The Future of the Internet

KUEK Yu-Chuang| VP & MD, ICANN APAC Hub | 27 Nov 2015
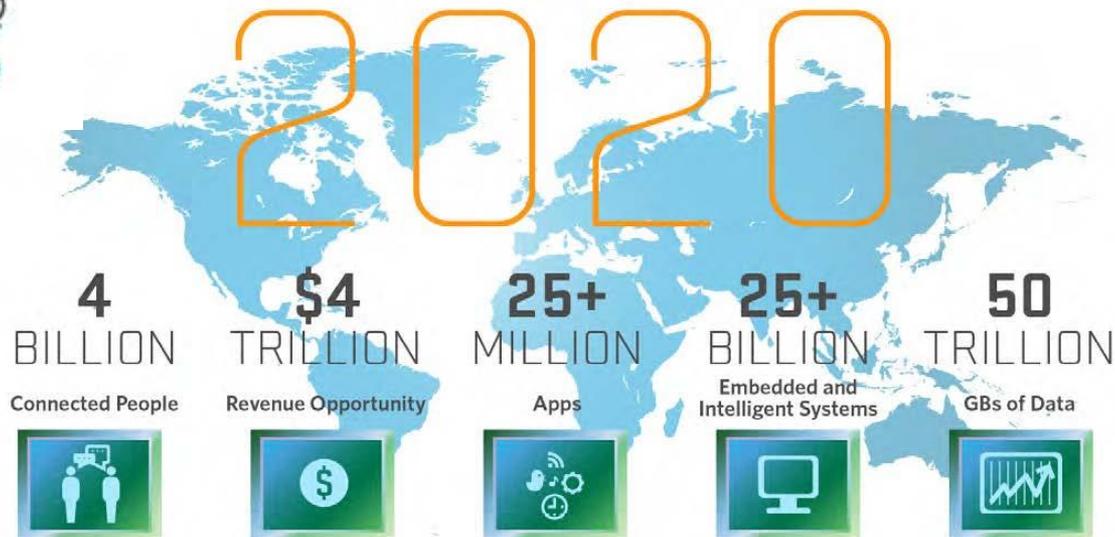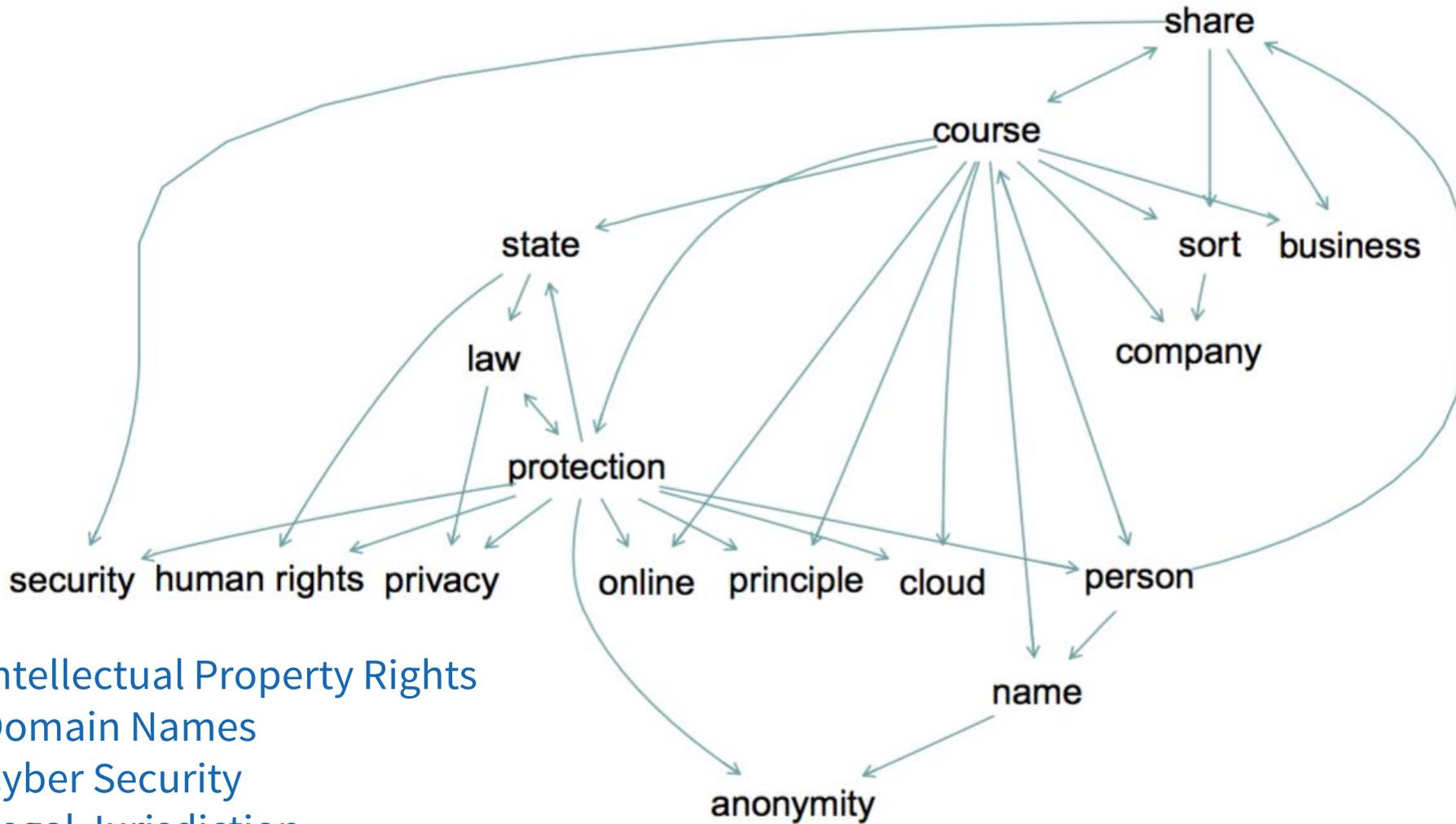
- **Facilitate inclusion**
- **Use the Internet innovatively**

The Internet and You

- Intellectual Property Rights
- Domain Names
- Cyber Security
- Legal Jurisdiction
- …

Source: Digital Watch IGF Report
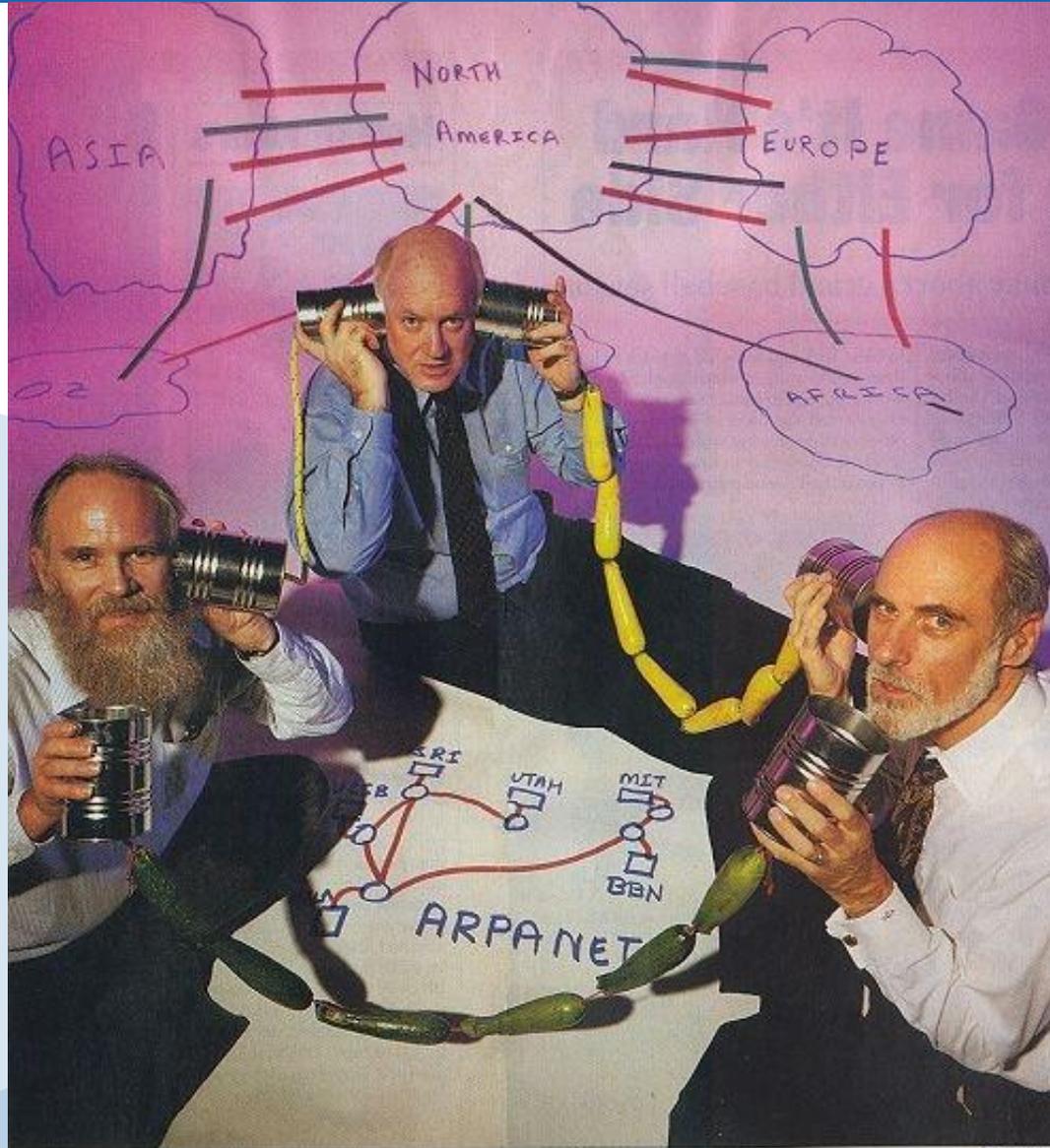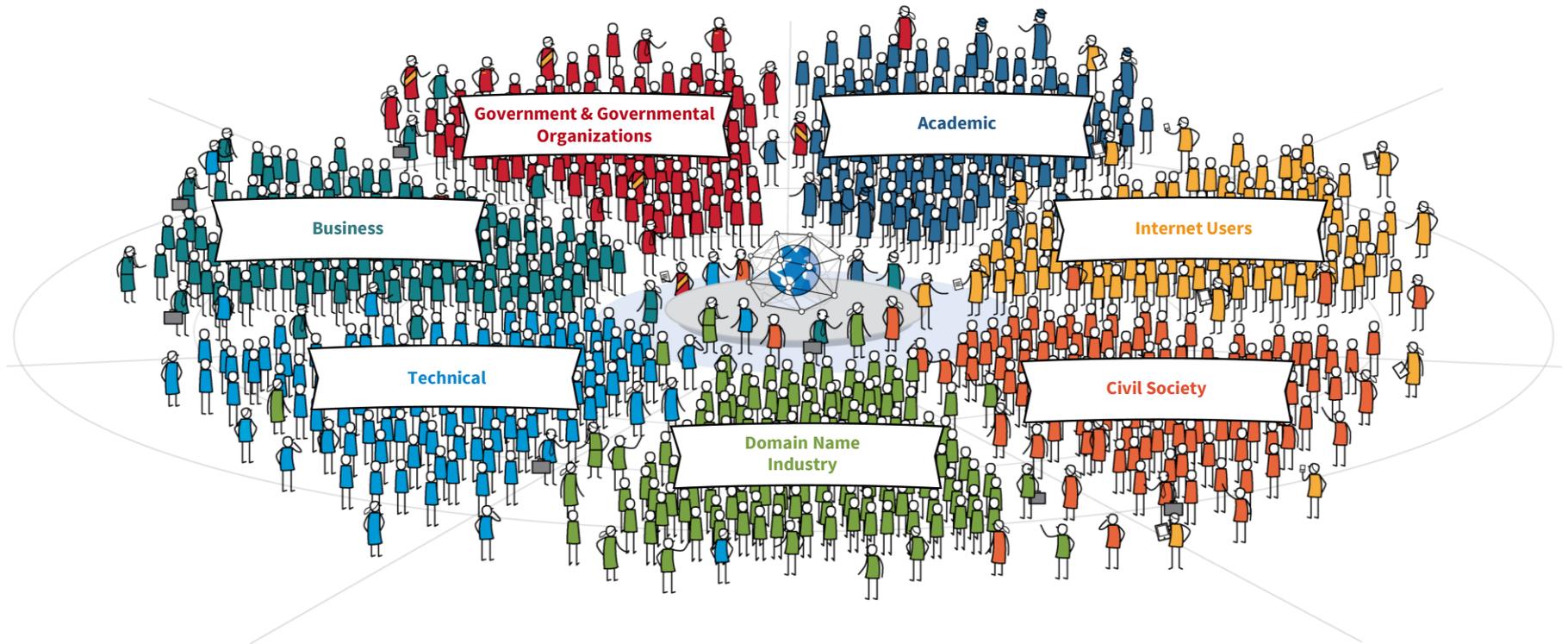
ICANN's Global Multi-stakeholder Community

Today's Community of Communities

In the same way the Internet is a network of networks comprised of computers and devices, the ICANN community is a community of communities comprised of people and organizations

THE THREE LAYERS OF DIGITAL GOVERNANCE

No one person, government, organization, or company governs the digital infrastructure, economy, or society. Digital governance is achieved through the collaborations of Multistakeholder experts acting through polycentric communities, institutions, and platforms across national, regional, and global spheres. Digital Governance may be stratified into three layers to address infrastructure, economic, and societal issues with solutions. For a map of Digital Governance Issues and Solutions across all three layers, visit *https://map.netmundial.org*

MULTISTAKEHOLDER COLLABORATIONS

Solutions to issues in each layer include policies, best practices, standards, and specifications developed by the collaborations of expert stakeholders from actors in business, government, academia, technical, and civil society.

ECONOMIC AND SOCIETAL LAYER

LAWS, POLICIES, AND REGULATIONS
Governing bodies in local, national, regional, and international spheres are engaged with their citizens and with other bodies to develop and apply laws, policies, and/or regulations. The transnational nature of the Internet must be synchronized with the established International system of governance and laws.

INDUSTRY AND TRADE
Manufacturing, retail, supply chain/logistics, healthcare, finance, etc.
Such as Amazon, eBay, Alibaba, Rakuten, Sony, Toyota, Coca-Cola, Boeing, Alcatel-Lucent

NEWS AND INFORMATION
Newspapers, broadcast, personal & professional blogs, social media.

USERS
There are over 3 billion users worldwide. Most users connect to the Internet through their mobile phone.

OCEANIA 7% ASIA 48% NA 22% EU 19% AFR 10%
www.internetlivestats.com/internet-users/#byregion

EDUCATION
Online universities, research, tutorials, classroom engagement.

APPLICATIONS
World wide web, email, cloud, VoIP, mobile apps.

ENTERTAINMENT
Music, movies, television, games.
Such as iTunes, Spotify, YouTube, Amazon, Netflix

CIVIC AND HUMAN RIGHTS
Privacy, identity, access to content, freedom of expression, cybercrime, consumer protection, cultural diversity, and many more.

SOCIAL MEDIA
Sharing photos, videos, ideas and information.
Such as Facebook, Twitter, Instagram, Tencent QQ, Whatsapp

SECURITY
Cybersecurity, cyber warfare, cyber espionage, cyber terrorism, and many more.

MOBILE
Smart phones, tablets, cars. There are now more mobile devices on the planet than people.

KEY GOVERNANCE ACTORS
- IGF
- Technical Organizations (ISOC, W3C,...)
- NETmundial
- World Economic Forum
- National Governments
- Civil Society
- Intergovernmental Organizations (OECD, UNESCO,...)
- Law Enforcement Agencies

LOGICAL LAYER

ROOT SERVICES
12 organizations from 4 countries administering 13 different root servers that provide top-level DNS services via hundreds of machines in dozens of countries.
~500 Anycast copies worldwide.

THE ROOT ZONE = **NAMES** + **NUMBERS** + **INTERNET PROTOCOLS** = **IDENTIFIERS' PUBLIC REGISTRIES**

DOMAIN NAMES
~300 Country Code Top-Level Domains (ccTLDs) such as .fr, .br, .us, ...
~600+ Generic Top-Level Domains (gTLDs) such as .com, .biz, .realtor, ...
~1500+ Domain Name Registrars such as GoDaddy, Network Solutions, Register, ...

IP ADDRESSES
IPv4: More than 4 billion addresses.
IPv6: 340 undecillion (trillion, trillion, trillion) addresses.
5 Regional Internet Registries (RIRs) who coordinate policy related to Internet address resources.

PROTOCOL PARAMETERS
Protocol parameters are the commands and identifiers that are used inside protocols, the structured communications used for the web, email, etc., to transfer the information.
These parameters are used in standards defined by the IETF in coordination with other standard organizations such as the W3C. e.g. TCP/IP, VoIP, HTTP, HTTPS.

KEY GOVERNANCE ACTORS
- ETSI
- ICANN / IANA
- IETF
- ISO
- IEEE
- NRO
- TLD Operators
- W3C

INFRASTRUCTURE LAYER

THE INTERNET BACKBONE (IP NETWORKS) 90% is privately owned by global companies like: *Level 3 Communications, TeliaSonera International Carrier, CenturyLink, Vodafone, Verizon, Sprint, AT&T*

INTERNET EXCHANGE POINTS (IXP)
~550 points worldwide.

TERRESTRIAL CABLES

UNDERSEA CABLES
~300 cables that transmit 99% of all international Internet data.

SATELLITES
~2000 communications satellites in use, many used now for Internet data.

WIRELESS SYSTEMS
~824,000 wireless towers worldwide.

KEY GOVERNANCE ACTORS
- GSMA
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ICANN

Internet Assigned Names Authority (IANA)

The IANA Functions evolved in support of the Internet Engineering Task Force, and initially funded via research projects supported by the U. S. Department of Defense, Advance Research Projects Agency.
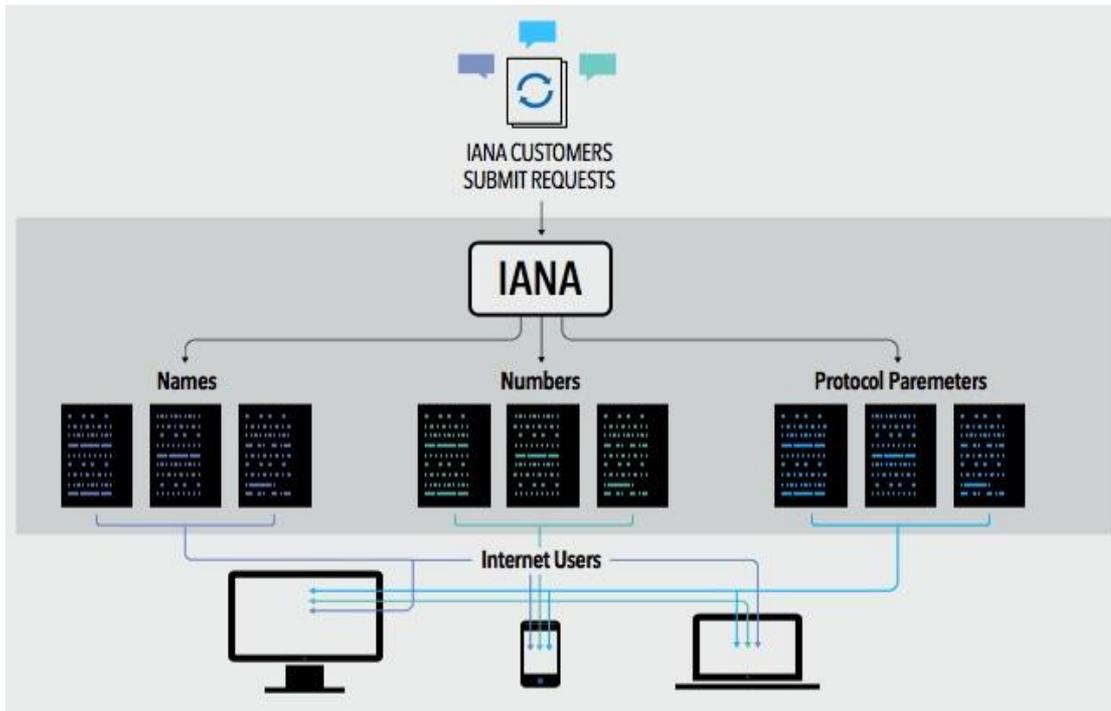
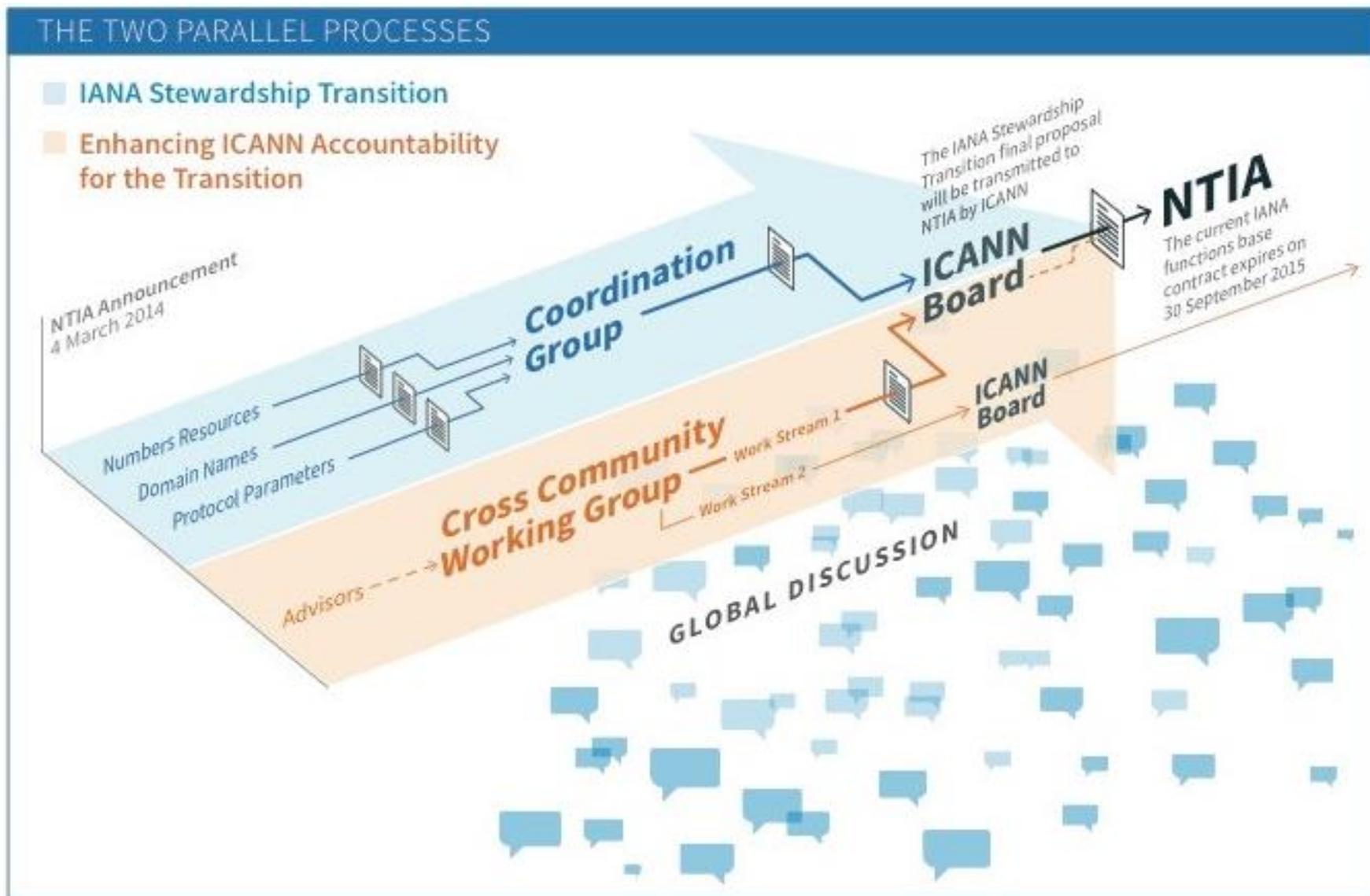**These functions include:**
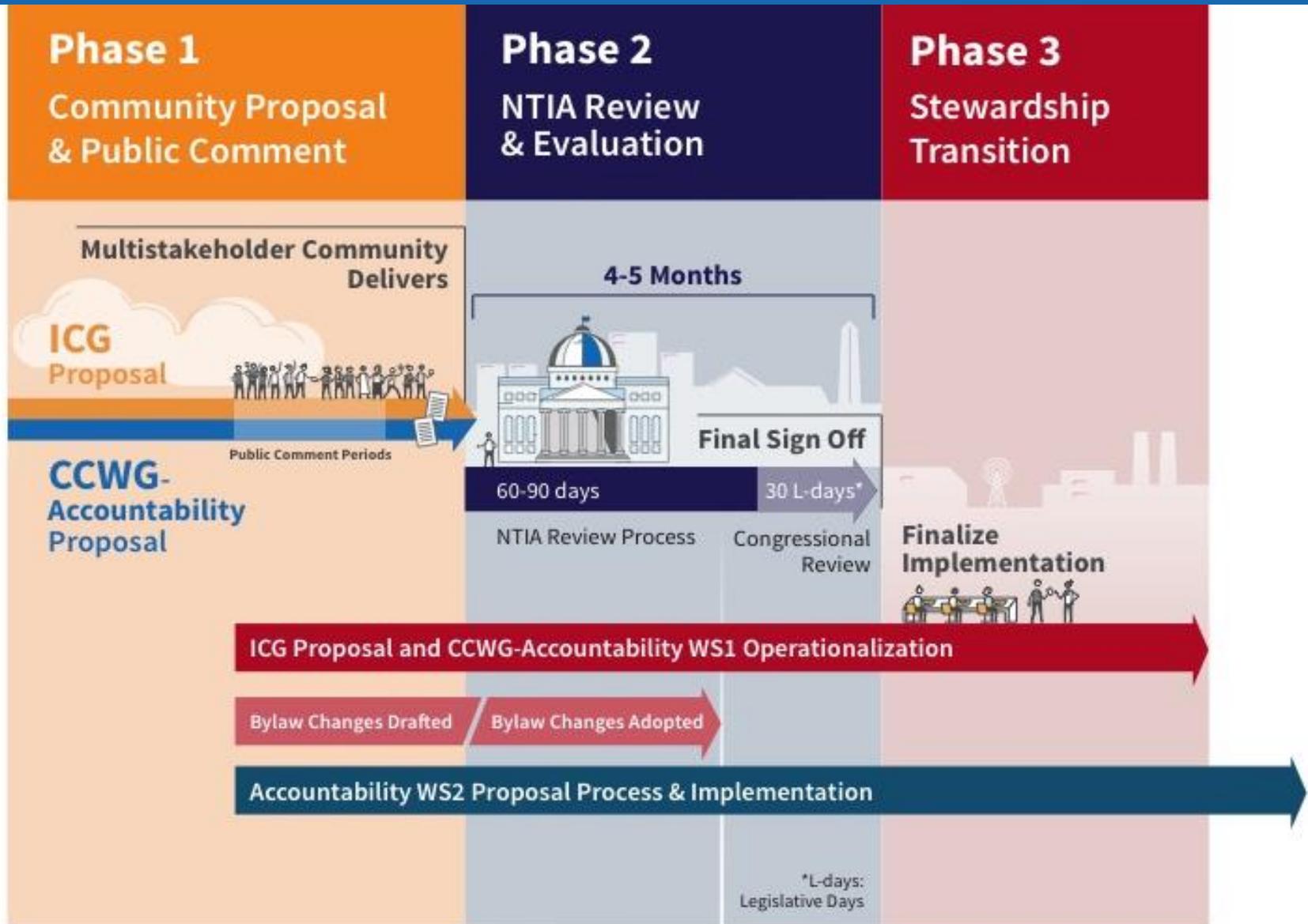
- The coordination of the assignment of technical Internet protocol parameters

- The administration of certain responsibilities associated with Internet DNS Root zone management

- The allocation of Internet IP addresses

ICANN was created to perform the IANA Functions and has done so pursuant to a no-cost contract with the Department of Commerce for over 15 years

THE TWO PARALLEL PROCESSES

IANA Stewardship Transition

Enhancing ICANN Accountability for the Transition

NTIA Announcement 4 March 2014

Numbers Resources
Domain Names
Protocol Parameters

Coordination Group

The IANA Stewardship Transition final proposal will be transmitted to NTIA by ICANN

ICANN Board

NTIA

The current IANA functions base contract expires on 30 September 2015

Cross Community Working Group — Work Stream 1 — Work Stream 2

Advisors

ICANN Board

GLOBAL DISCUSSION

Where are we now?

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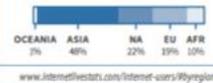Manufacturing, retail, supply chain/logistics, healthcare, finance, etc.
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RIGHTS!
NEWS 4

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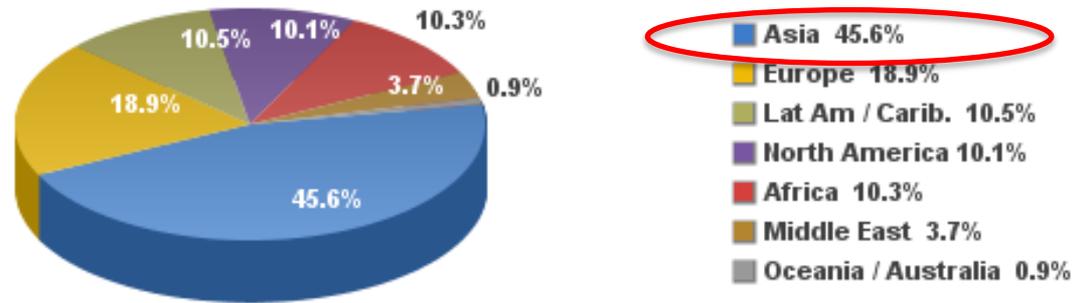~2000 communications satellites in use, many used now for Internet data.

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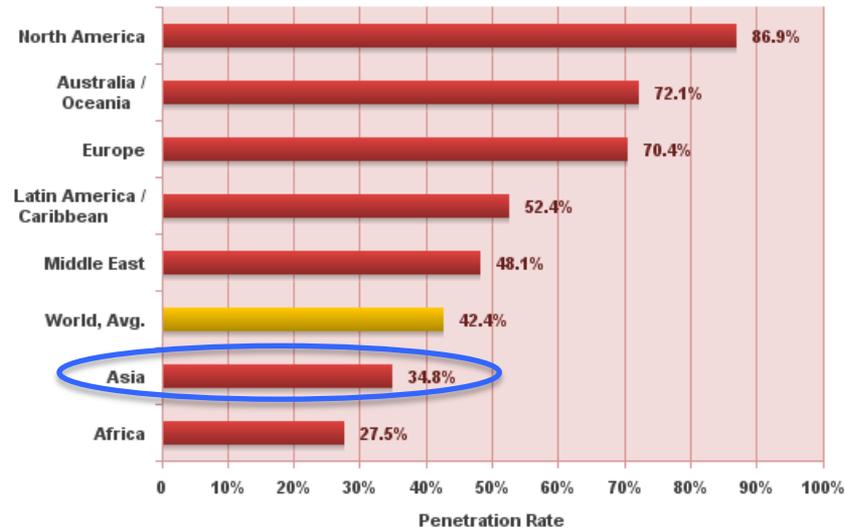~824,000 wireless towers worldwide.

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ICANN

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The Asia Pacific

- **3 billion Internet users in the world**

Legend:
- Asia 45.6%
- Europe 18.9%
- Lat Am / Carib. 10.5%
- North America 10.1%
- Africa 10.3%
- Middle East 3.7%
- Oceania / Australia 0.9%

- **Asia Internet penetration still low**

Penetration Rate:
- North America 86.9%
- Australia / Oceania 72.1%
- Europe 70.4%
- Latin America / Caribbean 52.4%
- Middle East 48.1%
- World, Avg. 42.4%
- Asia 34.8%
- Africa 27.5%

- **Asia - majority of next billion people coming online**

Source: www.internetworldstats.com; Euromonitor

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Thank you

Get updates from us

Reach us at:
Email: apachub@icann.org
Website: icann.org

ICANN

twitter.com/icann	gplus.to/icann
facebook.com/icannorg	weibo.com/ICANNorg
linkedin.com/company/icann	flickr.com/photos/icann
youtube.com/user/icannnews	slideshare.net/icannpresentations