



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

Operational Update

Ensuring an accurate registry and
world-class services

Felipe Victolla Silveira | RIPE 82 | 19 May 2021

RIPE NCC Strategic Focus



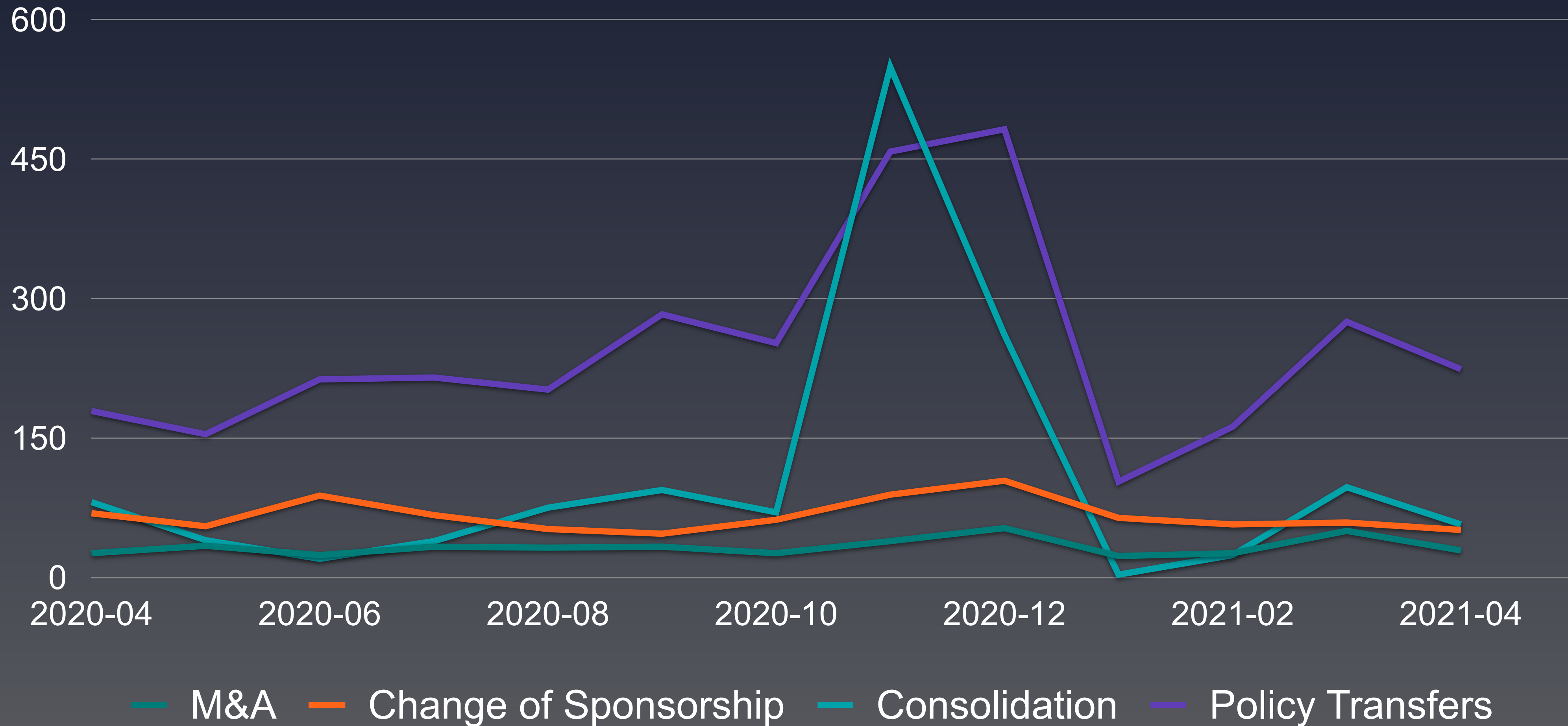
“Deliver world-class services while engaging to connect people to maintain the resiliency and stability of the Internet.”



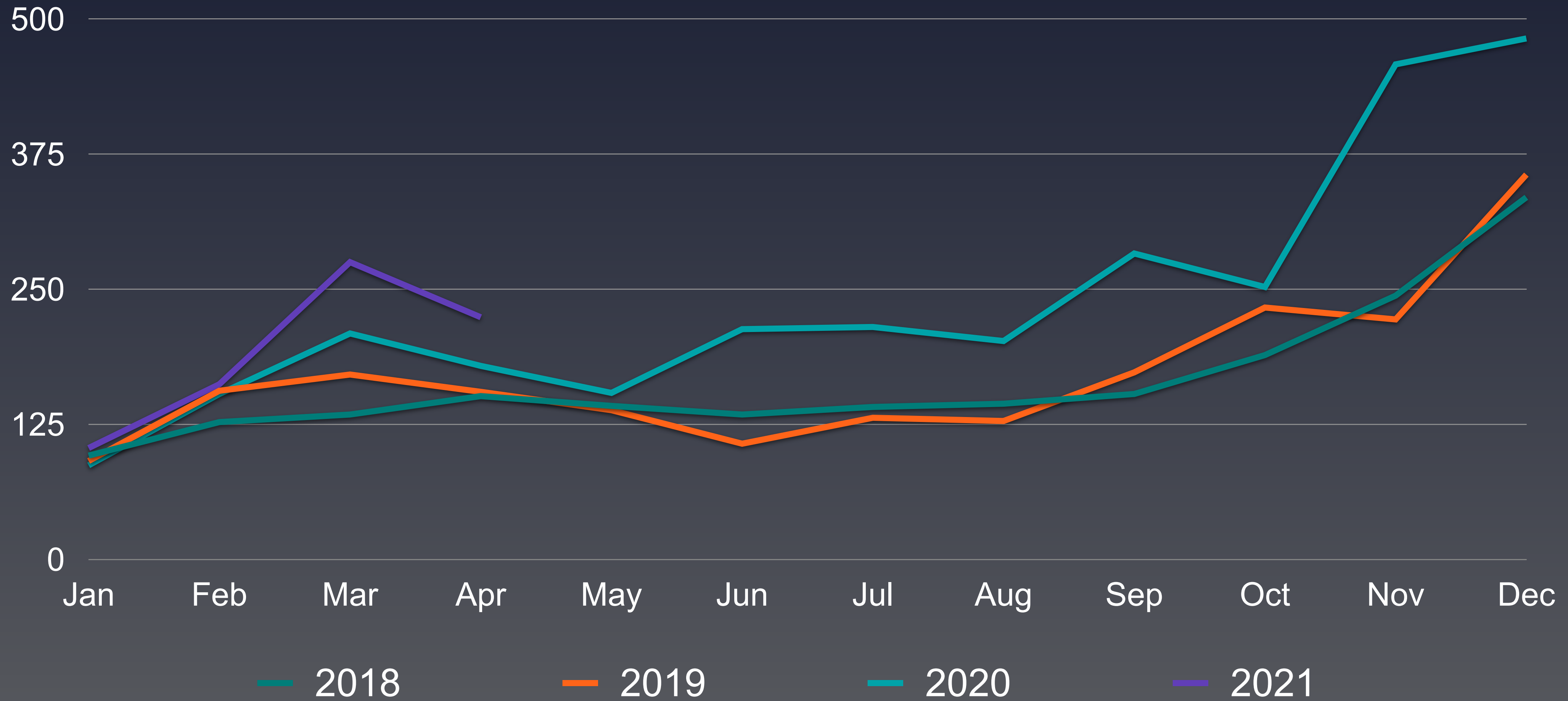
Statistics

What can we learn from
our main KPIs?

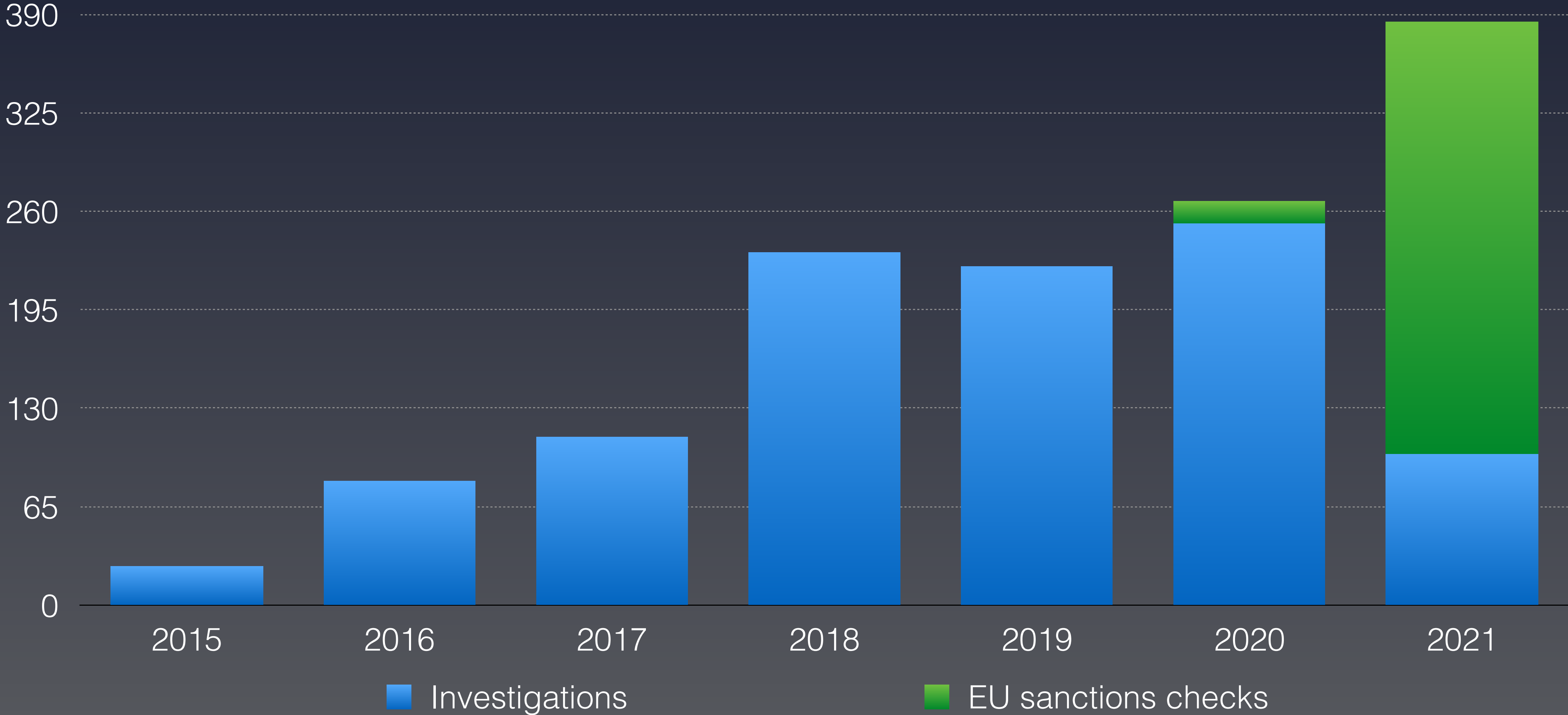
Requests per Category



Policy Transfer Requests per Year



Number of Investigations



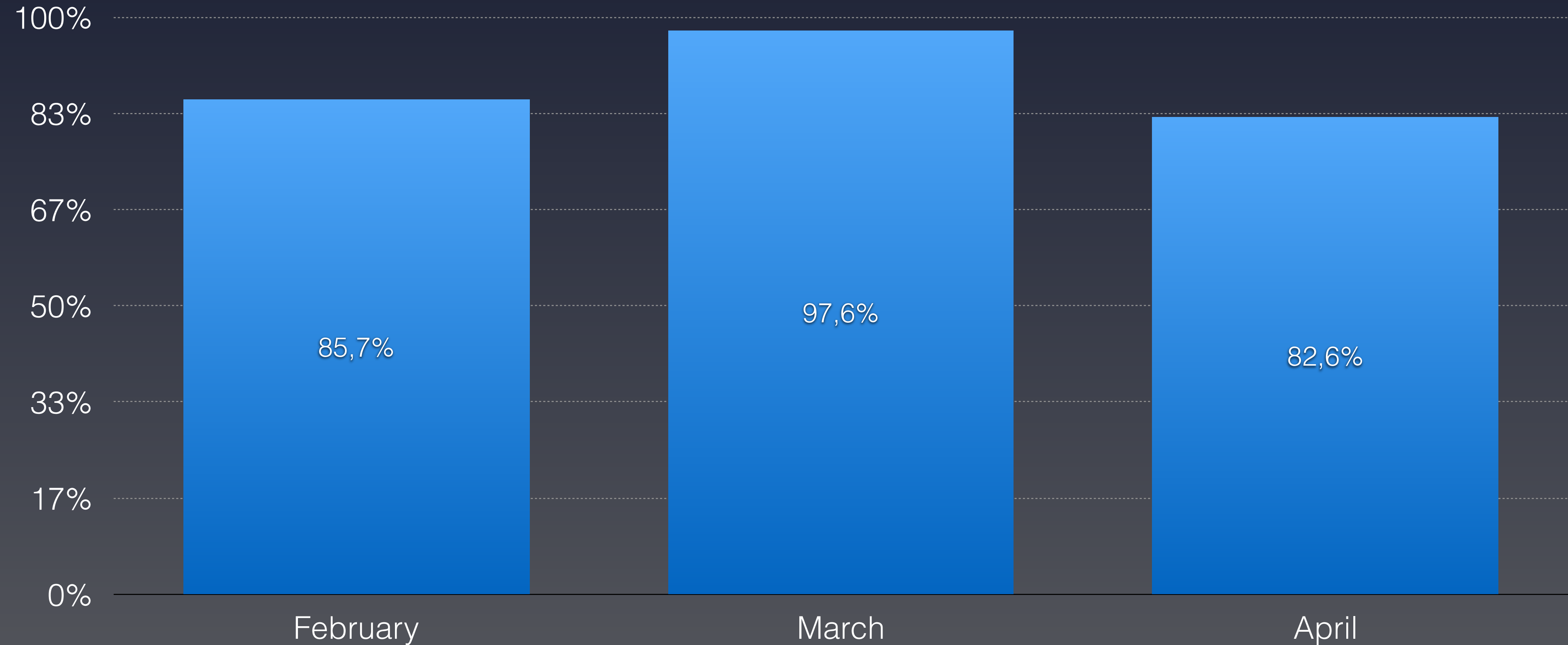
Long-standing Tickets



- Requests that last longer than eight weeks and ten replies

	#	Improvable	Sensitive	% total tickets	# tickets closed
January	122	56	4	3,91%	3122
February	130	48	3	2,5%	5195
March	148	52	3	2,35%	6298
April	156	48	2	2,77%	5630

% Tickets Responded to Within One Day





Membership Growth

- Number of members Q1: **20,059**
- Number of LIR accounts Q1: **23,713**
- There are currently **1,216** members with multiple LIRs, holding **4,796** LIRs in total (**3,580** extra LIRs).
- **3,310** additional LIR accounts will be eligible for closure
- Peak of consolidations is expected by the end of the year

What Can We Learn From These Numbers?



- Cost of compliance and work complexity is increasing
 - What is seen as “bureaucracy” and “slowness” is the RIPE NCC making sure your resources remain protected
 - Changes have been made to address this (e.g. streamlined due diligence)
 - We do acknowledge that there is still room for improvement in our processes
- Number of transfers has been steadily increasing over the past few years
 - These are the most complex tickets with largest number of controls
- Exposure in high number of additional LIR accounts eligible for consolidation may impact future income development



Delivering World- Class Services

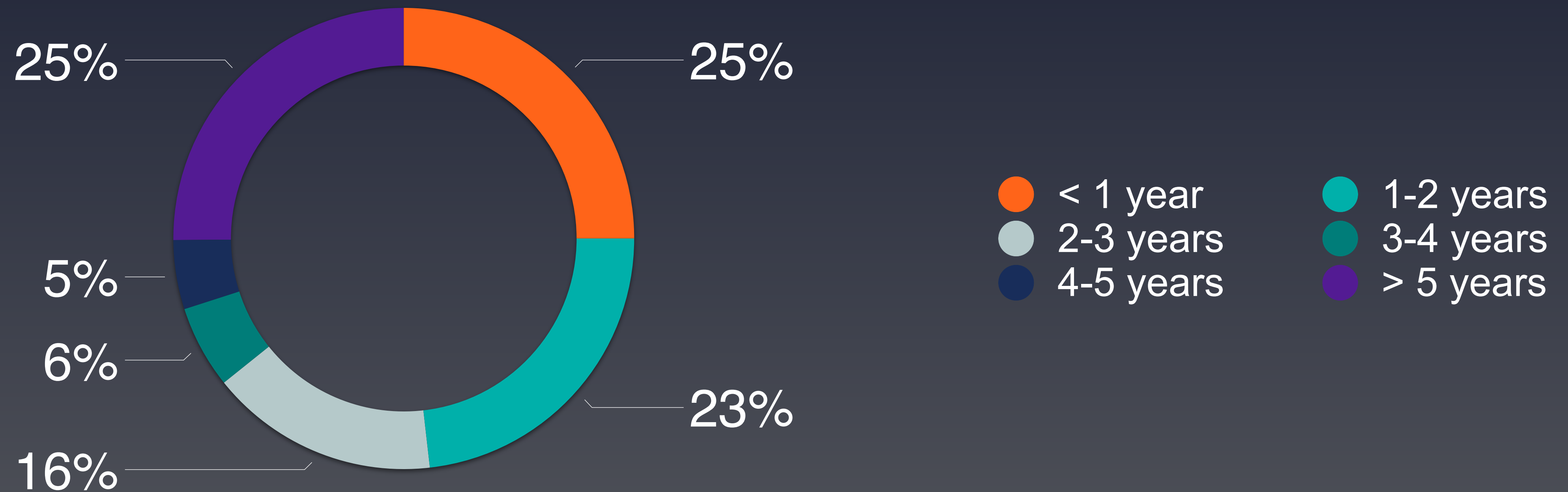
Good KPIs and streamlining
troublesome processes



How do we measure registry accuracy?



Members with Recent Registration Information



Improving Membership Experience



- Starting point is good KPIs on membership satisfaction
- Membership surveys every three years are a great source of feedback
- We are also in the process of implementing something more granular
- Measure satisfaction per ticket
 - Improvement to processes to follow through on unsuccessful interactions
 - Streamline troublesome processes
- Ongoing improvements for closures and M&As

Active Registry Monitoring



- Usage of third-party tooling for monitoring compliance with EU sanctions and changes in member's legal structure
- We are half-way through the implementation
 - Starting with EU sanctions
 - Monitor against changes in legal structure (later this year)
- Our main goals:
 - Reduce compliance costs
 - Higher accuracy
 - More efficiency



RPKI Resiliency

Working towards a secure Trust Anchor
and highly available repositories

Key Goals



- Security and integrity of our Trust Anchor
- High availability, resiliency and low latency for our RPKI repositories

RPKI Audit Framework



Gap Analysis



- BSI has performed a gap analysis and identified 49 missing controls (total of 179)
- Overview of control gaps:
 - Processing Integrity: 5 controls missing
 - Confidentiality: 1 control missing
 - Availability: 3 controls missing
 - Security: 40 controls missing
- We are in the process of closing these control gaps
- Full audit to be done in Q1 2022

RPKI Repositories in the Cloud



- Our goal is to offer 99.999% availability on mission-critical services
- We started looking into usage of cloud infrastructure for RPKI and RIPE Database about one year ago
- We understand the uniqueness of our position and the importance of our services to a well-functioning Internet
- Community has been involved since RIPE 80 and will continue to be involved in the process (Database WG, NCC Services WG, Routing WG)
- Article published on RIPE Labs (https://labs.ripe.net/author/felipe_victolla_silveira/rpki-repositories-and-the-ripe-database-in-the-cloud/)
- Open House planned for next month
- Our cloud strategy will be further discussed with our board in June 2021
- The plans will be adapted taking into account the community feedback

Target Architecture



- Publication server, HSMs, RPKI core, keys and data will remain on-premise
- We are currently making changes in our publication server to allow multiple publication
 - That change will allow having independent repository instances subscribing to the publication server and working in parallel
- One of them we plan to deploy in AWS, the other one will remain on-premise or with a secondary cloud provider
- We can potentially add more in the future (similar to DNS root servers)
- Alternating between them with DNS or composing them all together with anycast

Key Points



- The RIPE NCC will remain in full control of our data and processes
- We are aiming for zero downtime if one of the repository instances fail (e.g. catastrophic failure in AWS)
 - If a failover is required with downtime up to an hour, the 99,999% availability target won't be met
- Care is being taken to remove all potential circular dependencies
- Our main challenge is to quickly scale up an infrastructure that has very specific domain knowledge while at the same time to keep operating the services
- Being a good shepherd, thinking everything through, growing organically, making incremental improvements



**Ensuring the accuracy and compliance
of our registry while providing world-
class services to our members and
safeguarding the resiliency and security
of our mission-critical services**



Questions



fvictolla@ripe.net
[@victolla](#)