GCC Internet Infrastructure

Statistics, Analysis and Trends

Hisham Ibrahim | Roundtable for Governments (Middle East) | 15 December 2020

Government Topics of Interest in 2020

- Digital Transformation

- Cloud Strategies

- Data Flows

- Routing Security

Developing a mature digital economy through better understanding and utilization of the Internet architecture and infrastructure.
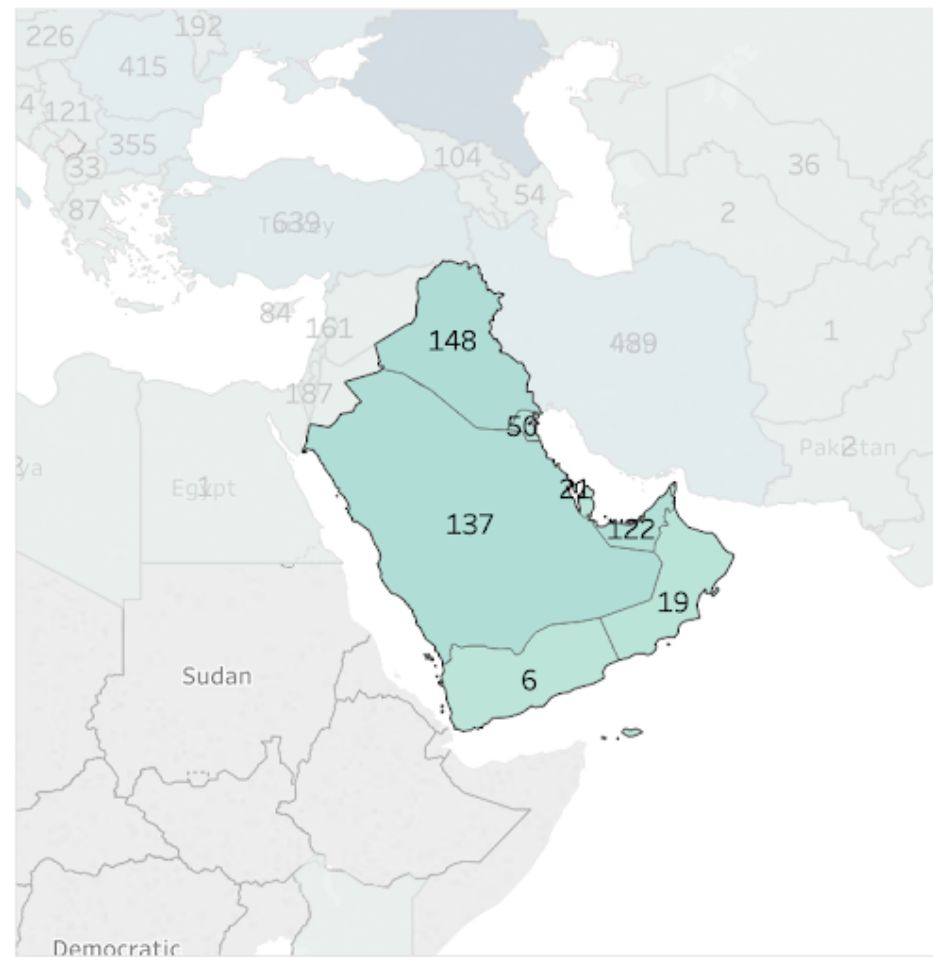
Internet Development Indicators - Benchmarking

- Resource Availability

- Domestic Offerings

- International Offerings
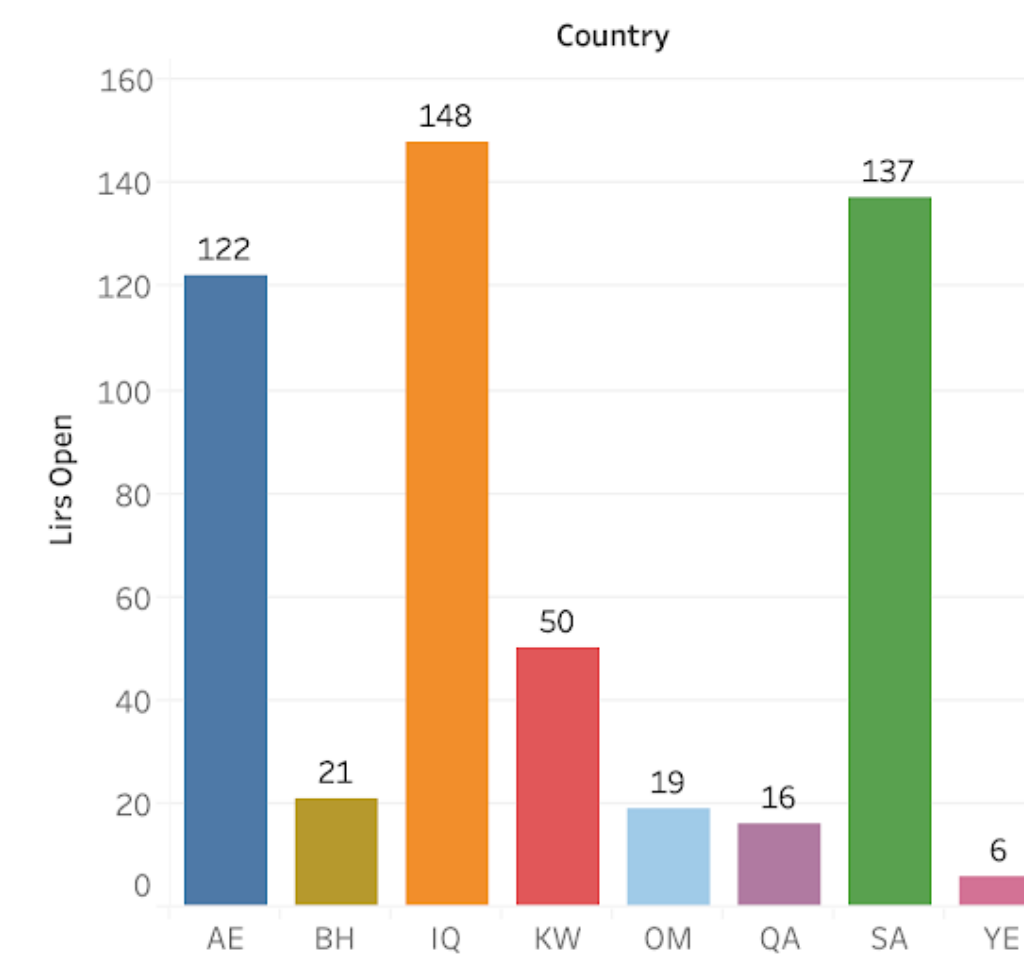
- Regional Connectivity
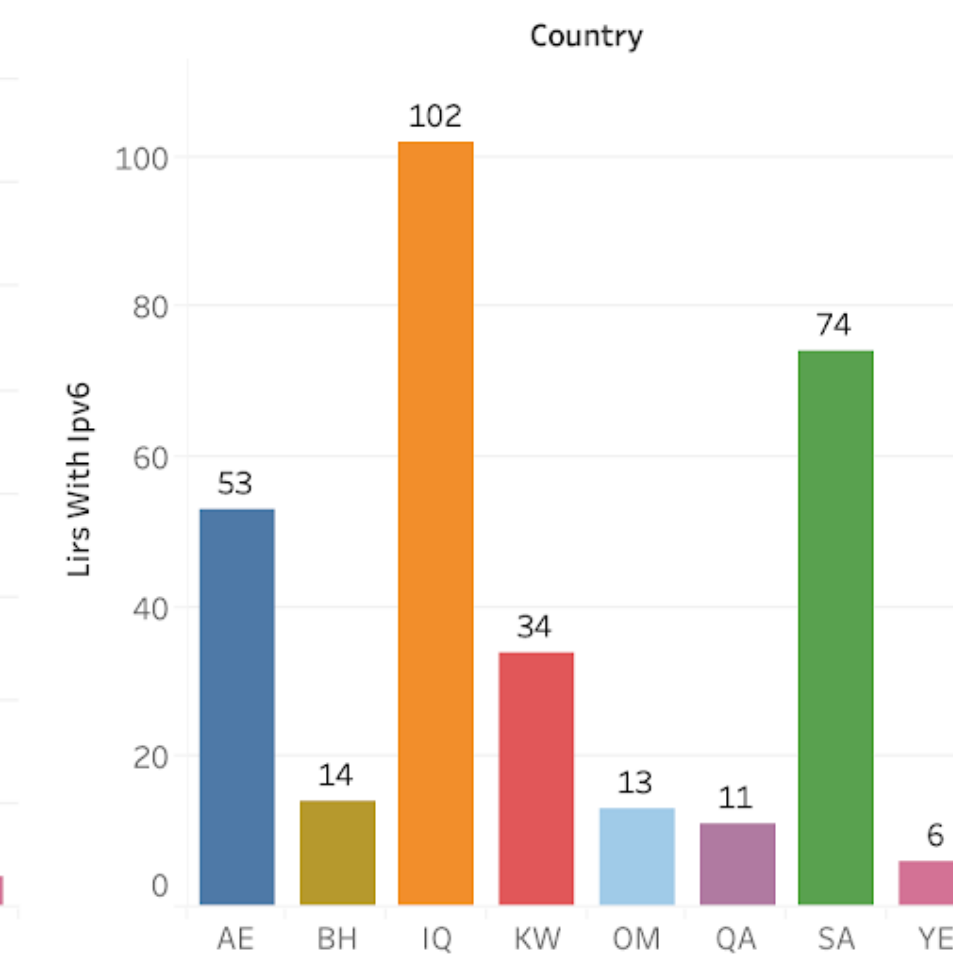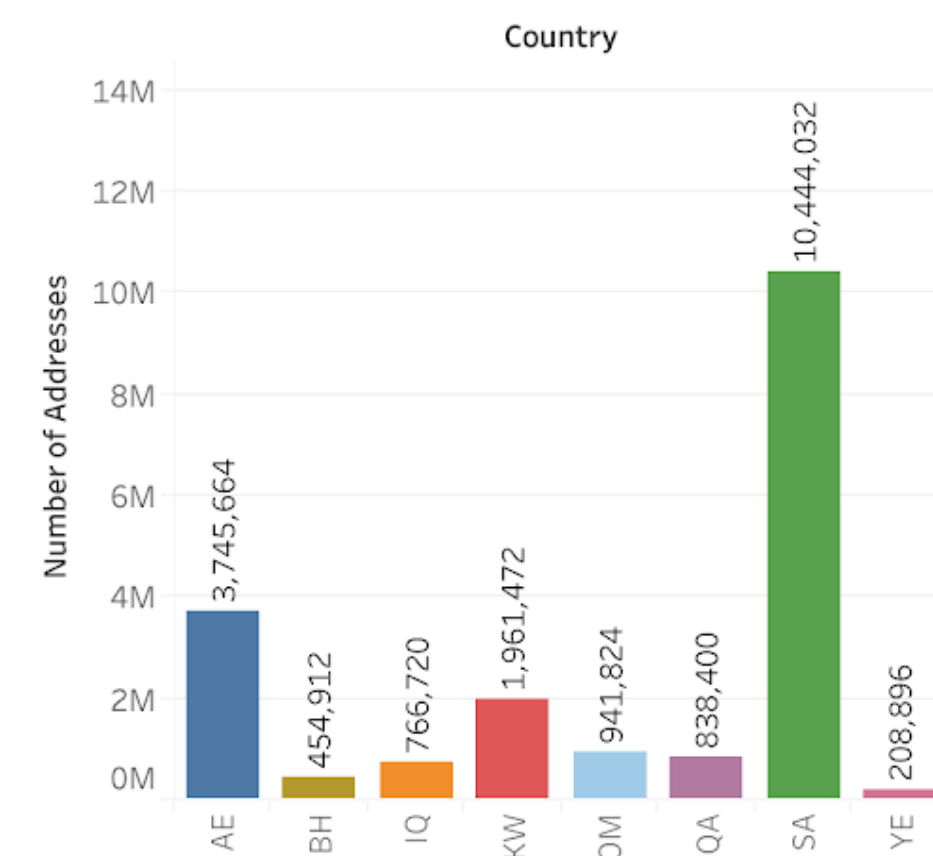
- Routing Security

Resource Availability
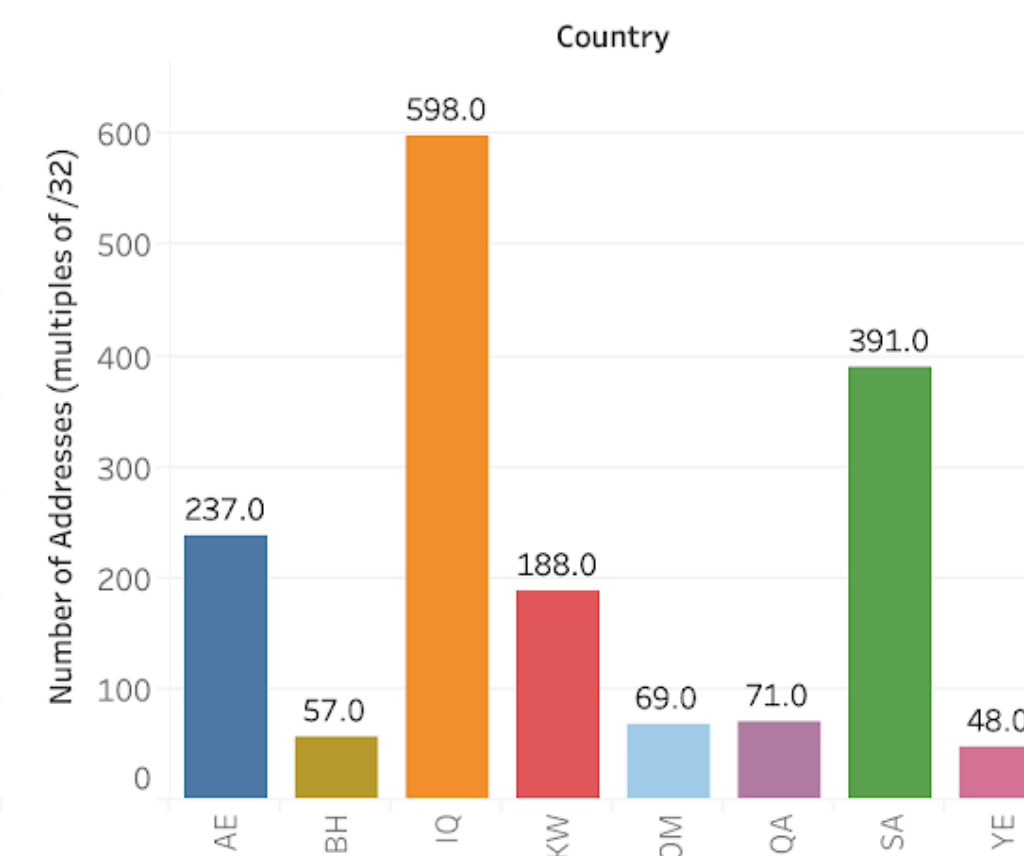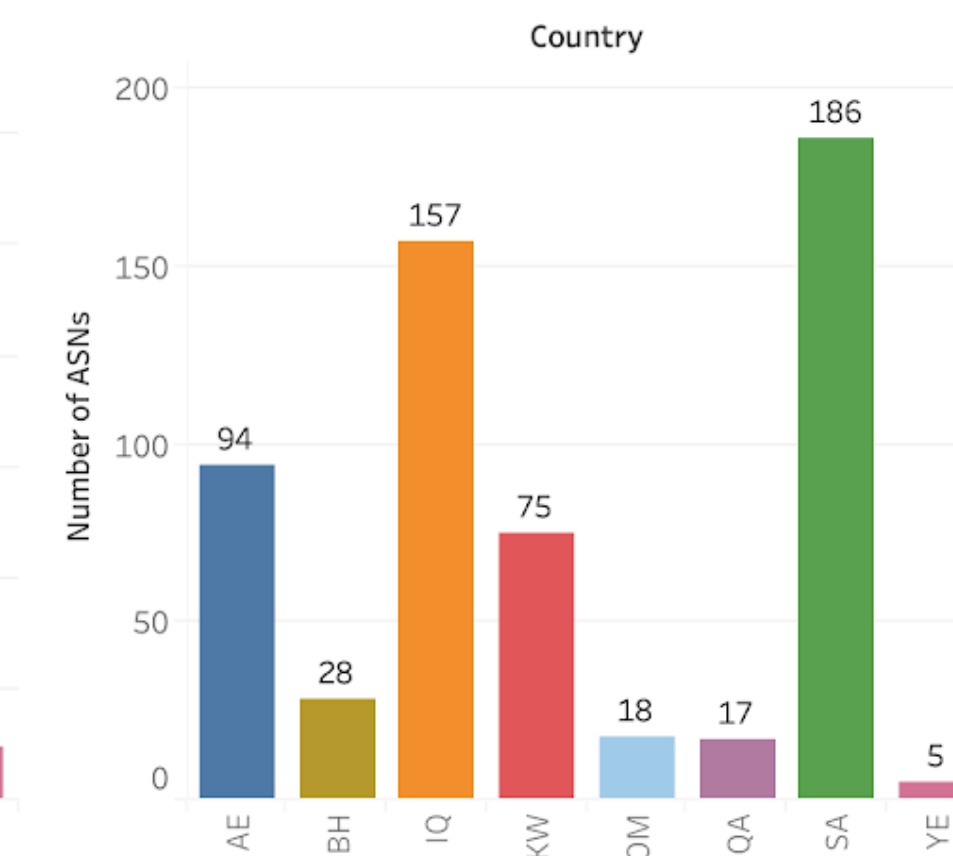
Resource Availability - ASN Growth

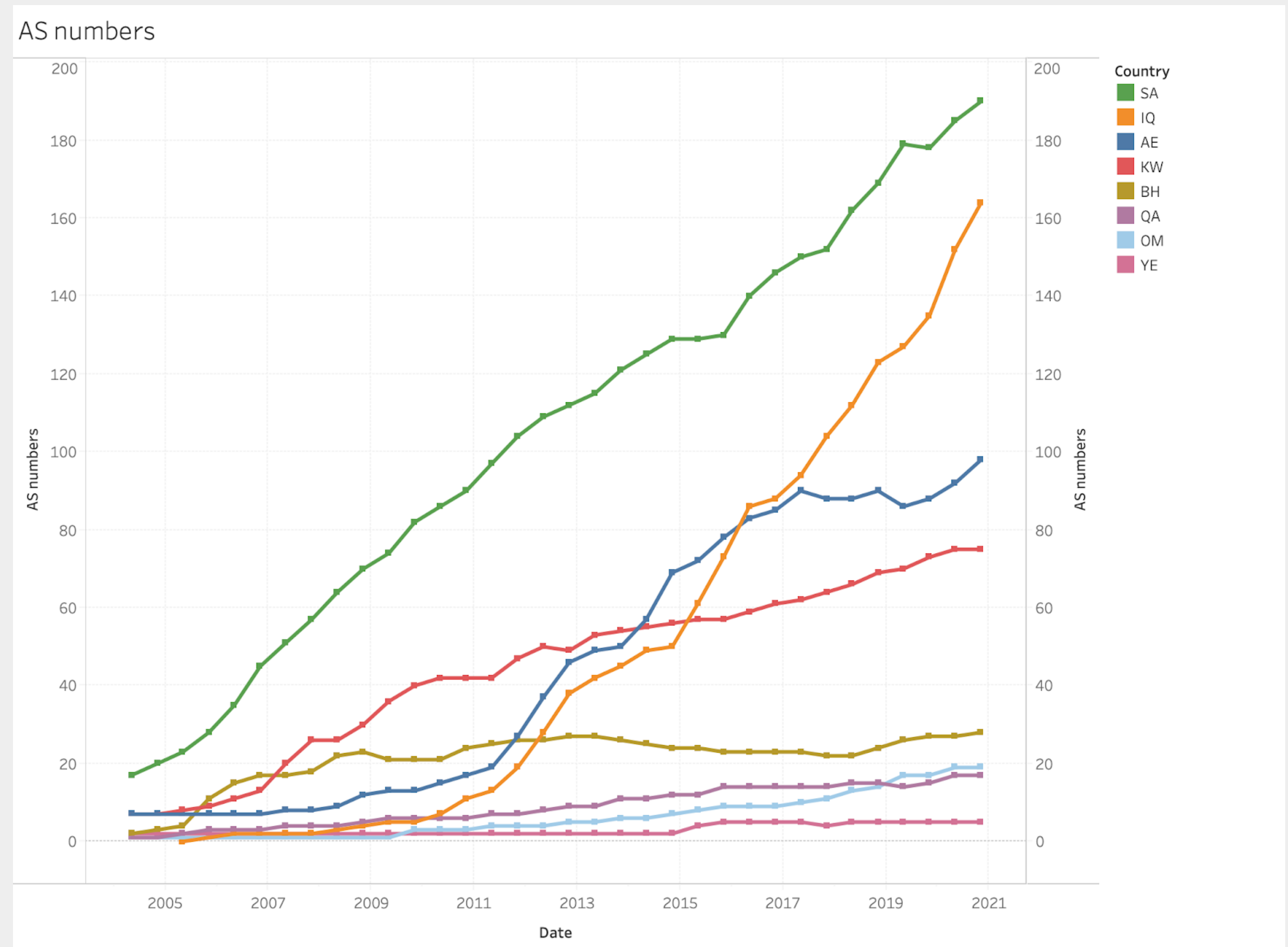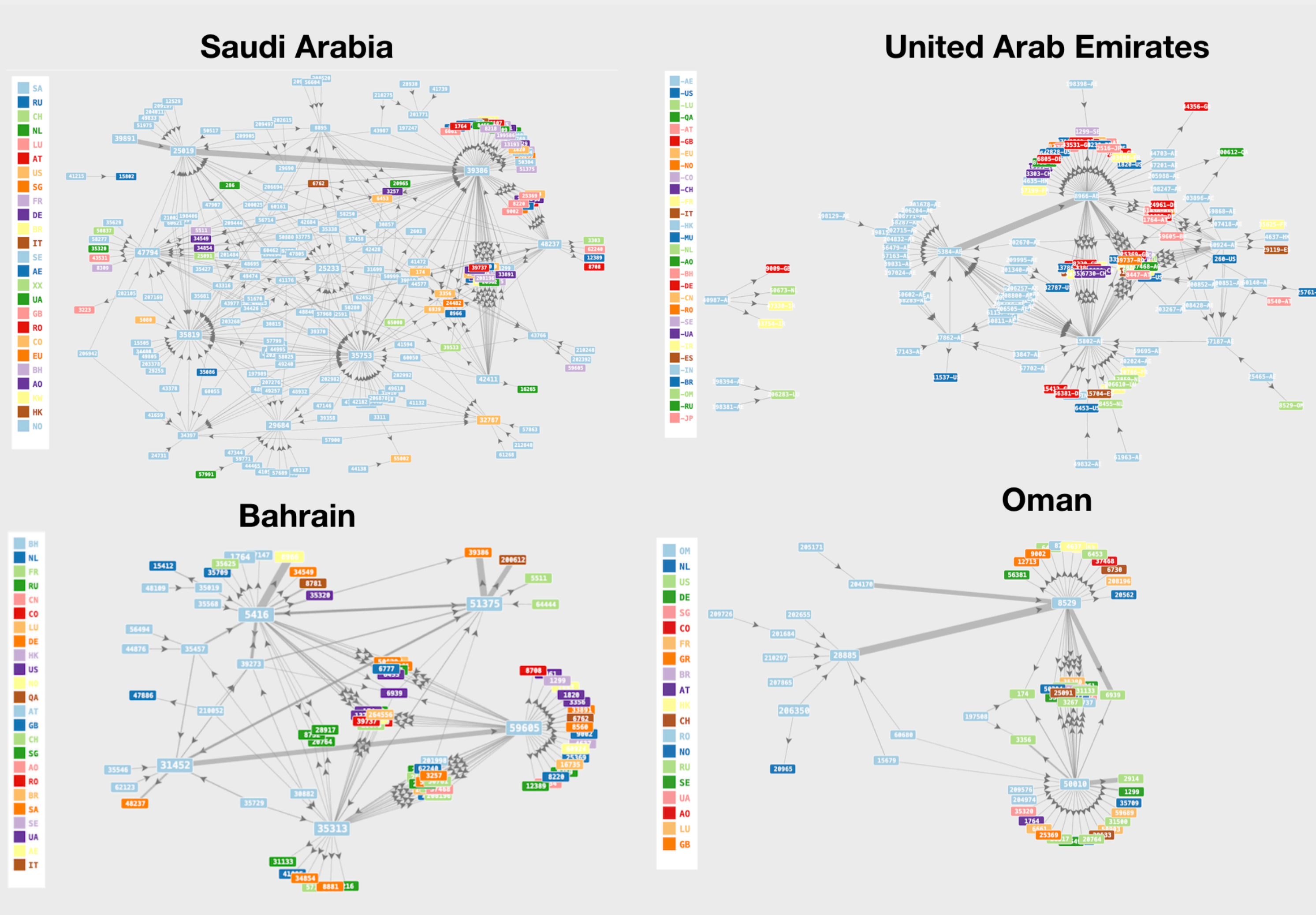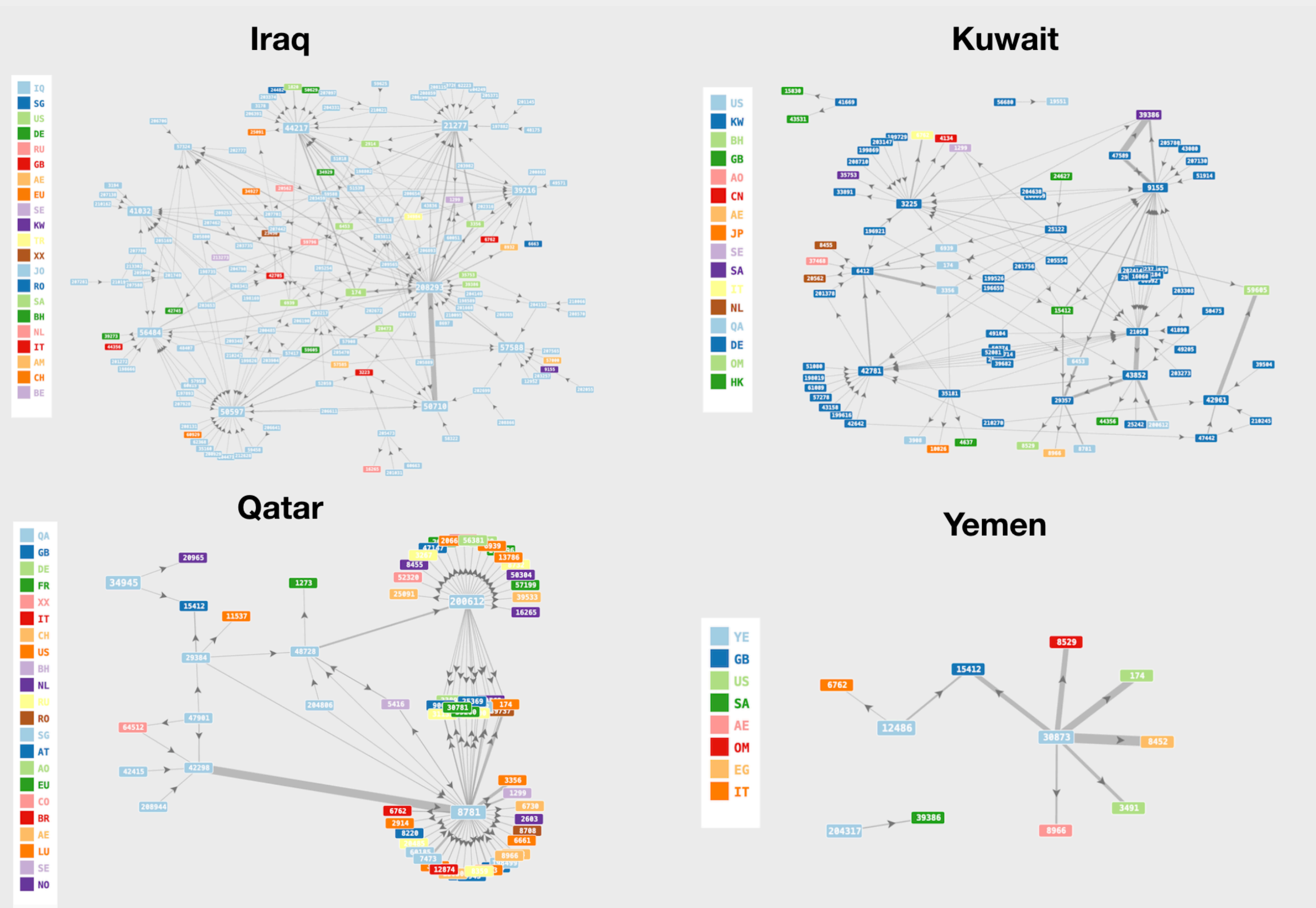- Clear divide among the Gulf countries, with significant growth in Saudi Arabia, Iraq, the United Arab Emirates and Kuwait.

- Uptake in recent years in enterprise networks such as the financial, academic and private sectors.

AS numbers

Country
SA
IQ
AE
KW
BH
QA
OM
YE

Domestic Offerings - Resilience
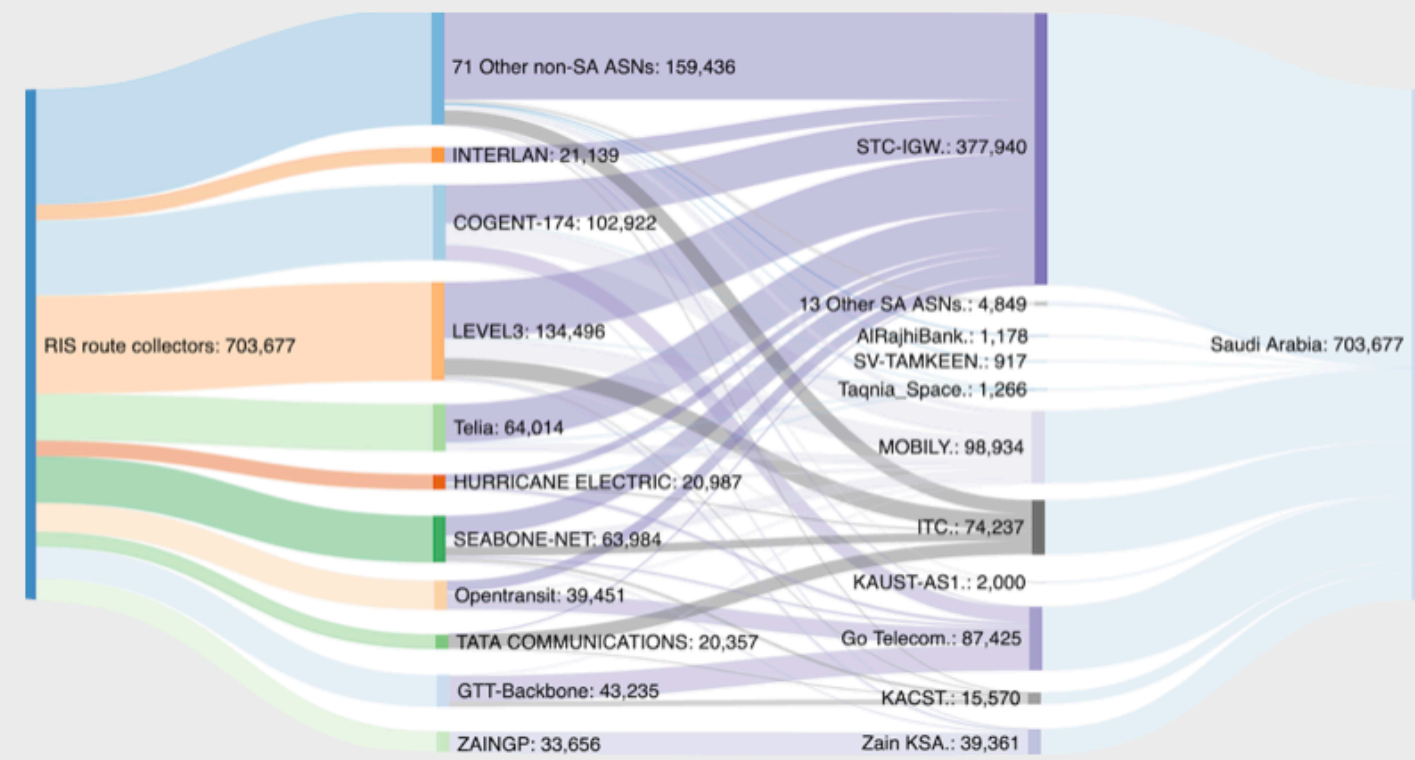

Saudi Arabia

United Arab Emirates

Bahrain

Oman

Domestic Offerings - Resilience

International Offerings - Path Diversity
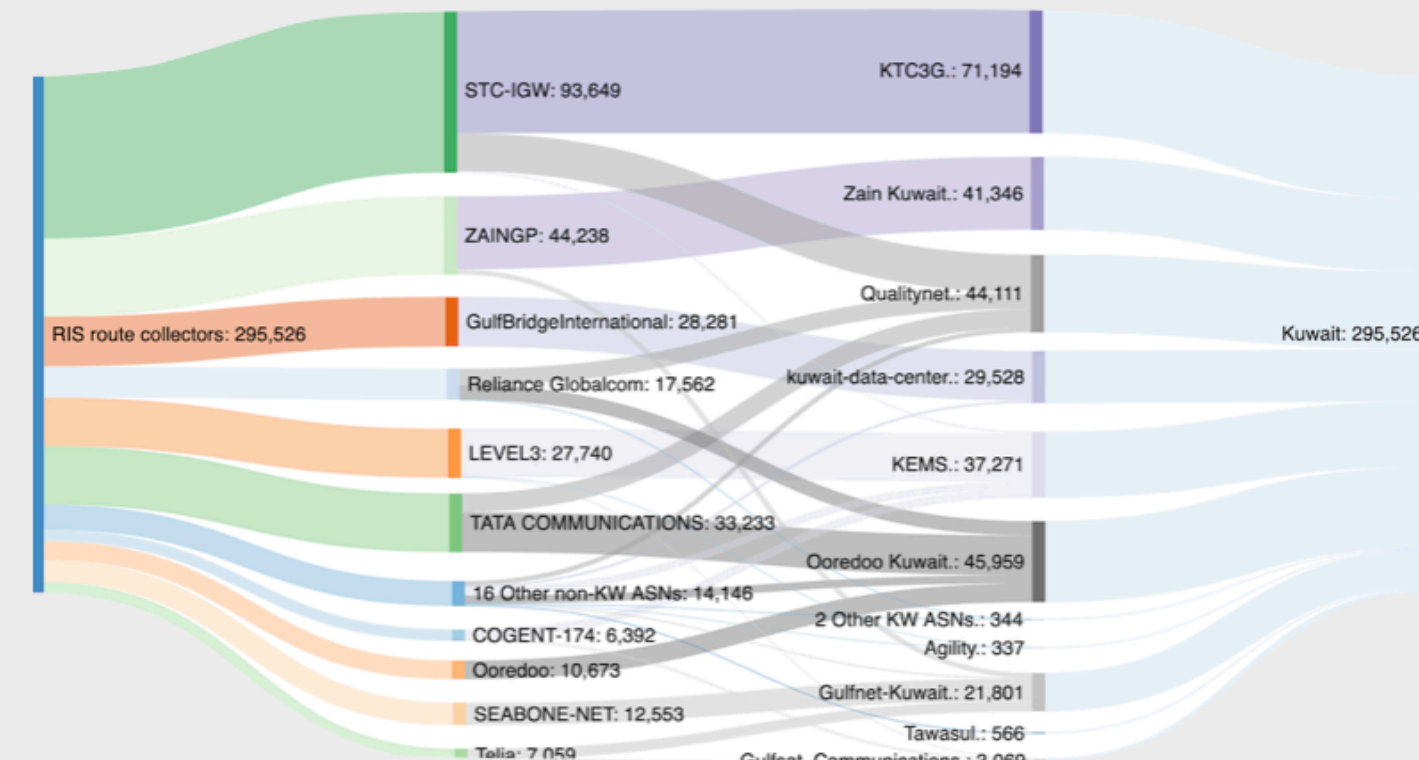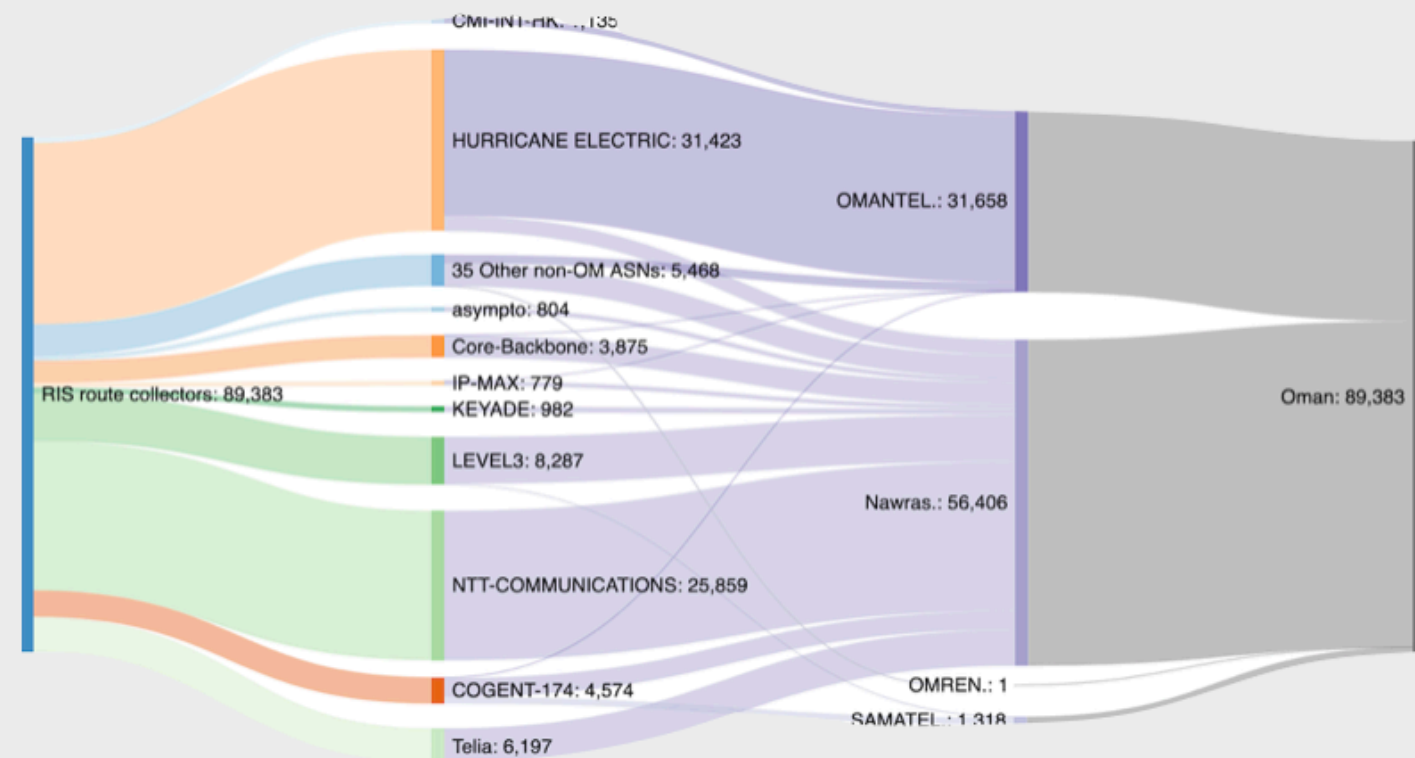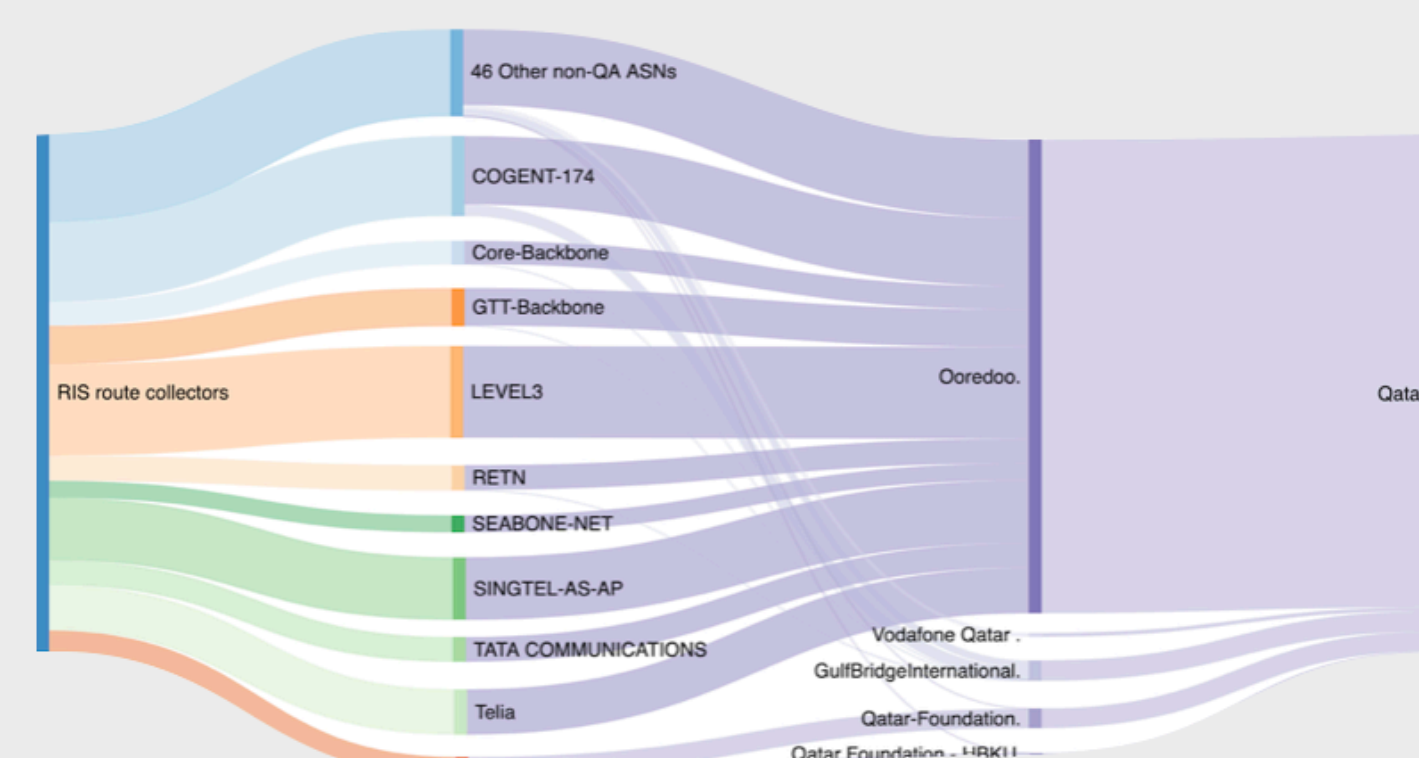
International Offerings - Path Diversity

Regional Connectivity
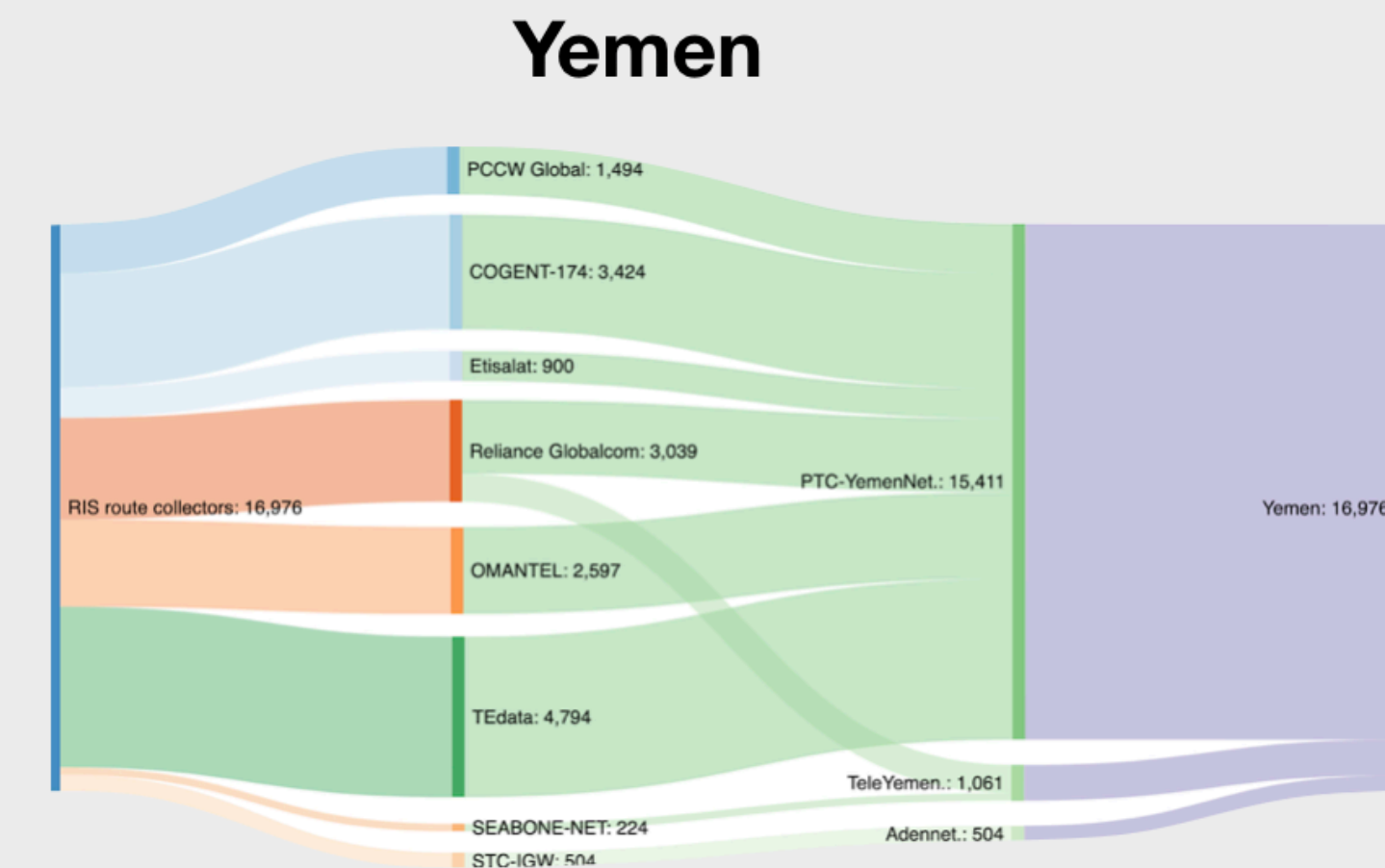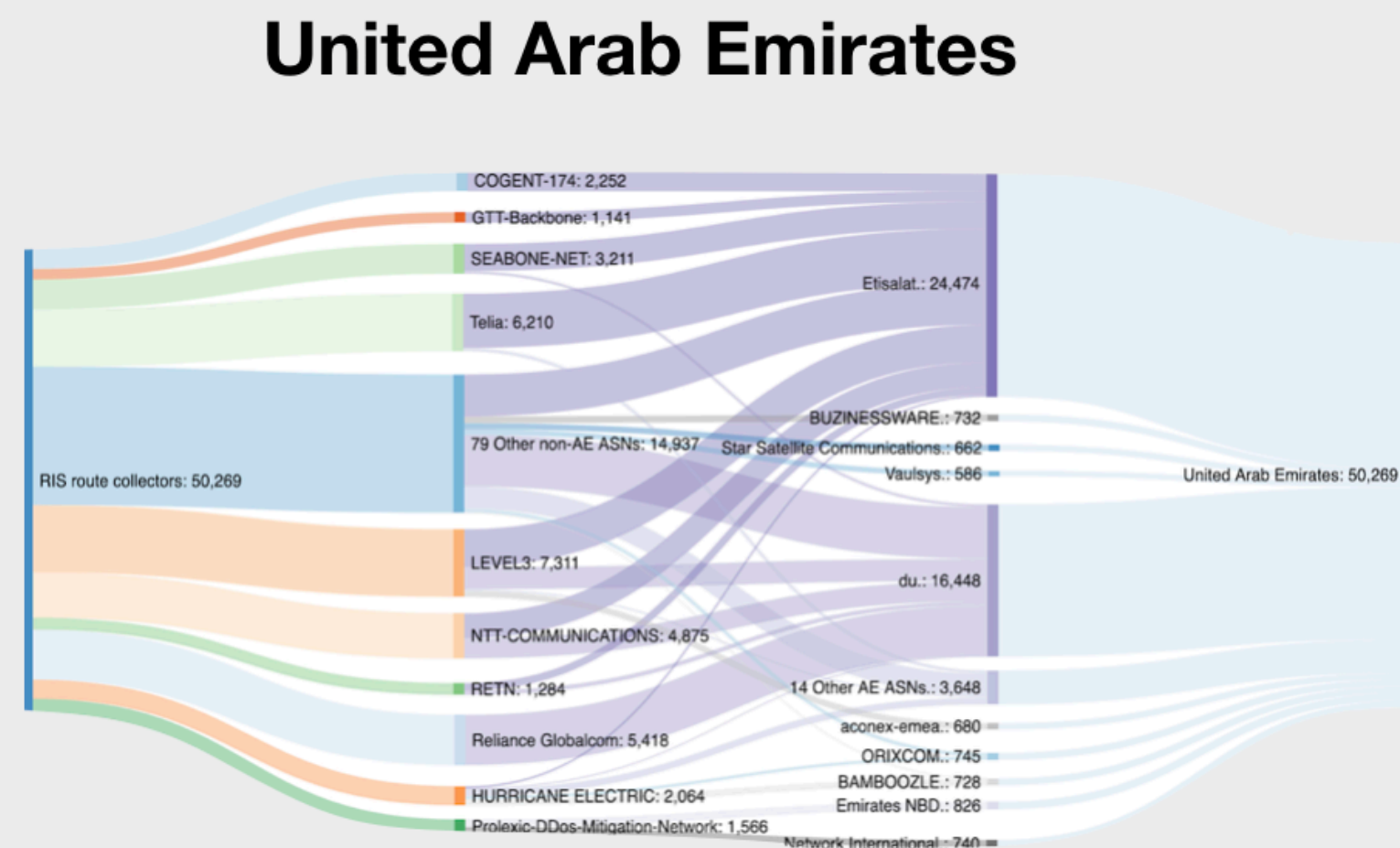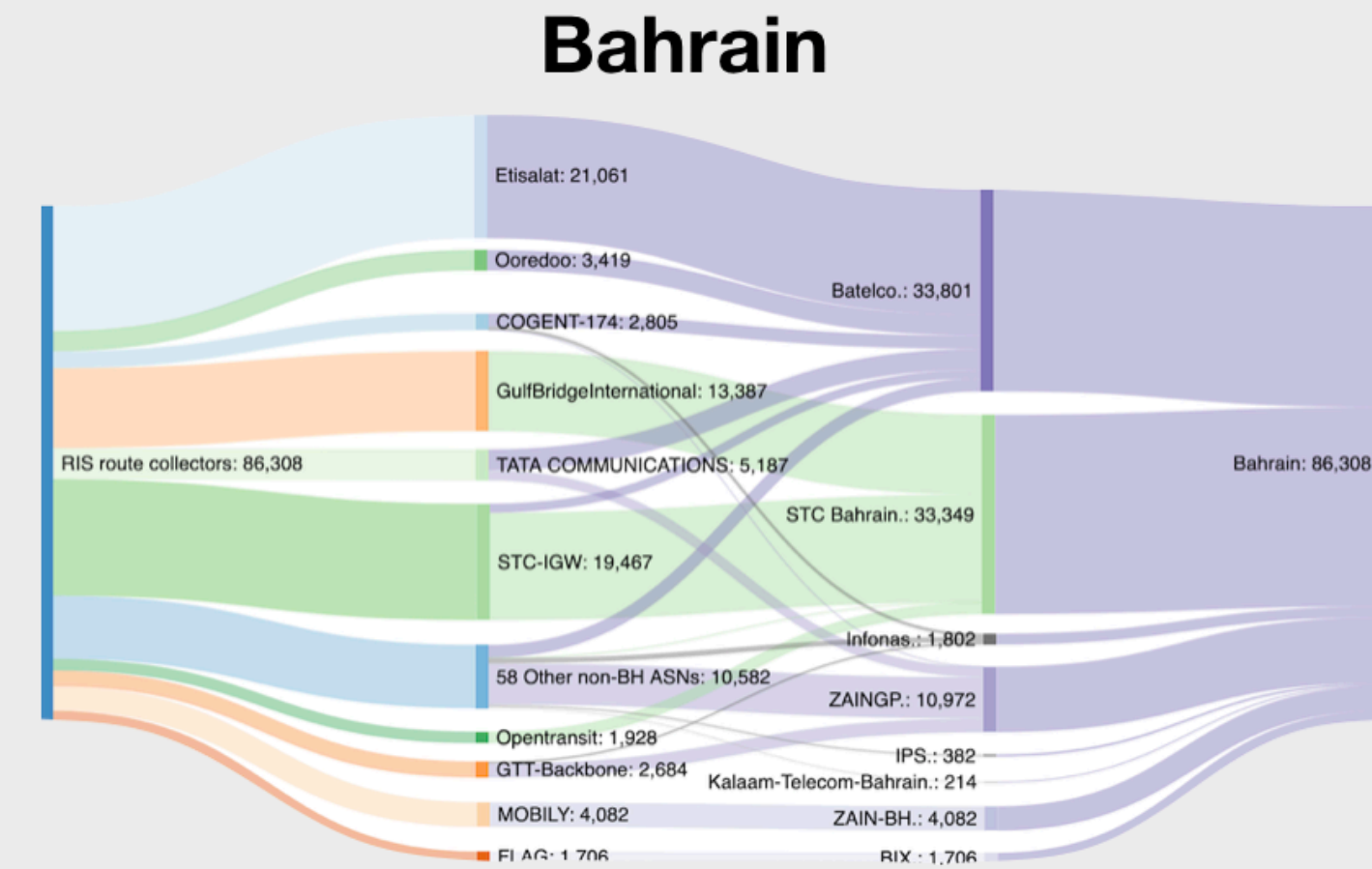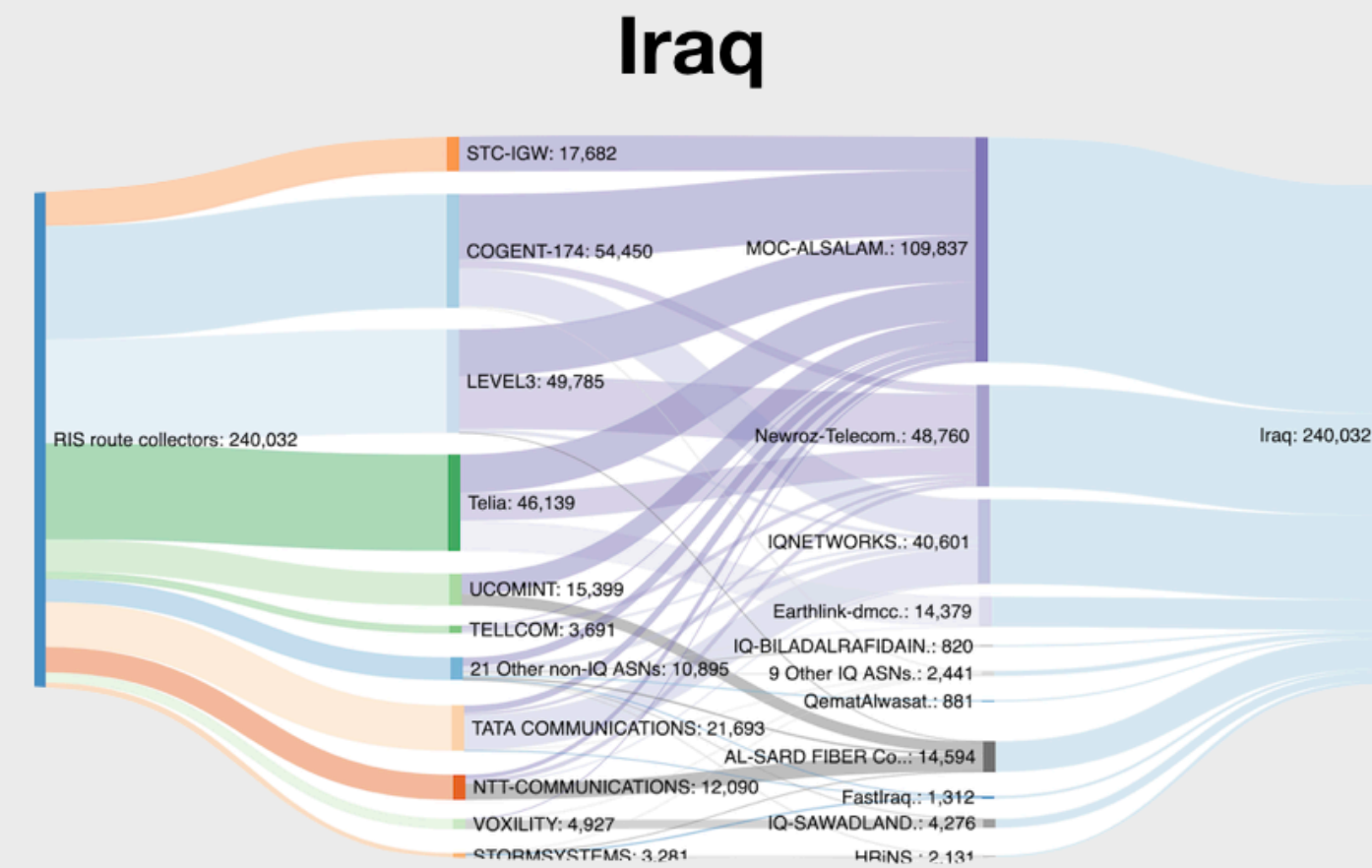
- The number of Internet Exchange Points (IXPs) in the region has gone up. Most of the routes exchanged are domestic.

- Some improvement in regional connectivity, but only at a couple of IXPs. The focus is still on attracting Content Delivery Networks.

- Members of IXPs are mostly traditional Internet Service Providers, with little engagement from other sectors such as financial, academic or private.

- While there are more localised services hosted in the region, we still see packets travelling all over the globe to access them.

Routing Security

- RPKI is a security framework that helps network operators make more informed and secure routing decisions

- Only resource holders with a properly delegated 'right of use' can generate a digital signature that associates Internet number resources with their signing.

- Resource users can protect information related to their delegated resources with a digital signature. Any attempt to alter this information results in the signature being invalidated.

Routing Security - RPKI

- The Middle East has seen a large number of IPv4 transfers over the past few years.

- RPKI proves the association between specific IP address blocks or ASNs and the holders of those Internet number resources.

- The certificates are proof of the resource holder's right to use the resources and can be validated cryptographically.
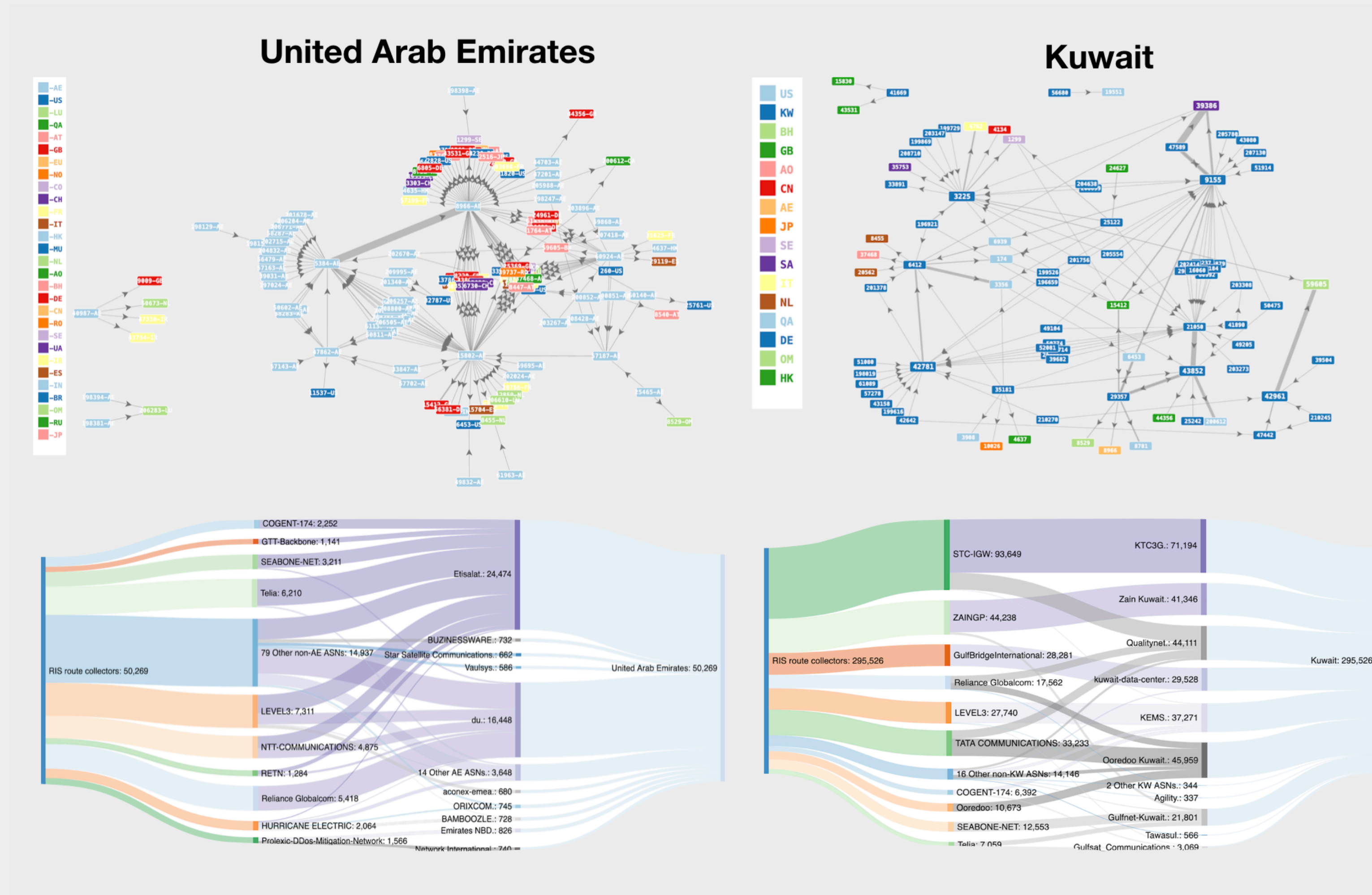

IPv4 transfers within, into and out of the Gulf region, January 2014 - November 2020
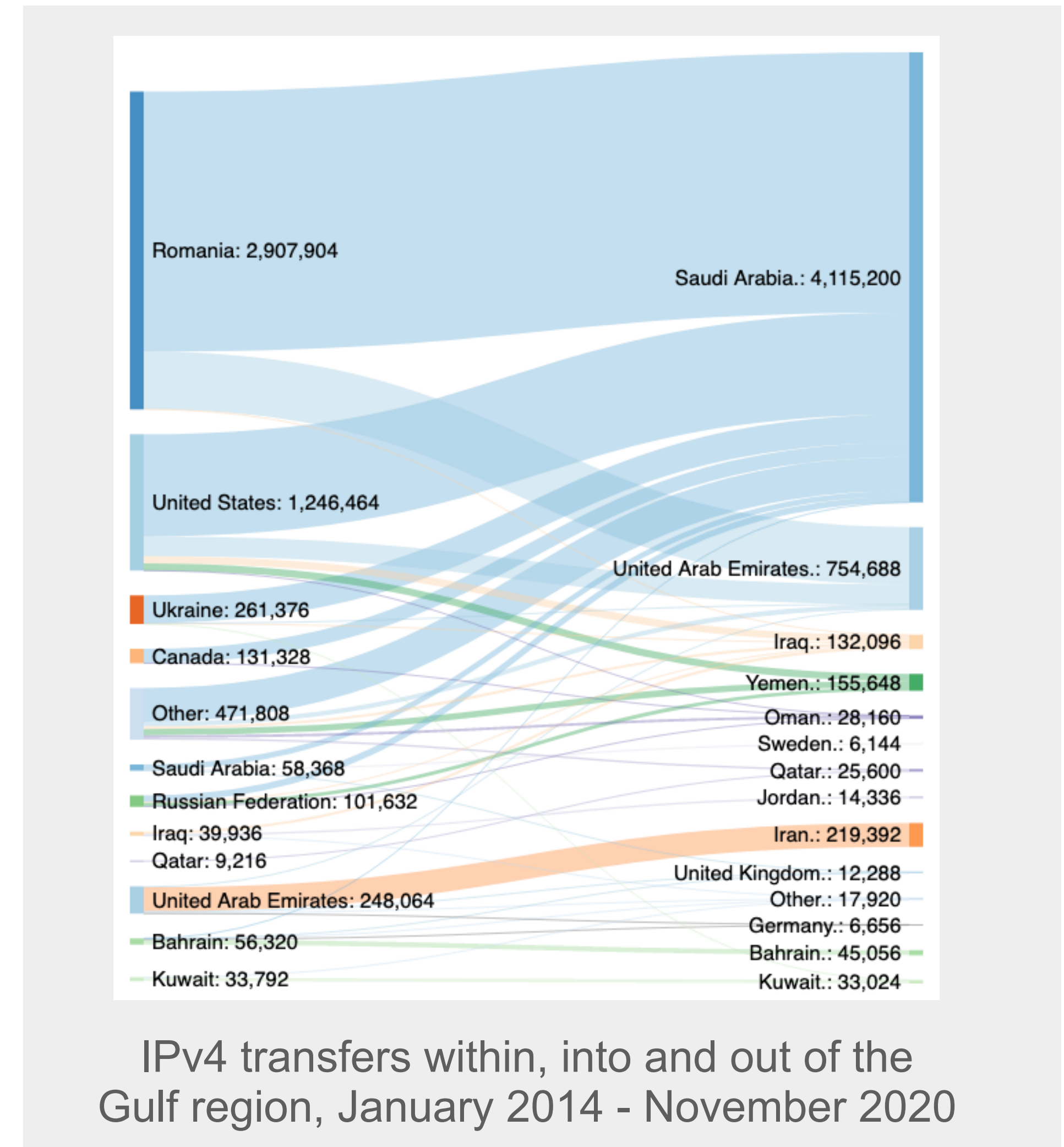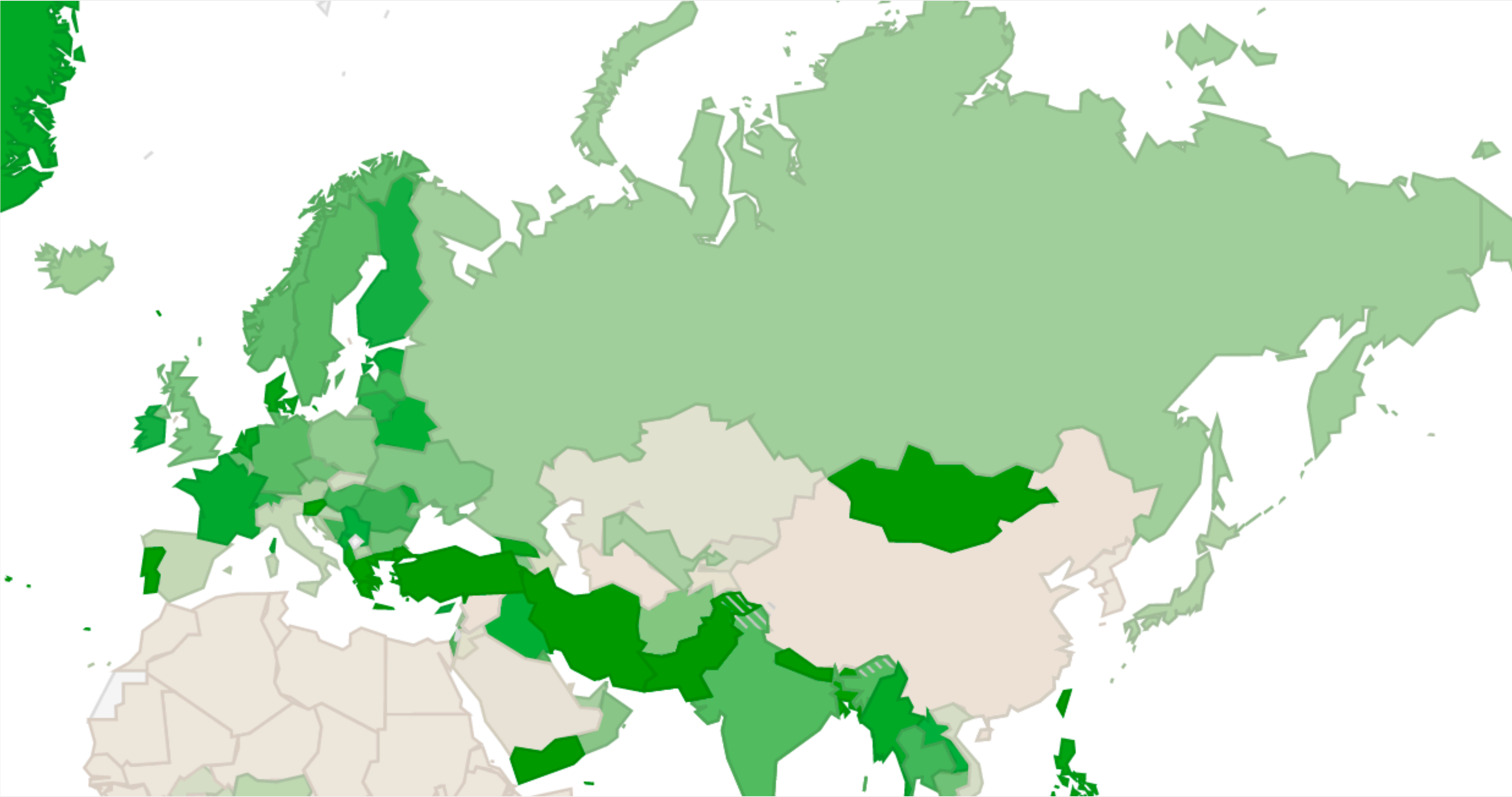
RPKI By Country

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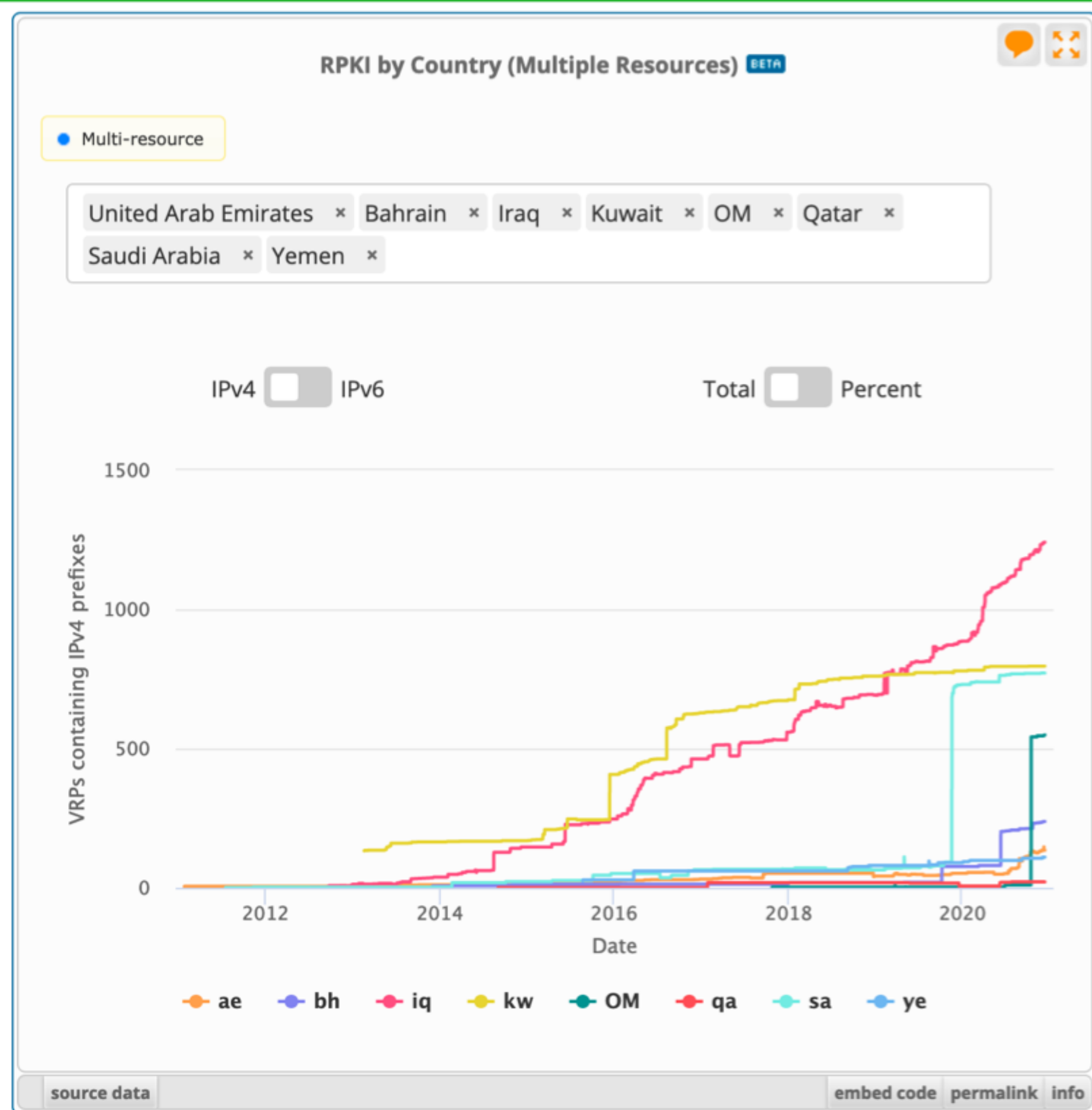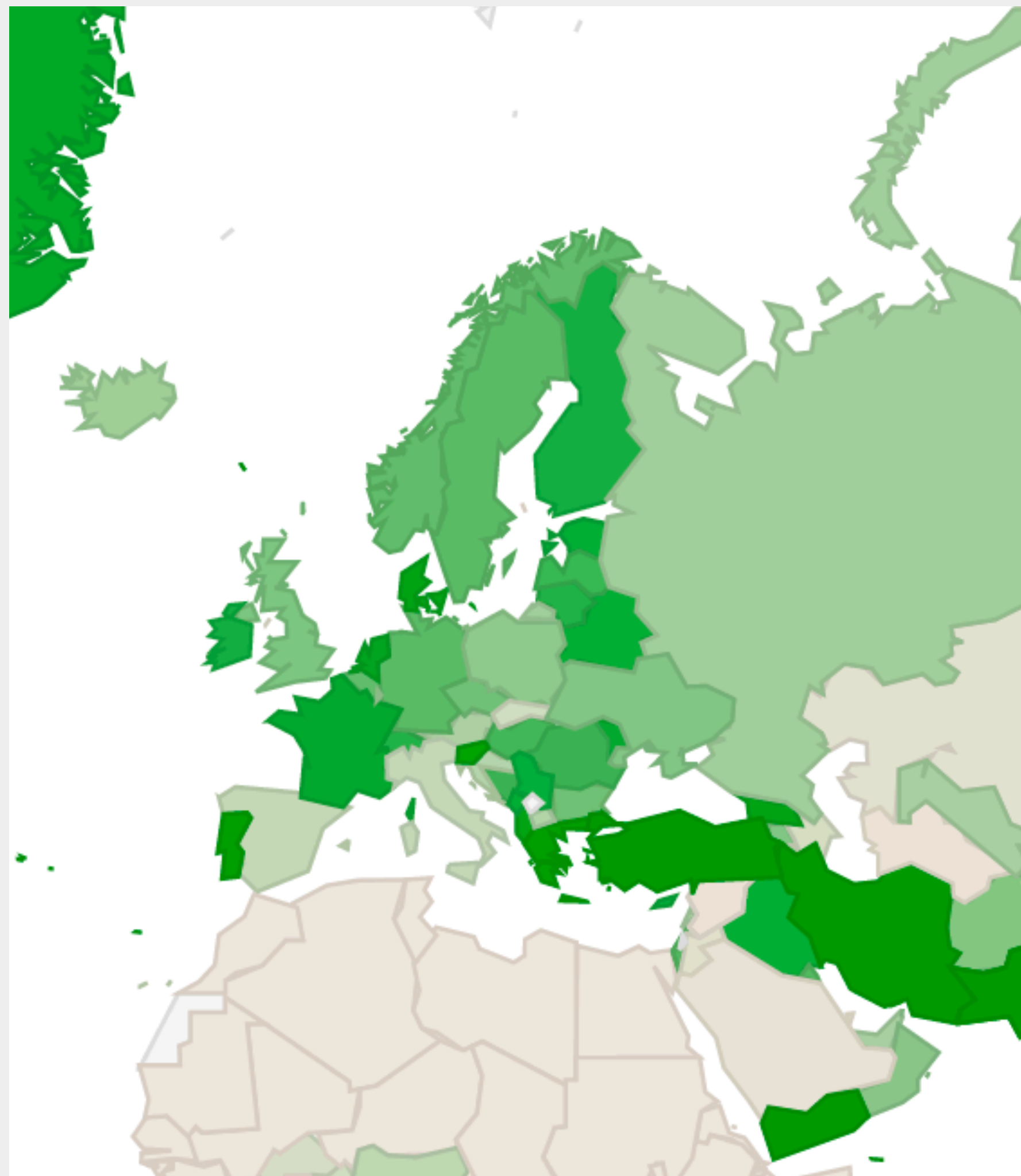
Questions ?

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Benchmarking - AE & KW

Benchmarking - BH & QA