Civil forensic on removing roadblocks to the growth Tor Network from Latin American

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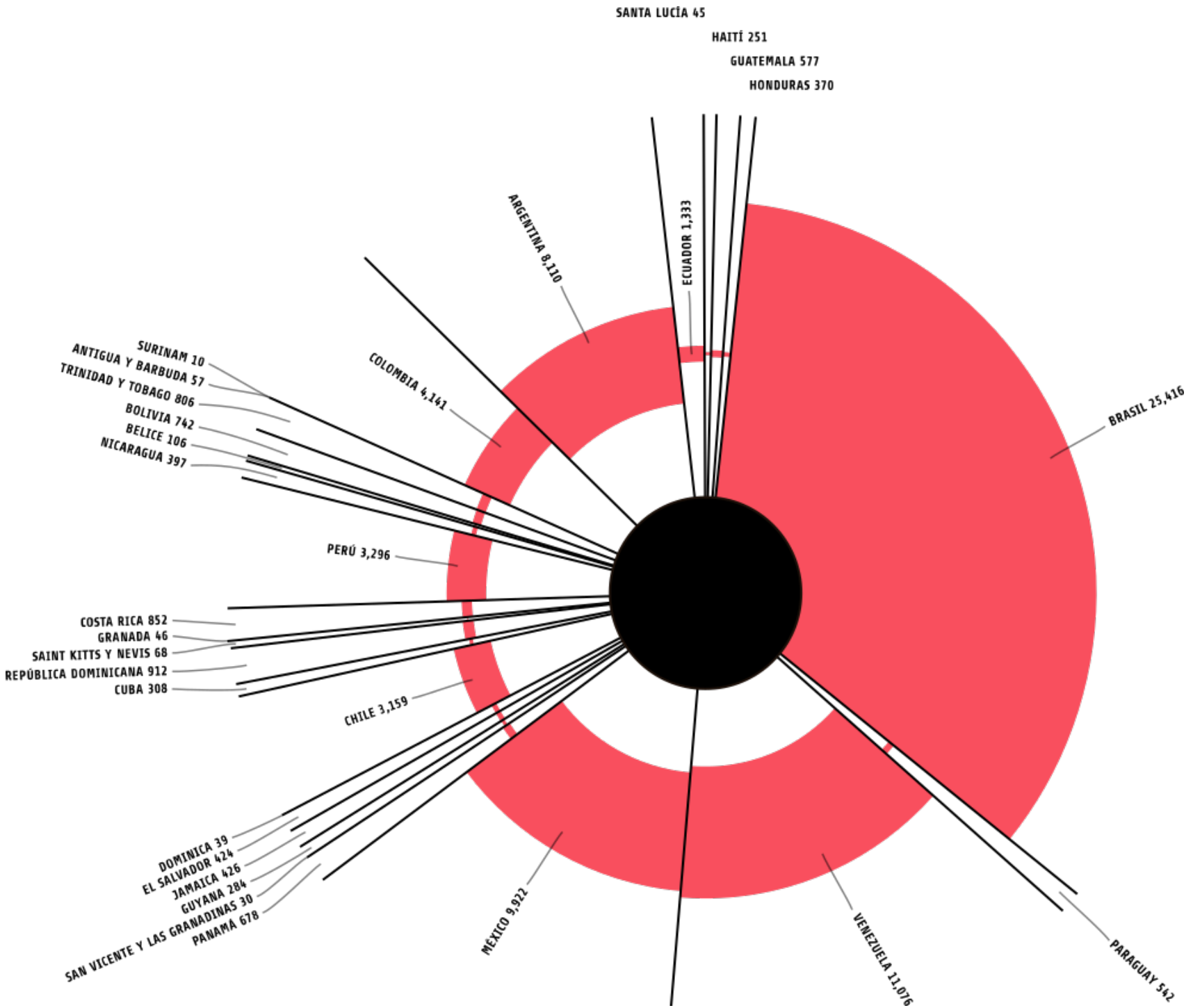
Enjambre Digital, Researcher

State of art and role of the civil forensics research in the growth of Tor Network participation on the region, particularly on México.

Layers of civil perspective

- Network Architecture / Protocols

- Market policy

- Legal context

- Human Rights

Introduce case: Tor Network in Latin America

- 1.5% of the nodes of the Tor network are in Latin America

- Mexico has 12, 000 users

SANTA LUCÍA 45

HAITÍ 251

GUATEMALA 577

HONDURAS 370

ARGENTINA 8,110

ECUADOR 1,333

BRASIL 25,416

SURINAM 10

ANTIGUA Y BARBUDA 57

TRINIDAD Y TOBAGO 806

COLOMBIA 4,141

BOLIVIA 742

BELICE 106

NICARAGUA 397

PERÚ 3,296

COSTA RICA 852

GRANADA 46

SAINT KITTS Y NEVIS 68

REPÚBLICA DOMINICANA 912

CUBA 308

CHILE 3,159

DOMINICA 39

EL SALVADOR 424

JAMAICA 426

GUYANA 284

SAN VICENTE Y LAS GRANADINAS 30

PANAMÁ 678

MÉXICO 9,922

VENEZUELA 11,076

PARAGUAY 542

Architecture of the Tor network

- Overlay network (over the top)

- Directory Authorities

- Relays , aka routers or nodes (bridge, guard, middle and exit)
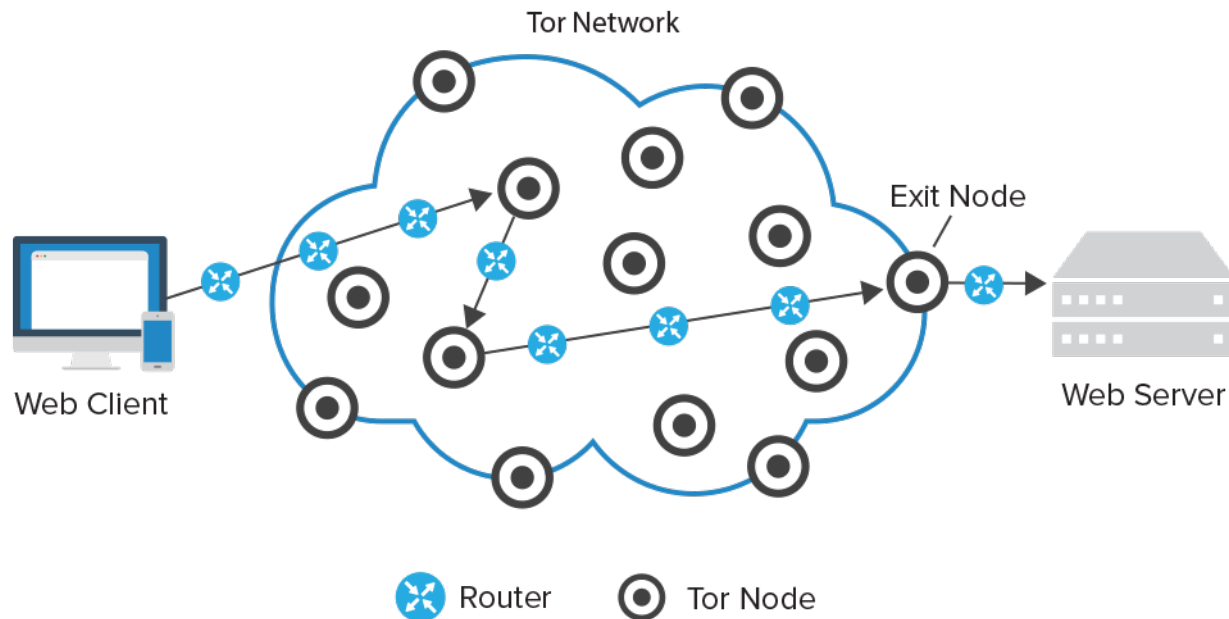
source: distil networks

Directory Authorities

- 171.25.193.9 (maatuska.4711.se)
- 86.59.21.38 (tor.noreply.org)
- 199.58.81.140 (longclaw.riseup.net)
- 194.109.206.212 (tor.dizum.com)
- 204.13.164.118 (bastet.readthefinemanual.net)
- 131.188.40.189 (despari.informatik.uni-erlangen.de)
- 128.31.0.34 (moria.csail.mit.edu)
- 193.23.244.244 (dannenberg.torauth.de)
- 154.35.175.225 (faravahar.redteam.net)
- 66.111.2.131 (serge.torbsd.org)

Technical barriers for installation nodes

- Implementation of Network Address Translation (NAT) for regional Internet service providers
- Telmex (dominant fixed-line phone carrier in Mexico) blocks directory Authorities

Tests by Open Observatory of Network Interference

- **154.35.175.225**
- **171.25.193.9**
- **193.23.244.244**
- **131.188.40.189**
- **194.109.206.212**
- **86.59.21.38**
- **128.31.0.34**
- **204.13.164.118**
- **199.58.81.140**
- **66.111.2.131**
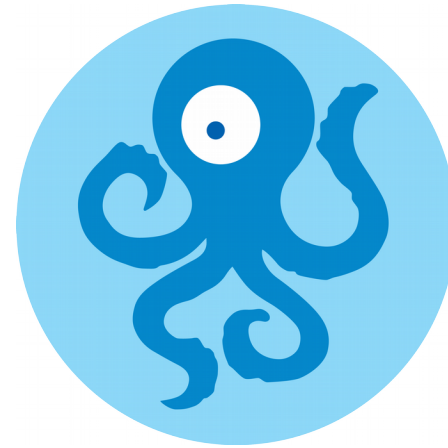
- 7 IP addresses are blocked by ISP Telmex

- Blocking is by route

  Red = blocked

  Green = ok

Network Address Translation for regional Internet Service Providers

```
traceroute to 171.25.193.9 (171.25.193.9), 30 hops max, 60 byte packets
 1  gateway (192.168.1.1)  3.404 ms  3.376 ms  3.366 ms
 2  * * *
 3  10.222.86.106 (10.222.86.106)  77.699 ms  81.648 ms  81.669 ms
 4  10.14.143.70 (10.14.143.70)  81.666 ms  81.663 ms  81.657 ms
 5  10.216.31.121 (10.216.31.121)  81.652 ms  81.645 ms  81.638 ms
 6  dfn01.mx.movistar.optele.net (200.76.93.106)  81.636 ms  77.826 ms  77.874 ms
 7  dfn01.mx.movistar.optele.net (201.166.129.249)  77.852 ms  47.490 ms  43.503 ms
 8  84.16.8.145 (84.16.8.145)  54.886 ms  53.033 ms  54.884 ms
 9  84.16.8.144 (84.16.8.144)  67.868 ms  65.815 ms  67.871 ms
```

171.25.193.9 86.59.21.38 199.58.81.140
194.109.206.212 204.13.164.118 131.188.40.189
128.31.0.34 193.23.244.244 154.35.175.225
128.31.0.39 199.254.238.52

AS7438 for Movistar

Country: MX

Registration Date: 1996-12-12

Registrar: lacnic

Owner: Pegaso PCS, S.A. de C.V., MX

Red = blocked

Green = ok

Market policy

- Telmex ISP does not have public information about this specific policy

- The terms of service establishes a clause to prohibit the use of the service to offer comercial services

- **But contract has an exception for services that are offered for free.**

Legal context

In Mexico, the node operation is legal given the fact that the node is not an ISP, but a free private connection that any user can make use of at the moment they enter the Tor Network. These actions take place in the free exercise of rights and freedoms as: privacy, Internet access, information exchange, freedom of expresión and idea manifestation which are contemplated by the 6º Constitutional Article, and the Article 191-XV of the Federal Telecommunications and Broadcasting Law.

Human Rights

- The policy by Telmex could be a violation of the freedom of expression and Netneutrality article (145) on Telecom Law. But Currently Mexico has not a regulation rules for NetNeutrality

Next steps

- Technical and legal recommendation to the IFT (Federal Telecommunications Institute)
- Trial by Consumer Protection Law

Thanks!

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www.jacobo.org

References

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- Tor Metrics https://metrics.torproject.org/

- Censura de conexiones hacia Tor desde ISPs mexicanos http://rutas.priv-anon.unam.mx/all

- Open Observatory of Network Interference, Mexico https://explorer.ooni.torproject.org/country/MX