

TLD Analytics

Dr. Matthew Zook, ZookNIC

June 28, 2017

ICANN 59, Tech Day

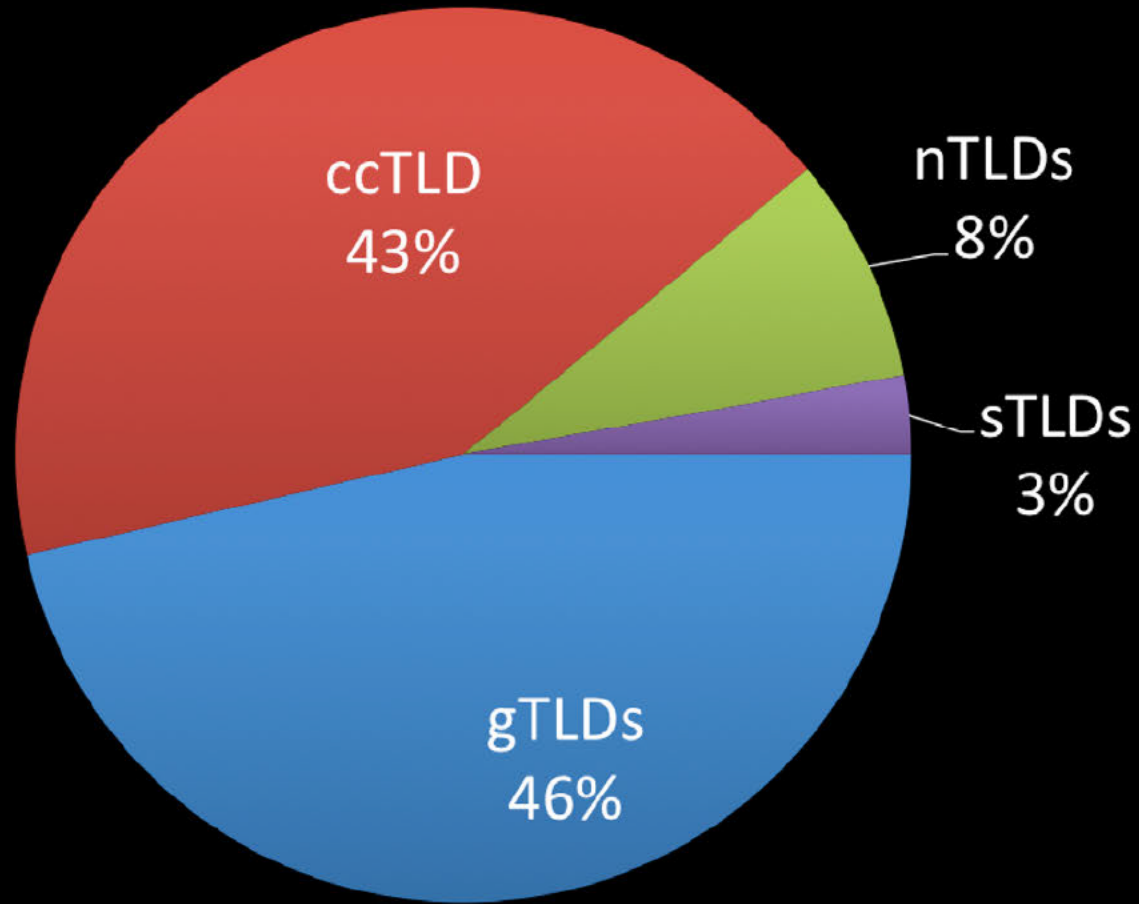


Overview

- Research project tracking trends within domain names for the past twenty years.
- Has become an important means to study the industry (e.g., VeriSign's Domain Name Industry Brief).
- The project also supports academic work using domain name counts to study the information and knowledge economies
 - The 2017 GII Innovation Index, WSIS reports and my ongoing work with researchers at the Oxford Internet Institute.

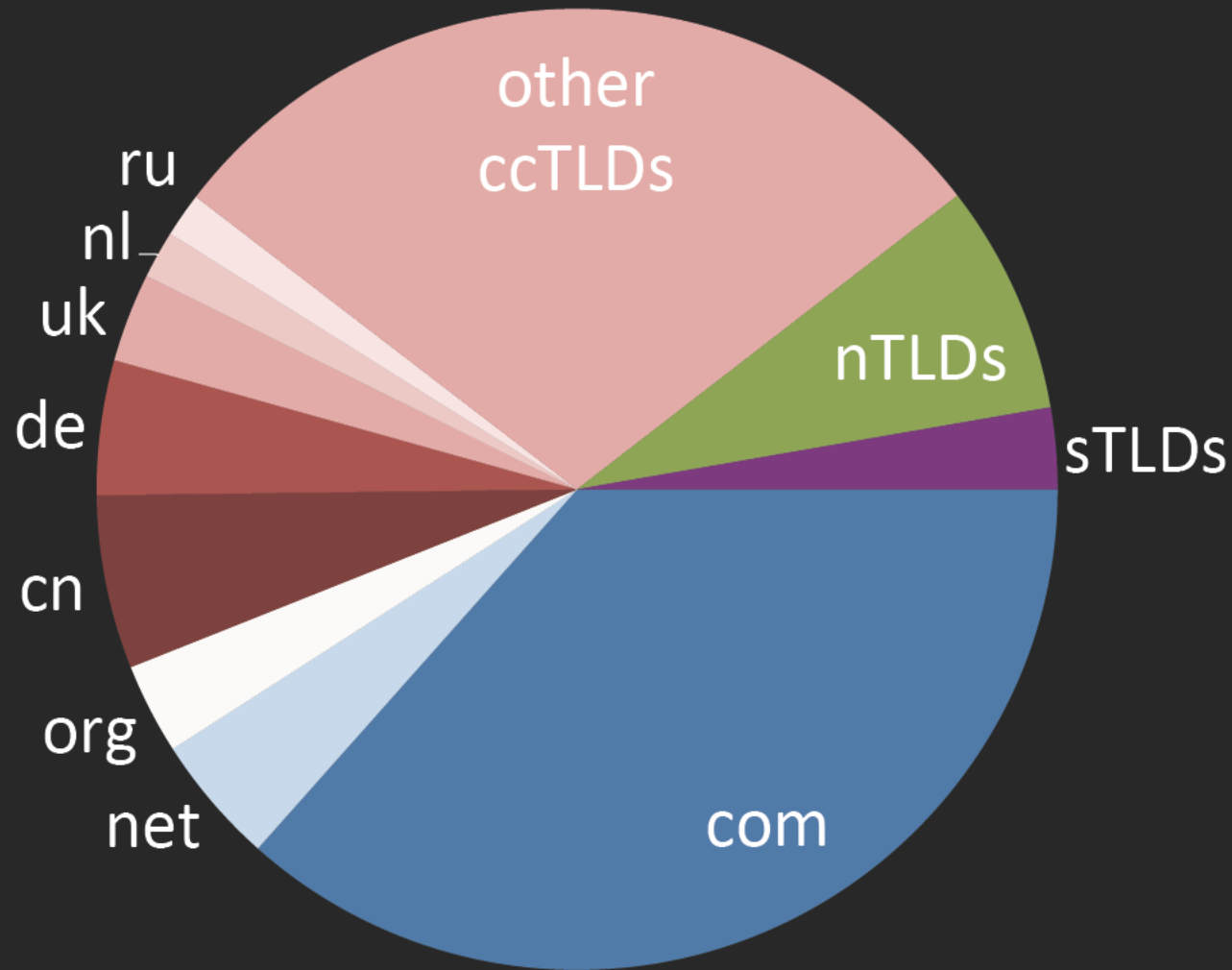
Distribution by TLD (May 2017)

339 Million Domains



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339 Million Domains



Tracking Domain Names

1. Zone file analysis and ICANN monthly reports
 - Primarily for gTLDs, sTLDs and nTLDs
2. Registry reports
 - Statistics pages, counters, press releases, etc.
3. Inquiries to registries
 - Labor intensive but very useful.

1. Zone File Counts

- ICANN contracts obligates gTLDs, sTLDs and nTLDs to provide zone file access.
- Using DNS record types extract a complete list of *currently active* domain names.
 - Important to sort and dedup to get current counts.
 - Can compare subsequent zone files to track adds and deletes.

Moving beyond counts

- Root name server information is also included in zone files and IP geolocation allows us to map the locations of these servers relative to the headquarters of the companies that run them.

Placemarks indicate the headquarters location of gTLDs and sTLDs; the white lines show the connections to the locations of the root name servers for these TLDs.

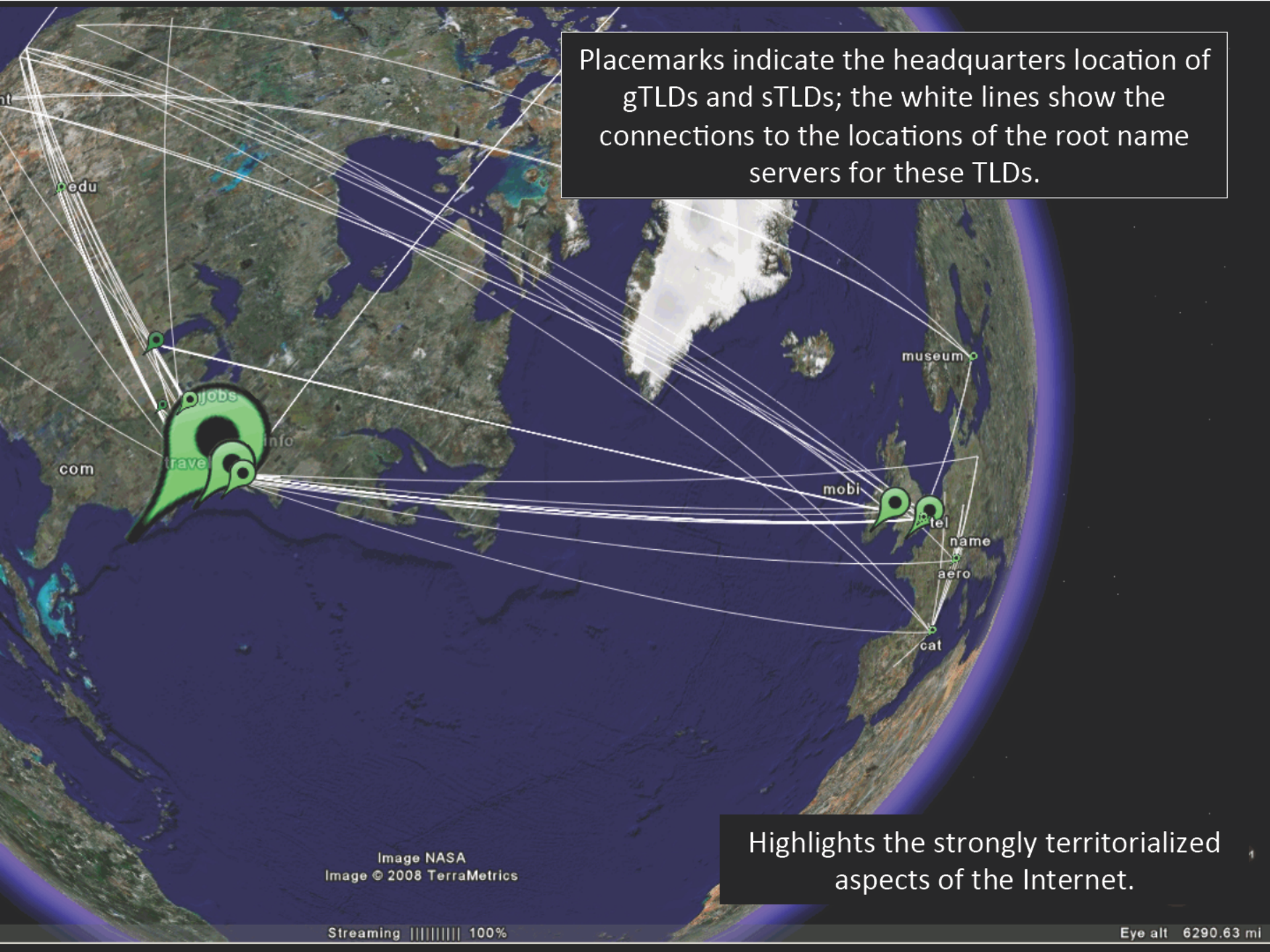


Image NASA
Image © 2008 TerraMetrics

Highlights the strongly territorialized aspects of the Internet.

1. Zone File Access via Dig

- I use utility *dig* (domain information groper) to query DNS servers for other TLDs where access is available.
- Follow the same procedure for counting *currently active* domain names.

DIG(1)

UNIX Reference Manual

DIG(1)

NAME

dig - send domain name query packets to name servers

SYNOPSIS

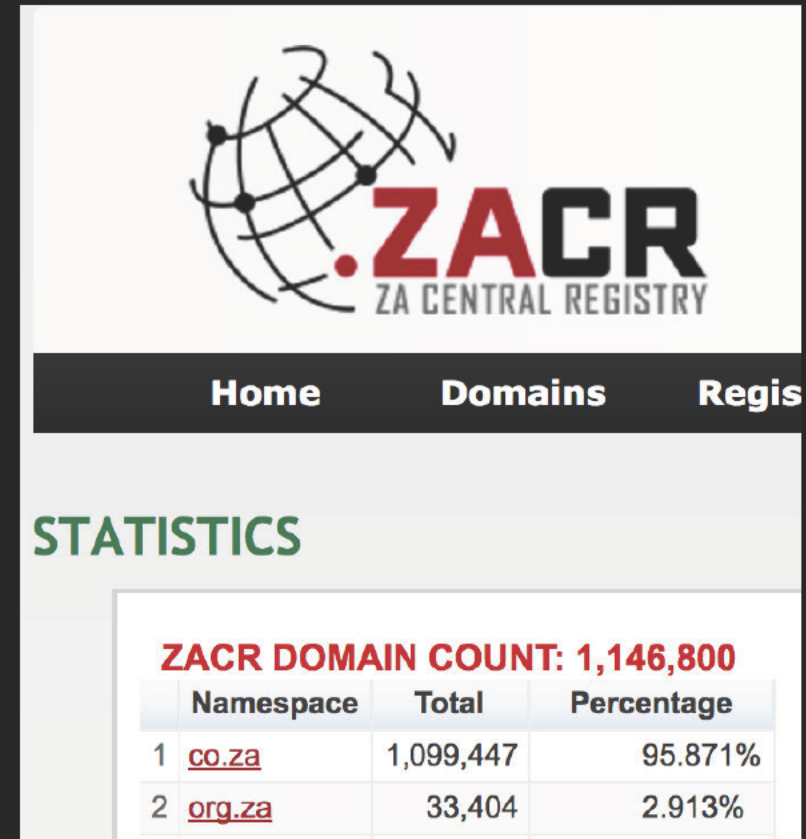
```
dig [@server] domain [<query-type>] [<query-class>] [+<query-option>]  
      [-<dig-option>] [%comment]
```

DESCRIPTION

Dig (domain information groper) is a flexible command line tool which can be used to gather information from the Domain Name System servers. **Dig** has two modes: simple interactive mode for a single query, and batch mode which executes a query for each in a list of several query lines. All query options are accessible from the command line.

2. Registry reports – from .AM to .ZA

- Many registries run counters and statistics pages which I check monthly.
- Really useful resource, I'd love to talk with (and thank) anyone who runs one.



Armenia Network Information Centre

AM NIC is managed by [Internet Society of Armenia](#)
Member of [Reseaux IP Europeens](#), [Council of European National TLD Registries](#)

It is 06:58 on Tuesday, 20 June 2017 in Yerevan, Armenia
There are [.am - 38062](#) and [.Էմ - 278](#) records in domain database

2. Registry reports and press releases are also consulted regularly



Domain reports

Each month AusRegistry posts a General Report which statistically presents the monthly and accumulative performance of the .au domain



Quarterly Progress Report

EURid reports its status and progress every quarter.

Each report includes registration trends across all European Union countries, the countries of Iceland, Liechtenstein and Norway, and a summary of the quarter by the General Manager.

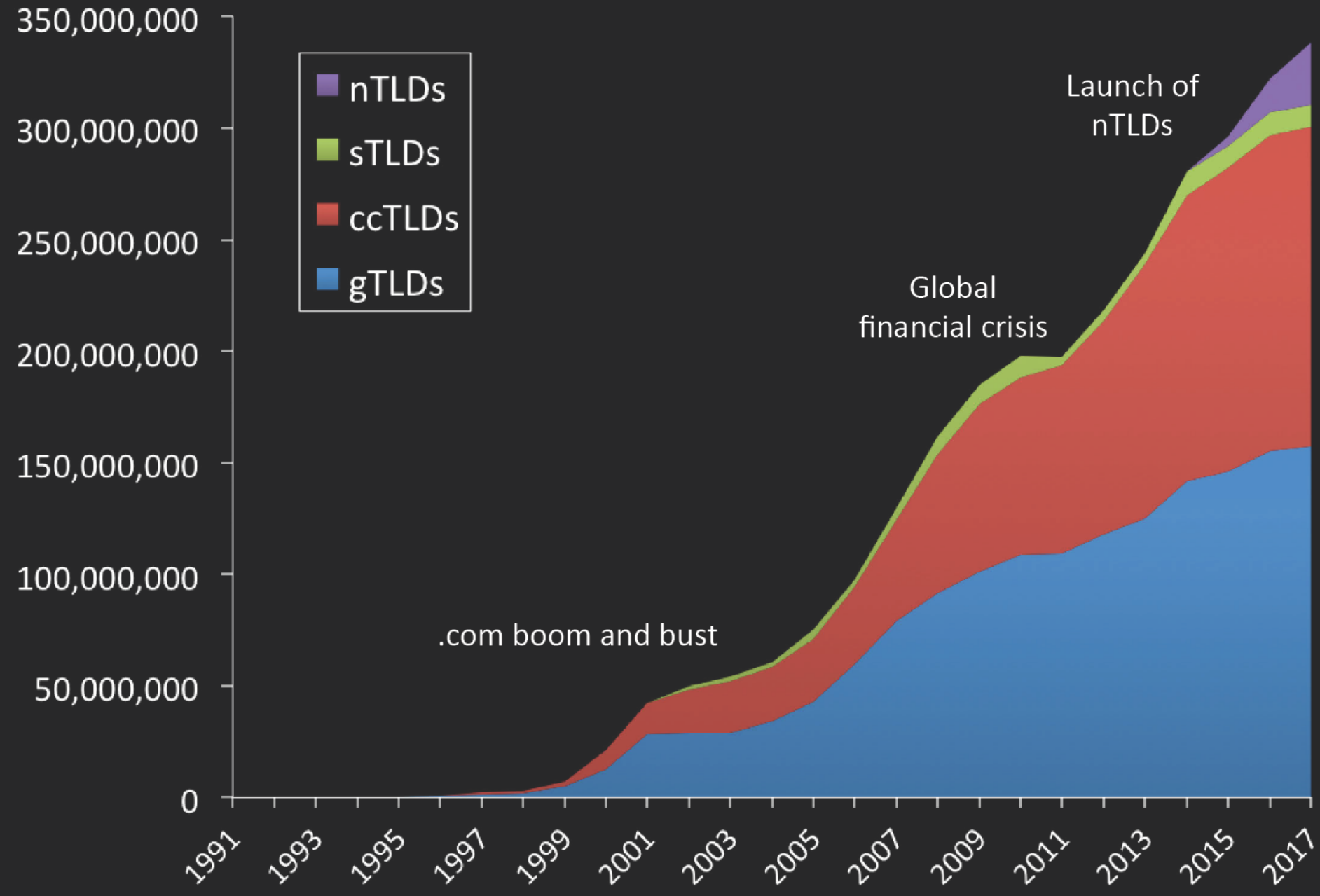
3. Inquiries to registries

- I regularly contact registry operators (via email and phone) to ask for current data.
 - **MANY THANKS TO ALL WHO HAVE RESPONDED.**
- Continuing this work at the ICANN59 meeting, hope to talk to many of you this week.

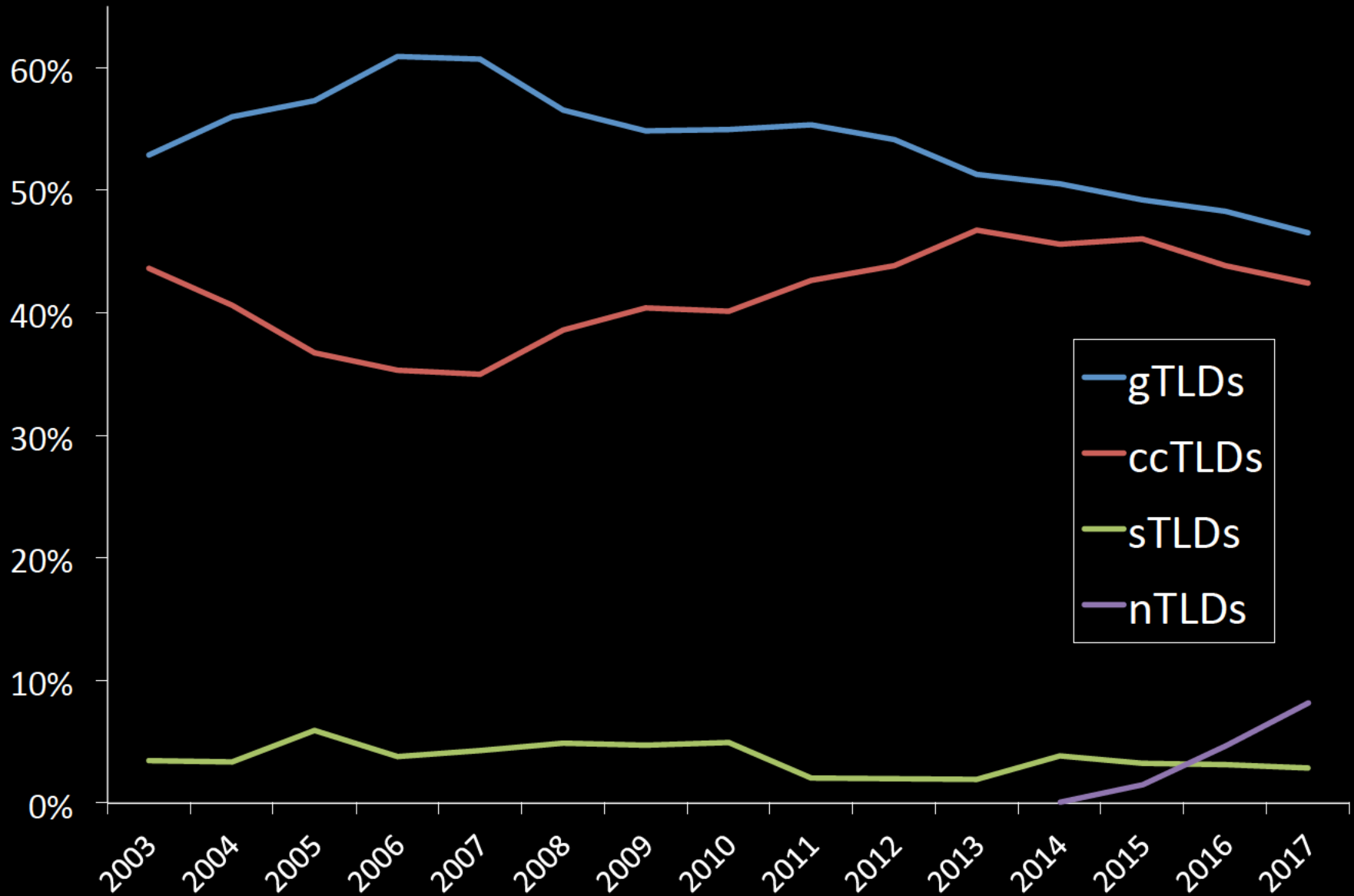
But what can you do with this?

Lots of insight on the domain
name industry in general.

Historical Growth of Domain Names



TLD Type Share of All Domains



Possible to zoom in on regional and country cases, trends within IDN domains/TLDs, adds, deletes and renewal rates.

Domain counts also work as a
metric for studying the
information and knowledge
economies.

The Global Innovation Index 2017

Innovation Feeding the World

TENTH EDITION



PARTNERSHIP ON MEASURING ICT FOR DEVELOPMENT

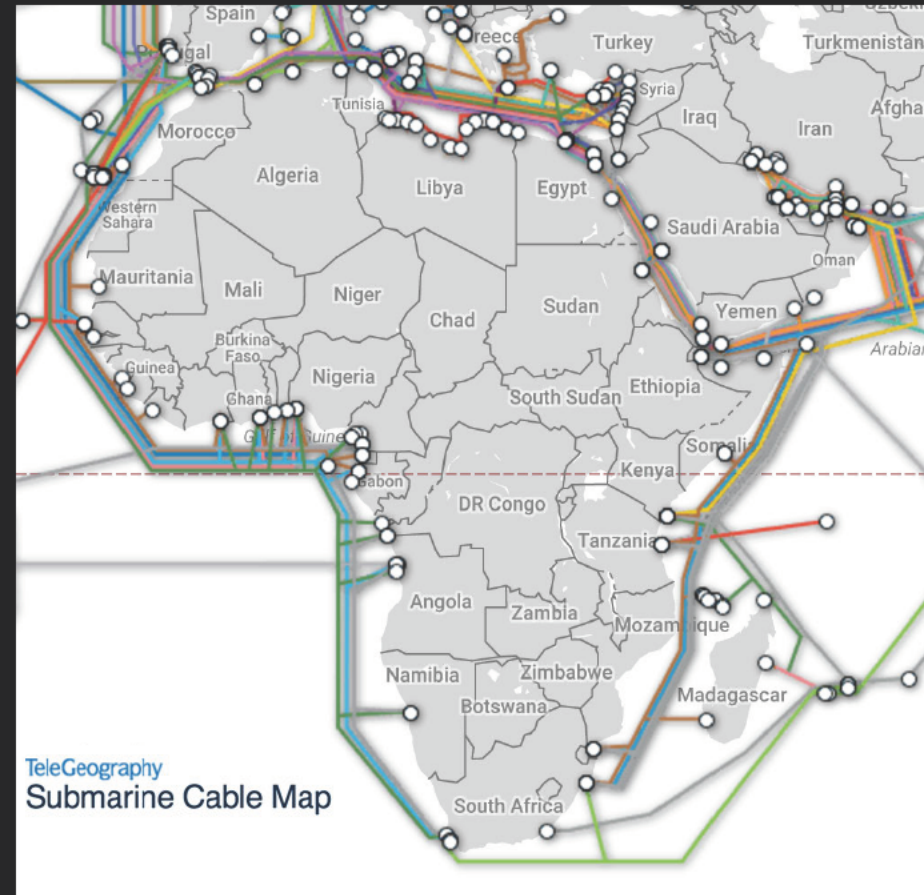
FINAL WSIS TARGETS REVIEW

ACHIEVEMENTS, CHALLENGES AND
THE WAY FORWARD

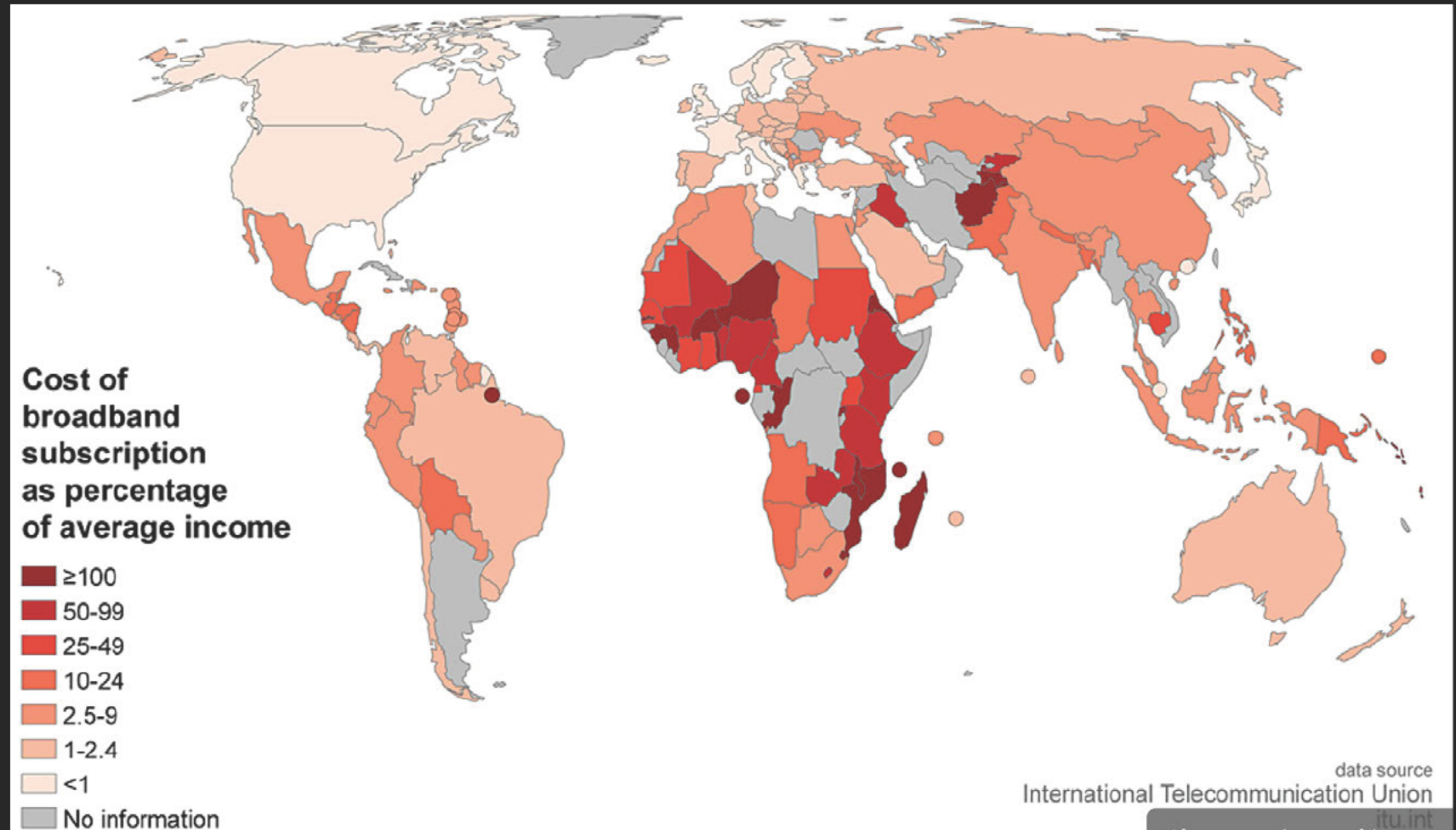


More specific to the African context...increasing digital connectivity (submarine cables) has sparked many hopes for the democratization of information and knowledge production in sub-Saharan Africa...

...but is this happening?

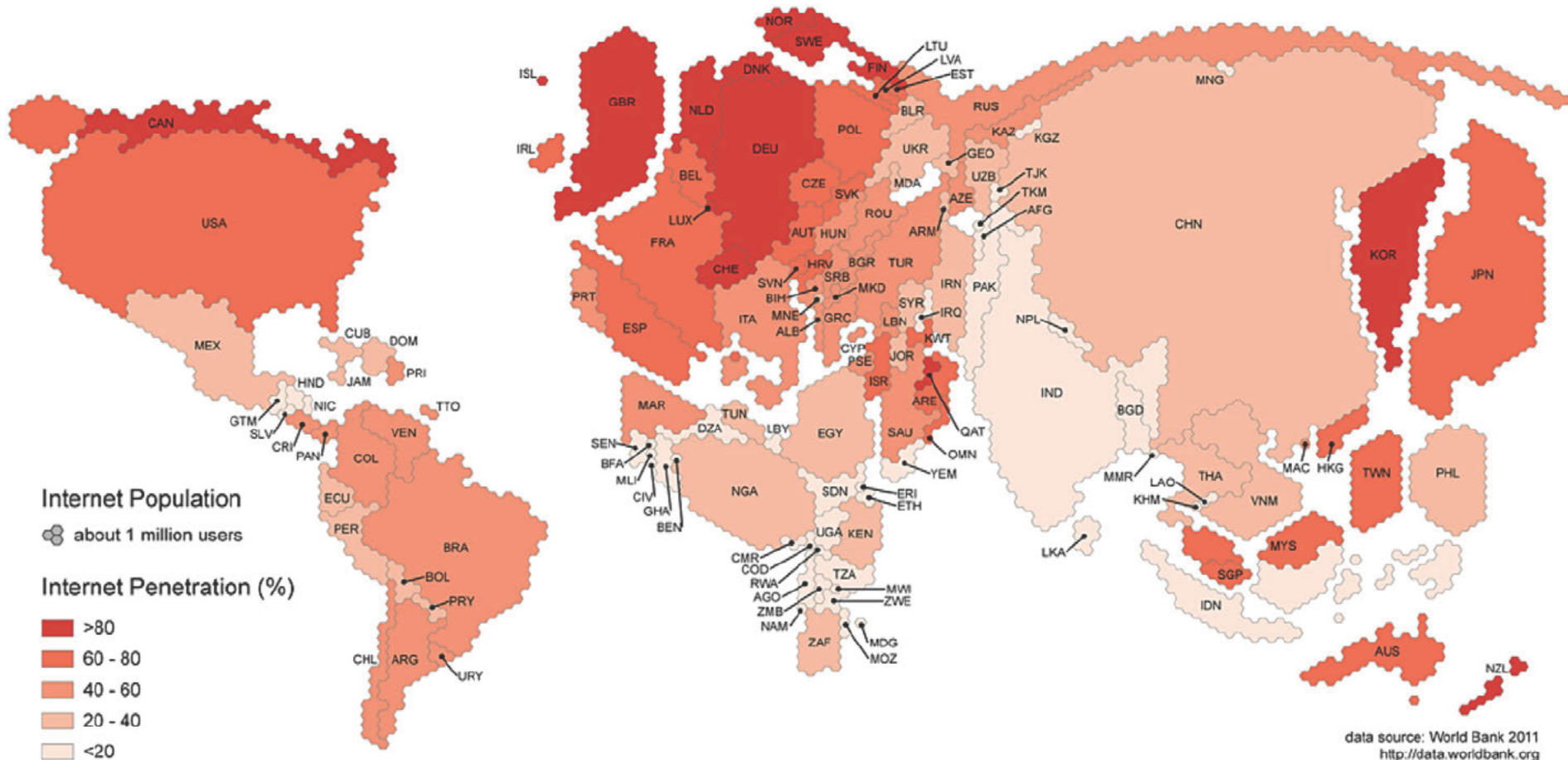


Cost of broadband as a percentage of average income



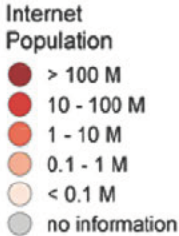
Graham, M, Sabbata, S and M. Zook. (2015). Towards a Study of Information Geographies: Immutable Augmentations and a Mapping of the Geographies of Information. *Geo: Geography and Environment*. DOI: 10.1002/geo2.8/epdf

Internet users by country



Graham, M, Sabbata, S and M. Zook. (2015). Towards a Study of Information Geographies: Immutable Augmentations and a Mapping of the Geographies of Information. *Geo: Geography and Environment*. DOI: 10.1002/geo2.8/epdf

country



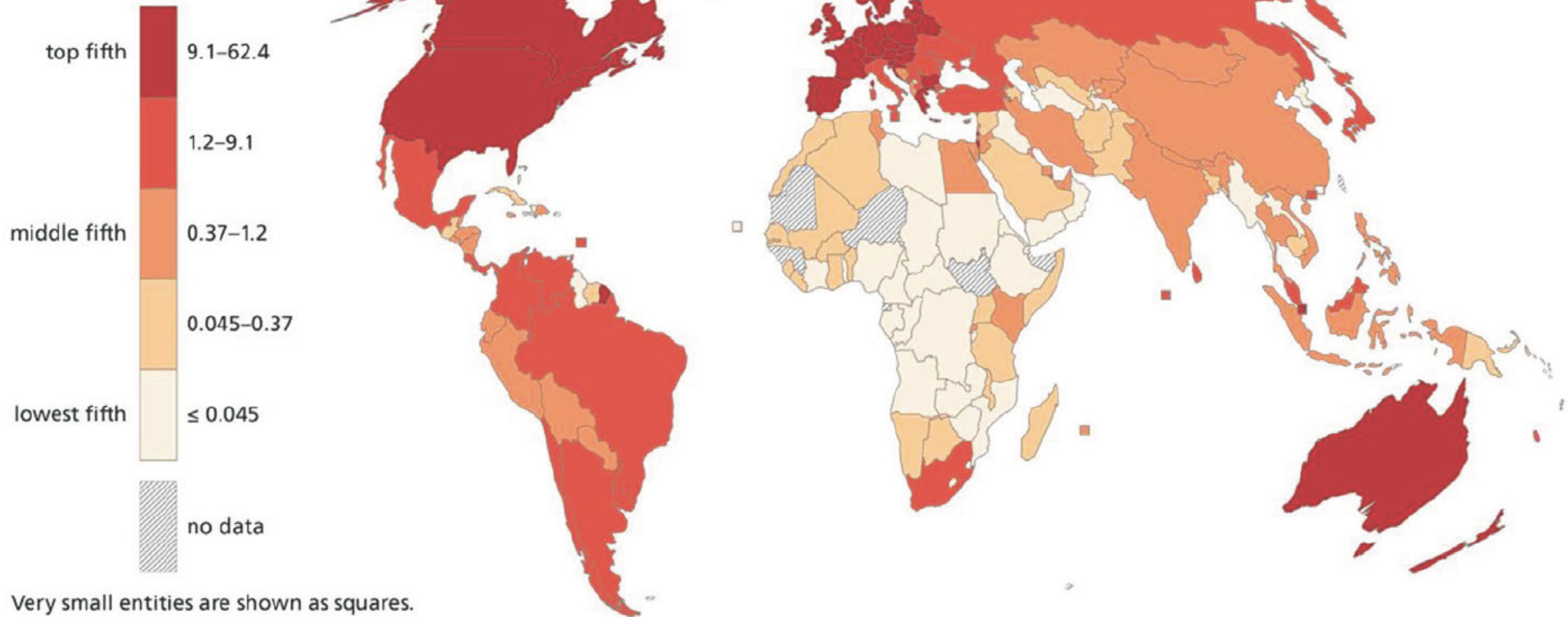
Data source:
World Bank 2011
(data.worldbank.org)

Show caption and image c

Graham, M, Sabbata, S and M. Zook. (2015). Towards a Study of Information Geographies: Immutable Augmentations and a Mapping of the Geographies of Information. *Geo: Geography and Environment*. DOI: 10.1002/geo2.8/epdf

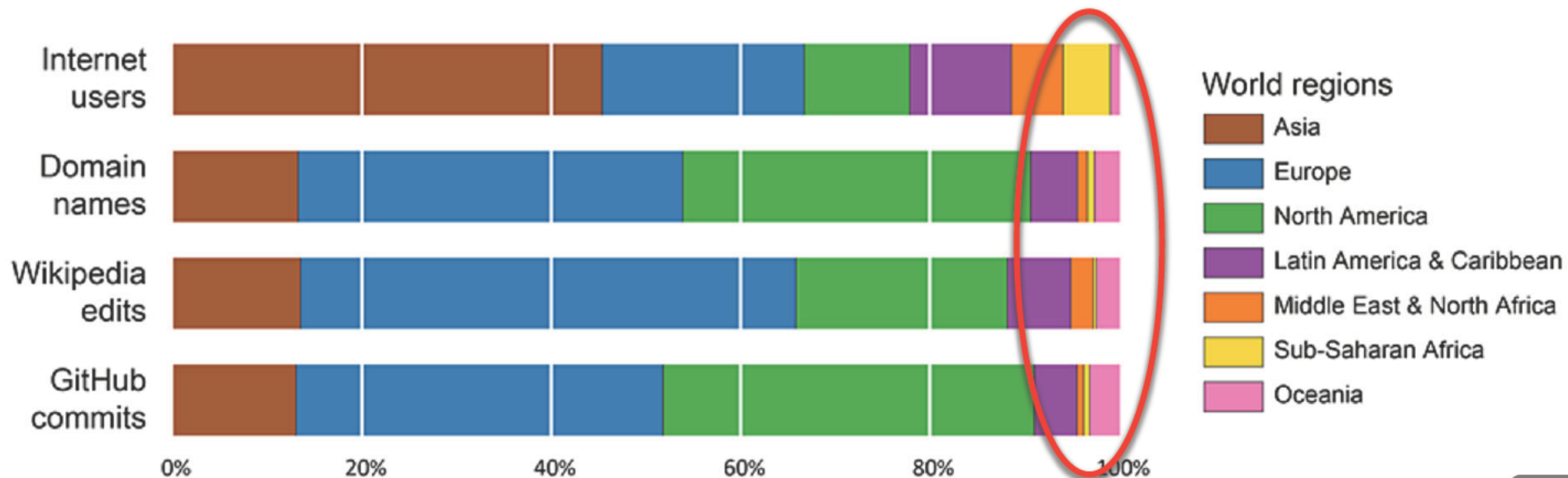
GitHub commits per thousand capita, 2013

GitHub commits
per thousand capita, 2013



Ojanperä, S., Graham, M., Straumann, R. K., De Sabbata, S., & Zook, M. (2017). Engagement in the knowledge economy: Regional patterns of content creation with a focus on sub-Saharan Africa. *Information Technologies & International Development*. 13, 33–52.

Distribution of internet users and platforms and modes of participation



Graham, M, Sabbata, S and M. Zook. (2015). Towards a Study of Information Geographies: Immutable Augmentations and a Mapping of the Geographies of Information. *Geo: Geography and Environment*. DOI: 10.1002/geo2.8/epdf

Connectivity and Content Creation

Our analysis shows that, contrary to expectations, connectivity alone falls short.

Digital content (represented by Github commits, Wikipedia entries and domain names) is less evenly geographically distributed than traditional metrics of knowledge generation (represented by academic articles).

Fiber connectivity is only a necessary, not a sufficient, condition; wealth, innovation capacity, and public spending on education are also important factors.

Thanks

Dr. Matthew Zook

zook@zooknic.com

@mattzook