ICANN and the Internet Ecosystem

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4 Sept 2019
Today

- What does ICANN do?
- How does the Internet work?
- Participating in ICANN:
  - ICANN Learn,
  - Fellowships and
  - NextGen
- The Domain Names Industry
- ICANN Africa Strategy
What does ICANN do?
THE INTERNET (RFC1310)

The Internet, a (1) loosely-organized (2) international collaboration of (3) autonomous, (4) interconnected networks, (5) supports host-to-host communication through (6) voluntary adherence to open protocols and procedures defined by Internet Standards. (7) There are also many isolated interconnected networks, which are not connected to the global Internet but use the Internet Standards.
Naming

“Who is your dentist?”
What is a Name?

- Name |nām|
  - Noun
    - 1: A word or set of words by which a person, animal, place, or thing is known, addressed, or referred to: my name is Parsons, John Parsons | Köln is the German name for Cologne.
    - 2: A famous person: as usual, the big race will lure the top names.
      [ in sing. ] a reputation, especially a good one: he set up a school that gained a name for excellence.

→ If I know your name,
   I know ‘who’ you are
Name as a Handle

• “A word or set of words by which a person, animal, place, or thing is known…”
  – Having a name is only meaningful when other people know about it.
  – Knowing a name enables us to relate to it
    • We can talk –to– someone, or we can talk –about– someone.
    – Names can be passed from one party to another as a referral.

Here is the name of my dentist:
ADDRESSING

“Where is your dentist?”
What is an Address?

• Address |əˈdres, ˈaˌdres|
  – Noun
  • The particulars of the place where someone lives or an organization is situated: they exchanged addresses and agreed to keep in touch

➔ If I know your address, I know ‘where’ you are.
An Address is Not Enough to Communicate

• You can send a postcard to 1600 Pennsylvania Avenue NW, Washington D.C. 20500 USA from anywhere in the world
• It would only arrive there because there is a postal system that will “route” the postcards through a number of mail hubs
• Now, How do I go to 125, Root Canal rd, DC?
Routing

“How do I go to your dentist?”
What is a Route?

• route |root, rout|
  – Noun
  – A way or course taken in getting from a starting point to a destination: the most direct route is via Los Angeles

→ If I have a route for you, I know where to go.
Sending Traffic Hop-by-Hop

Forwarding traffic happens hop-by-hop

→ If I have a route for your destination, I know the “next hop” to which I can deliver the packet.

Cooperative system:
We rely on the next hop to do the “right thing”
How Internet Protocol (IP) Addresses Are Distributed

IANA Functions

Distribute IP addresses to Regional Internet Registries

Regional Internet Registries

Distribute IP addresses to ISPs in your region

Internet Service Providers

Distribute IP addresses by providing connectivity to homes and businesses

Homes and Businesses

End users connect their personal and professional devices to the Internet

End users connect their personal and professional devices to the Internet
Conclusion

• “A Name + Number + Route (DNS) = You have arrived…”

• This is What ICANN Does.
ICANN's Mission

Ensuring the stable and secure operation of the Internet's unique identifier systems

1. Coordinates the allocation and assignment of names in the root zone of the Domain Name System

2. Coordinates the development and implementation of policies concerning the registration of second-level domain names in generic top-level domains (gTLDs)

3. Facilitates the coordination of the operation and evolution of the DNS root name server system

4. Coordinates the allocation and assignment at the top-most level of Internet Protocol numbers and Autonomous System numbers
ICANN’s Global Presence

Call one of our regional offices or submit a question online

Regional Offices:
Los Angeles, U.S.A (Headquarters)
Brussels, Belgium
Istanbul, Turkey
Montevideo, Uruguay
Singapore

Engagement Centers:
Beijing, China
Geneva, Switzerland
Nairobi, Kenya
Washington, D.C., U.S.A.

Partnership Centers:
Asunción, Paraguay
Cairo, Egypt
Seoul, Republic of Korea

Contact us ➤ www.icann.org/contact
ICANN Ecosystem
A volunteer-based, open collection of global stakeholders working together through bottom-up processes to give advice, develop and make policy recommendations, conduct reviews, and propose implementation solutions for common problems within ICANN’s mission and scope.
How Does the Multistakeholder Model Work?

Policy recommendations are developed and refined by the ICANN community through its Supporting Organizations (SOs) and influenced by Advisory Committees (ACs).
Supporting Organizations (SOs)

**ASO**
The ASO Address Council is composed of 15 volunteers — 3 from each of the Regional Internet Registries (RIRs) — who work on global Internet Protocol (IP) Address Policy.

**ccNSO**
The ccNSO (Council and members) works on global policies relating to country code top-level domain name (ccTLD) policies (e.g., .mt, .uk).

**GNSO**
The GNSO Council is composed of 21 members — divided into 2 houses (contracted and non-contracted parties) — who work on generic top-level domain name (gTLD) policies (e.g., .com, new gTLDs).

Supporting Organizations (SOs)
Three SOs in the ICANN community are responsible for developing policy recommendations in the areas they represent.

- Address Supporting Organization (ASO)
- Country Code Names Supporting Organization (ccNSO)
- Generic Names Supporting Organization (GNSO)
Advisory Committees (ACs)

Four ACs give advice and make recommendations on ICANN topics.

At-Large Advisory Committee (ALAC)
Governmental Advisory Committee (GAC)
Root Server System Advisory Committee (RSSAC)
Security and Stability Advisory Committee (SSAC)

ALAC
The ALAC voices the interests of the individual Internet user and is composed of 15 members - 2 from each of the five Regional At-Large Organizations (RALOs) and 5 appointed by the ICANN Nominating Committee. It is supported by over 200 At-Large Structures (ALSes) and volunteers.

GAC
The GAC provides advice on public policy issues, particularly on interactions with policies and national laws or international agreements.

RSSAC
The RSSAC advises the ICANN community and Board on the operation, administration, security, and integrity of the Internet's Root Server System.

SSAC
The SSAC advises on matters related to the security and integrity of the Internet's naming and address allocation systems.
Who Makes Up the ICANN Board?

16 directors and 4 non-voting liaisons, from different geographies and with expertise relevant to ICANN's mission.

SUPPORTING ORGANIZATION (SO) APPOINTEES:
Each of the three SOs nominates two directors:

- The Address Supporting Organization (ASO)
- The Country Code Names Supporting Organization (ccNSO)
- The Generic Names Supporting Organizations (GNSO)

INTERNET ENGINEERING TASK FORCE (IETF) APPOINTEE:
The IETF nominates one non-voting liaison.

NOMINATING COMMITTEE APPOINTEES:
The Nominating Committee appoints eight seats.

ADVISORY COMMITTEE (AC) APPOINTEES:
Each of the four ACs nominates one member, although only the ALAC director can vote:

- The At-Large Advisory Committee (ALAC)
- The Governmental Advisory Committee (GAC)
- The Root Server System Advisory Committee (RSSAC)
- The Security and Stability Advisory Committee (SSAC)

ADVISORY COMMITTEE (AC) APPOINTEES:
Each of the four ACs nominates one member, although only the ALAC director can vote:
Some Key Issues @ICANN today:

- Freedom of expression
- Multilingual Internet
- Human rights
- Development and use of the DNS
- Privacy and data protection (GDPR, Privacy Legislations)
- Trademarks and access to knowledge
- Jurisdiction
- Accountability and transparency

more … but as the touch on ICANN's mission
State of the DNS Industry
Broad Categories of Domains:

a) ccTLDs
b) gTLDs
c) IDNs
Who’s Who in the DNS Ecosystem?

Registries manage top-level domain (TLD) databases and generate zone files

• gTLD operators contract with ICANN
  - Must comply with ICANN (consensus) policy

• ccTLDs operators do not have contracts with ICANN
  - May have different registration or Whois services from gTLDs
  - http://ccnso.icann.org

• Registry operators may be
  - Large corporations,
  - For- or non-profit organizations
  - Departments in universities
  - Government agencies
  - Operated by an outsourced party
Registrars

Registrars are business entities that process domain name registrations

• In GTLD space all registrars must be ICANN accredited and are subject to Registrar Accreditation Agreement (RAA)
• ccTLDs define their own registration processes
• Retailers or wholesalers (resellers)
• Registration is not an exclusive business
  ○ Registrars or resellers often offer web, DNS, email, merchant transactions, voice or other Internet services as complementary or bundled services

https://www.icann.org/resources/pages/approved-with-specs-2013-09-17-en
http://www.icann.org/registrar-reports/accredited-list.html
Registrars within the Ecosystem
State of the Domain Name Industry…
Global Domain Registrations: Q1, 2019

Q1 2019 closed with 351.8 million domain name registrations across all TLDs, an increase of 3.1 million or 0.9% over Q4 2018.
.COM & .NET remain Dominant: Q1, 2019

Q1 2019 closed with 154.8 million .COM and .NET domain name registrations in the domain name base\(^3\), an increase of 6.5 million or 4.4% year over year from Q1 2018.
Top 10 Largest TLDs by Number of Reported Domain Names

1. com
   - (CHINA)
   - 141.0M

2. cn
   - 23.0M

3. tk
   - 22.5M

4. de
   - 16.2M

5. net
   - 13.8M

6. uk
   - 12.0M

7. org
   - 10.1M

8. tw
   - 5.9M

9. nl
   - 5.9M

10. ru
    - 5.8M
State of the African DNS Market :(Africa DNS Market Study - 2016)

Registries
- 52 functioning ccTLDs

Registrar Market
- 27 countries have only one Registrar: usually the Registry
- 13 countries have a fully competitive Registrar market

Registrant Market
- Approximately 5 million African domains (ccTLD & gTLD) in total
- 4.4 domains / 1000 population
- Value of $52 million p.a.
### Weight of regions in the total of each segment (2018)

<table>
<thead>
<tr>
<th>Region</th>
<th>ccTLDs</th>
<th>.COM</th>
<th>Other Legacy TLDs</th>
<th>ngTLDs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
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<td>1%</td>
</tr>
<tr>
<td>Latin America &amp; the Caribbean</td>
<td>7%</td>
<td>3%</td>
<td>3%</td>
<td>12%</td>
<td>5%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>34%</td>
<td>16%</td>
<td>16%</td>
<td>52%</td>
<td>25%</td>
</tr>
<tr>
<td>Europe</td>
<td>54%</td>
<td>22%</td>
<td>27%</td>
<td>12%</td>
<td>36%</td>
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<tr>
<td>North America</td>
<td>4%</td>
<td>59%</td>
<td>53%</td>
<td>23%</td>
<td>33%</td>
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<td><strong>Total</strong></td>
<td>100</td>
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ICANN Africa Strategy...
The strategy has a two pronged approach

Awareness
Promote Awareness and Meaningful Participation of Africa in ICANN & the wider IG Ecosystem in partnership with other I* and Af* Organizations.

Build Capacity
Transform the DNS & Internet Industry in Africa by Facilitating capacity development and Cultivating an environment for the emergence of an Africa grown domain name industry and business.

Our Regional Engagement Centre in Nairobi is Central in Supporting our work in Africa
Capacity Building Initiatives Launched in Africa

- DNS-Abuse & Mitigation Workshops
- DNSSEC Roadshows
- GAC Capacity Building Workshops
- DNS Entrepreneurship Workshops / Exchange Programme
- DNS – Entrepreneurship Centre (DNS - EC)
- Challenges / Opportunities
ICANN Learn presents education and training, across a wide variety of topics that pertain to ICANN, to better educate stakeholders in the ICANN ecosystem.

- It is an online platform that is free to access and free to create course content to share with fellow ICANN community members.
- ICANN Learn is currently available in the six UN languages.

Learn more: learn.icann.org
Programs Available

**Fellowship**
Global Capacity Building Program to support ICANN’s Multistakeholder community; online application process 3x year around an ICANN Meeting (1 Mtg for Alumni only)

**NextGen**
Regionally based Program to create awareness and promote future discussions within universities and other regional forums; online application process 3x a year around an ICANN Meeting

**Newcomer**
Those just entering the ICANN community can self-educate using the Newcomer webpage or participate in person or remotely at the ICANN Meeting Newcomer Sunday

Watch Fellowship and NextGen video: [https://www.youtube.com/watch?v=nrV_ZkDEflQ](https://www.youtube.com/watch?v=nrV_ZkDEflQ)

Watch Newcomer video: [https://www.youtube.com/watch?v=da1RQt9-e-g](https://www.youtube.com/watch?v=da1RQt9-e-g)
Do you now feel like this? Remember, if you think you are too small to make a difference, then you have not shared a room with a Mosquito!
Engage with ICANN

One World, One Internet

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