reverse charging Mobile networks, and reverse charging mobile networks SMS, WAP Hybrid voice / online
Online	Static web site URL Email	Static web site URL Email Search engines Blogs and other Web 2.0 content management and filtering technologies

In summary, the following is relevant for organizations:
- Web 2.0 and other ways of filtering content are likely to be viewed as complementary new channels to market for companies wanting to target their services to specific interest groups who identify themselves online by the types of transactions, linkages, ratings, content groupings and affiliations that they create.

- TLDs do currently help companies to retain some form of online identity that can be shown to be similar, yet somehow differentiated from their competitors. Further to this, if a TLD becomes large (e.g. .com) and names within it harder to find, then it may make business sense for other TLDs to be opened up to allow for more organizations to stake their unique claim in the online world.
- TLDs are also part of the Internet's embedded current navigational framework – the DNS.

A 2.6   What individuals want

It is likely that individuals want the following:
- To be able to load information up into the Internet easily.
- To be able to find what they are looking for quickly and easily.
- To be able to join new and access existing services quickly and easily.
- Low hassle, low cost interactions.
- Need to know who they are dealing with: i.e. a confirmed / moderated 'other party'.
- Work in environments that maintain or enhance individual privacy.

For individuals, the following is assumed by this feasibility report:
- For uploading and hosting of content and services, individuals are less likely to be concerned about branding and ownership rights (with exception of intellectual property rights and preservation of individual identity), and more likely to want to leverage the bundled services and low entry cost models provided by larger scale providers such as Google, MSN and Yahoo.
- the importance of the role played by content aggregators and filtering services will to increase over the foreseeable planning horizon.
- For downloading content and consumption of services, the use of TLD as a technology for filtering web content (e.g. geographic, subject matter, political and sovereignty) will decrease in importance over time as it becomes just another way to search for organizations, services and content.
- Because organizations may choose to value and hold on to their TLD names, however (as discussed in the previous section), users may continue to use this as further validation of organizational identity and / or link to some form of stronger online organizational authentication.

A 2.7   Competitive / Partner analysis

While there other Web 2.0 etc. style content filtering and directory services that can be provided instead of or alongside existing TLD directory services, these are not analysed to any great amount of detail in this report.

The TLD market can be roughly divided into gTLD and ccTLDs. The larger gTLDs are dominated by three players, VeriSign (.com) and Afilias (.info) and ISOC / PIR (.org). The ccTLD market is geographically fragmented, driven by each government's desires for operational independence and retention of some control over the Internet. While a few ccTLDs are outsourced to the larger players, such as Afilias, many countries choose to 'in-source' the operation of their ccTLD.

A 2.7.1 :   VeriSign (http://www.verisign.com/)

VeriSign is a large US company vested by ICANN with the rights to run the .com and the .net TLDs. VeriSign also runs the .jobs TLD on behalf of Employ Media (i.e. they run both

wholesale and retail models of domain name registry). From their corporate overview, VeriSign operates digital infrastructure that enables and protects billions of interactions every day across the world's voice and data networks. VeriSign processes daily around 31 billion Internet interactions and support over 100 million phone calls.

VeriSign helps companies to deliver integrated marketing campaigns and mobile content across the three screens of personal computers, mobile phones, and television sets. Their solutions help organizations to deliver emerging services such as mobile banking, voice over Internet Protocol (VoIP), and video over broadband. VeriSign provides layered security solutions that protect an organization's consumers, brand, Web site, and network. Their digital certificates help to protect over 750,000 Web servers.

VeriSign supplies services into a range of industries, including carriers, consumer product and retail companies, financial services organizations, healthcare and life sciences organizations, media and entertainment companies, and the public sector. VeriSign is a global enterprise with offices throughout the Asia-Pacific region, Europe, Latin America, and North America, supported by a widespread international network of data centers and operations centers.

Interestingly, VeriSign identify the ccTLD market as the 'fastest growing market of domain registries', and identifies three likely target markets for registrars to focus ccTLD channel marketing: multi-national corporations in need of multi-national online branding, medium-sized enterprises expanding beyond their borders, and local businesses where registrar gaps exist[53].

VeriSign currently offers one-stop-shop access to fifty-four ccTLDs through their 'Name Store Platform', accounting for 10.5 million domain registrations with an average annual growth rate of 23% per year. In VeriSign's view, the market for country domain names is on the rise as use of the Internet goes global. To capture more of this growth market, VeriSign offers a range of market research papers and resources to assist people with understanding and leveraging the ccTLD markets.

A 2.7.2 :   Afilias (www.afilias.com)

Afilias launched its registry services in July 2001 with the launch of the top-level domain registry for .info. Today, Afilias provides registry services for .info, .org, .mobi (for the mobile Internet), .aero (for the aerospace industry), .asia (for the Asia Pacific region) and several country code TLDs (ccTLDs). Like VeriSign, Afilias run both wholesale and retail registry management models. In total, Afilias supports over eleven million domain names, making it the second largest provider behind VeriSign of registry services worldwide. In addition, Afilias' technology supports supply chain and radio frequency identification (RFID) networks through its Afilias Discovery Services (ADS).

Afilias maintains international headquarters in Dublin, Ireland, sales offices in London, England, sales and operational facilities in Toronto, administrative offices in the U.S. near Philadelphia, PA, and operational offices in New Delhi, India. Afilias' technology supports a wide range of applications, including top-level Internet domain registries such as .info and .org (under contract to the Public Interest Registry) and several sponsored and country

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[53]   Refer to VeriSign web site at URL: http://www.verisign.com/information-services/naming-services/cctlds/index.html

code domains, as well as supply chain enablement technologies such as Afilias Discovery Services.

Recently (July 2007) GoDaddy.com and Afilias USA have teamed up to create The Domain Name Alliance Registry ('Alliance Registry'), a joint venture seeking to assume stewardship of the usTLD[54].

A 2.7.3 : Others

There are numerous combinations and permutations of TLD owner / operator models. While many ccTLD's tend to be 'insourced' (e.g. .ca - Cira, .eu – EURid, .au - AUDA and AusRegistry), a small number are also outsourced to larger operators such as Afilias (e.g. AG (Antigua and Barbuda), BZ (Belize), GI (Gibraltar), HN (Honduras), IN (India)).

A 2.7.4 : Consolidation to a single standard platform

The TLD registry industry lead by VeriSign and Afilias appears to be consolidating to a single registry technology called Extensible Provisioning Protocol (EPP)[55]. EPP is an IETF standard connection oriented application layer protocol for provisioning objects (domain, hosts and other related objects) shared in a common repository. This is an XML based protocol that supports a hierarchical and extensible data structure.

There are two majors aspects to EPP: objects and actions. Objects are entities stored in the EPP registry, such as domains, contacts and hosts (aka "nameservers"). Actions affect changes to the registry and the objects it contains (e.g. check, create, update, delete...). EPP registries and registrars communicate via messages in XML format. XML organizes data in requests and responses into logical groups and hierarchies. Because of the way the protocol is defined, it is transport independent. This means that a registry may offer any number of transport layers to carry the EPP message (e.g. plain TCP, TCP+TLS, SMTP, BEEP, ...). EPP is also extensible. Registries, depending their own or their domain's business needs, may define additional object type or actions, or even additional payload data for existing messages.

EPP may help to drive industry consolidation as the technology is standardized and countries and companies look to lower their operating costs. One of the biggest issues to resolve in order for consolidation to occur would be perceptions of trust / control over the Internet if countries were to outsource their TLD operations to an offshore company.

For NZRS, EPP will be the required platform, rather than SRS. This means the current technology platform run by NZRS cannot be leveraged, and a new technology platform would be required. It is worth noting that SRS to build around 5 years ago was $1m NZD. To repeat this process now for EPP would most likely cost closer to $2m NZD (*this estimate to be validated*).

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[54]   Refer to Afilias web site at URL: http://www.afilias.info/news/press_releases/pr_articles/2007-07-31-01
[55]   Refer to VeriSign web site at URL: http://www.verisign.com/information-services/naming-services/com-net-registry/page_028585.html

A 2.8   Strengths Weaknesses Opportunities Threats (SWOT) Analysis:

A SWOT analysis is a useful way to summarise the key issues surrounding gTLD opportunities for NZRS. The following is a summary of the strengths, weaknesses, opportunities and threats associated with a new gTLD application.

A 2.8.1 :   Strengths

- Registry management experience and skills
- Market credibility as an established provider
- Neutral branding
- Access to infrastructure and support experience
- Access to policy experience
- (Some) cash on hand
- Ability to borrow against future earnings

A 2.8.2 :   Weaknesses:

- Distance of New Zealand from the market
- Distance of New Zealand from the US (home of all current gTLDs)
- All current gTLDs are based in the US, and InternetNZ would most likely require a corporation to be set up and based in the USA.
- During the application process, someone would need to be stationed in the US for likely at least 2 years to lobby both ICANN and the GAC.
- gTLDs are expected to have a higher fixed compliance cost relative to ccTLDs, plus a higher ICANN fixed + variable fee component.
- ICT infrastructure requirements for gTLD providers is very high – e.g. resiliency requirements stipulate three alternative physical supply links into the Internet (something that New Zealand cannot currently do).
- Investing and running a gTLD would require a completely new vehicle. This is because a gTLD vis-à-vis our current .nz ccTLD would require a new form of registry, policy, dispute resolution process, and be operating in a different (global) environment requiring a lot more marketing effort.
- A new gTLD would not be a natural monopoly.
- High up-front cost, with a long lead-time and low probability of success.

A 2.8.3 :   Opportunities:

- The cost to run TLDs may fall if ICANN removes many of the current restrictions and lowers its licensing costs. This is unlikely, however, given the vested commercial interests of large influential American organizations such as VeriSign, for example. What is more likely is the DNS will become obsolete (e.g. just another part of the technology stack) as service providers and content aggregators provide their own web navigation tools and organization / individual / application / content, etc. directory services. The drop in input cost of TLDs is also a double-edged sword, because if the input cost of TLDs fall, so too will the potential revenue from them.
- There may be a possible opportunity if InternetNZ were to partner with a consortium of other providers. These providers could agree to share the risk / return and work collaboratively to scope the opportunity in more detail.

- There may be an option for InternetNZ to 'market test' by launching an 'xyz.nz' domain name and testing market demand for it. This could be achieved by working collaboratively with proponents of likely good names.
- An alternative to 'xyz' TLD, is 'xyz.com', which is not a TLD, but rather a 2LD within the .com TLD.

A 2.8.4 : Threats:

- IDNs are expected to be a major disruption to the IANNA process (e.g. there are reportedly at least 13 different ways to spell the company name 'Toshiba' using IDNs), driving additional requirements into the gTLD application process. IDNs may actually limit markets by inadvertently filtering an organisation's web site out of a search query.
- DNS may be replaced by new technology.
- .com appears to be increasing in value, not decreasing. E.g. it could be that .info.com is more valuable that .info, etc. This is also an opportunity if InternetNZ decides that a particular 'xyz.nz' domain name is valuable, it could then look to invest in 'xyz.com'. This would be subject to a lot less political and regulatory intervention and be a lot easier to get up and running.
- Versign and Afilias are large entrenched incumbent operators in gTLD space who would be expected to fight hard to retain market share

Appendix 3: Original Terms of Reference

A 3.1 <u>Purpose</u>

The purpose of this feasibility report is to evaluate the opportunities for .nz Registry Services (NZRS) to acquire and / or to operate a generic or sponsored (g/s) top level domain (TLD).

A 3.2 <u>Background</u>

NZRS has been operating and managing the Shared Registry System (SRS) and the Domain Name System (DNS) for the .nz space since October 2002.

As part of the recent TBSR project[56], it was recommended that a number of feasibility reports be commissioned to consider ways to broaden NZRS service base and potentially reduce its reliance on the .nz TLD technology.

This feasibility report is one of a number of feasibility reports subsequently commissioned, including a registry stock take, and identity management services.

A 3.2.1 : Definition of gTLD[57]

Most TLDs with three or more characters are referred to as "generic" TLDs, or "gTLDs". They can be subdivided into two types, "sponsored" TLDs (sTLDs) and "unsponsored TLDs (uTLDs). In the 1980s, seven gTLDs (.com, .edu, .gov, .int, .mil, .net, and .org) were created. Domain names may be registered in three of these (.com, .net, and .org) without restriction; the other four have limited purposes. In 2001 & 2002 four new unsponsored TLDs (.biz, .info, .name, and .pro) were introduced. The other three new TLDs (.aero, .coop, and .museum) were sponsored.

Generally speaking, an unsponsored TLD operates under policies established by the global Internet community directly through the ICANN process, while a sponsored TLD is a specialized TLD that has a sponsor representing the narrower community that is most affected by the TLD. The sponsor thus carries out delegated policy-formulation responsibilities over many matters concerning the TLD.

A Sponsor is an organization to which some policy making is delegated from ICANN. The sponsored TLD has a Charter, which defines the purpose for which the sponsored TLD has been created and will be operated. The Sponsor is responsible for developing policies on the delegated topics so that the TLD is operated for the benefit of a defined group of stakeholders, known as the Sponsored TLD Community, that are most directly interested in the operation of the TLD. The Sponsor also is responsible for selecting the registry operator and to varying degrees for establishing the roles played by registrars and their relationship with the registry operator. The Sponsor must exercise its delegated authority according to fairness standards and in a manner that is representative of the Sponsored TLD Community.

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[56]   NZRS Technical and Business Systems Review Project, Doug Mercer, 30th September 2006 (TBSR Requirements v1.2)

[57]   Descriptions sourced from ICANN's report: "GNSO new TLDs Committee Part A: Final Report Introduction of New Generic Top-Level Domains" at http://gnso.icann.org/drafts/pdp-dec05-fr-a-18jun07.pdf

These classifications of TLDs are distinct from a country code top-level domain (ccTLD), which is an Internet top-level domain generally used or reserved for a country or a dependent territory. ccTLD identifiers are two letters long, and all two-letter top-level domains are ccTLDs. Creation and delegation of ccTLDs is performed by the Internet Assigned Numbers Authority (IANA).

The following is an incomplete list of TLDs by type[58].

Type	TLD
Unsponsored	.biz .com .edu .gov .info .int .mil .name .net .org
Sponsored	.aero .cat .coop .jobs .mobi .museum .pro .tel .travel
Infrastructure	.arpa .root
Startup phase	.asia
Proposed	.berlin .bzh .cym .gal .geo .kid .kids .mail .nyc .post .sco .web .xxx
Deleted / retired	.nato
Reserved	.example .invalid .localhost .test

A 3.3   Scope

The Feasibility Report will be limited to the following scope.

A 3.3.1 :   In scope

1. Documentation of the ICANN schedule and criteria, including
   a. Consideration of ICANN's current strategies for the introduction of new top-level domains
   b. Consideration of the costs, resources, timetables and deadlines associated with placing a proposal for a gTLD
2. Documenting the NZRS / INZ criteria, including
   a. consultation with relevant stakeholders (listed below) to determine strategic fit, scope of acceptable and potential sourcing and funding options
   b. investment ROI and cash flow requirements
   c. resource, timelines
   d. levels of acceptable risk (both for do nothing / do something) both technical and business
3. Evaluation of suitable and potential gTLDs, including
   a. High level market analysis
      i. Potential uptake
      ii. Potential pricing
      iii. Competition
      iv. Technology review
      v. Suppliers
      vi. High level risk / return analysis
   b. Consideration of various potential ownership and operational models, including NZRS owning the rights to operate a generic or sponsored TLD and outsourcing the operation of the TLD to an offshore supplier. E.g.

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[58]   Note that a more complete list of TLDs can be found at IANA's web site: http://data.iana.org/TLD/tlds-alpha-by-domain.txt

> i. .jobs is a new Top Level Domain that provides companies a simple, fast, and consistent method to communicate the online destination of an employment page to job seekers throughout the world.
> ii. VeriSign has allied with Employ Media to perform the registration, resolution, billing, and 1st level customer support services for the .jobs TLD (further explanation provided in attachment).
>
> c. Risk analysis, e.g.
> > i. Deployment and operating risk associated with each major option category

4. Potential development of a business case (costing estimates and report format to be defined as part of the feasibility report)

A 3.3.2 :   Out of scope

1. Any formal consultation and engagement with ICANN and / or IANA
1. Personal engagement with entities outside of InternetNZ, NZOC, NZDNC and NZRS, unless expressly directed by the Business Owner.
2. Any formal engagement with potential suppliers

A 3.4   <u>Project Structure</u>

A 3.4.1 :   Report Phases

The intention is for two documents to be delivered: a feasibility report and, depending on the outcome of the feasibility report, a business case.

The feasibility report can be broken into five separate sections or phases, as follows:
- a definition of the subject area, including a summation of recent proposals (e.g. xxx, jobs .mobi .museum .pro .tel .travel)
- an investigation into business drivers / requirements
- an analysis of potential options
- an evaluation of the options (including an estimate of the costs associated with making a proposal / bid), and
- a recommendation with high-level plan of next steps (e.g. business case, market sourcing, detailed design, etc.)

The Business case (***dependent on outcome of feasibility report***), is likely to cover the following areas:
- background and drivers for change
- market analysis and uptake forecasts
- solution high level design and cost estimates (note that it **may require an RFP** to engage an external supplier to assist with this work)
- financial strategy and funding models
- recommendations
- risk analysis and mitigation strategies
- high level implementation planning

A 3.4.2 :   Project Management

Azimuth Consulting.

A 3.4.3 :   Business Owner

NZRS.

A 3.4.4 : Business Manager

NZRS General Manager is the Business Manager of the project and will oversee it on a day to day basis on behalf of the Business Owner. The Business Manager will be solely responsible for decision making on the project and will exercise his discretion to refer matters to the Business Owner as required.

A 3.5 Project reporting

The Project Manager will supply weekly short-form reports (example attached) of progress against the project schedule tasks and updates to the risk register, plus keep in regular contact with the Business Manager as appropriate.

A 3.6 Project schedule

The following project schedule identifies proposed start and end dates to complete the feasibility report:

Task – Feasibility Report	Start	Finish
Definition of the subject area	19 Jun 07	
Business drivers / requirements		
Analysis of potential options		
Option evaluation		
Recommendation and high level plan		30 Nov 07
Total	19 Jun 07	30 Nov 07

A 3.7 Stakeholders

The following are identified as key stakeholders in the project and will be consulted as appropriate.
- o NZRS
- o InternetNZ
- o .nz Oversight Committee
- o .nz Domain Name Commissioner

A 3.8 Deliverables

The project deliverable will be a feasibility report recommending a "go / no go" decision for a business case on some form of investment in a gTLD, and the high level next steps plan if the recommendation is to proceed.

Appendix 4: GSNO gTLD Report

The following tables list the new gTLD principles, recommendations and implementation guidelines as outlined in the GSNO's Final Report into gTLDs (June 2007), titled 'Part A: Final Report - Introduction of New Generic Top-Level Domains'. Internet reference http://gnso.icann.org/drafts/pdp-dec05-fr-a-18jun07.pdf

Number	Principle
A	New generic top-level domains (gTLDs) must be introduced in an orderly, timely and predictable way.
B	Some new generic top-level domains should be internationalised domain names (IDNs) subject to the approval of IDNs being available in the root.
C	The reasons for introducing new top-level domains include that there is demand from potential applicants for new top-level domains in both ASCII and IDN formats. In addition the introduction of new top-level domain application process has the potential to promote competition in the provision of registry services, to add to consumer choice, market differentiation and geographical and service-provider diversity.
D	A set of technical criteria must be used for assessing a new gTLD registry applicant to minimise the risk of harming the operational stability, security and global interoperability of the Internet.
E	A set of capability criteria for a new Gtld registry applicant must be used to provide an assurance that an applicant has the capability to meets its obligations under the terms of ICANN's registry agreement.
F	A set of operational criteria must be set out in contractual conditions in the registry agreement to ensure compliance with ICANN policies.

Number	Recommendation
1	ICANN must implement a process that allows the introduction of new top-level domains. The evaluation and selection procedure for new gTLD registries should respect the principles of fairness, transparency and non-discrimination. All applicants for a new gTLD registry should therefore be evaluated against transparent and predictable criteria, fully available to the applicants prior to the initiation of the process. Normally, therefore, no subsequent additional selection criteria should be used in the selection process.
2	Strings must not be confusingly similar to an existing top-level domain.
3	Strings must not infringe the existing legal rights of others that are recognized or enforceable under generally accepted and internationally recognized principles of law. Examples of these legal rights that are internationally recognized include, but are not limited to, rights defined in the Paris Convention for the Protection of Industrial Property (in particular trademark rights), the Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights (in particular freedom of speech rights).
4	Strings must not cause any technical instability.
5	Strings must not be a Reserved Word
6	Strings must not be contrary to generally accepted legal norms relating to morality and public order that are enforceable under generally accepted and internationally recognized principles of law. Examples of such limitations that are internationally recognized include, but are not limited to, restrictions defined in the Paris Convention for the Protection of Industrial Property (in particular restrictions on the use of some strings as trademarks), and the Universal Declaration of Human Rights (in particular, limitations to freedom of speech rights).
7	Applicants must be able to demonstrate their technical capability to run a registry operation for the purpose that the applicant sets out.
8	Applicants must be able to demonstrate their financial and organisational operational capability

Number	Recommendation
9	There must be a clear and pre-published application process using objective and measurable criteria.
10	There must be a base contract provided to applicants at the beginning of the application process.
11	[deleted – intentionally blank]
12	Dispute resolution and challenge processes must be established prior to the start of the process
13	Applications must initially be assessed in rounds until the scale of demand is clear.
14	The initial registry agreement term must be of a commercially reasonable length
15	There must be renewal expectancy
16	Registries must apply existing Consensus Policies and adopt new Consensus Policies as they are approved.
17	A clear compliance and sanctions process must be set out in the base contract which could lead to contract termination
18	If an applicant offers an IDN service, then ICANN's IDN guidelines must be followed.
19	Registries must use ICANN accredited registrars.
20	An application will be rejected if it is determined, based on public comments or otherwise, that there is substantial opposition to it from among significant established institutions of the economic sector, or cultural or language community, to which it is targeted or which it is intended to support.

Number	Implementation Guideline
IG A	The application process will provide a pre-defined roadmap for applicants that encourages the submission of applications for new top-level domains.
IG B	Application fees will be designed to ensure that adequate resources exist to cover the total cost to administer the new gTLD process. Application fees may differ for applicants
IG C	ICANN will provide frequent communications with applicants and the public including comment forums which will be used to inform evaluation panels.
IG D	A first come first served processing schedule within the application round will be implemented and will continue for an ongoing process, if necessary. Applications will be time and date stamped on receipt.
IG E	The application submission date will be at least four months after the issue of the Request for Proposal and ICANN will promote the opening of the application round.
IG F	If there is contention for strings, applicants may: i) resolve contention between them within a pre-established timeframe ii) if there is no mutual agreement, a claim to support a community by one party will be a reason to aware priority to that application. If there is no such claim, and no mutual agreement a process will be put in place to enable efficient resolution of contention and; iii) the ICANN Board may be used to make a final decision, using advice from staff and expert panels.
IG G	Where an applicant lays any claim that the TLD is intended to support a particular community such as a sponsored TLD, or any other TLD intended for a specified community, that claim will be taken on trust with the following exception: i) the claim relates to a string that is also subject to another application and the claim to support a community is being used to gain priority for the application Under this exception, Staff Evaluators will devise criteria and procedures to investigate the claim.
IG H	External dispute providers will give decisions on complaints.
IG I	An applicant granted a TLD string must use it within a fixed timeframe which will be specified in the application process.
IG J	The base contract should balance market certainty and flexibility for ICANN to accommodate a rapidly changing market place.

Number	Implementation Guideline
IG K	ICANN should take a consistent approach to the establishment of registry fees.
IG L	The use of personal data must be limited to the purpose for which it is collected.
IG M	ICANN may establish a capacity building and support mechanism aiming at facilitating effective communication on important and technical Internet governance functions in a way that no longer requires all participants in the conversation to be able to read and write English.
IG N	ICANN may put in place a fee reduction scheme for gTLD applicants from economies classified by the UN as least developed.
IG O	ICANN may put in place systems that could provide information about the gTLD process in major languages other than English, for example, in the six working languages of the United Nations.

Appendix 5: Porter's Five Forces Analysis

The following figure outlines Porter's Five Forces analysis framework (source: http://www.quickmba.com/strategy/porter.shtml).

SUPPLIER POWER
Supplier concentration
Importance of volume to supplier
Differentiation of inputs
Impact of inputs on cost or differentiation
Switching costs of firms in the industry
Presence of substitute inputs
Threat of forward integration
Cost relative to total purchases in industry

BARRIERS TO ENTRY
Absolute cost advantages
Proprietary learning curve
Access to inputs
Government policy
Economies of scale
Capital requirements
Brand identity
Switching costs
Access to distribution
Expected retaliation
Proprietary products

RIVALRY

THREAT OF SUBSTITUTES
-Switching costs
-Buyer inclination to substitute
-Price-performance trade-off of substitutes

BUYER POWER
Bargaining leverage
Buyer volume
Buyer information
Brand identity
Price sensitivity
Threat of backward integration
Product differentiation
Buyer concentration vs. industry
Substitutes available
Buyers' incentives

DEGREE OF RIVALRY
-Exit barriers
-Industry concentration
-Fixed costs/Value added
-Industry growth
-Intermittent overcapacity
-Product differences
-Switching costs
-Brand identity
-Diversity of rivals
-Corporate stakes