Making the Internet: A Longitudinal Analysis of the IETF

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34th Multi-Service Networks Workshop, 8th July 2022

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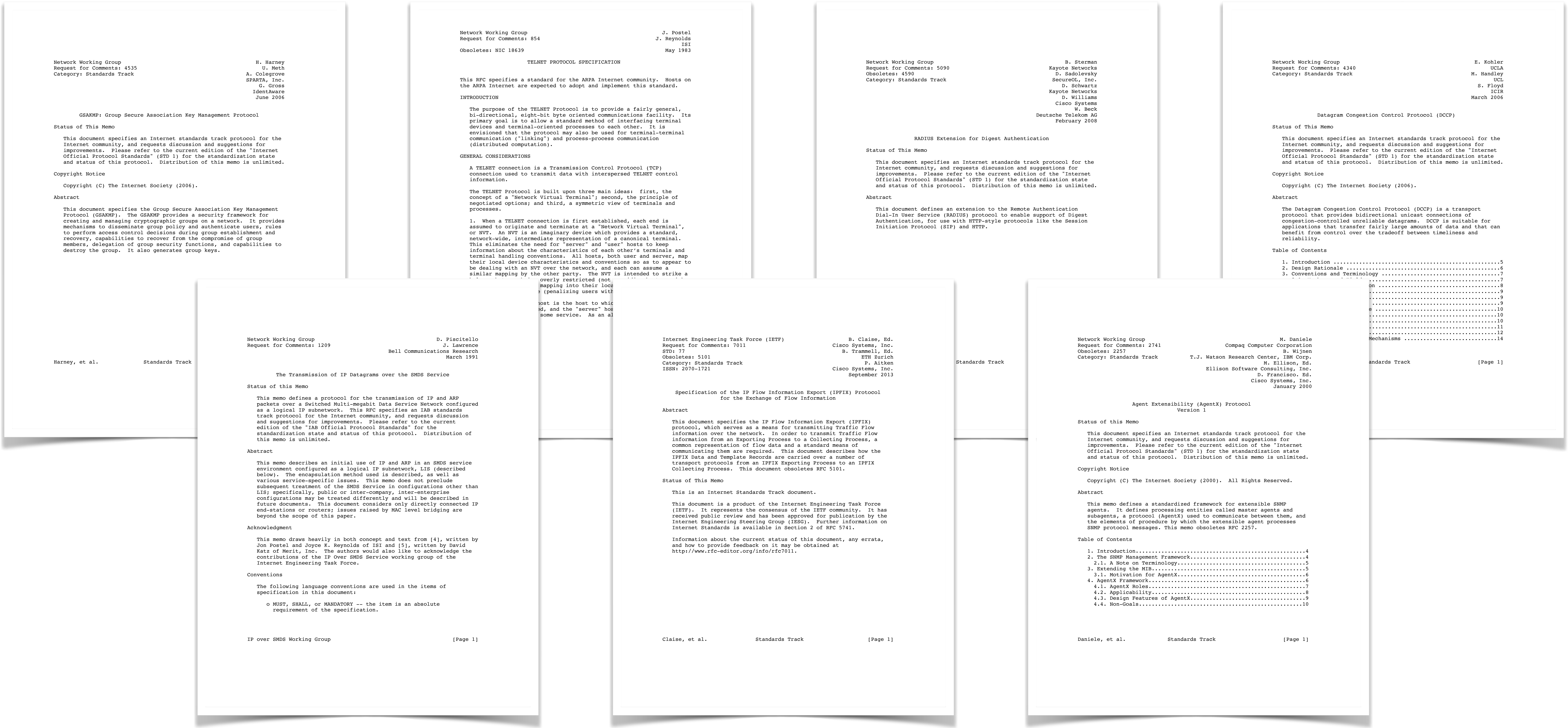
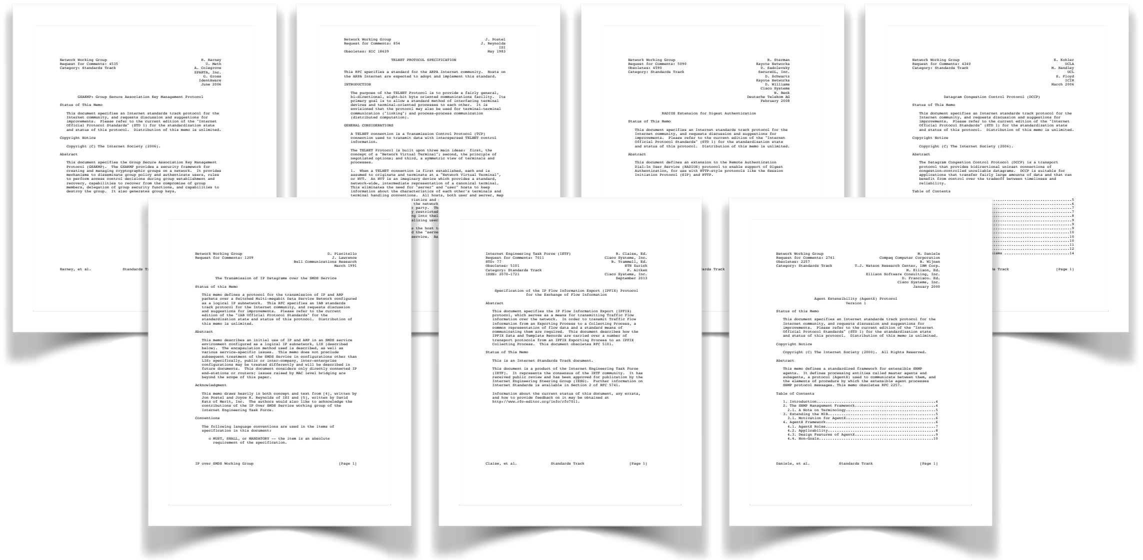
Engineering and Physical Sciences Research Council

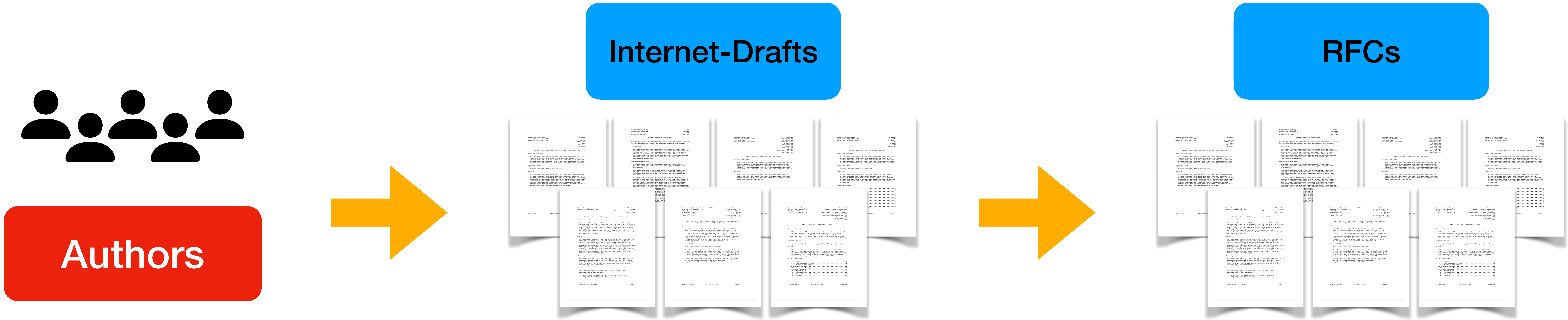
This work is funded by the UK Engineering and Physical Sciences Research Council, under grants EP/S033564/1 and EP/S036075/1.

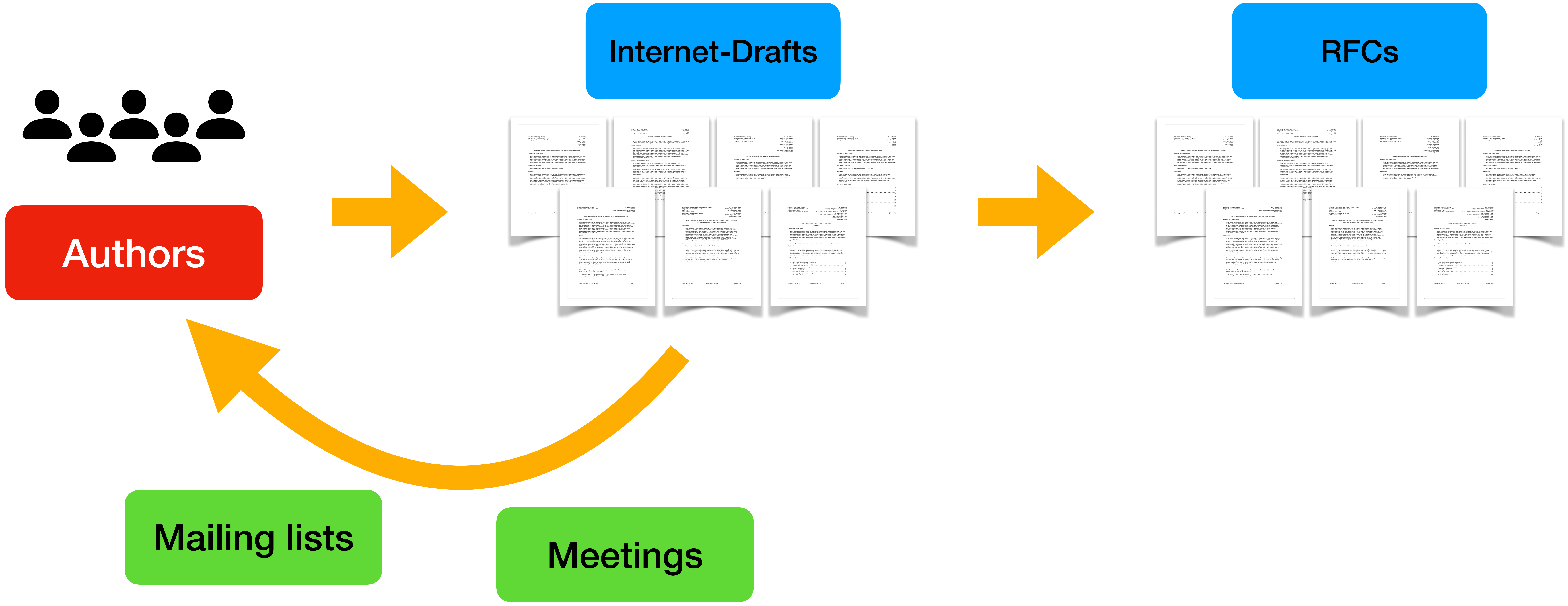

GSAKMP: Group Secure Association Key Management Protocol
TELNET PROTOCOL SPECIFICATION
RADIUS Extension for Digest Authentication
Datagram Congestion Control Protocol (DCCP)
The Transmission of IP Datagrams over the SMDS Service
Specification of the IP Flow Information Export (IPFIX) Protocol
for the Exchange of Flow Information
Agent Extensibility (AgentX) Protocol
Version 1

RFCs

RFCs




Authors
Internet-Drafts
RFCs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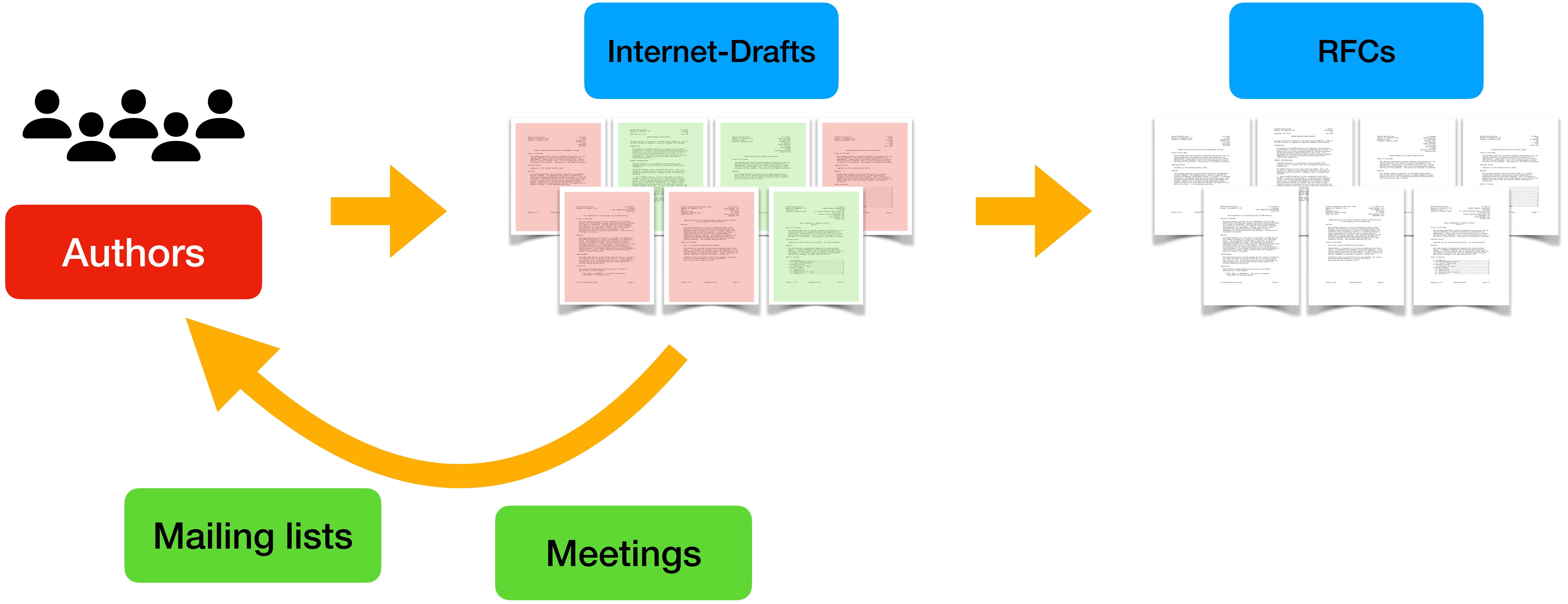
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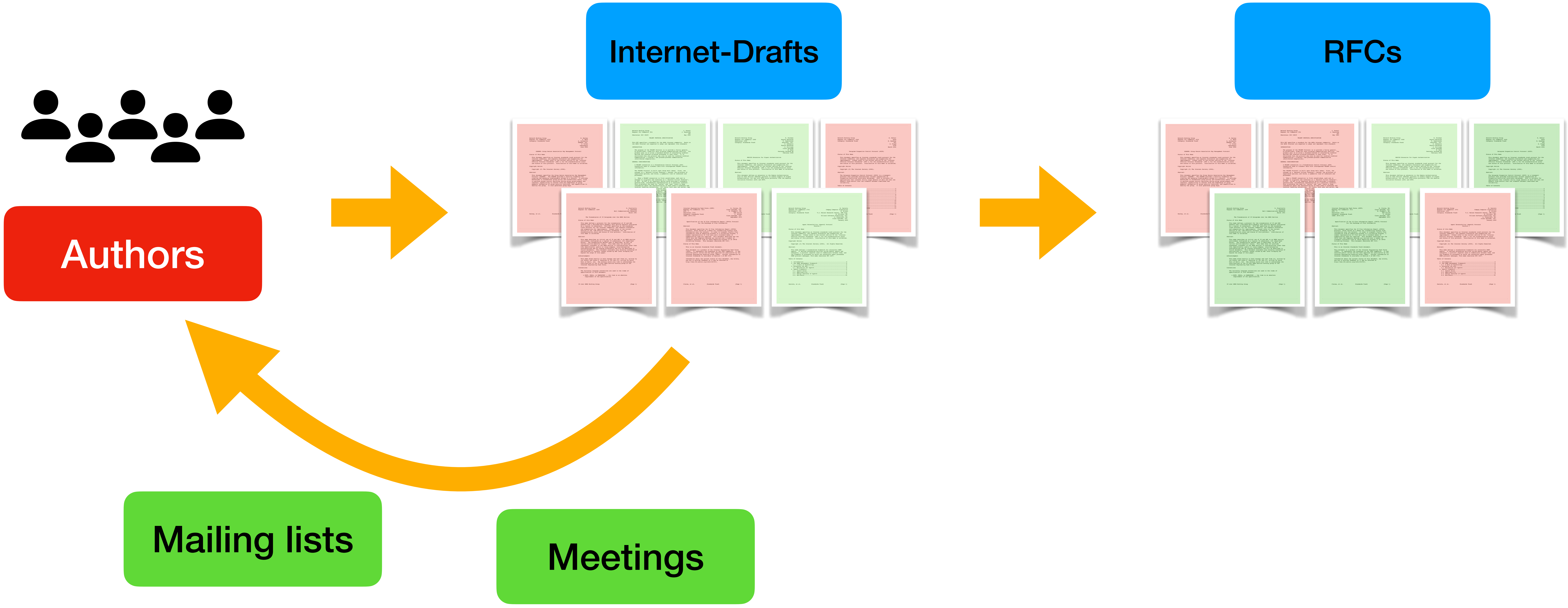
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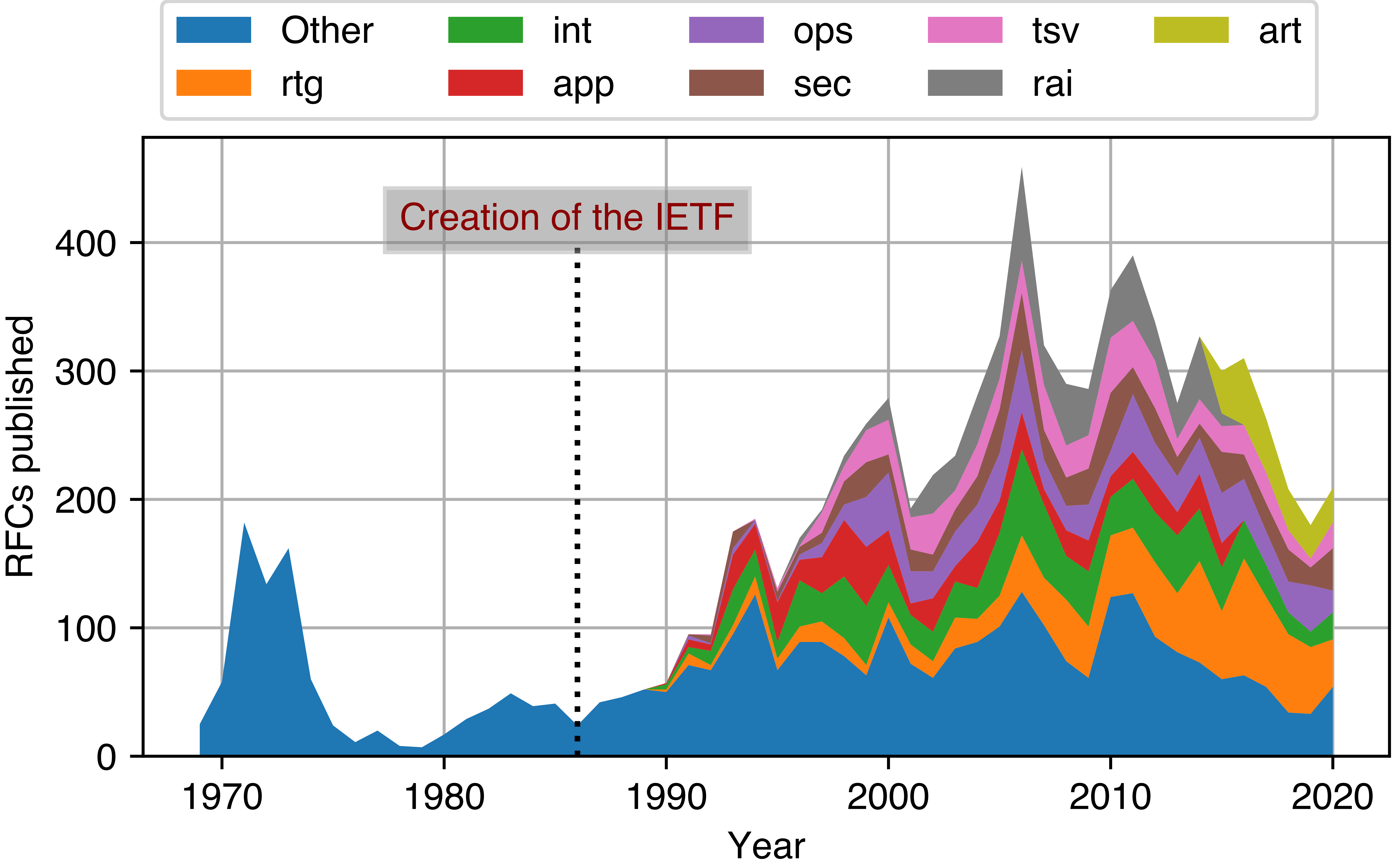

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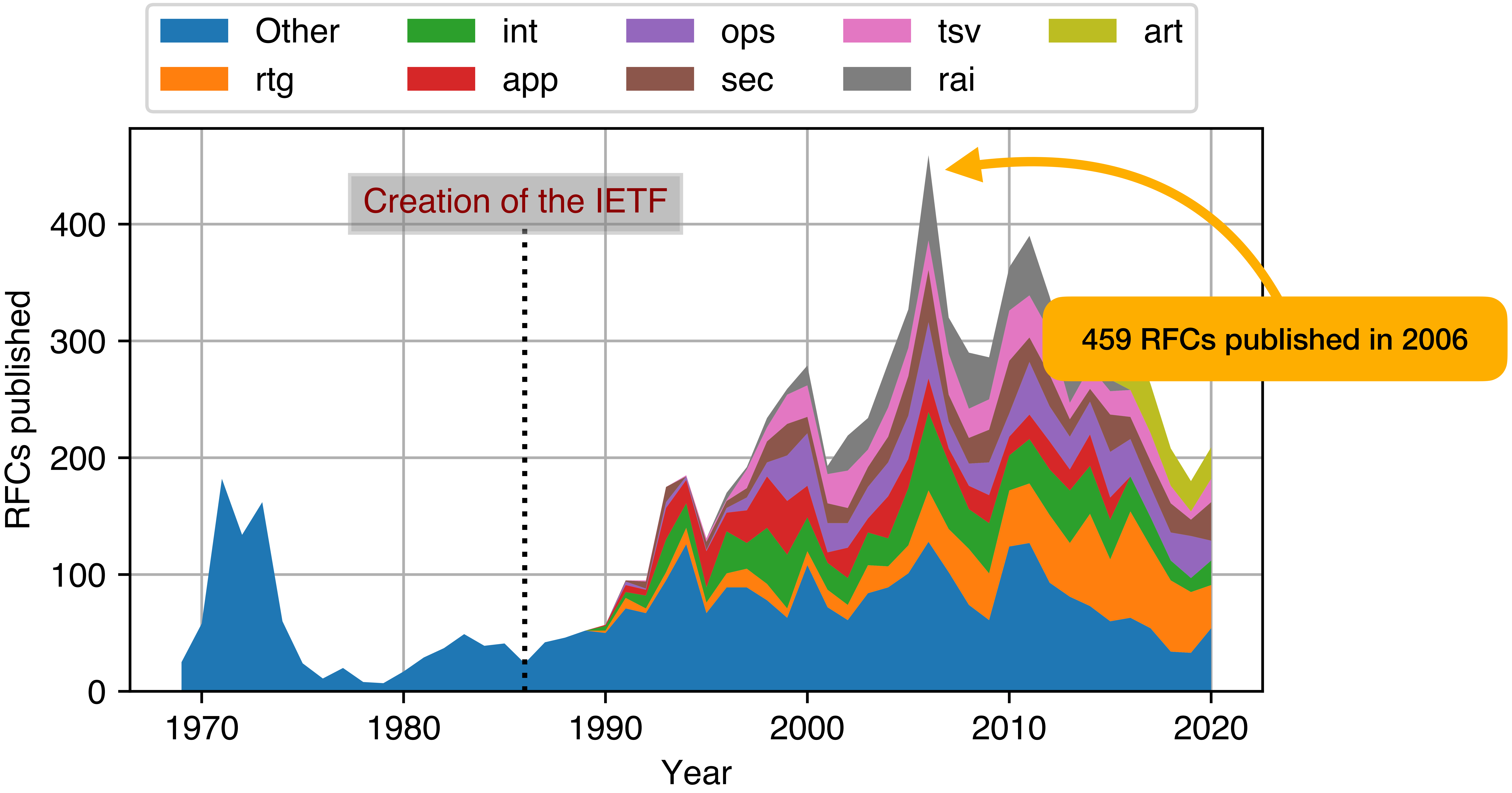
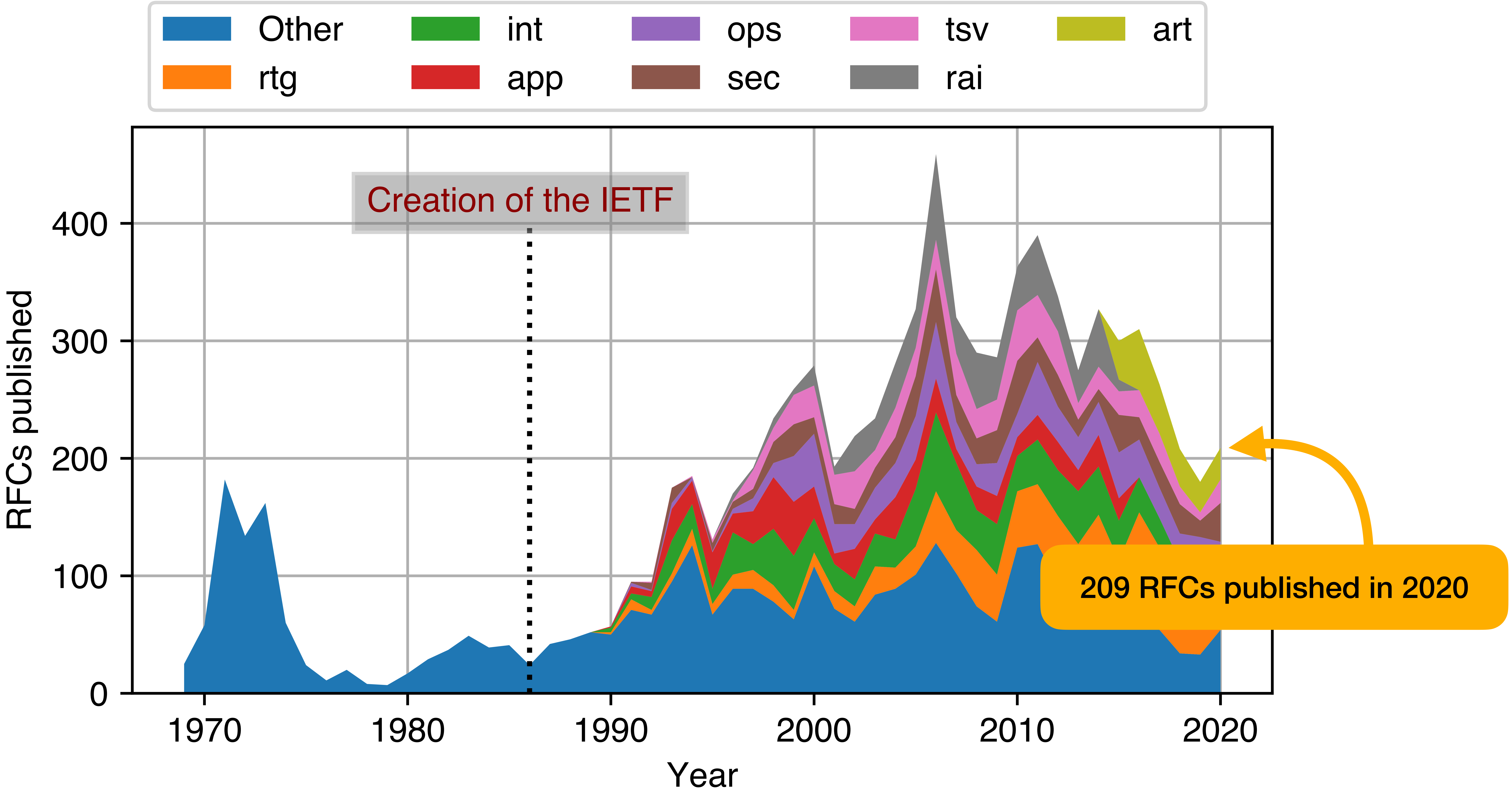
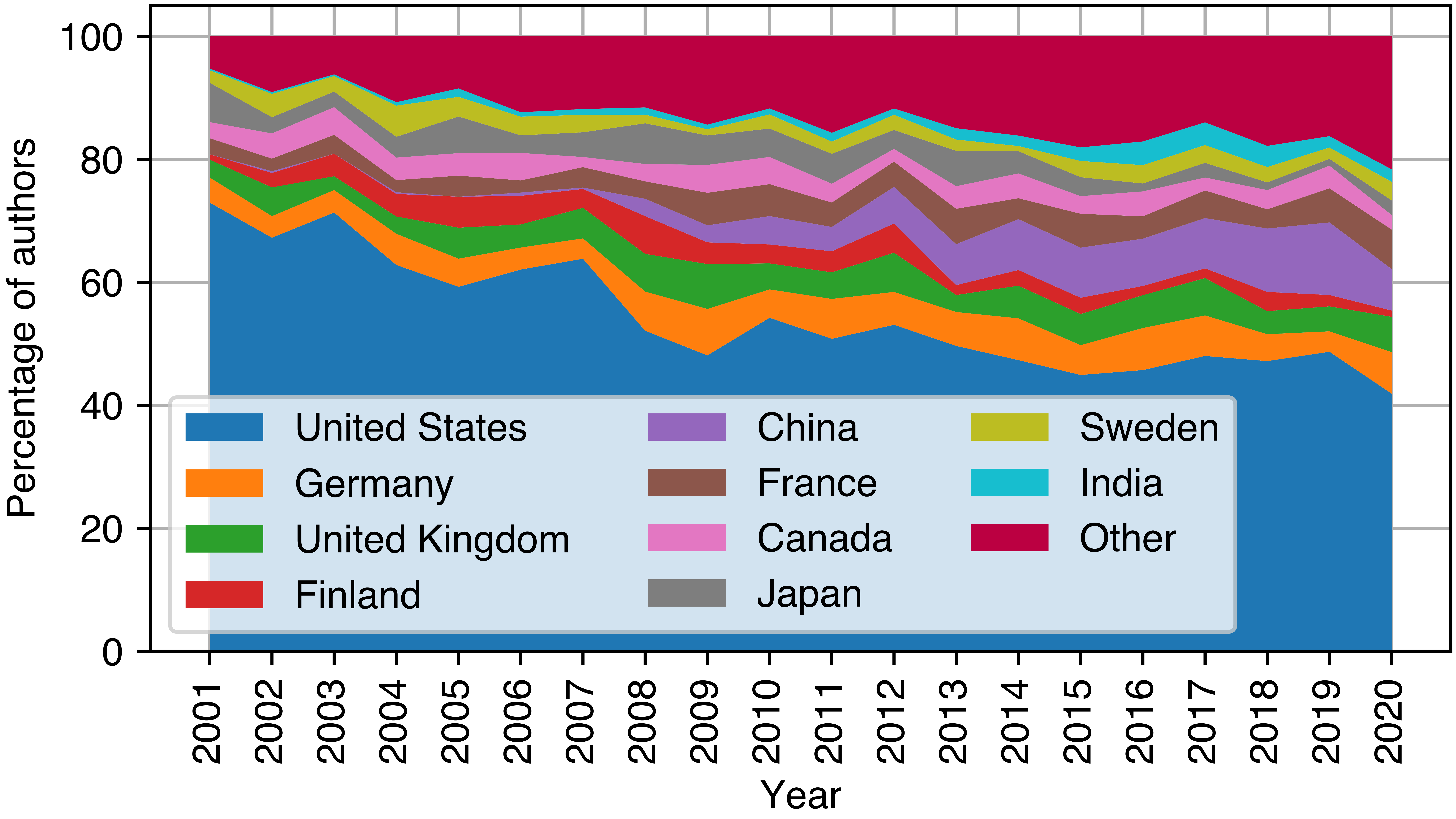


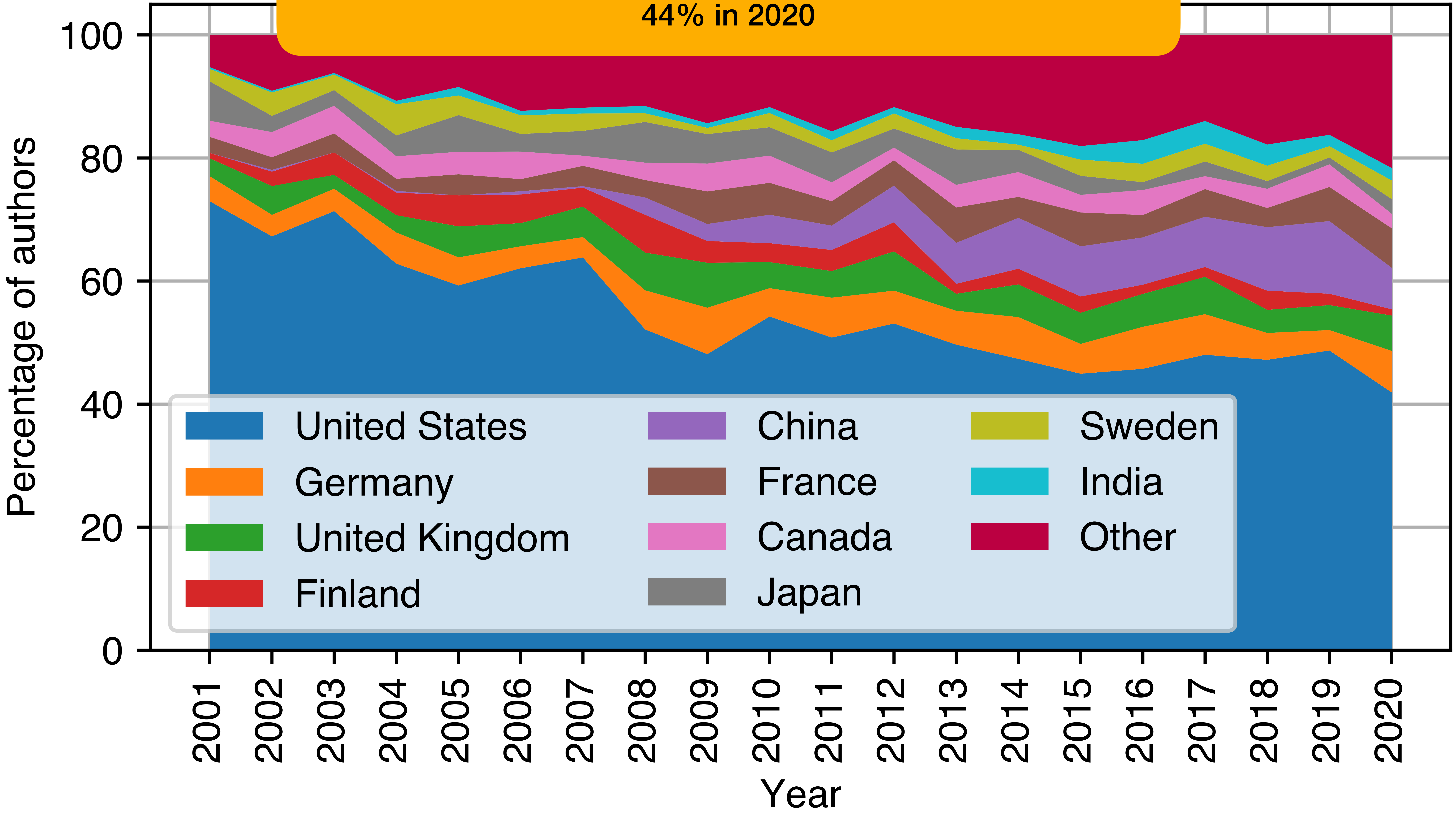
sodestream.github.io


Other
rtg
int
app
ops
sec
tsv
rai
art
Creation of the IETF
RFCs published
400
300
200
100
0
1970
1980
1990
2000
2010
2020
Year
209 RFCs published in 2020



Percentage of authors
100
80
60
40
20
0
United States
Germany
United Kingdom
Finland
China
France
Canada
Japan
Sweden
India
Other
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Year

75% of authors were from North America in 2001, falling to 44% in 2020



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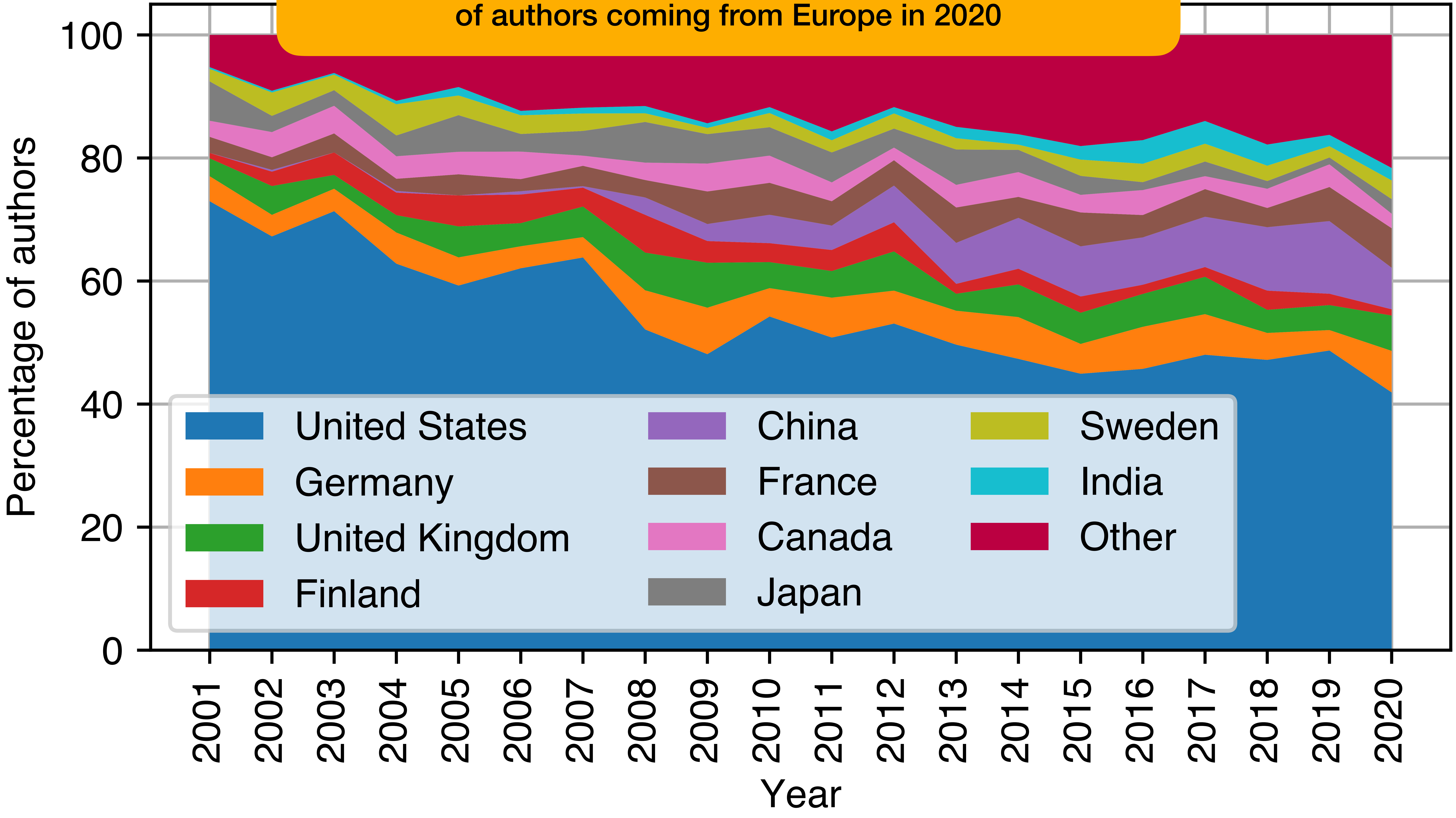
Representation from Europe and Asia has grown, with 40% of authors coming from Europe in 2020



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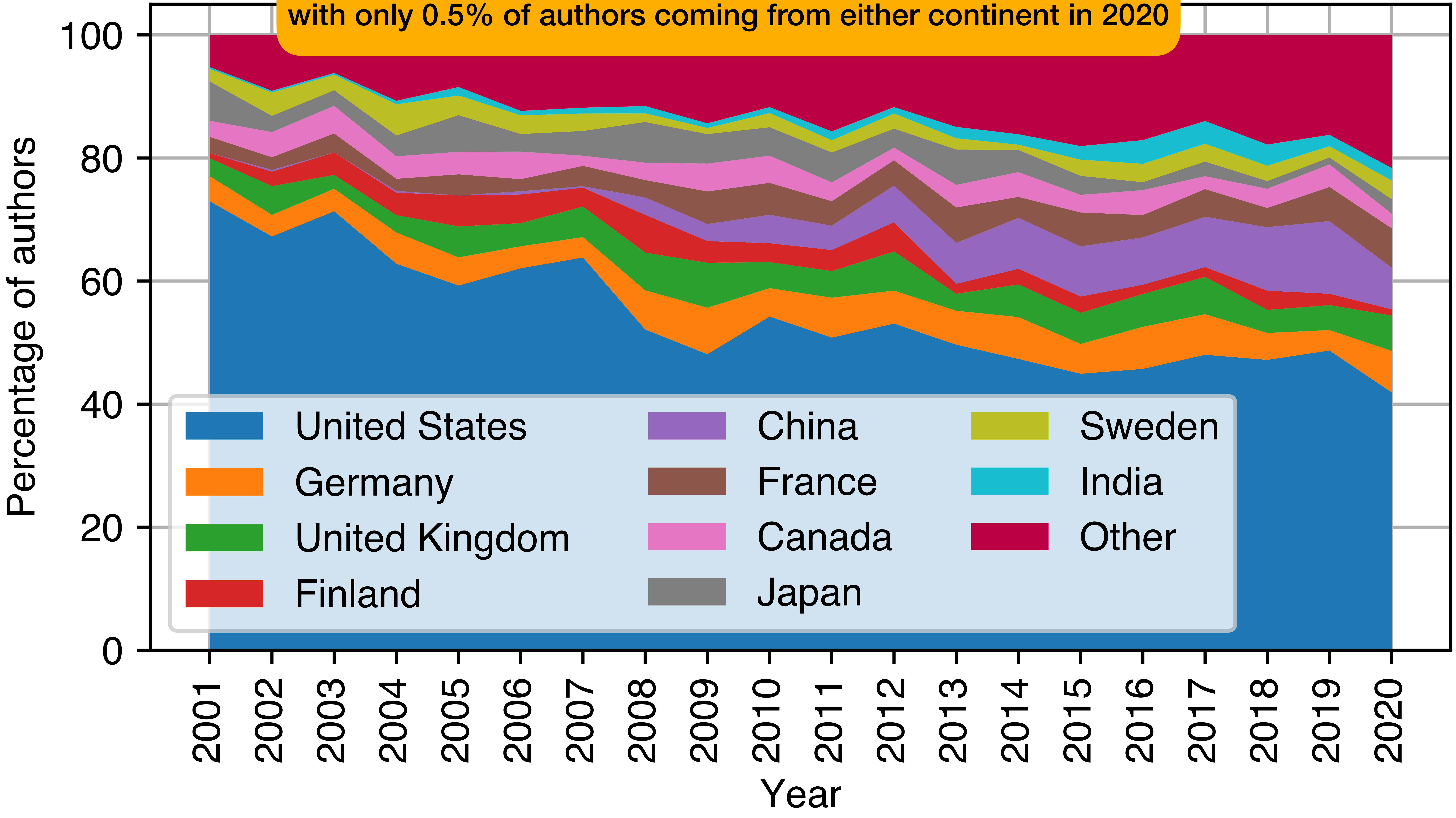
Africa and South America are still heavily underrepresented, with only 0.5% of authors coming from either continent in 2020



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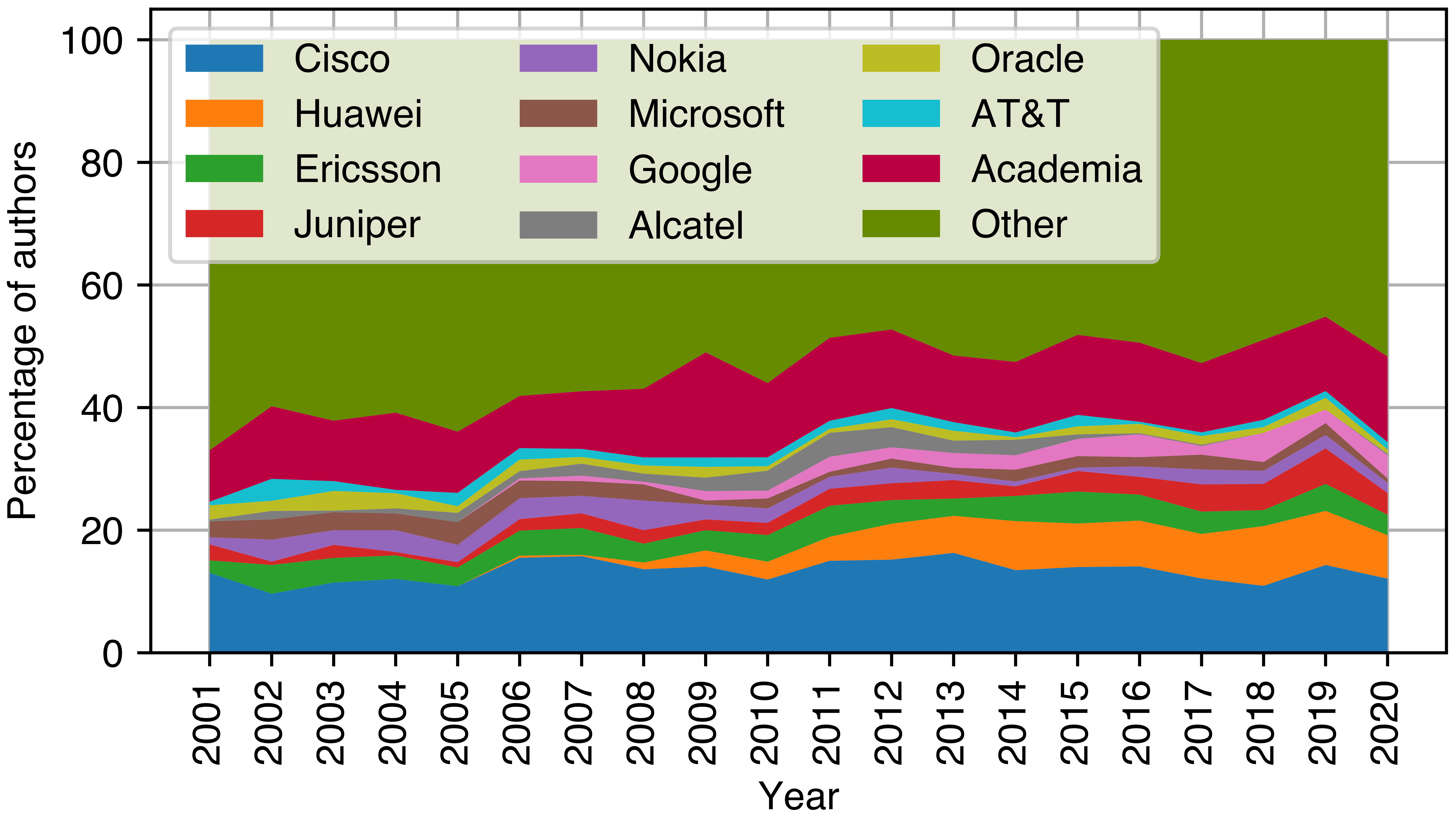

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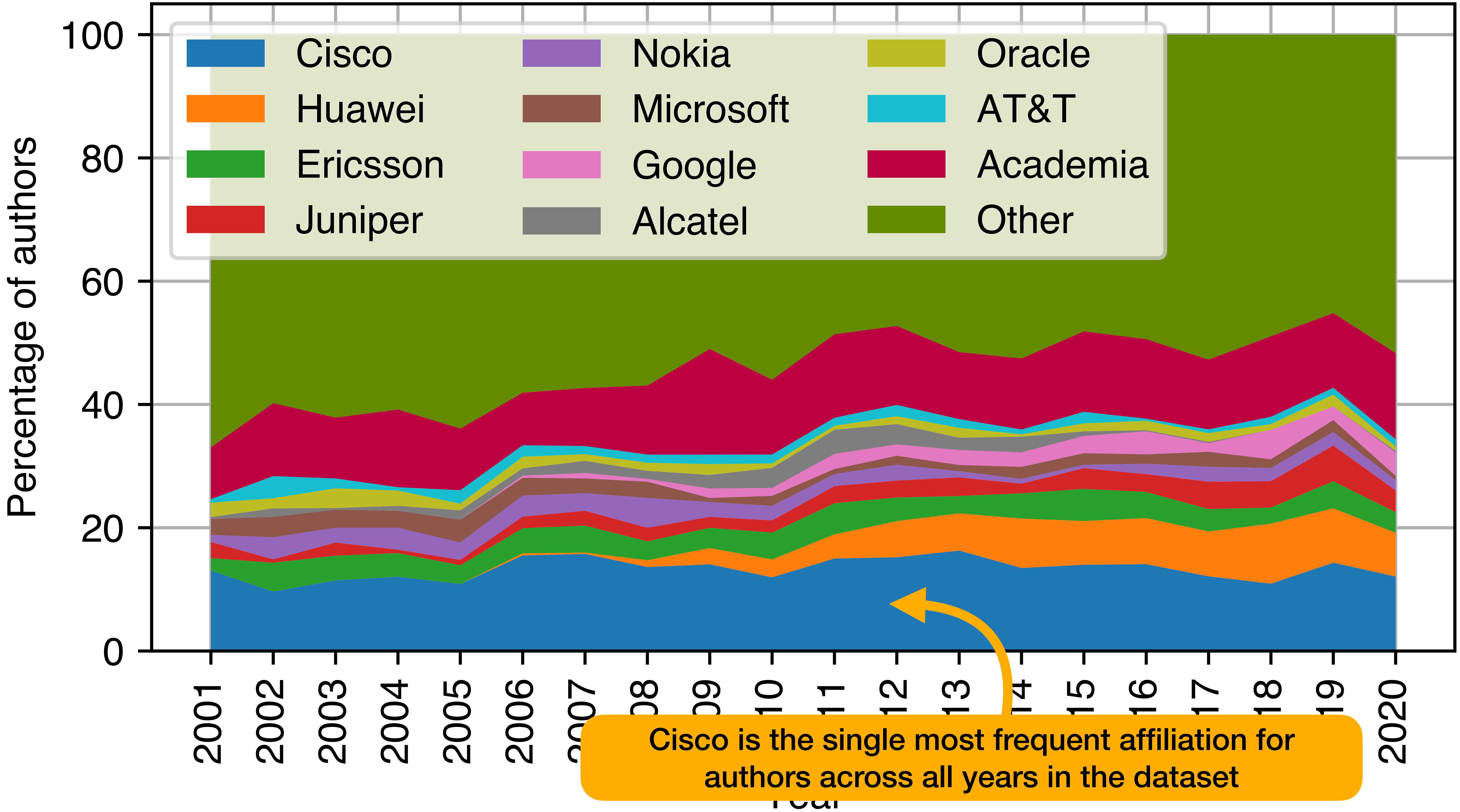
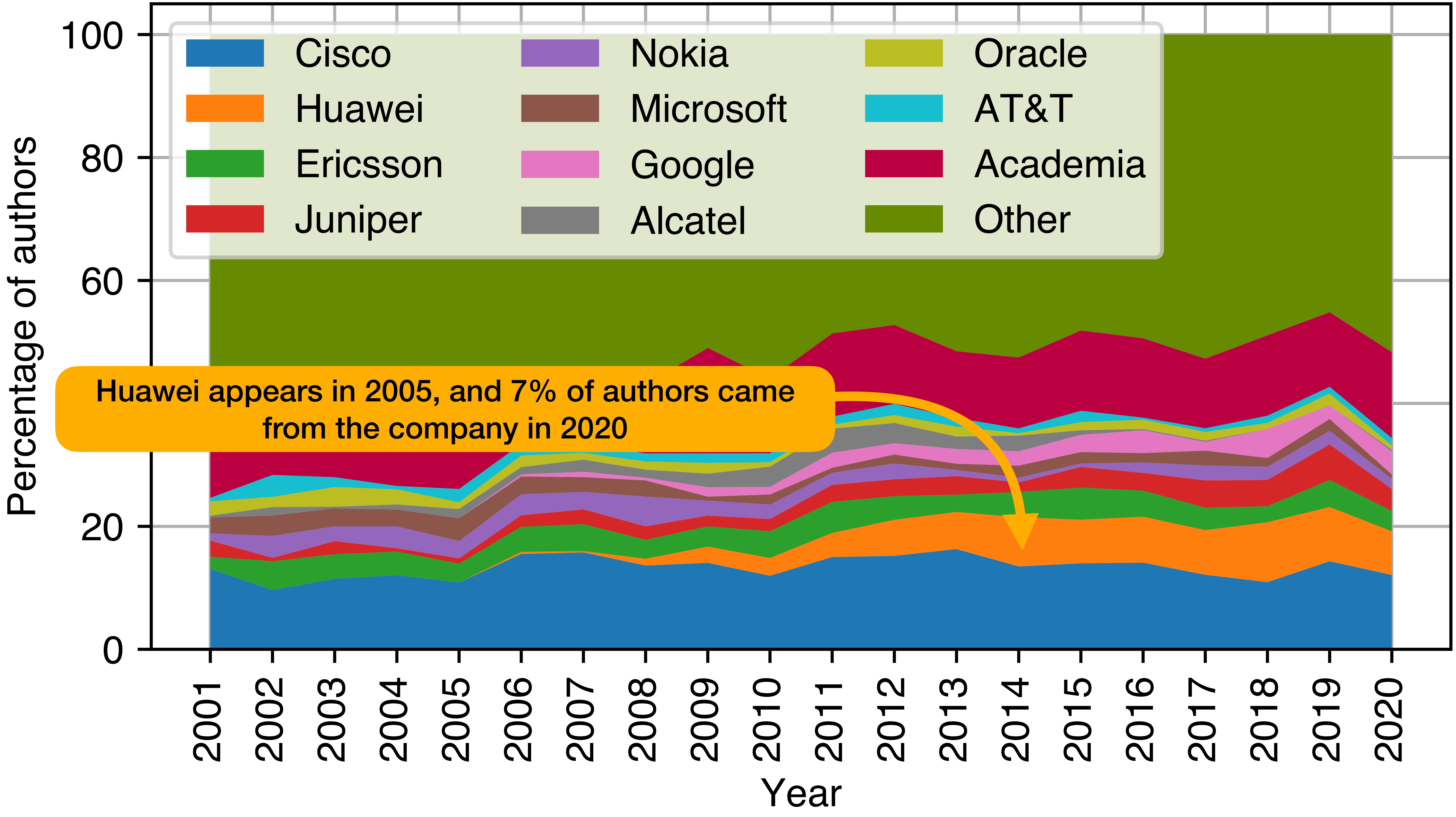


Percentage of authors
0
20
40
60
80
100
Cisco
Huawei
Ericsson
Juniper
Nokia
Microsoft
Google
Alcatel
Oracle
AT&T
Academia
Other
2001
2002
2003
2004
2005
2006
2020
Cisco is the single most frequent affiliation for authors across all years in the dataset



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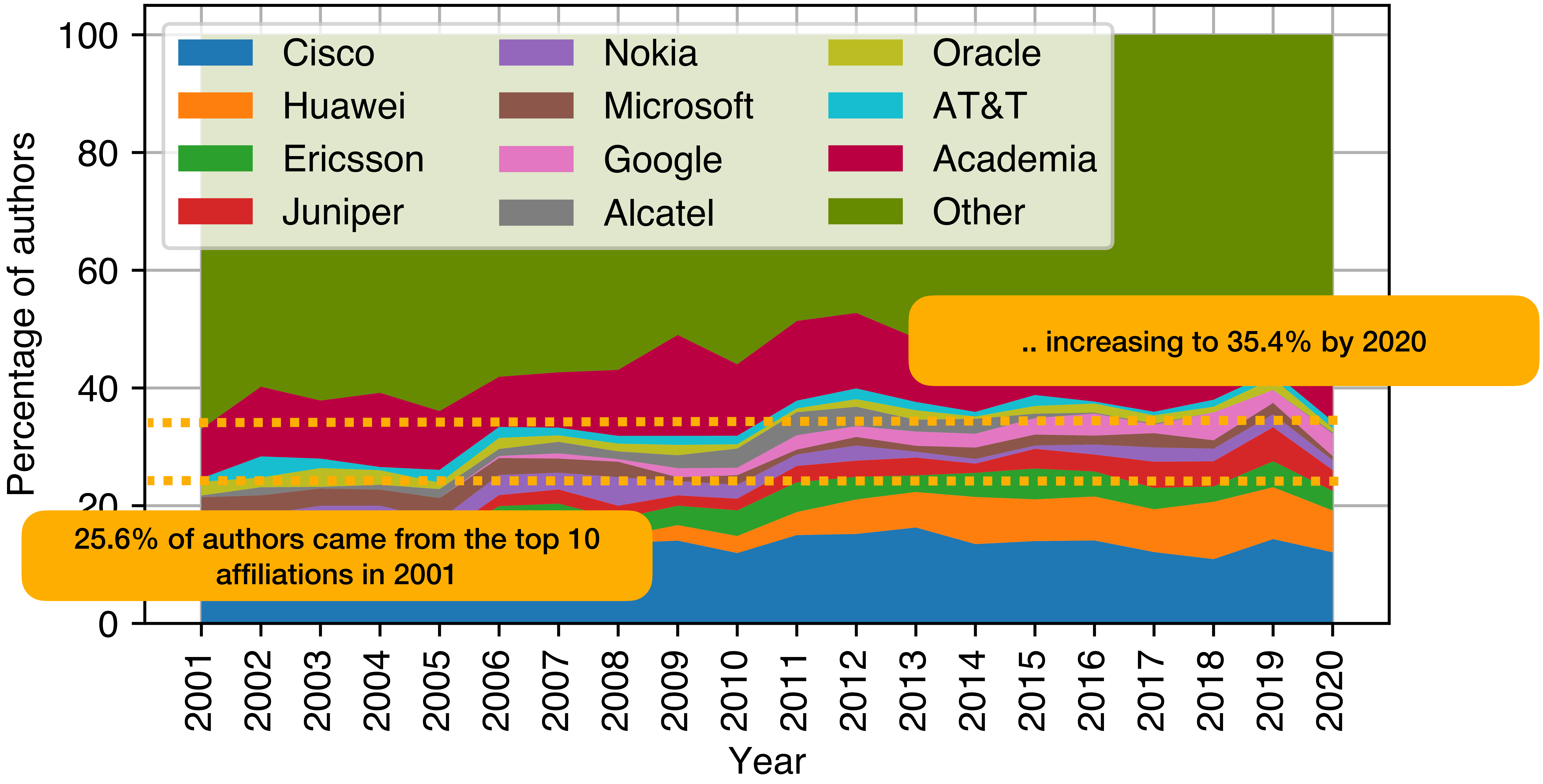

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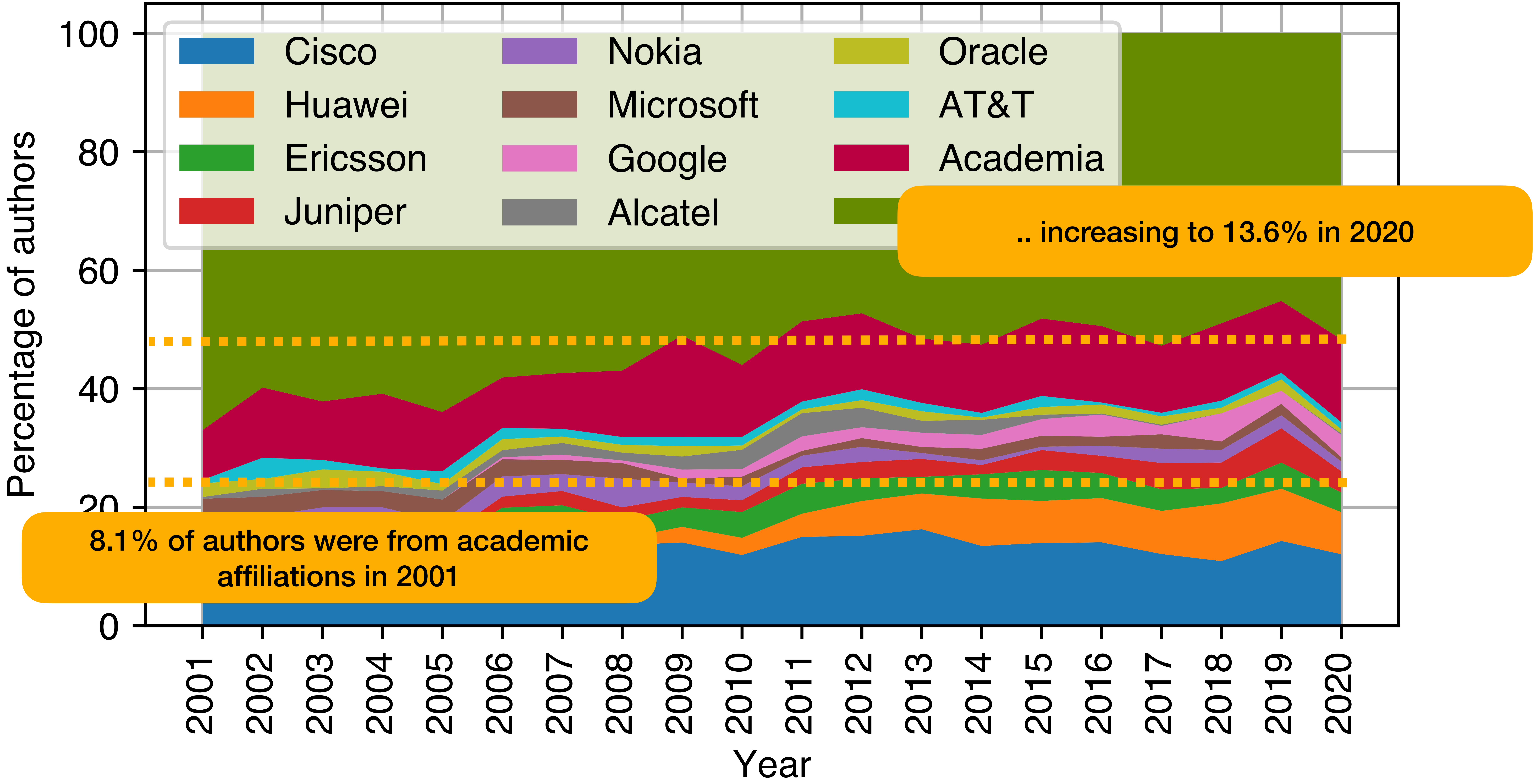

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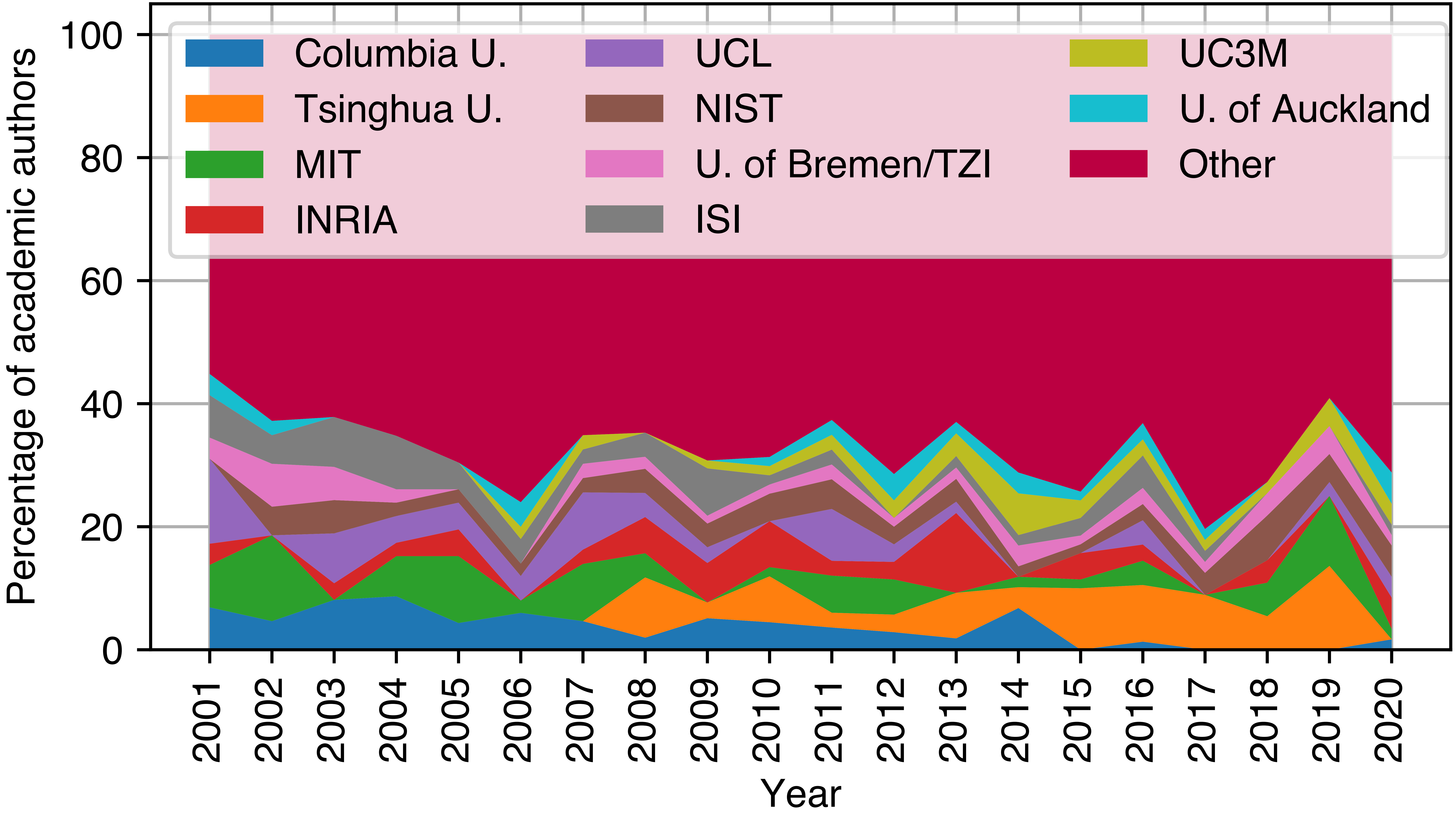

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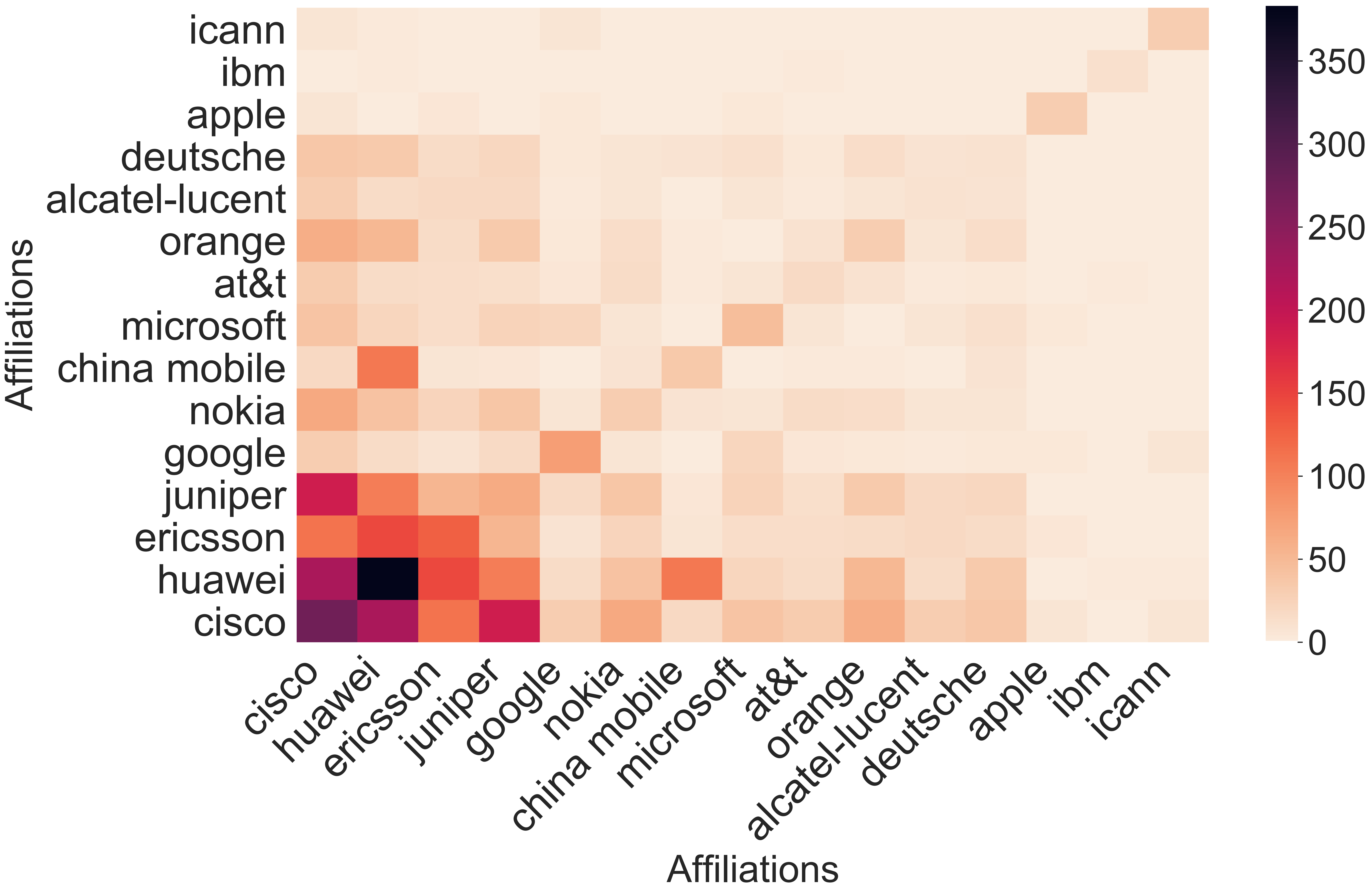

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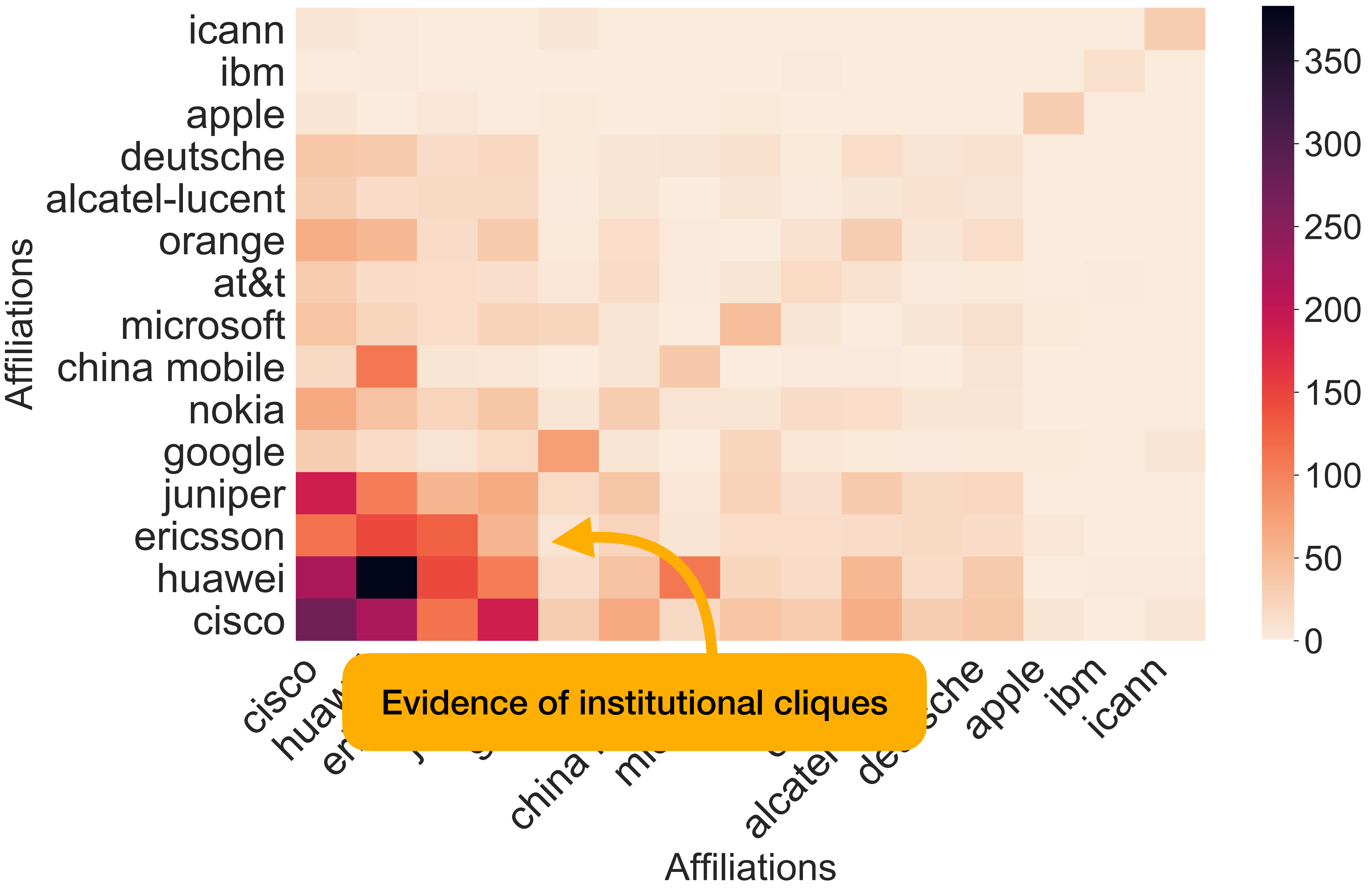
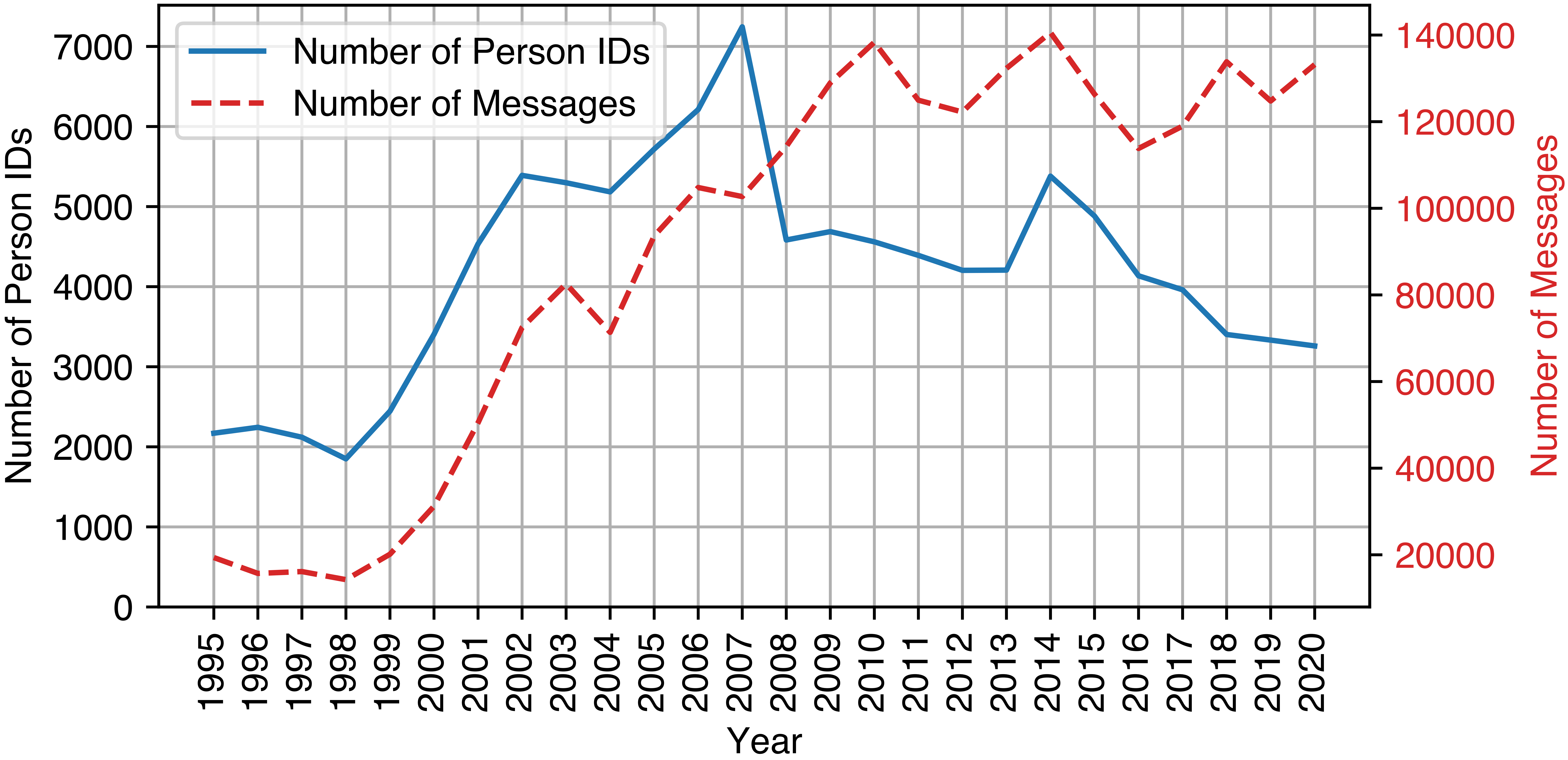


icann
ibm
apple
deutsche
alcatel-lucent
orange
at&t
microsoft
china mobile
nokia
google
juniper
ericsson
huawei
cisco
Affiliations
cisco
apple
ibm
icann
Affiliations
350
300
250
200
150
100
50
0
Evidence of institutional cliques



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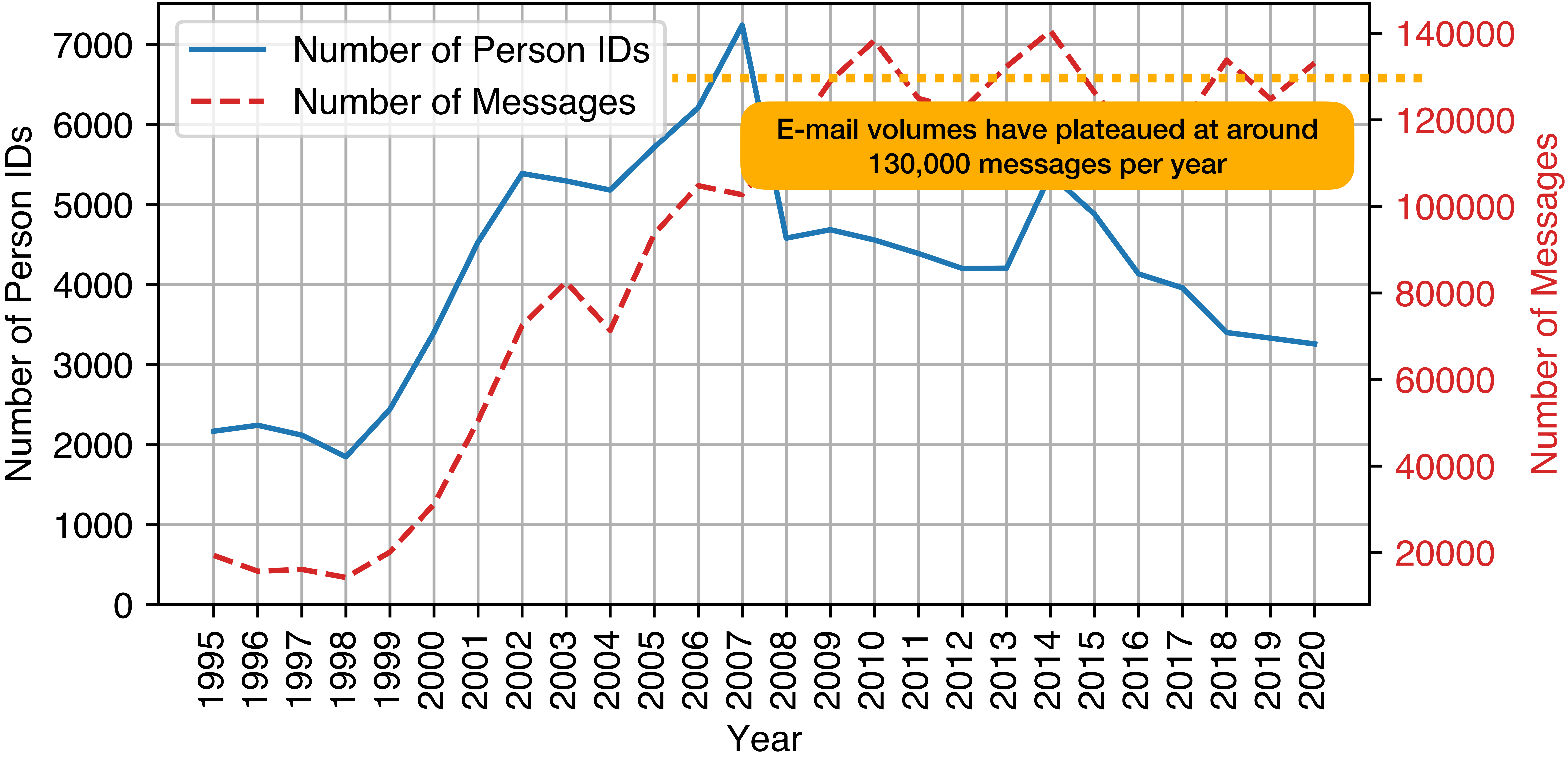

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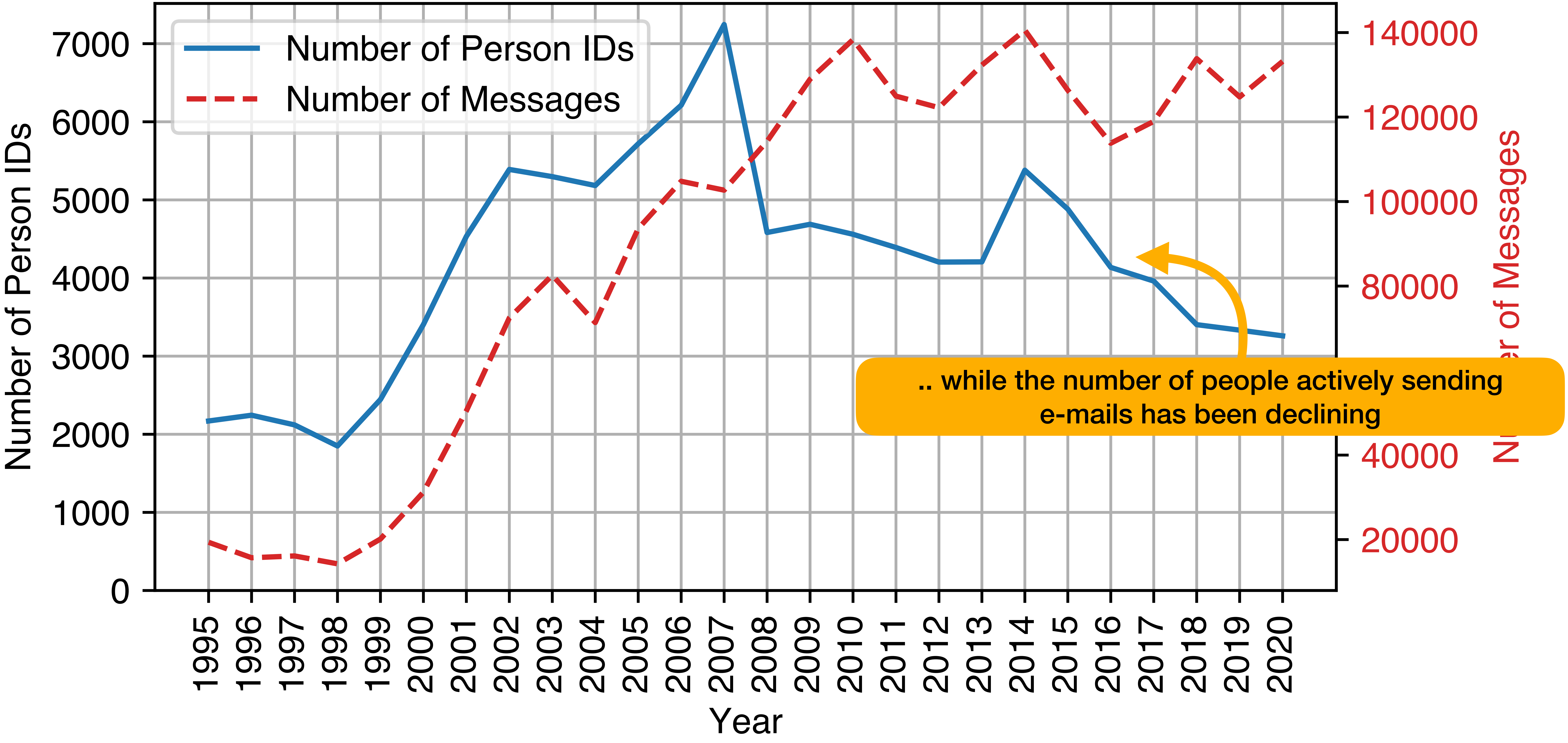
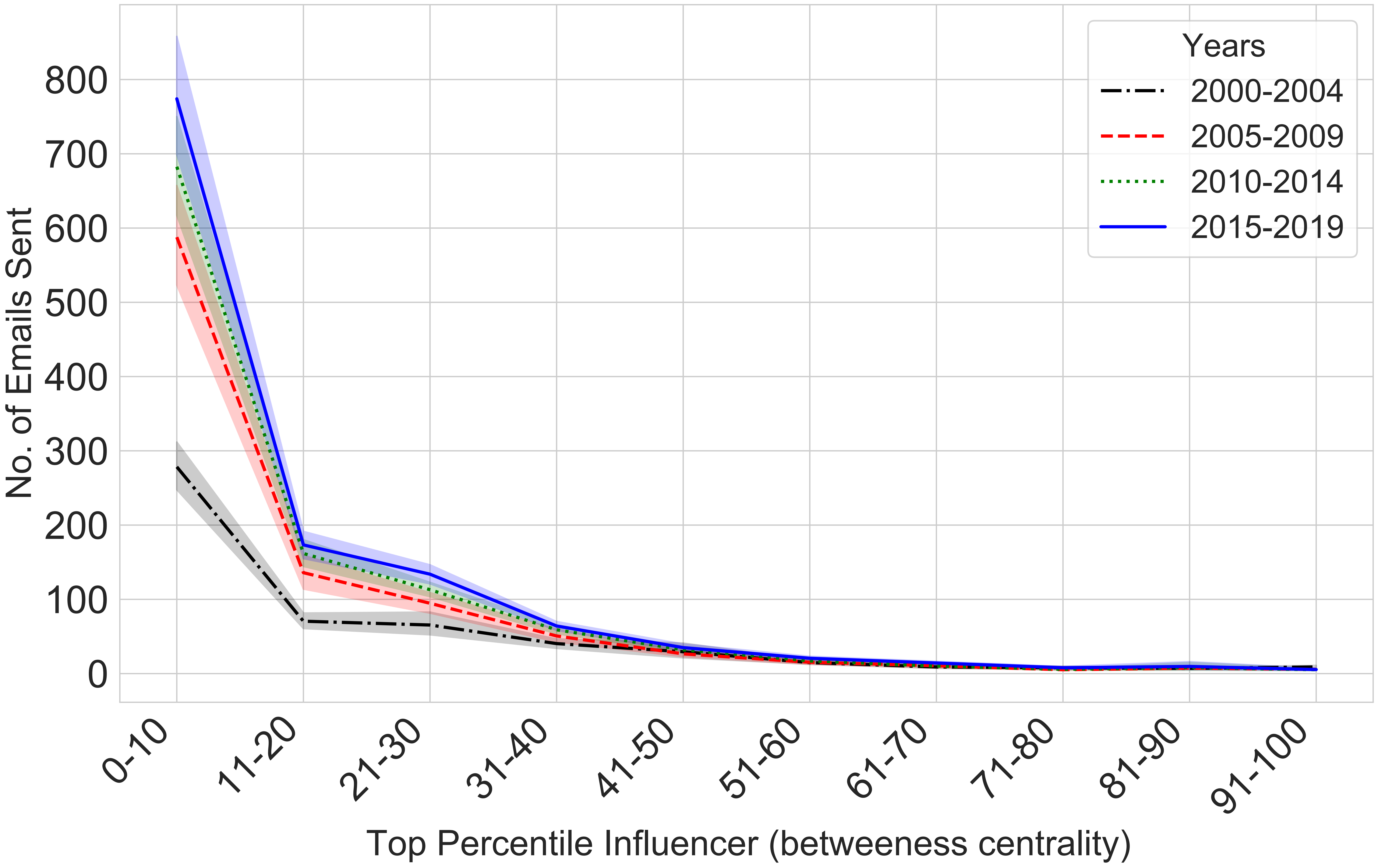


Number of Person IDs
Number of Messages
7000
6000
5000
4000
3000
2000
1000
0
140000
120000
100000
80000
40000
20000
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Year
.. while the number of people actively sending e-mails has been declining



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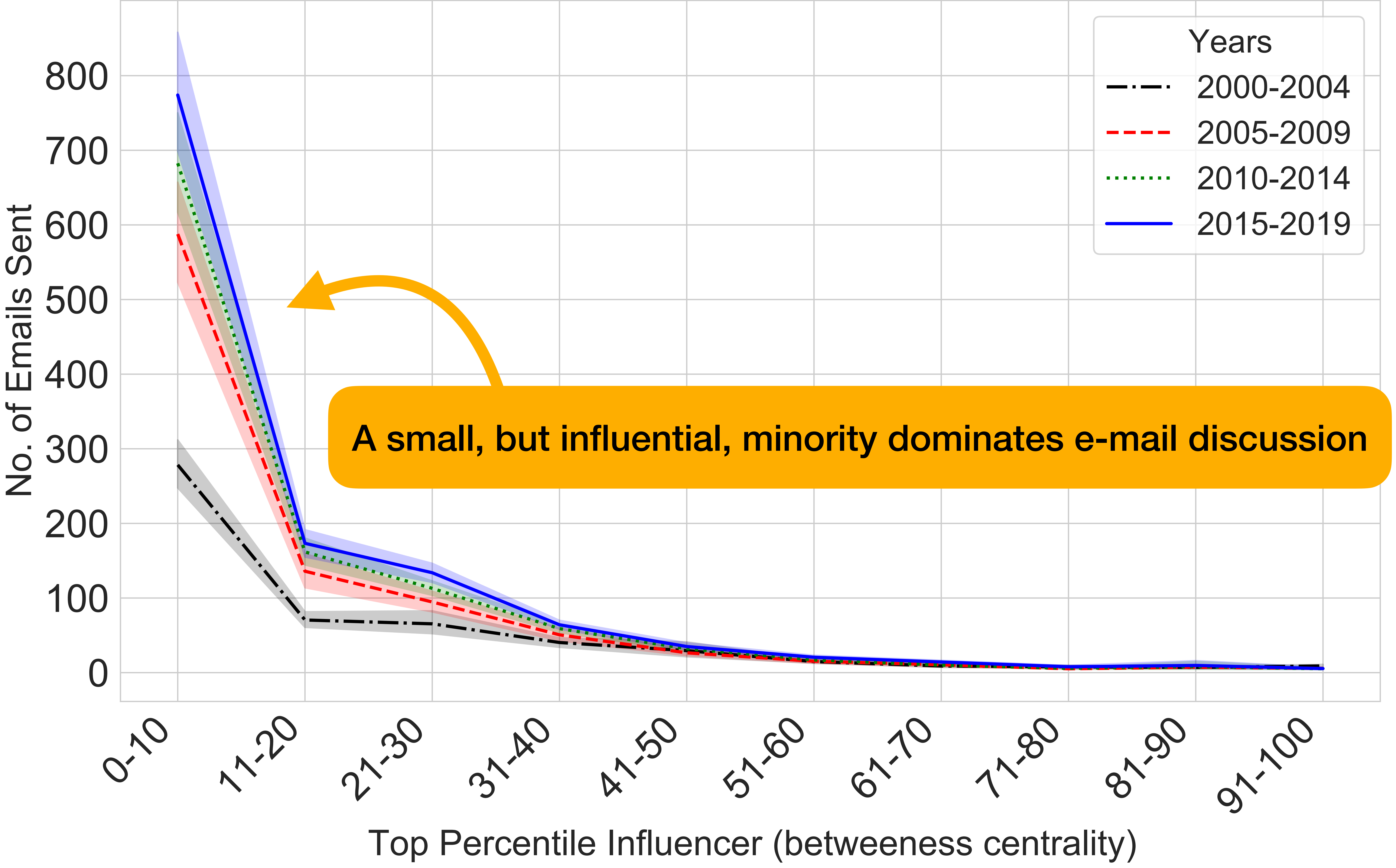

A small, but influential, minority dominates e-mail discussion

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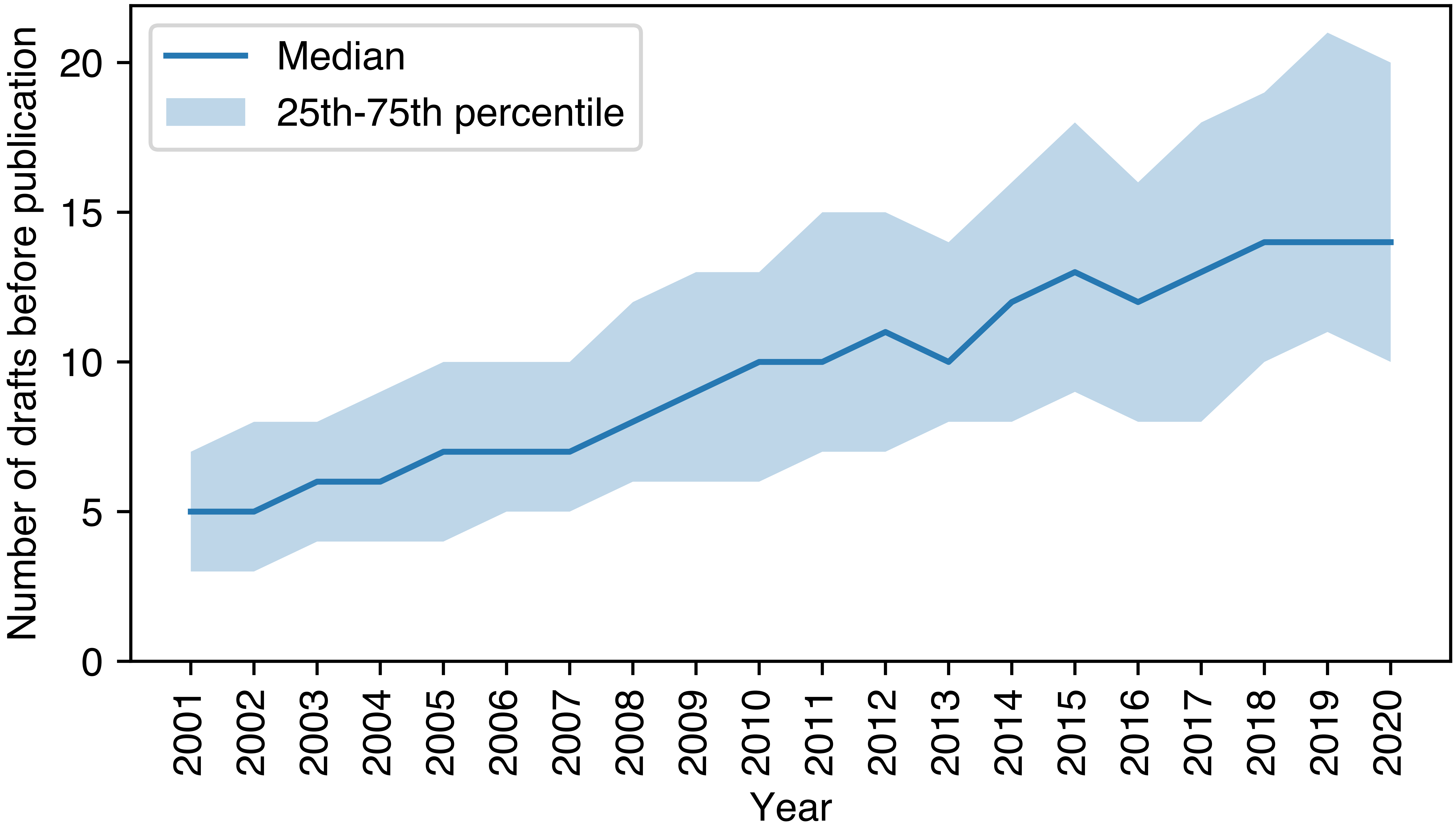

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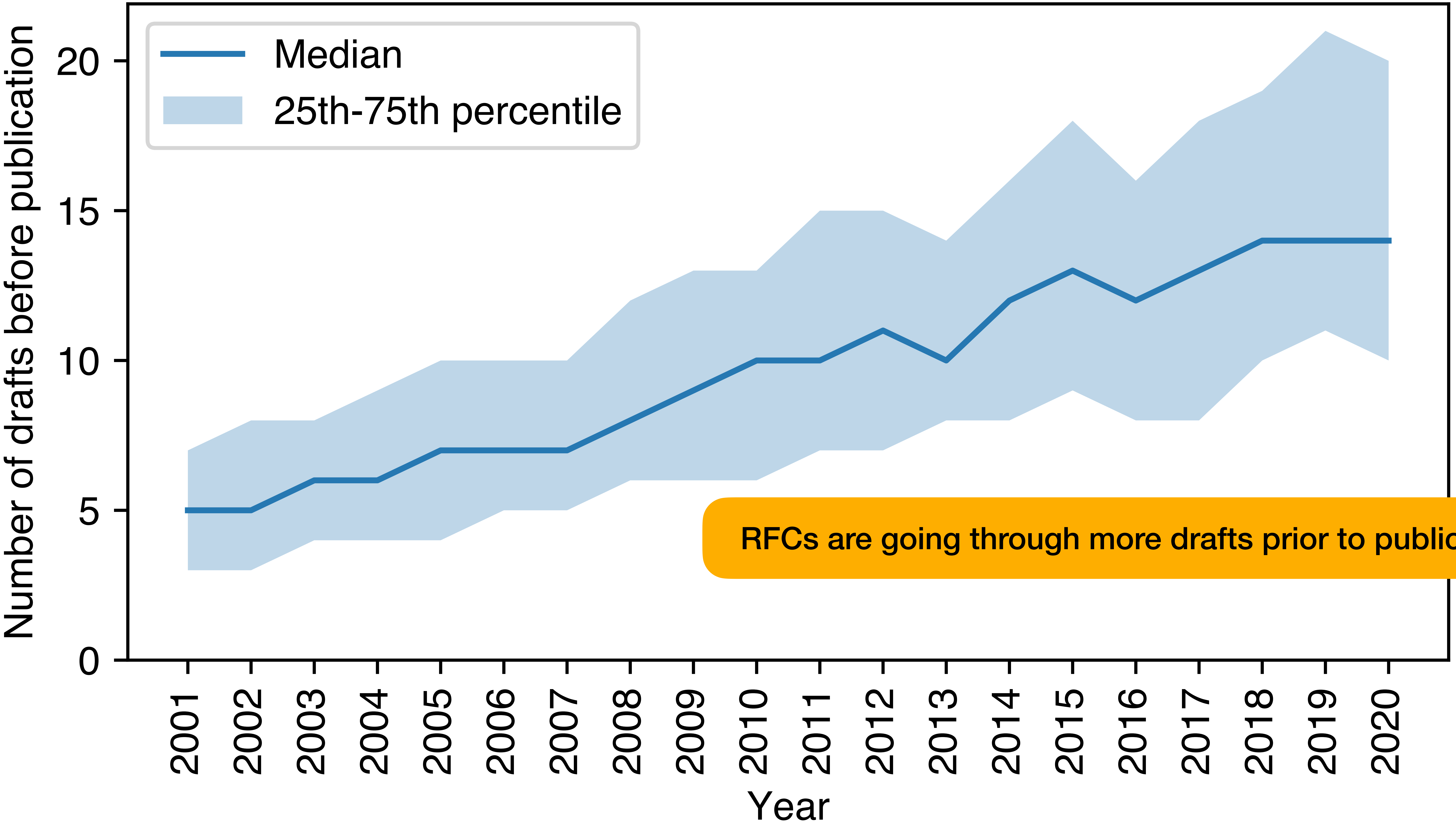

RFCs are going through more drafts prior to publication

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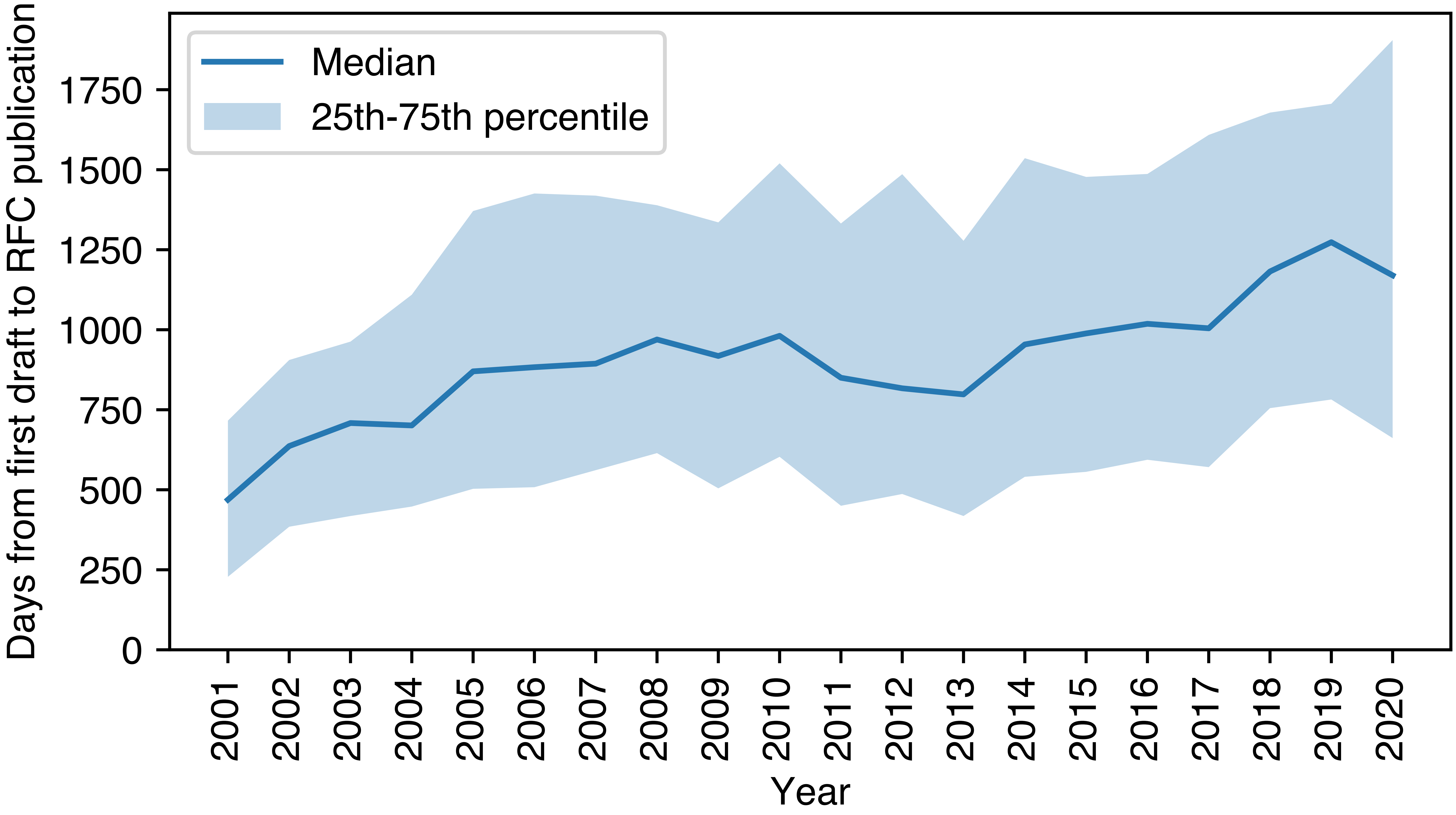

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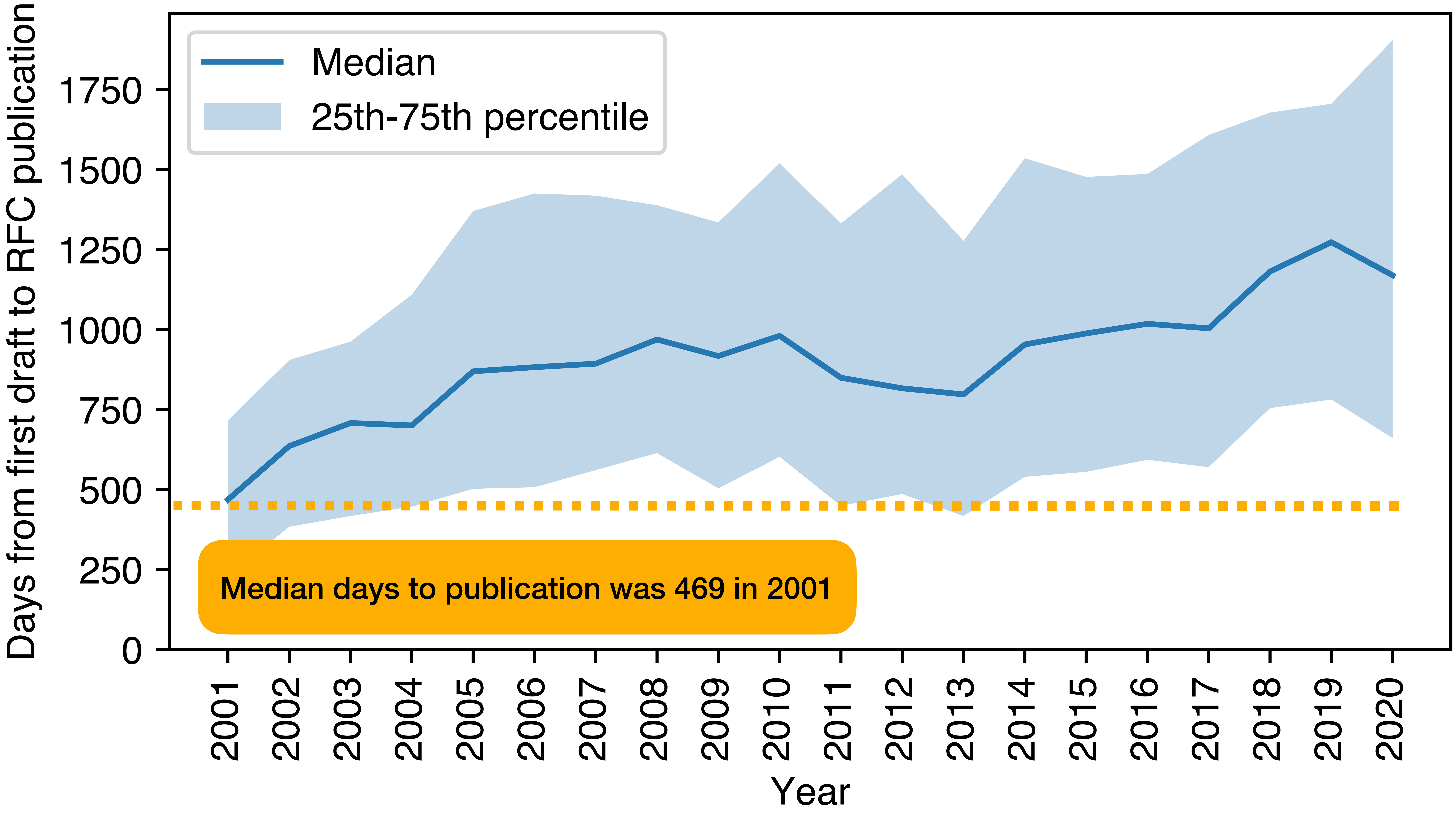

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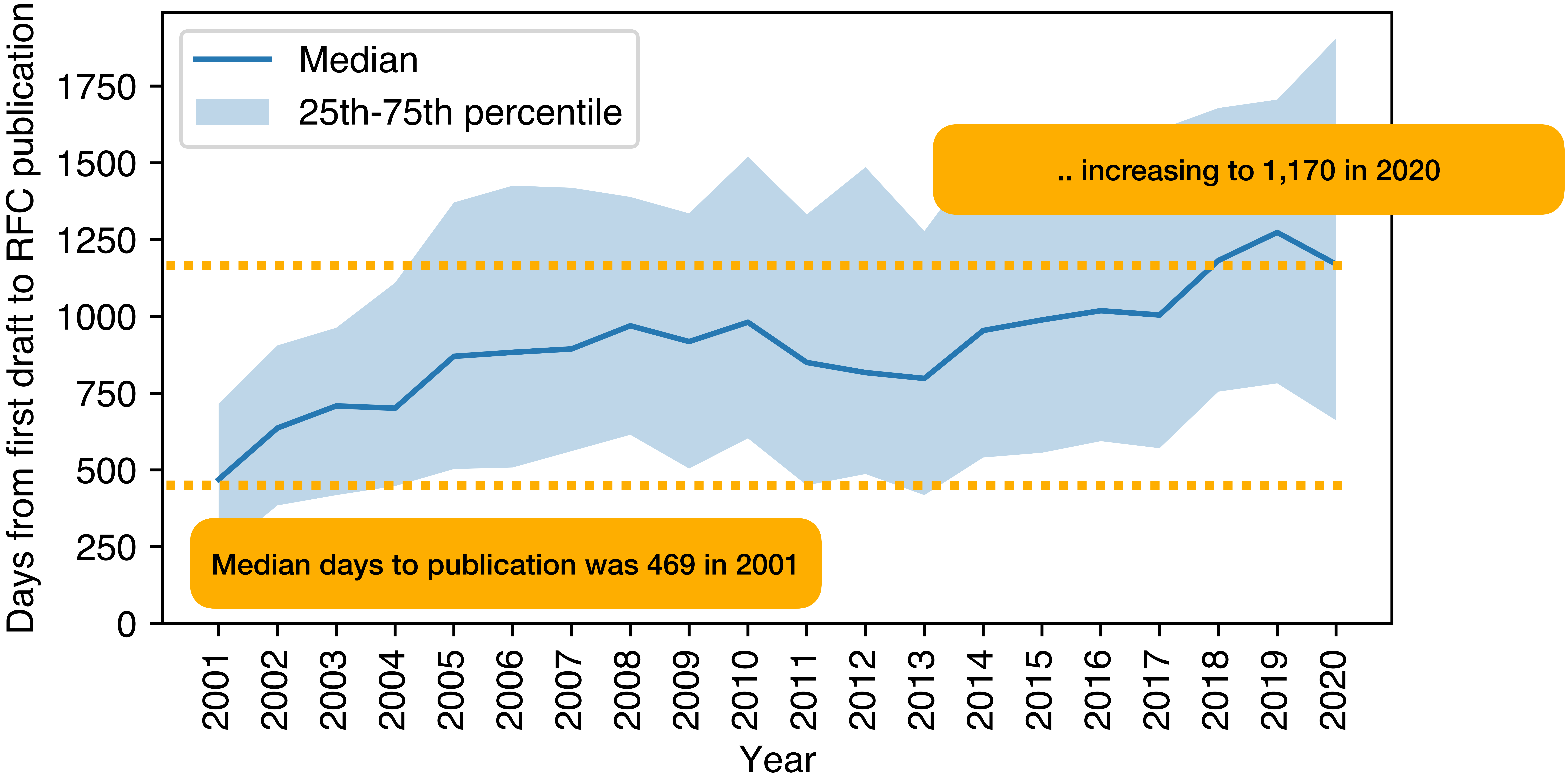

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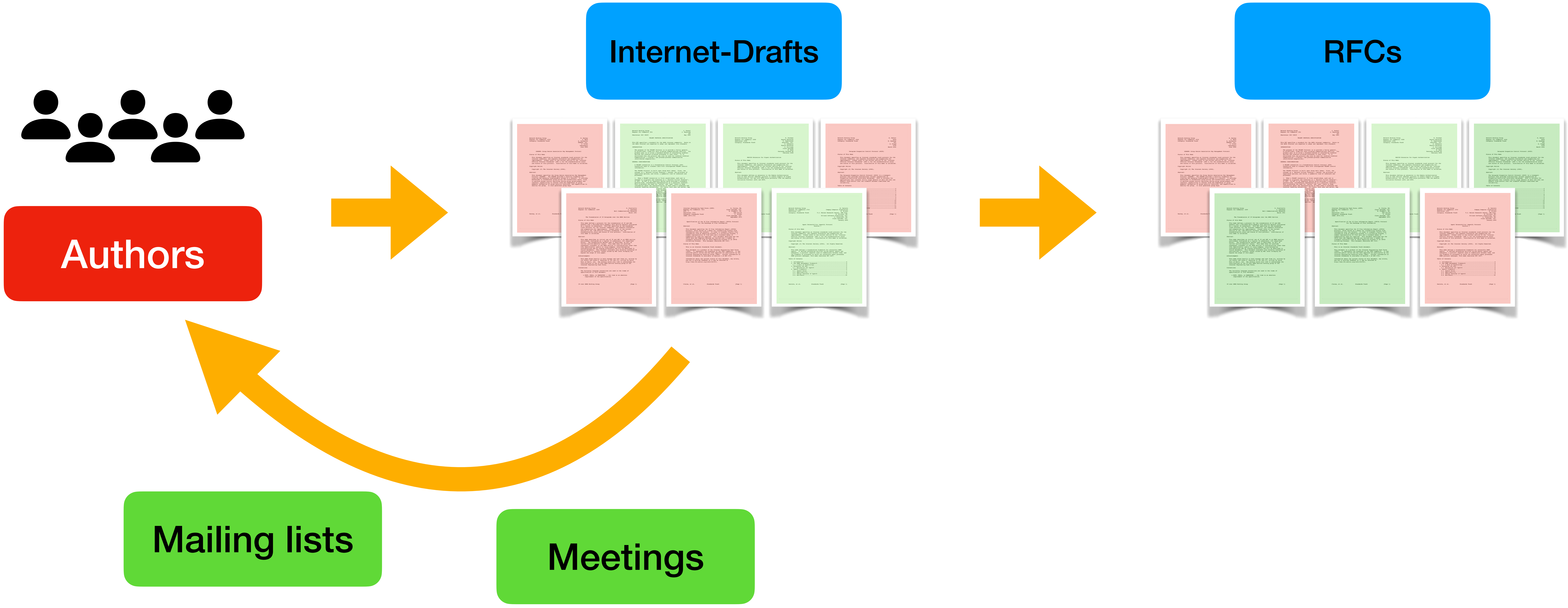

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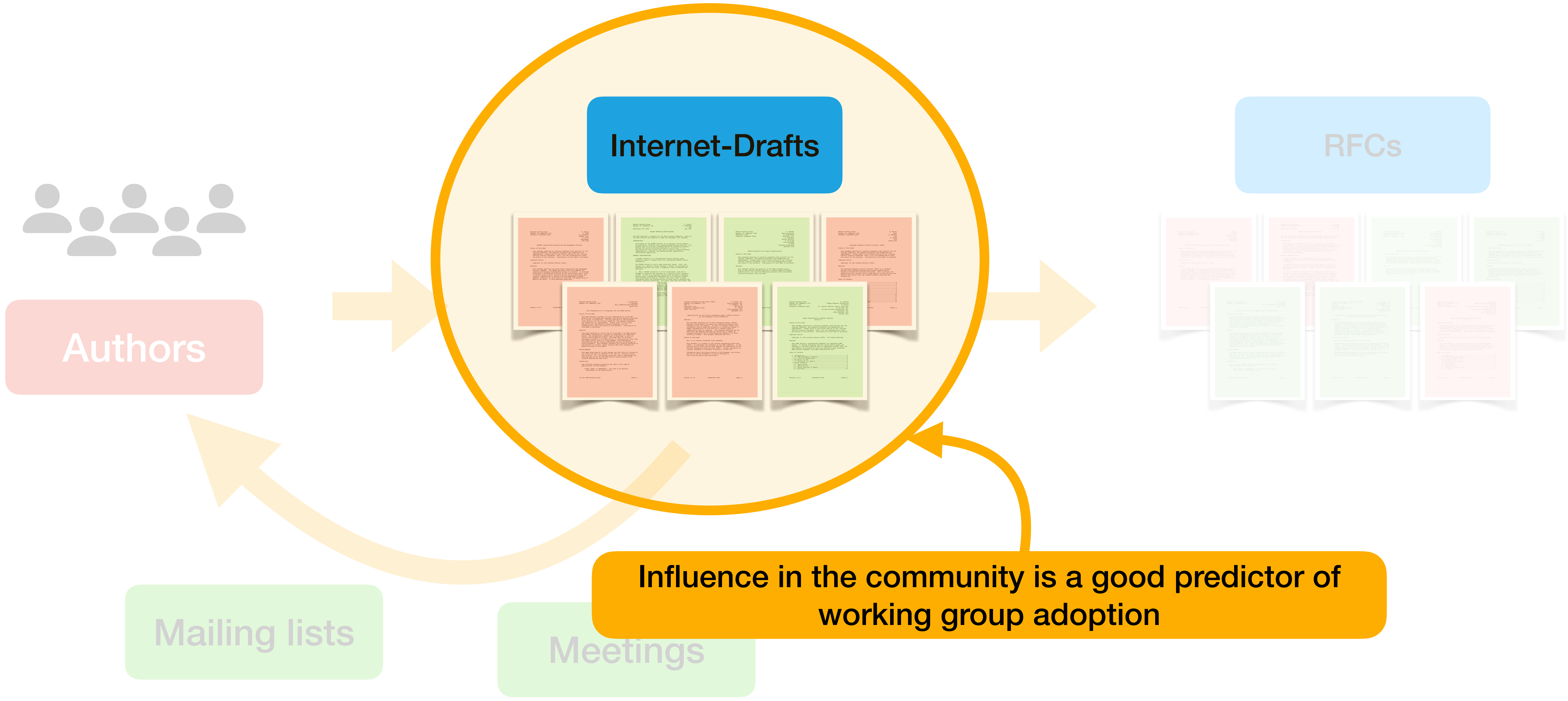
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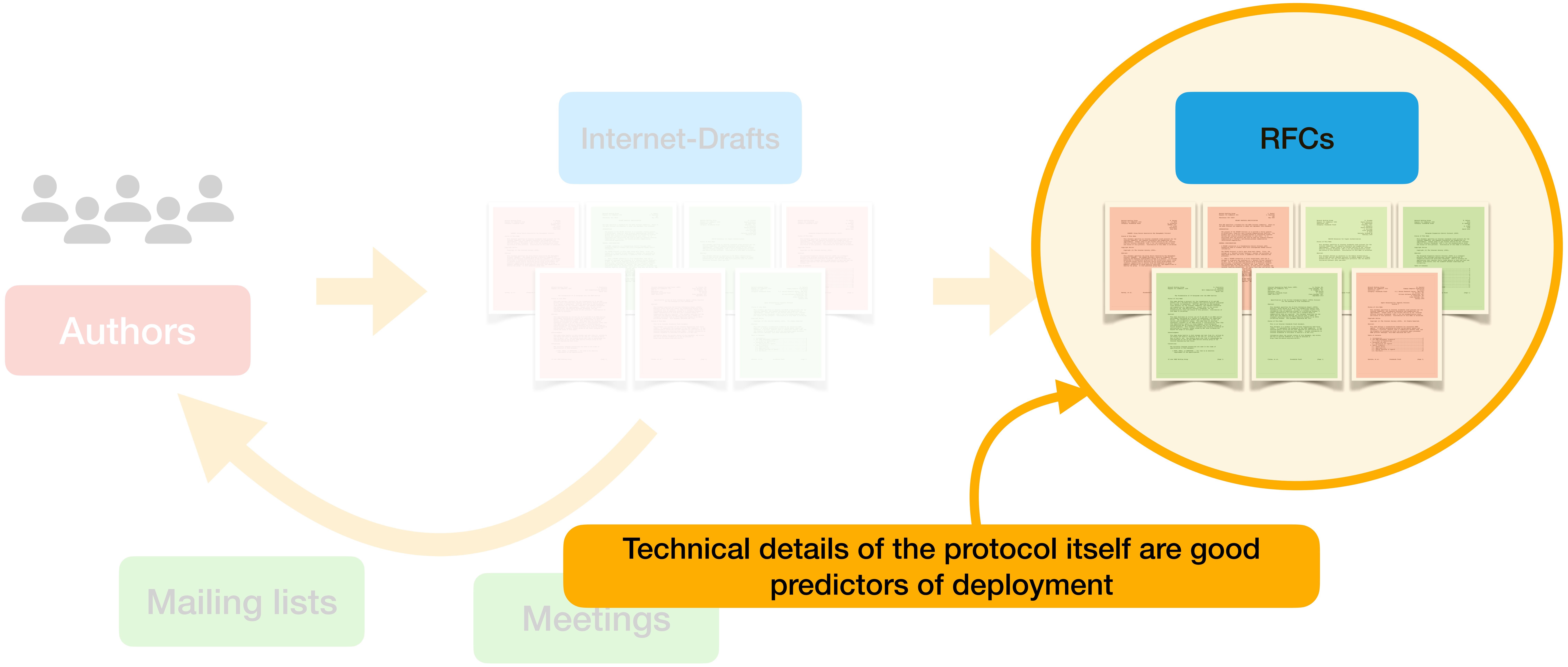
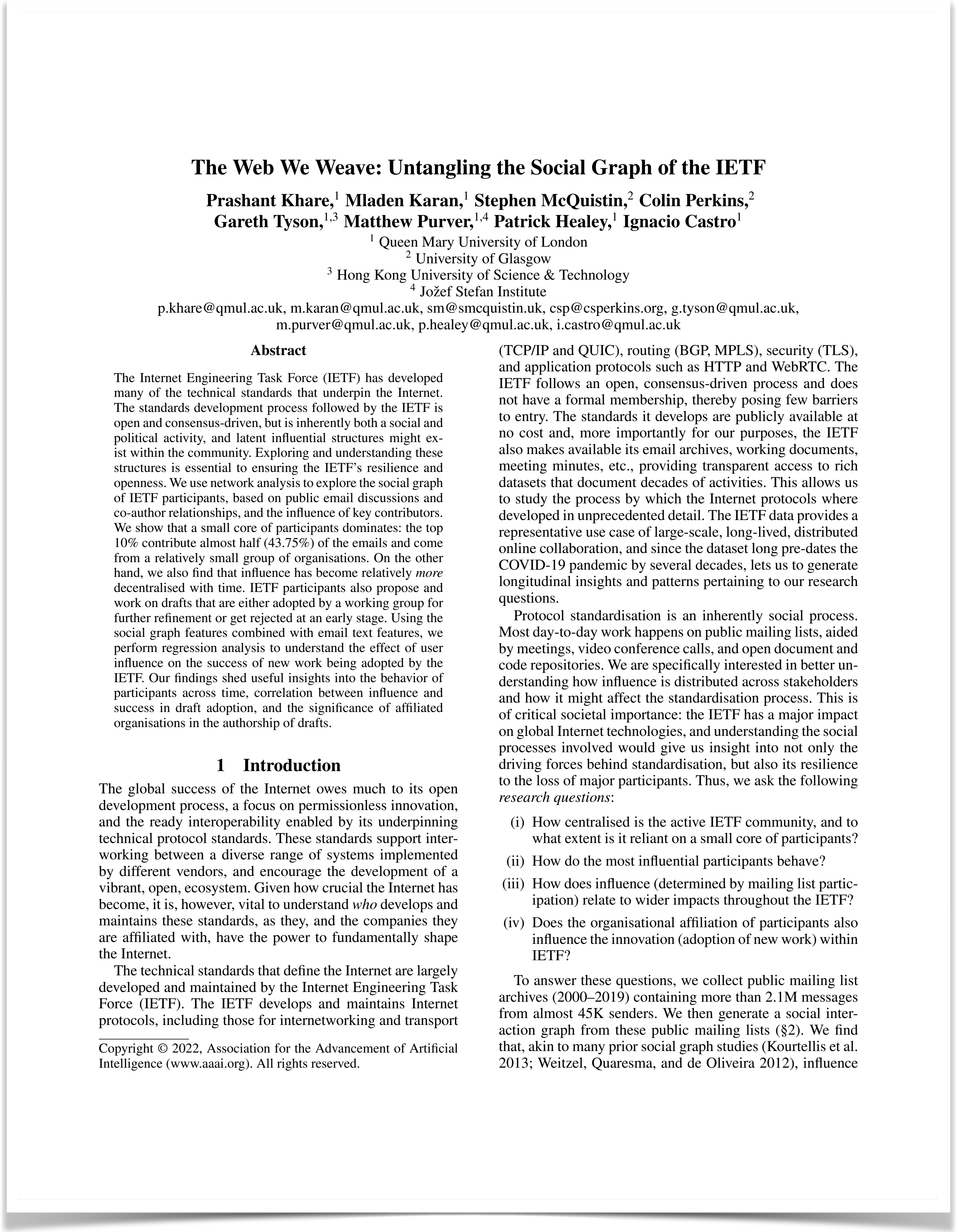
Influence in the community is a good predictor of working group adoption



Nikkhah et al., "*A Statistical Exploration of Protocol Adoption*".
IEEE/ACM Transactions on Networking. DOI: 10.1109/TNET.2017.2711642



Characterising the IETF Through the Lens of RFC Deployment

McQuistin et al.
ACM Internet Measurement Conference (IMC) 2021
https://doi.org/10.1145/3487552.3487821

The Web We Weave: Untangling the Social Graph of the IETF

Khare et al.
International AAAI Conference on Web and Social Media (ICWSM) 2022
https://ojs.aaai.org/index.php/ICWSM/article/view/19310

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