

Geographic Differences in Third-Party Web Tracking Ecosystem

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Motivation

- ▶ Better understanding of current web traffic which is important for overall system design, e.g. proxies
- ▶ Privacy concerns due to the ability of some third-parties to record and analyse personal information.

Goal

Examine **regional differences** of third-parties in terms of:

- ▶ Big services
- ▶ Small services
- ▶ Cross country services

AUSTRALIA
Bermuda
★

Independent state
Dependency or area of special sovereignty
Island / Island group
Capital

Scale 1:13,000,000
Reference: Equator
standard parallels 30°N and 30°S

1. IL
2. JO
3. QA
4. TR

North America

1. CA
2. US

Europe

1. BE
 2. DE
 3. FR
 4. GB
 5. GR
 6. HU
 7. IT
- NL
NO
PO
RU
SI
SE

Middle-East

East-Asia

1. CN
2. HK
3. JP
4. KR
5. TW

South America

1. AR
2. BR
3. EC

1. AU
2. NZ

Oceania

- Top 500 popular websites, based on Alexa ranking
- 29 countries
- Firefox extension
- PlanetLab

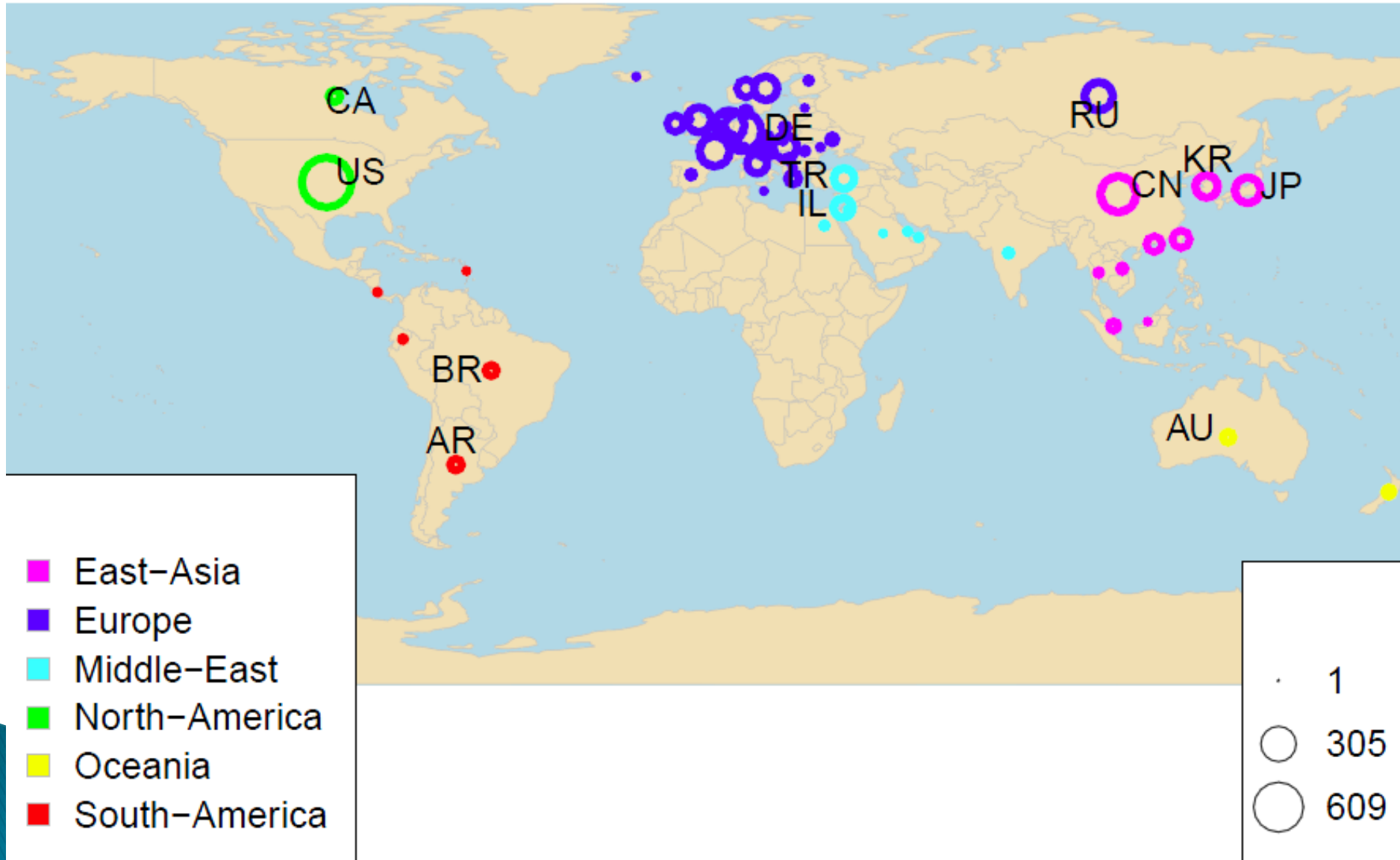
Dataset

- ▶ Visited 6497 websites; identified 6817 unique third-party websites
- ▶ **Qatar, Korea and Hong Kong** have the highest number of third-party websites (814, 769 and 726)
- ▶ **North America, Oceania and Middle-East:** highest average number of third-parties

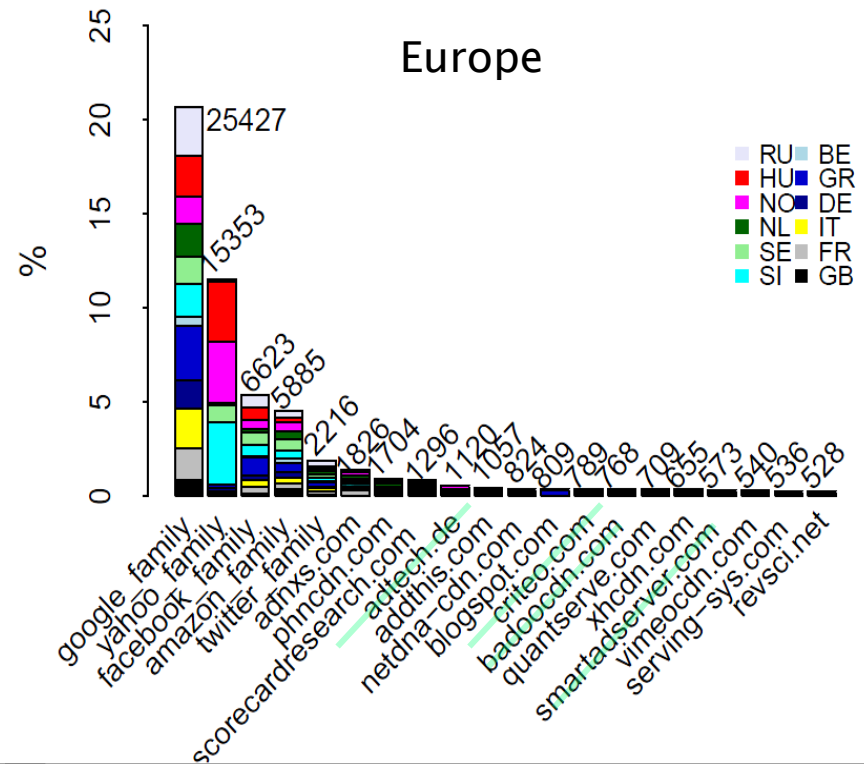
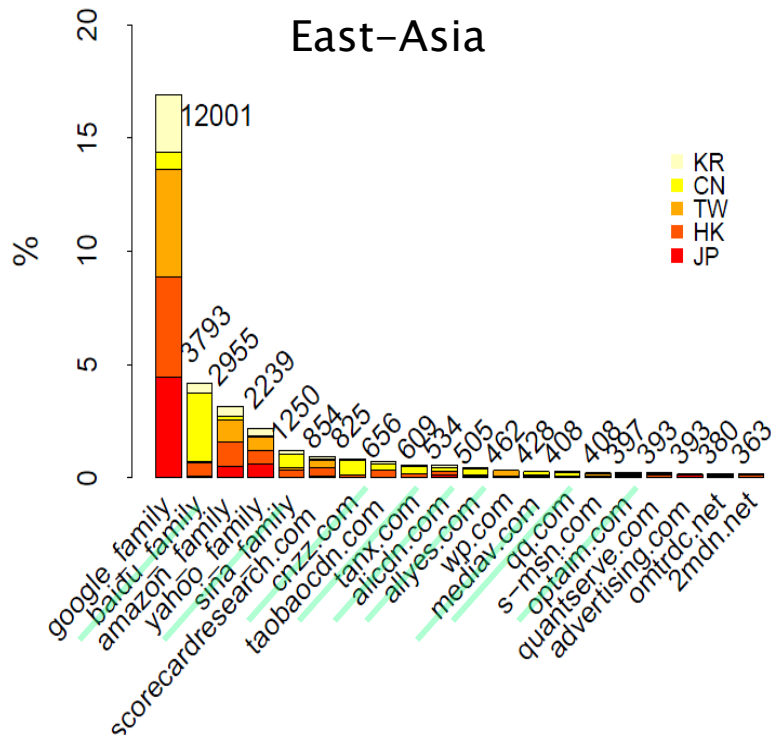
Presence of Regional Third-Parties

Regional Third-Parties: appeared across popular websites of a specific region and their geo-location is in that region

Regional Third-Parties

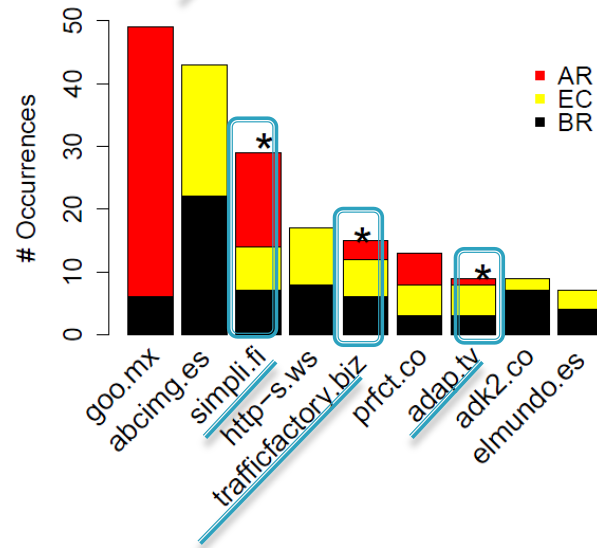
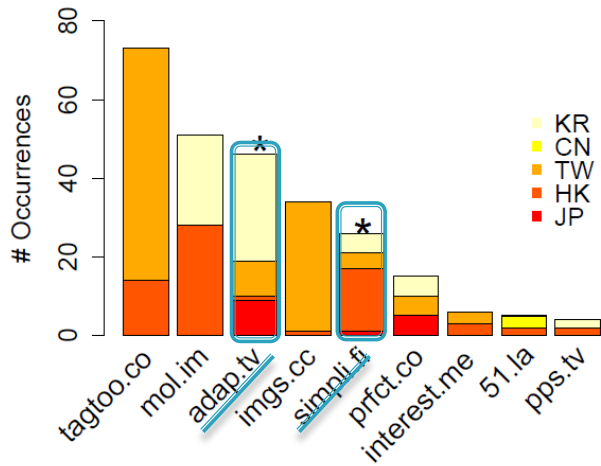
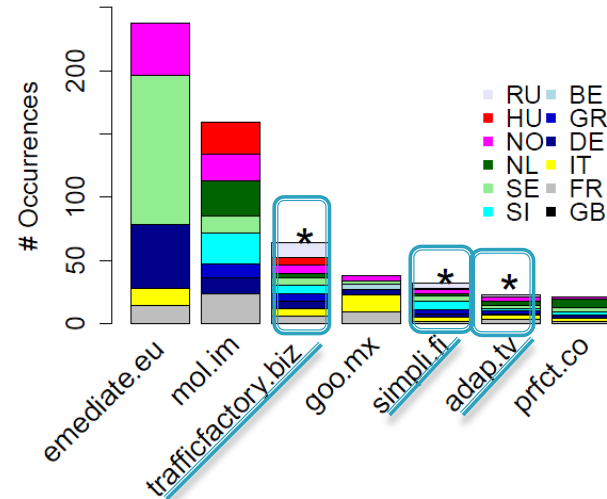
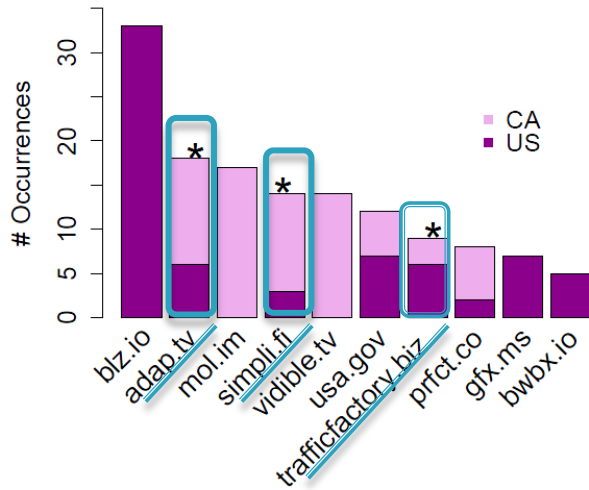


Are Regional Third-Parties Dominant?

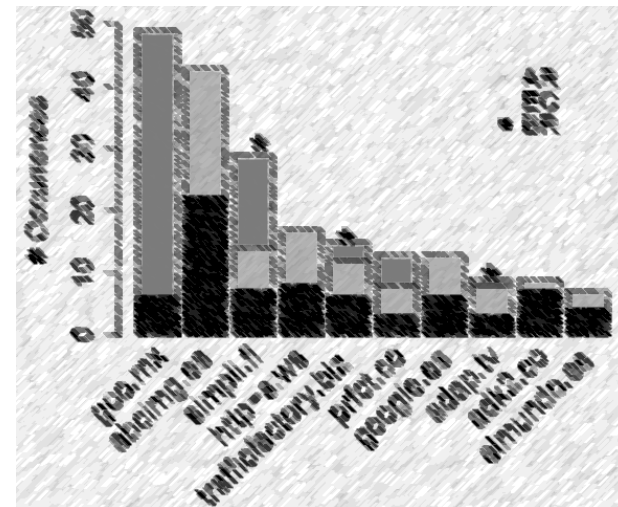
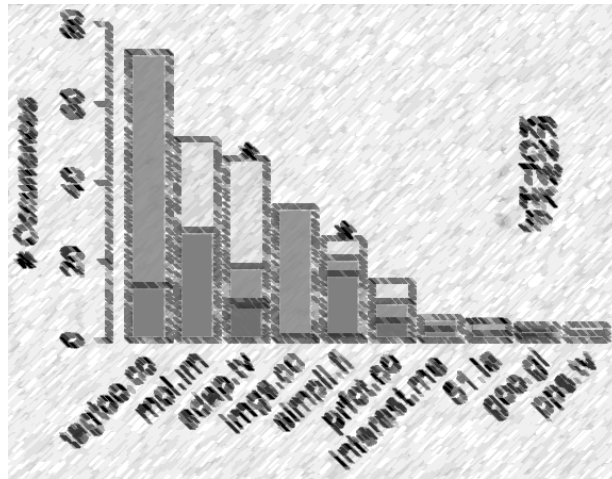
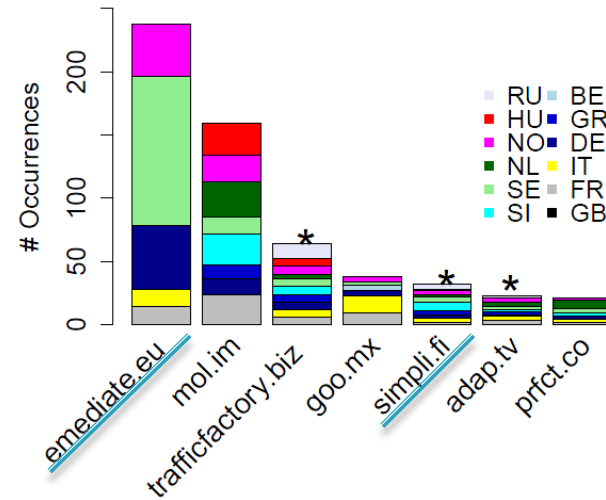
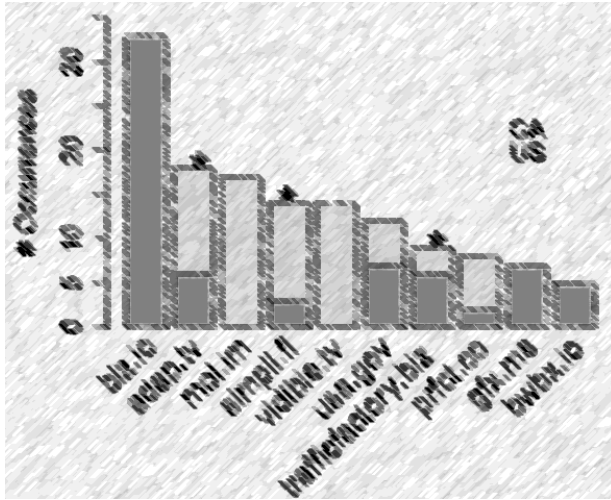


East-Asia and Europe have the most number of regional third-parties among top 20 third-parties

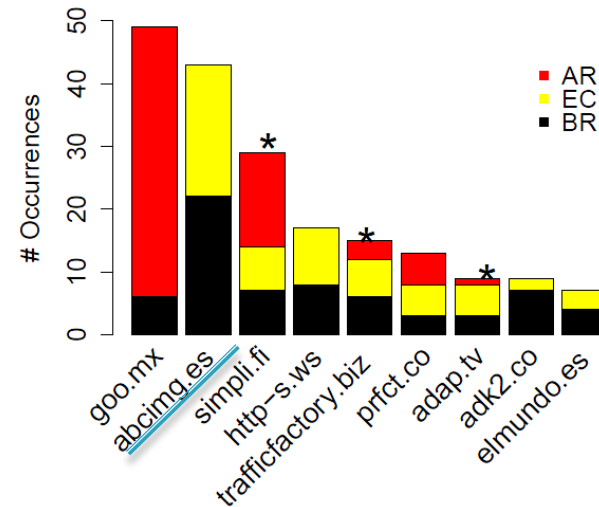
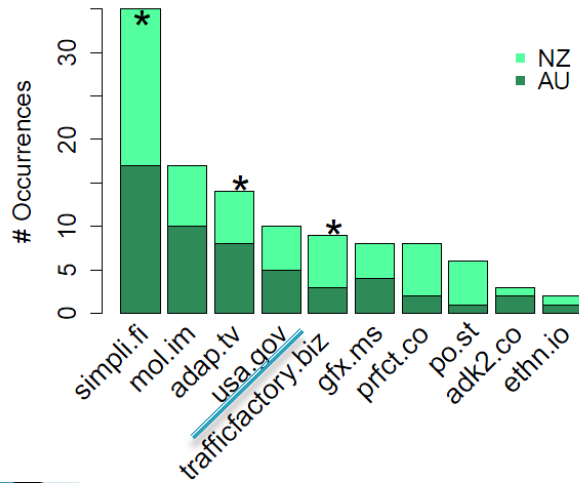
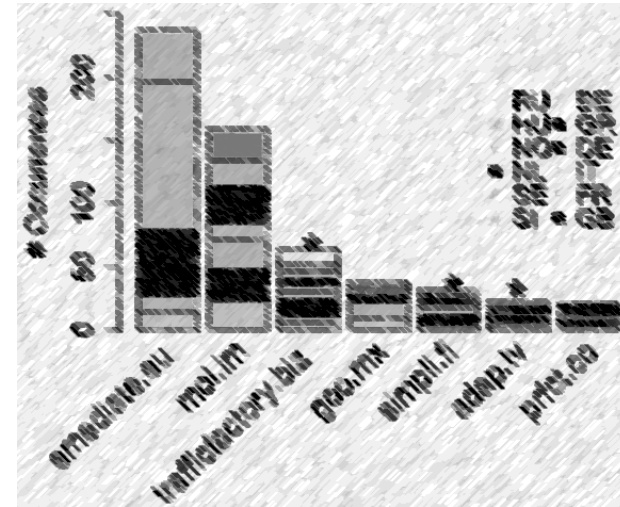
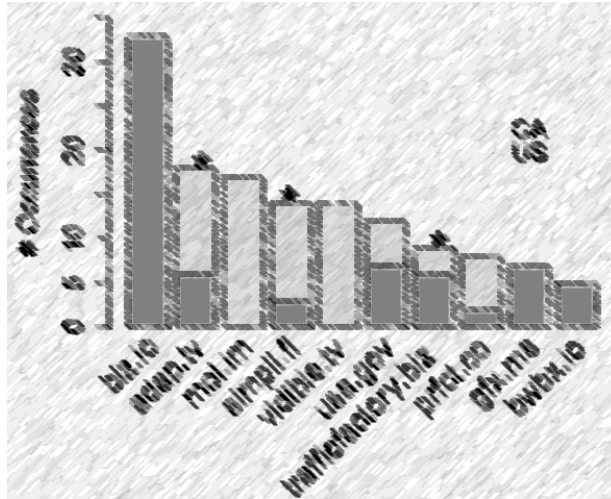
Small Global Third-Parties



Small Regional Third-Parties



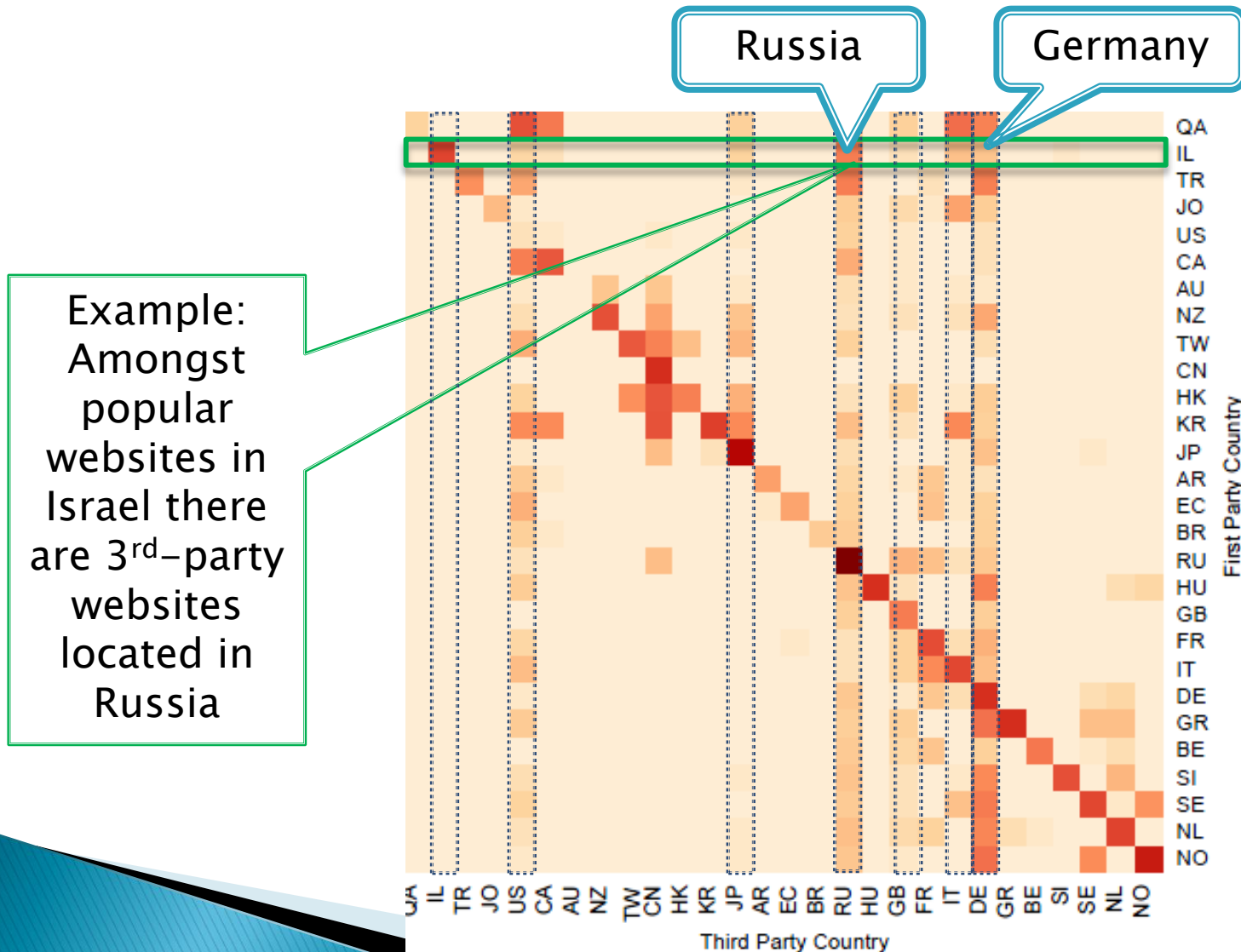
Small Third-Party Services



Cross-Country Third-Parties

We focused on third-parties which their TLD is a country code.

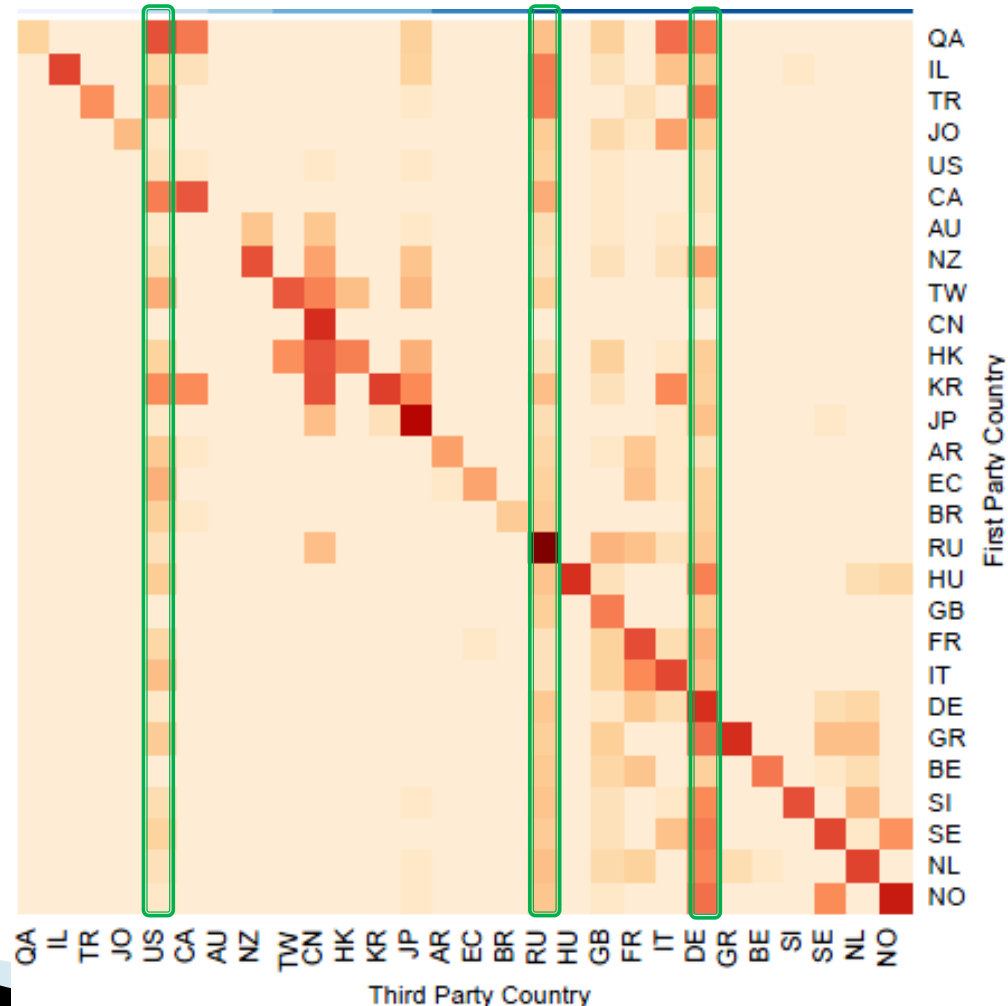
Cross-Country Third parties



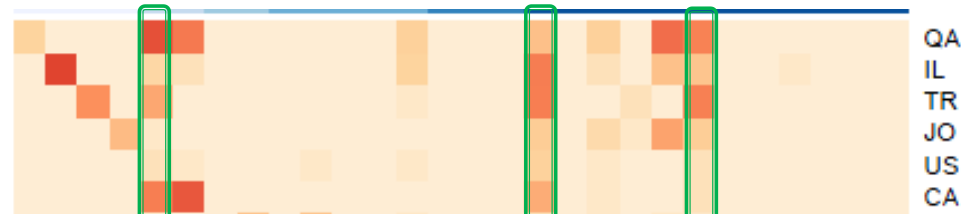
Cross-Country Third parties

Strong presence
of the 3-parties
located in:

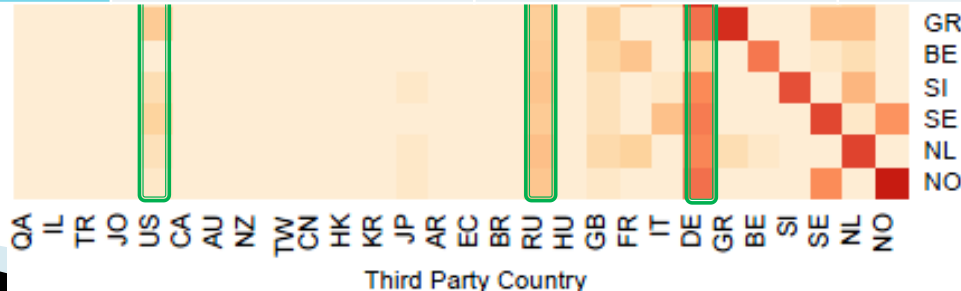
- *Germany
- *Russia
- *North America



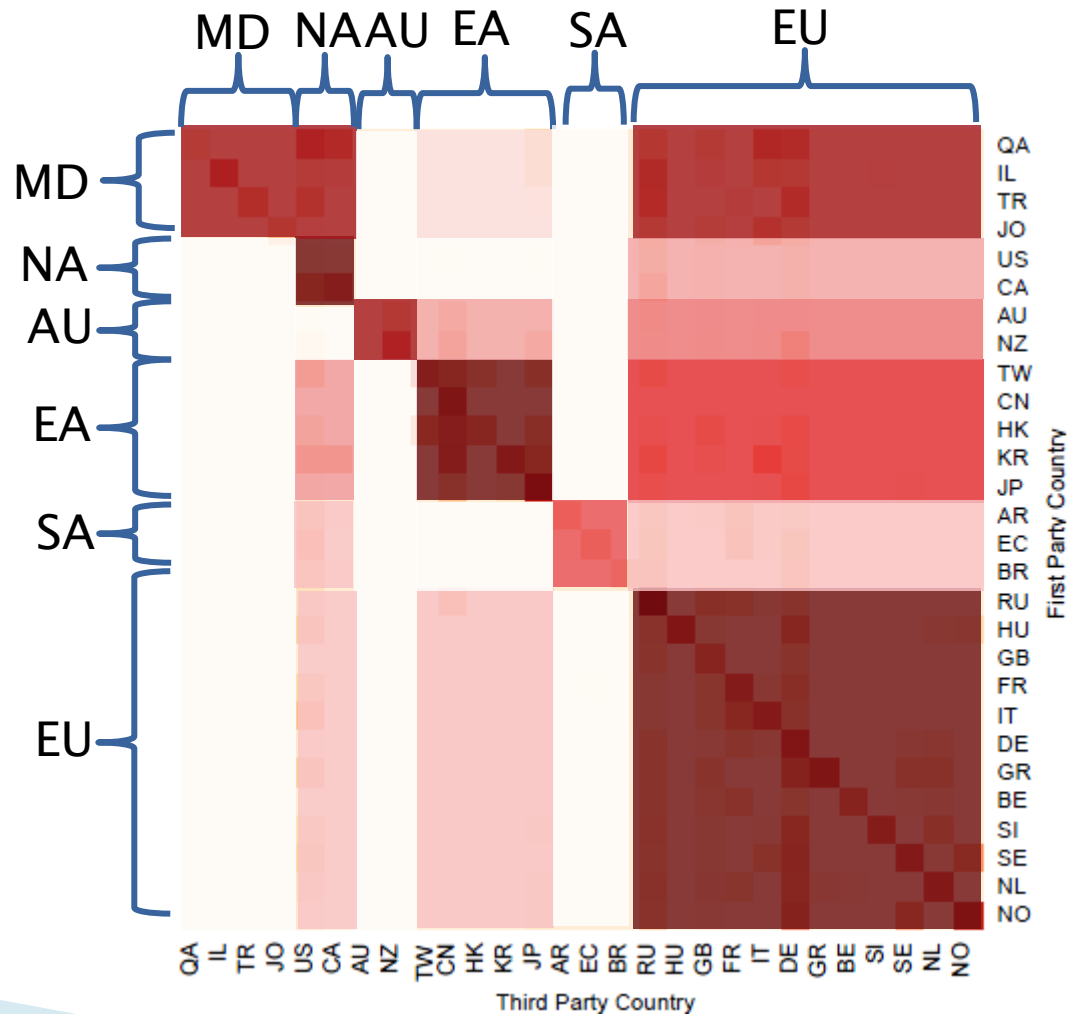
Cross-Country Third parties



	DE	US	RU
Privacy Regulation	Standardized Regulations	Self regulatory	Comprehensive Regulation
Coverage	general	sectoral	general
Enforcement of law	strong	complicated	complicated
Tracking-related regulation	Opt-out	Site Policy	None



Cross-Country Third parties



Conclusion

- ▶ Identified key countries in each region in terms of number of local third-parties; We found **strong presence** of local third-parties in **East-Asia** and **Europe**
- ▶ We found similar global presence of big and small third-parties.
- ▶ Identified **US**, **Russia**, and **Germany** as countries with the highest number of third-parties embedded in popular websites all around the world