

Improving Internet Usability – A Framework For Domain Name Policy Evaluation

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Josh Rowe – Brief Biography

- 16 years experience with the Internet
- Director of auDA – auda.org.au
- Domain name consumer advocate – domainwatch.org, whatsinaname.com.au
- Anti-spam lobbyist – caube.org.au, international.cauce.org, apcauce.org
- Manager of Online Strategy for Australia Post – auspost.com.au
- **Postgraduate Researcher at RMIT – rmit.edu.au**

Please note

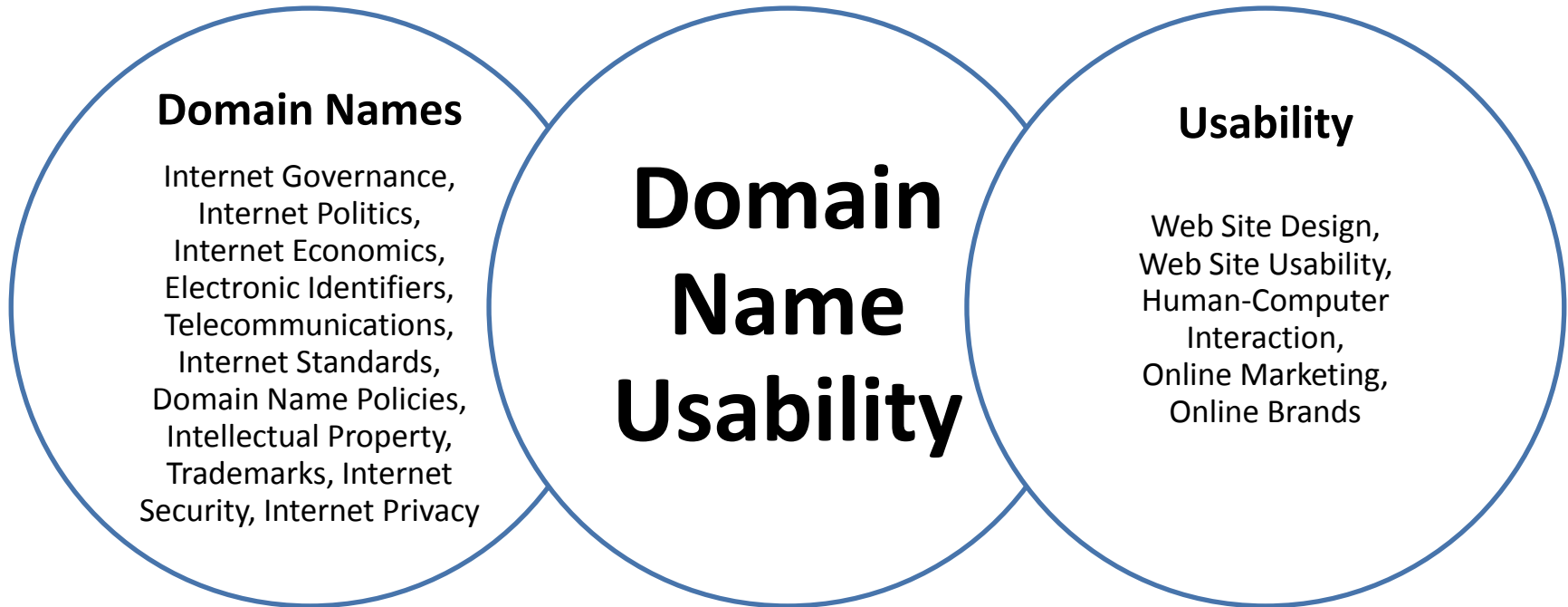
- This presentation provides an overview of academic research which may be useful for domain name policy makers
- It does not form an official recommendation for any particular ICANN supporting organisation

Research Overview

- Domain names are a fundamental part of the Internet's user interface.
- End users are inconvenienced by inconsistent domain name policies, which reduce the predictability of domain names.
- Research objective was to develop a set of criteria with which policy makers can evaluate their domain name policies, in order to improve the usability of domain names for end users.
- Benefits of more usable¹ domain names include:
 - higher sales, higher customer satisfaction, higher productivity, and reduced support costs.

¹Usability Professionals' Association. (2008). *Benefits of usability*.

Literature Review



- End users use domain names to assess the credibility of a destination¹.
- End users spent between 22% to 25% of their time looking at the domain name in search engine results².

¹ Nielsen, J. (1999). URL as UI, useit.com

² Cutrell, E. & Guan, Z. (2007). An eye-tracking study of information usage in Web search: Variations in target position and contextual snippet length. Conference on Human Factors in Computing Systems, Microsoft Research.

Domain names are not predictable **within** countries

Domain Name	Registrant
csiro.au	Commonwealth Scientific and Industrial Research Organisation (CSIRO)
nicta.com.au	National Information and Communications Technology Australia (NICTA)
arc.gov.au	Australian Research Council (ARC)
jdrf.org.au	Juvenile Diabetes Research Foundation (JDRF)
cvr.net.au	Centre for Vascular Research (CVR)
acer.edu.au	Australian Council for Educational Research (ACER)
scienceweek.info.au	National Science Week
ae.su.oz.au	University of Sydney School of Aerospace, Mechanical and Mechatronic Engineering
ufor.asn.au	Unidentified Flying Object Research

Domain names are not predictable **between** countries

Domain Name	Registrant
police. uk	United Kingdom Police Service
police.vic. gov .au	Victoria Police (Australia)
police. govt .nz	New Zealand Police
troopers. state.ny .us	New York State Division of State Police
bundespolizei. gv .at	Polizei (Austrian Police)
royalthaipolice. go .th	Royal Thai Police
policia. gob .pa	Policia Nacional (Panama)
rcmp-grc. gc .ca	Royal Canadian Mounted Police

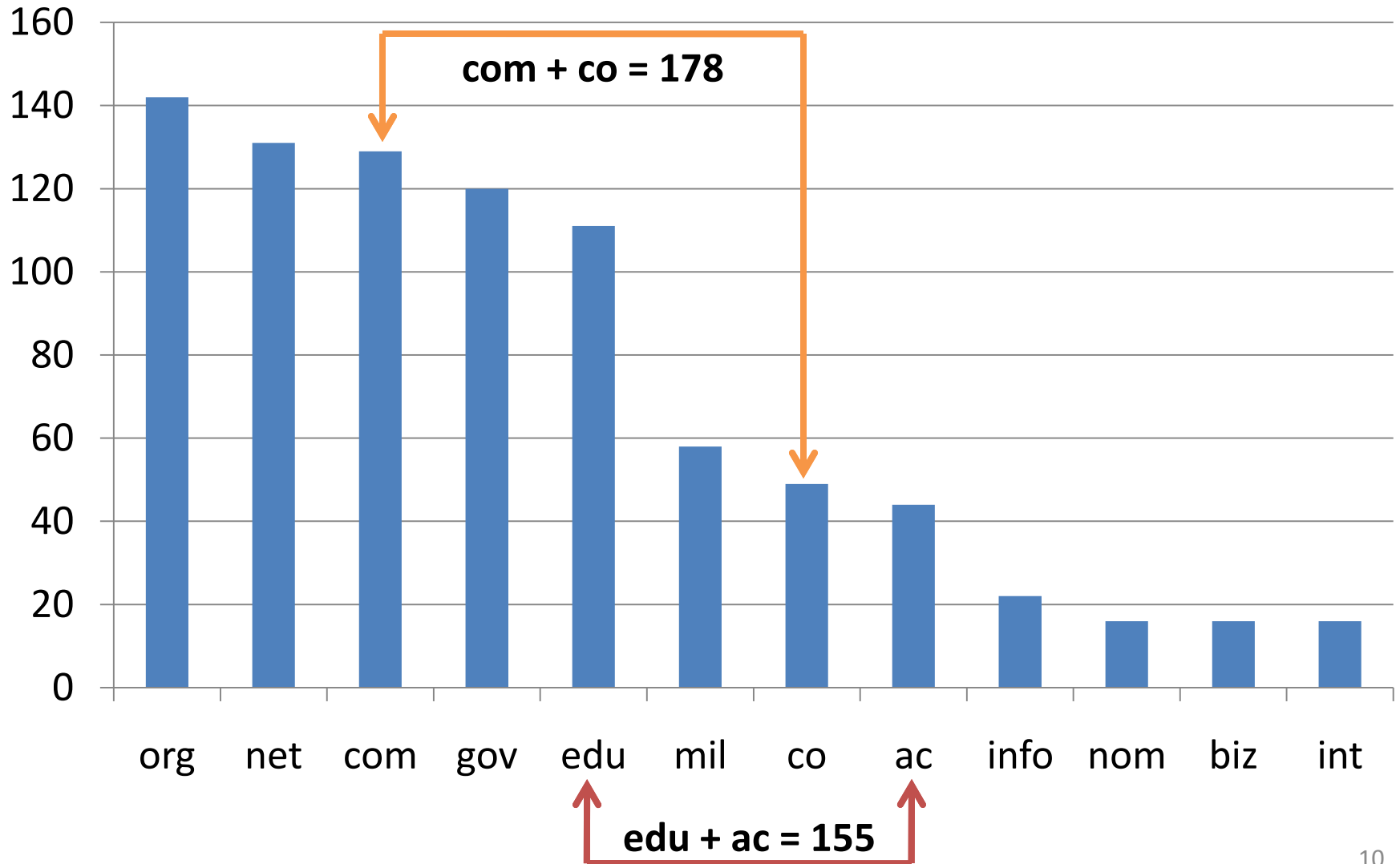
Domain names vary from their original intended use

Domain Name	ccTLD Country	Registrant Country	Registrant
hollywood.tv	Tuvalu	USA	Hollywood.tv Inc
plasticsurgery.la	Laos	USA	Los Angeles Plastic Surgery
cue.cc	Cocos (Keeling) Islands	Australia	Cue Clothing
sportsbook.gg	Guernsey	Australia	Betcorp

1775 second level country code domain names exist

Top-level domain names (270)	Second level country code domain names (1775)
.ac .ad .ae .aero .af .ag .ai .al .am .an .ao .aq .ar .arpa .as .asia .at .au .aw .ax .az .ba .bb .bd .be .bf .bg .bh .bi .biz .bj .bm .bn .bo .br .bs .bt .bv .bw .by .bz .ca .cat .cc .cd .cf .cg .ch .ci .ck .cl .cm .cn .co .com .coop .cr .cu .cv .cx .cy .cz .de .dj .dk [... etc ...] .nf .ng .ni .nl .no .np .nr .nu .nz .om .org .pa .pe .pf .pg .ph .pk .pl .pm .pn .pr .pro .ps .pt .pw .py .qa .re .ro .rs .ru .rw .sa .sb .sc .sd .se .sg .sh .si .sj .sk .sl .sm .sn .so .sr .st .su .sv .sy .sz .tc .td .tel .tf .tg .th .tj .tk .tl .tm .tn .to .tp .tr .travel .tt .tv .tw .tz .ua .ug .uk .um .us .uy .uz .va .vc .ve .vg .vi .vn .vu .wf .ws .ye .yt .yu .za .zm .zw	com.ac edu.ac gov.ac mil.ac net.ac org.ac nom.ad ac.ae co.ae com.ae gov.ae mil.ae name.ae net.ae org.ae pro.ae sch.ae com.af edu.af gov.af net.af co.ag com.ag net.ag nom.ag org.ag com.ai edu.ai gov.ai net.ai off.ai org.ai com.al edu.al gov.al inima.al net.al org.al soros.al tirana.al uniti.al upt.al ac.am co.am com.am edu.am gov.am int.am mil.am [... etc ...] edu.vn gov.vn health.vn info.vn int.vn name.vn net.vn org.vn pro.vn com.vu edu.vu net.vu org.vu com.ws edu.ws gov.ws net.ws org.ws com.ye edu.ye gov.ye mil.ye net.ye org.ye ac.yu co.yu edu.yu org.yu ac.za alt.za bourse.za city.za co.za edu.za gov.za law.za mil.za net.za ngo.za nom.za org.za school.za tm.za web.za ac.zm co.zm gov.zm org.zm sch.zm ac.zw co.zw gov.zw org.zw

Second level country code domain names are inconsistent



Standards versus Policies

- Domain names are regulated by a combination of standards and policies
 - ISO 3166¹ and RFC1591²
- Standards lead to **predictable results** for end users
- Second level ccTLD policies are inconsistent and lead to **unpredictable results** for end users

¹ ISO. (2008). *ISO 3166-1 and country coded Top-Level Domains (ccTLDs)*. ISO.

² Postel, J. (1994). *RFC 1591 - Domain Name System Structure and Delegation*. IETF.

Domain name industry supply chain – don't forget the end user!



Industry Participant	Description
End User	Person who uses domain names to access web sites, email addresses and other Internet resources.
Registrant	An organisation or entity which licences the use of a domain name.
Specialist	Intellectual property lawyers, marketers, web developers, etc.
Reseller	Retail domain names to registrants based on any domain name policies in place. Resellers sell on behalf of registrars.
Registrar	Retail domain names to registrants based on any domain name policies in place.
Registry	Assign and maintain a database of domain names on the Internet.
Regulator	Set policy and administrate domain name space.

A framework for domain name policy evaluation

- Domain names are a user interface for the Internet.
- The framework sets out criteria which assesses domain name policies with end users in mind.
- The framework can be used to evaluate new or existing domain name policy for domain names at any level:
 - top-level; e.g. '.com', '.au', '.nz', '.newgTLD'
 - second level; e.g. '.com.au', '.co.uk', '.new2LD.ru'
 - third level; e.g. '.rmit.edu.au', '.vic.gov.au', '.new3LD.city.za'
 - etc; e.g. '.student.rmit.edu.au', '.new4LD.rmit.edu.au'
- The framework can also be usefully applied to internal or intranet domain names.

A framework for domain name policy evaluation

Criteria	Example(s)
Who are the intended users for the domain name space? <i>(End users not the domain name registrants).</i>	The intended users for the Australian community geographic domain names (act.au, nsw.au, nt.au, qld.au, sa.au, tas.au, vic.au, wa.au) are all members of the Australian Community, Business and Industry, Local Community Groups/Organisations, Tourism – Local, State/Territory, National and International .
How is the domain name space meant to be interpreted by the intended users ?	The '.com.au' domain name space is for Australian commercial entities .
How else could the domain name space be interpreted by the intended users ?	Italy's '.it' ccTLD can be interpreted as the abbreviation for 'Information Technology' or the English word 'it'.

A framework for domain name policy evaluation

Criteria	Example(s)
Who are the unintended users for the domain name space? <i>(End users not the domain name registrants)</i>	A Canadian entrepreneur has struck a deal with the country of Cameroon (.cm) to redirect mistyped .com domains names to an advertising page.
How could the domain name space be interpreted by the unintended users ?	The country names of Australia and Austria are sometimes confused. A user not familiar with the domain name system could misinterpret 'au' as the ccTLD for Austria instead of Australia.
Is the domain name space consistent compared with other domain name spaces for the intended or unintended users ?	Educational domain name spaces include 'edu.au', 'ac.nz' and 'sch.uk'. For the 250 ccTLDs there are 111 'edu', 44 'ac' and 13 'sch' second level domain names .

A framework for domain name policy evaluation

Criteria	Example(s)
What other semantic meanings does the domain name space have for the intended or unintended users ?	Laos has handed over .la to the LA Names Corporation; who misinform their web site visitors that 'LA is the official internet address for Los Angeles' when the official ccTLD database says otherwise .
How easy is the domain name space to spell for intended or unintended users ?	Users from the United States expect 'center' where as British users will expect 'centre' .
How easy is the domain name space to type for intended or unintended users ?	Consider the input device (for example United States layout keyboard, mobile phone keypad, etc) and the end user's proficiency at using the input device. One entrepreneur recently auctioned 264 'circle shape' .com domains using the standard QWERTY keyboard .

A framework for domain name policy evaluation

Criteria	Example(s)
How easy is the domain name space to say and pronounce for intended or unintended users ?	The domain name space 'naturbruksgymn.se' may be simple to say for a Swede, but those from other countries may find it difficult to pronounce.
How memorable is the domain name space for intended or unintended users ?	A memorable domain name does not necessarily have to be short; consider which of the two domain names would more likely be recalled, BobJonesSurfShop.com or BJSShop.com .
How meaningful is the domain name space in the languages and scripts of the intended or unintended users ?	'nu' is the country code top-level domain for the Pacific Island of Niue . 'Nu' means 'now' in Swedish and 'nude' or 'naked' in French and Portuguese .

Questions?

Study is available on request

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