Internet Governance 101

NetHui 2012

InternetNZ

Internet Governance 101

- Or "how we got into this mess"

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Internet Governance

Introduction - Keith Davidson

— International Director for InternetNZ
— Vice Chair of APTLD
— ISOC Director (from Aug 2012)
— Vice Chair of ICANN's ccNSO
— Chair of ICANN's FOIWG (looking at delegations and redelegations of ccTLDs)
— Convenor - Pacific Internet Partnership
— Organising committee member for AusIGF, Pacific IGF, APrIGF
— Former President and former Executive Director of InternetNZ
— Former owner - operator of an ISP in NZ

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Presentation Outline

1. Relevant history

2. Current actors a.k.a. "Alphabet Soup"

3. Transition / Convergence

4. Summary

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In the beginning…

- Telegraph invented 1804? – 1837? (Morse code)

- Telephone invented 1844? - 1876?

- International Telecommunications Union ITU (1865)
  — The ITU's mission is to enable the growth and sustained development of telecommunications and information networks, and to facilitate universal access so that people everywhere can participate in, and benefit from, the emerging information society and global economy. The ITU assists in mobilizing the technical, financial, and human resources
  required to make this vision real.

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In the beginning…

- The Internet's beginnings:

  — Late 1950's space race established DARPA

  — 1962 DARPA concept – establish a galactic network

  — ARPANET experimental network established 1969

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ARPANET

- 1969 - ARPANET connected 4 USA universities
- 1969 - Used Packet Switching protocols
- 1969 - Standards established using RFC process
- 1972 - IANA established (RFC322 and RFC 433)
- 1973 - File Transfer Protocol (FTP) – 1st "killer app"
- 1973 - Norway and UK linked to ARPANET
- 1983 - TCP / IP become standard protocol
- 1983 - Network splits into ARPANET and MILNET
- 1983 - email usage surges – 2nd "killer app"

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ARPANET to Internet

- 1985 - IANA commences delegation of ccTLD's
- 1992 - ISOC formed
- 1993 - CERN releases the WWW }
- 1993 - Web browser available   } – 3rd "killer app"
- 1994 - Online transactions, video and voice over IP
- 1995 – 2012 – popularisation - now 2.x billion users

Transition / Convergence

- Until 1993, the Internet was run for and by geeks

- Previously used primarily for research / education in Universities, especially military / space issues

- 1993 onwards - mass popularization of the Internet
  — Business uptake and different drivers
  — Challenges to the anarchic structure
  — Beginning of transition from "geek playground" to "critical infrastructure"
  — Technical challenges increase
  — Legal and regulatory challenges increase massively

- 1997 / 98 Establishment of ICANN

- 1999 – ITU becomes somewhat interested

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Alphabet Soup

- Lets unpick the acronyms and look at the roles of the various stakeholder organisations…

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IANA

— Internet Assigned Numbers Authority (IANA)

- o Is the central repository for domain name and IP Address (number) registries
- o Includes all Top Level Domains (TLD's)
  - – Generic Top Level Domains (gTLD's) e.g. .com, .info, .biz, .org
  - – country code Top Level Domains (ccTLD's) e.g. .nz, .us, .as
- o And all IP address allocations - both IPv4 and IPv6
- o Is the database published on the Internet root servers
- o Managed under US Government contract (currently by ICANN) with US Government

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Root Servers

— The Root Servers:

- 13 root servers, numbered A to M
- The root servers resolve domain names by matching domain name lookups to IP addresses – the combined function known as the "Domain Name System" (DNS)
- 11 of the 13 root servers are managed by USA organisations
- 240+ instances of mirrors of the root servers worldwide, mainly located at peering points and internet exchanges (e.g. APE and WIX)
- "A" Root managed by Verisign, who also operate .com & .net gTLD's

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IP Address / IP Number

- ## IP Addresses:
  - Are allocated from IANA (by ISOC mandate)
  - Five Regional Internet Registries (RIR's) – also known as Network Information Centres (NIC's):

○ Africa	AfriNIC	www.afrinic.net
○ Asia Pacific	APNIC	www.apnic.net
○ Europe	RIPE NCC	www.ripe.net
○ N America	ARIN	www.arin.net
○ S America	LACNIC	www.lacnic.net

  - MoU between the 5 RIR's creates the Number Resource Organisation (NRO) www.nro.net
  - Also many country specific National Internet Registries (NIR's) e.g. TWNIC, CNNIC

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ISOC

- The Internet Society (ISOC)
  - Not for profit membership society formed 1992
  - 55,000+ members
  - 130+ Organisational members
  - 90 geographic "chapters"

- Mantra: *"The Internet is for Everyone"*

- Seeks to assure the open development, evolution and use of the Internet for the benefit of everyone

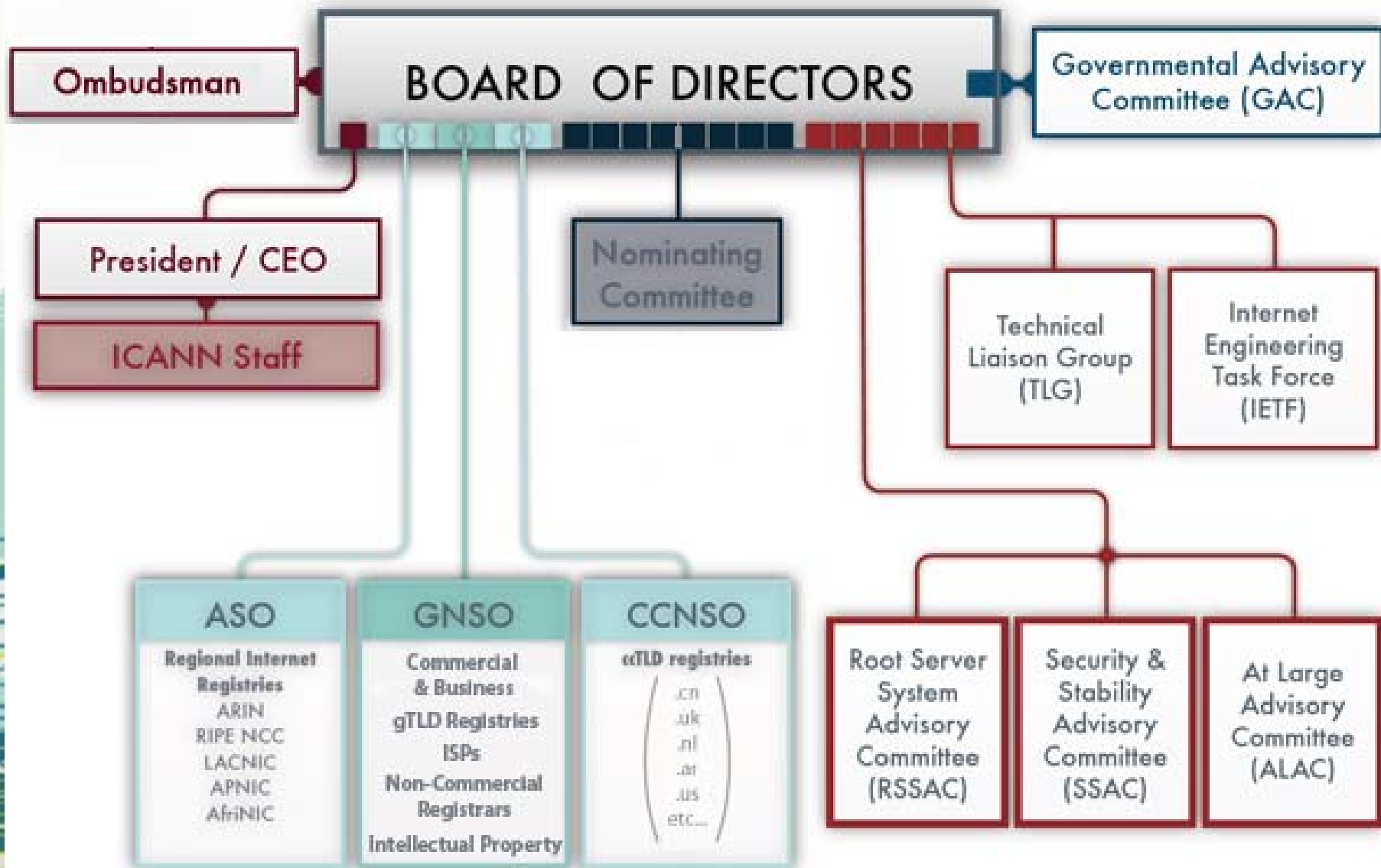**InternetNZ**

ISOC (Continued)

- ISOC also is home to:
  - Internet Architecture Board (IAB)
    www.iab.org
    - Architectural oversight of IETF
    - Request for Comment (RFC) Editor
      www.ietf.org/rfc
  - Internet Engineering Steering Group (IESG)
    www.iesg.org
    - Technical management of IETF activities
  - Internet Engineering Task Force (IETF)
    www.ietf.org
    - Technical documents for Internet protocols & processes
  - Internet Research Task Force (IRTF)
    www.irtf.org
    - Collaborative evolution of Internet standards
  - Public Internet Registry (PIR)
    www.pir.org
    - Registry for TLD ".org" since 2003

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ICANN

- The Internet Corporation of Assigned Names and Numbers (ICANN)
  www.icann.org
  — California based, not for profit corporation, established 1998 by US Government
  — Seeks to globalise the management of the Internet's unique identifiers
  — Now has an Affirmation of Commitments (AoC) with US Gov
  — Two primary roles:
    o Administers the IANA function on contract with US Gov
    o Establishes policies for managing the Internet's unique identifiers

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Ombudsman

BOARD OF DIRECTORS

Governmental Advisory Committee (GAC)

President / CEO

ICANN Staff

Nominating Committee

Technical Liaison Group (TLG)

Internet Engineering Task Force (IETF)

ASO
Regional Internet Registries
ARIN
RIPE NCC
LACNIC
APNIC
AfriNIC

GNSO
Commercial & Business
gTLD Registries
ISPs
Non-Commercial Registrars
Intellectual Property

CCNSO
ccTLD registries
.cn
.uk
.nl
.au
.us
etc...

Root Server System Advisory Committee (RSSAC)

Security & Stability Advisory Committee (SSAC)

At Large Advisory Committee (ALAC)

United Nations

- **United Nations (UN)**
  www.un.org
  — Created 1948 / 49
  — 192 or 193 Member states (whereas there are 240+ ccTLD's)
  — Myriad of associated treaty organisations - the 3 main Internet-related being:
    - International Telecommunications Union (ITU)

      www.itu.int
    - United Nations Educational Scientific and Cultural Organisation (UNESCO)

      www.unesco.org
    - United Nations Development Programme (UNDP)
      www.undp.org
- Global binding policies by treaty

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Multistakeholder Definition

- IANA, ICANN, ISOC, RIRs like APNIC were established as multistakeholder organisations – no barrier to equal participation

- UN / ITU / Treaty organisations empower only Governments as decision makers

- Multistakeholderism means all stakeholders, from Government, business, the technical community and civil society, participating on an **equal** basis.

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Relevant Regional Organisations

- Regional ccTLD membership organizations:
  - AFTLD   Africa   www.aftld.org
  - APTLD   Asia Pacific   www.aptld.org
  - CENTR Europe   www.centr.org
  - LACTLD   S America   www.lactld.org

- Regional Internet Registries (RIR's) e.g. APNIC

- Regional "civil society" organisations e.g. APRALO

- Asia Pacific Economic Cooperation (APEC) www.apec.org

- APEC Telecomms and Information

  (APECTEL) www.apectelwg.org

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Relevant Regional Organisations

- AP Regional Internet Conference on Operational Technologies (APRICOT) www.apricot.net

- AP Advanced Networks (APAN) www.apan.net

- AP Internet Association (APIA) - organizers of APRICOT
        www.apia.net

- Asia Pacific Star (APstar or AP*) www.apstar.org

- AP IPv6 Task Force APv6TF www.ap-ipv6tf.org

- Various country / sub regional based Network Operator Groups e.g. NZNOG, SANOG (South Asia), PacNOG (Pacific Island) www.nznog.org   www.pacnog.org

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Transition / Convergence

- 1999 - 2000 - ITU recognises the Internet's existence, previously the conduit for global interconnection of telephony.

- 2002 - 2005 - UN takes interest in the Internet, some Governments advocating UN taking control

- 2006 - Internet Governance Forum launched

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Summary

- The Internet has been a bold experiment in development of technical policy and sometimes public policy, outside of treaty organisations and Governments

- Technical development was the sole criteria, with no concern for morals, ethics, and sometimes laws

- The Internet culture clashed with normal regulatory environments as it popularised

- The challenge remains - fast deployment of new technologies vs legal and regulatory frameworks

- There are seldom "one size fits all" solutions

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Summary

- The Internet has been the fastest growing new media in history, with currently:
  - 7 billion people on Earth
  - 2.x billion people connected
  - 19.25 billion pages on the WWW
  - 294 billion email messages per day
  - 185 million domain names registered

- The challenge is still to promote and protect the Internet

- "*The Internet is for everyone*" (ISOC vision)

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Internet Governance Forum

- The global IGF born out of the WSIS multistakeholder process   www.intgovforum.org
  - 6 x Annual events to 2011
  - Main themes:
    - Access
    - Diversity
    - Openness
    - Security
    - Critical Internet Resources

- IGF is non-decision making, multistakeholder, participation on an equal basis

- Strong IGF remote participation, through hubs etc.

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Internet Governance Forum

- A multitude of national, sub-regional and regional IGFs have evolved, particularly over the past 3 years:

  — 3rd Asia Pacific IGF in Tokyo next week

  — 2nd NZ IGF (Net Hui)

  — 1st Pacific IGF Noumea April 2011

  — 1st Australian IGF Canberra 11-12 October 2012

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Thank You / Questions

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