IPv6 Developments in the RIPE NCC Service Region

Chris Buckridge, RIPE NCC

chrisb@ripe.net

Tuesday, 8 December 2009

Outline

- ## About RIPE and the RIPE NCC

- ## What We Know: IPv4 and IPv6

- ## European Commission IPv6 Deployment Monitoring Survey

- ## Engaging the Community

  - ### IPv6 Act Now

  - ### RIPE NCC and the RIPE Community

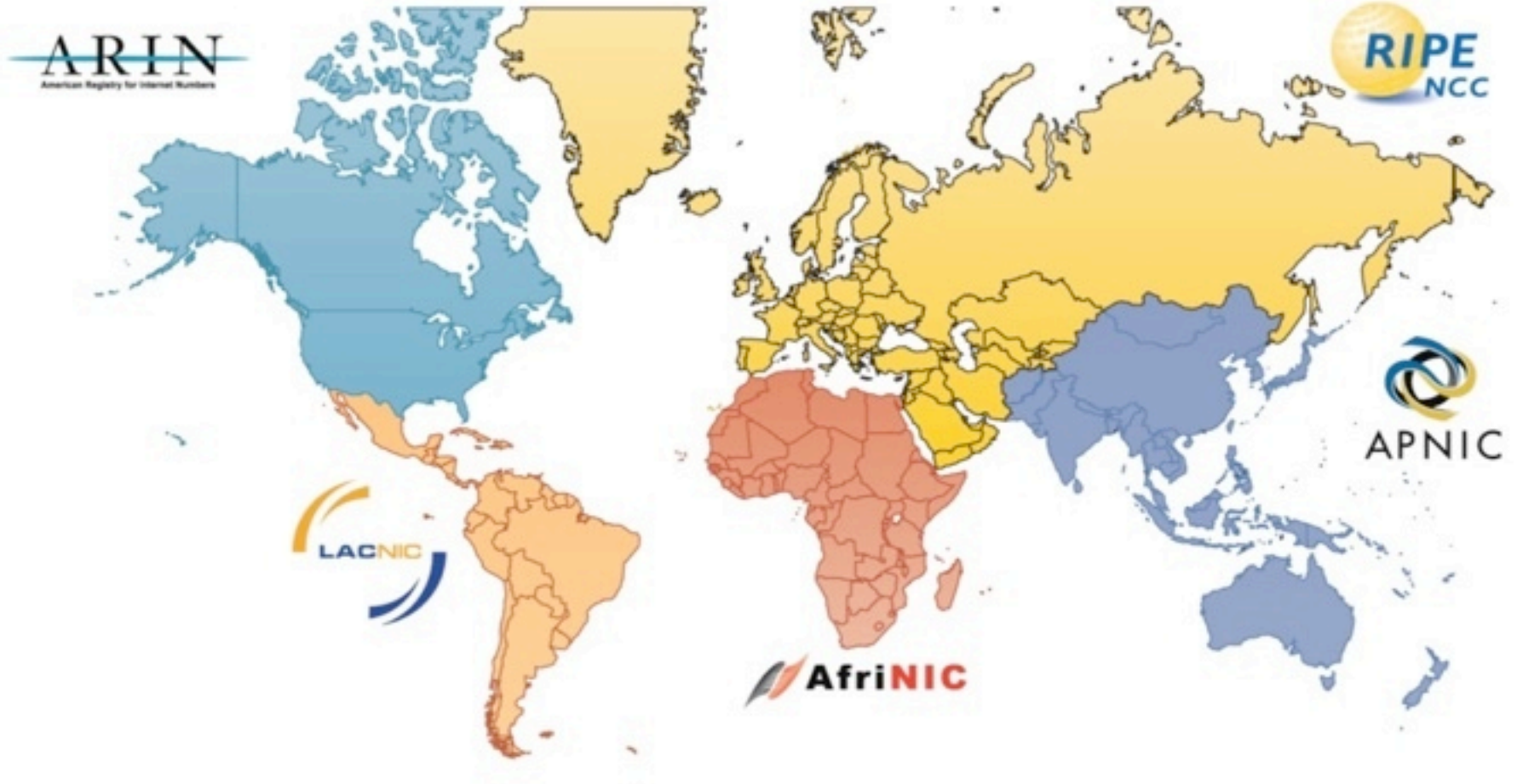 - ### Other Fora

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RIPE NCC

- Since 1992 in Amsterdam

- Not for profit association

- One of five Regional Internet Registries (RIRs)

- 6500+ members in 75 countries
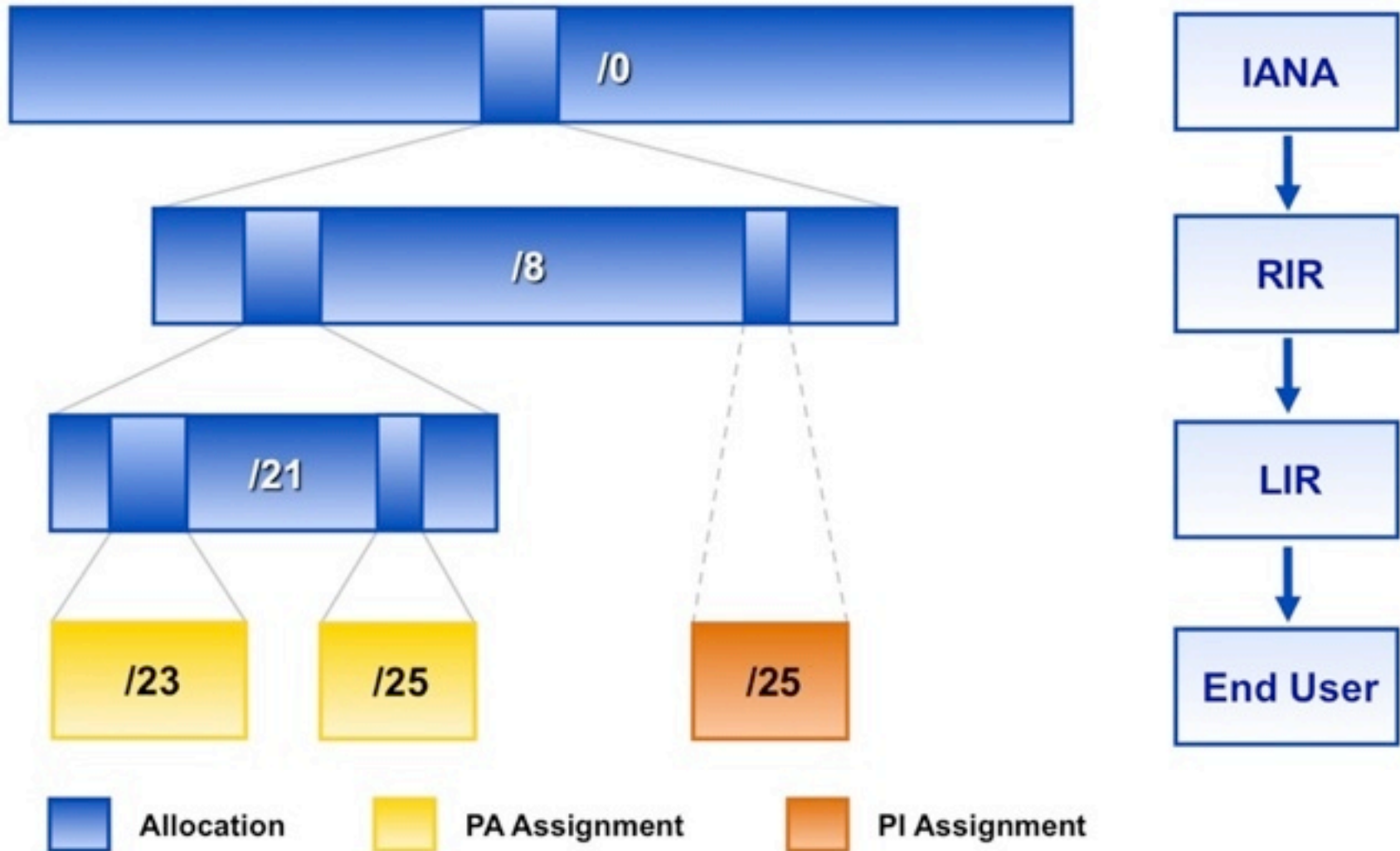
- Independent

- Does not make policies

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The Regional Internet Registries

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The Regional Internet Registries

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IP Address Distribution

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RIPE NCC Services

Member services

- Distributing resources
  - IPv4
  - IPv6
  - AS numbers
- Training courses
  - LIR
  - Routing Registry
  - DNS for LIRs
  - IPv6

Public services

- RIPE Database
- Reverse DNS
- ENUM (e164.arpa)
- K-root name server
- NetSense
- E-learning
- RIPE Labs
- IPv6 Act Now

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- Policy forum
  - Not a legal entity
  - No official membership
  - Open to everyone

- One RIPE Chairman and Working Group Chairs

- No voting

  - "**consensus**" is the magic word

- Work happens at meetings and on mailing lists by:

  - Working Groups
  - Task forces

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RIPE Meetings

- Biannually

  - Somewhere in the RIPE NCC service region

- Plenary discussions

  - Wide ranging topics

- Working Group meetings

  - More specific focus

- Policy discussions

- Exchange of views and information
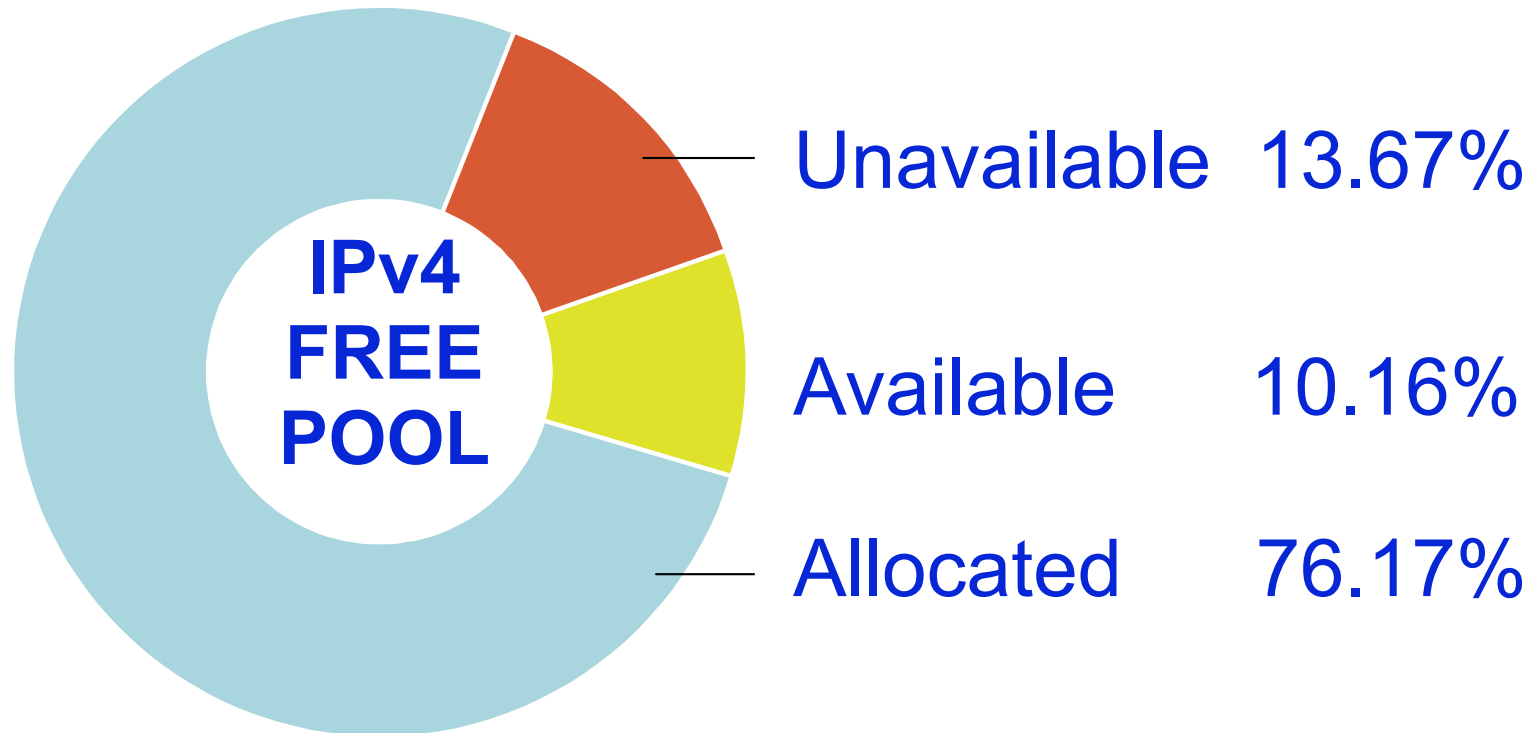
- Interaction with other Internet stakeholders

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RIPE Policy Development Process

- ## Open
  - Anyone can participate
  - Policy meetings
  - Mailing lists

- ## Transparent
  - List discussions archived publicly
  - Meetings transcribed

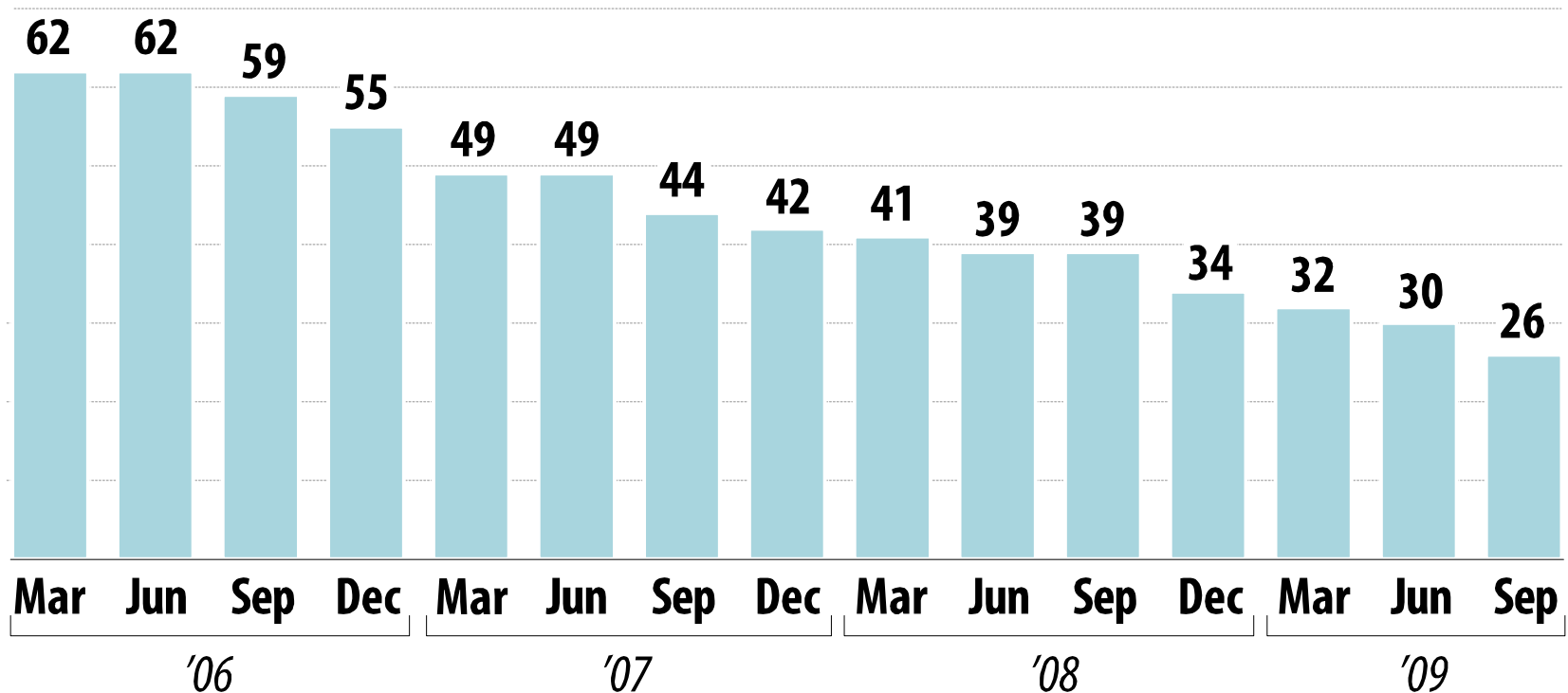- ## Developed bottom-up
  - By the Internet community

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What We Know About

IPv4 Exhaustion

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Available IPv4 /8s from IANA *

IPv4 FREE POOL

Unavailable 13.67%

Available 10.16%

Allocated 76.17%

* as of September 2009

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Remaining IPv4 /8s from IANA

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IPv4 Address Pool Projections

Source: http://www.potaroo.net/tools/ipv4/
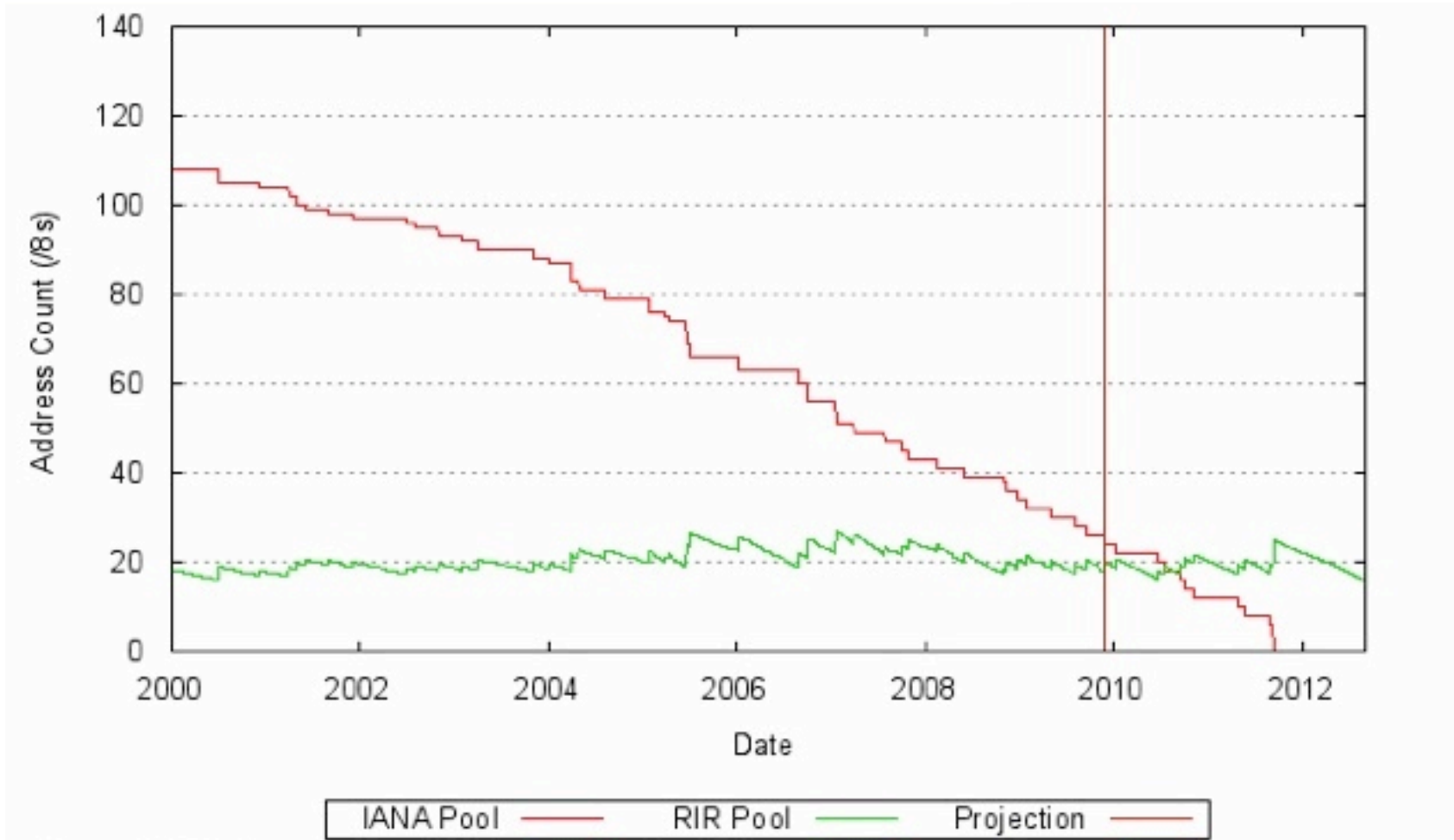
What We Know

- RIRs are consistently allocating around 10 /8s each year worldwide

- There were 26 /8s remaining at the IANA as of 30 September 2009

- Projected exhaustion of unallocated IPv4 pool:

  September 2011

- IPv6 adoption is the only way to ensure continued Internet growth

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EC IPv6 Deployment Monitoring Survey

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EC IPv6 Deployment Monitoring Survey

- Commissioned by the European Commission

- Developed by GNKS/TNO, in close consultation with RIPE community

- Conducted between 18 June - 10 July 2009

- Questions sent to RIPE community and RIPE NCC member mailing lists

- Respondents:
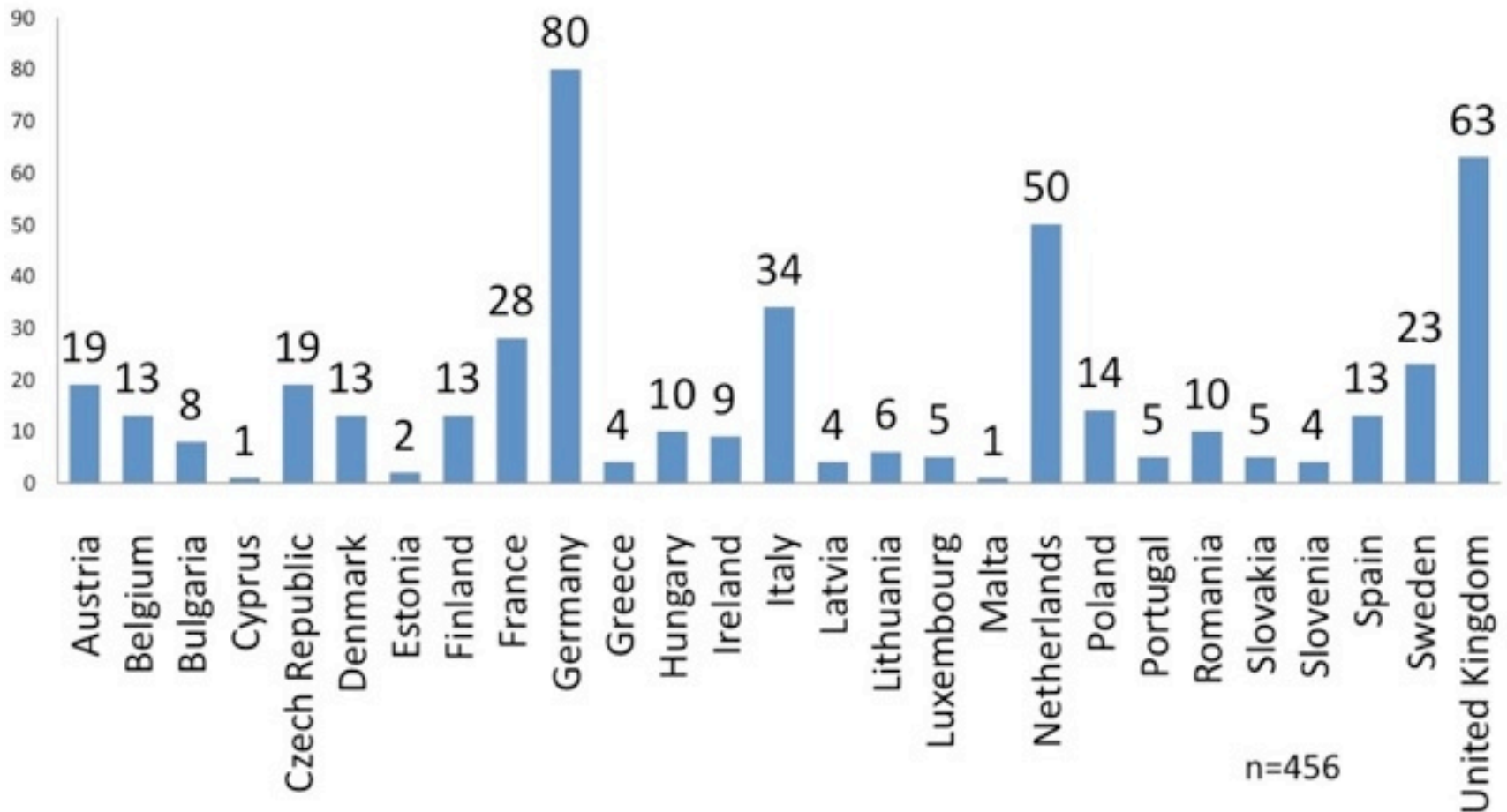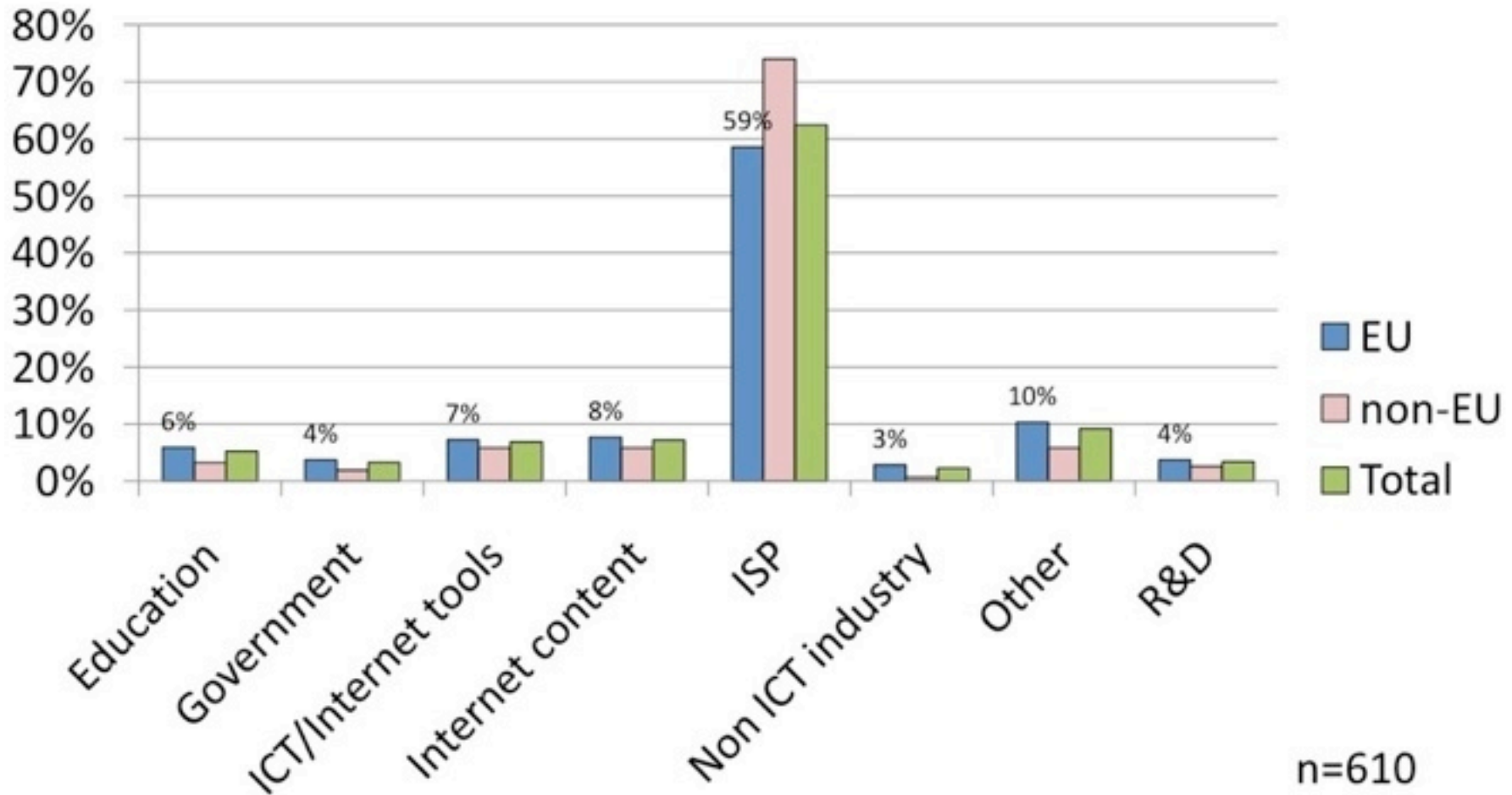   - Total: 610
    - ISP: 380
    - EU: 456

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Respondents by Region

75% — EU 27
2% — Candidate countries
18% — Other European countries
6% — Other countries
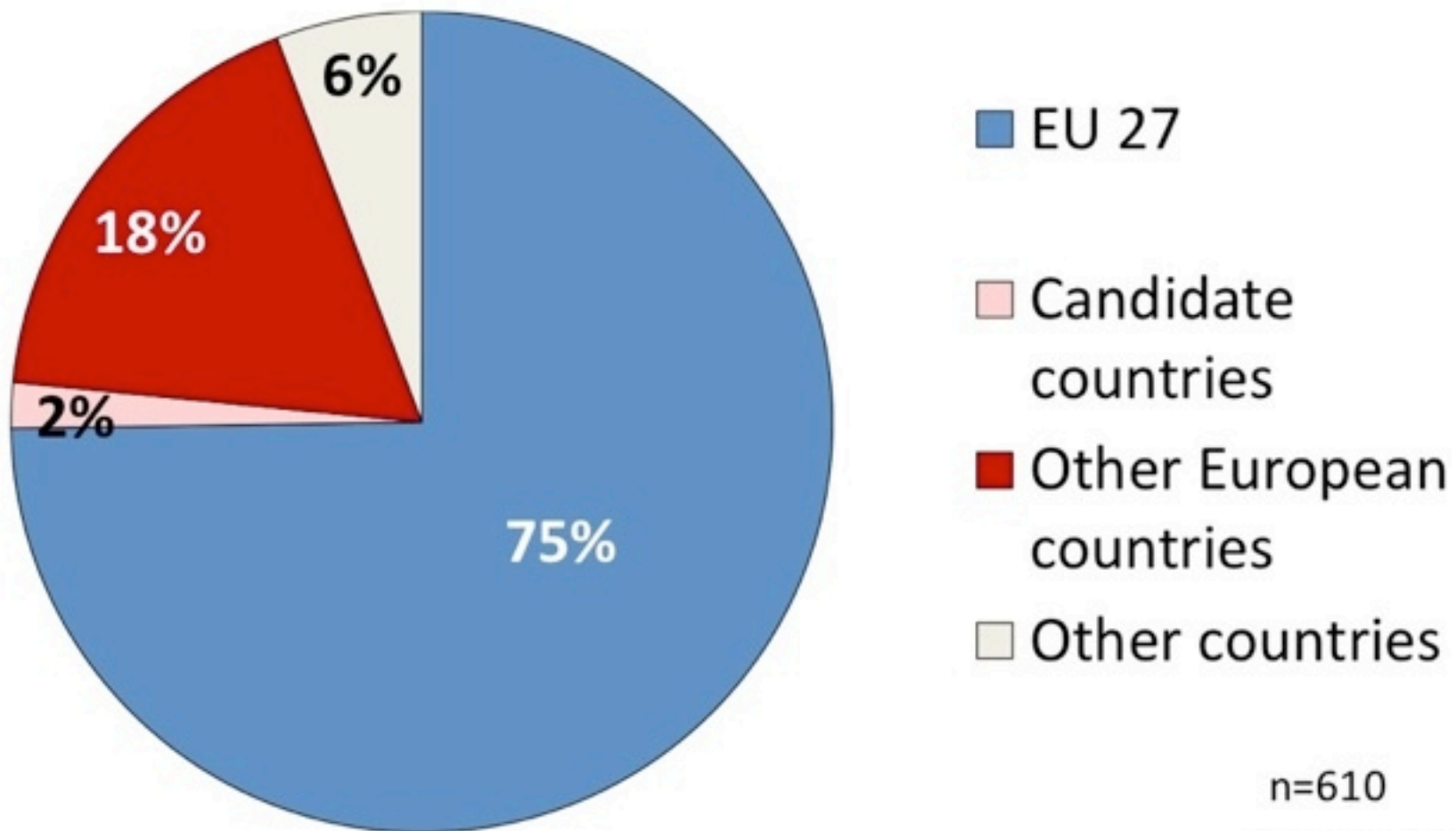
n=610

source: TNO/GNKS 2009

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Respondents per EU Member State

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Respondent Categories

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Organisation Size

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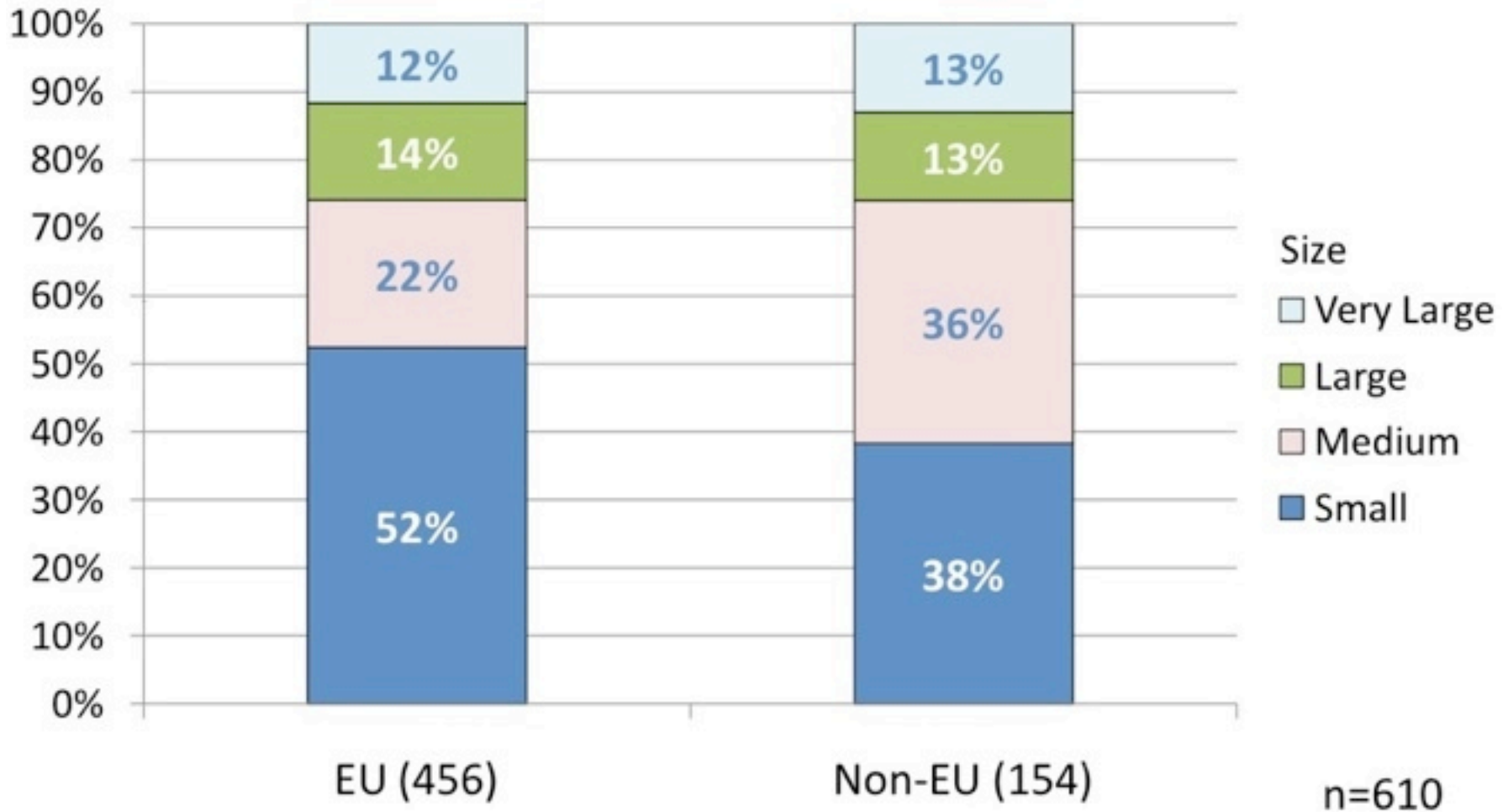
Currently Have an IPv6 Allocation
(Or Currently Considering One)

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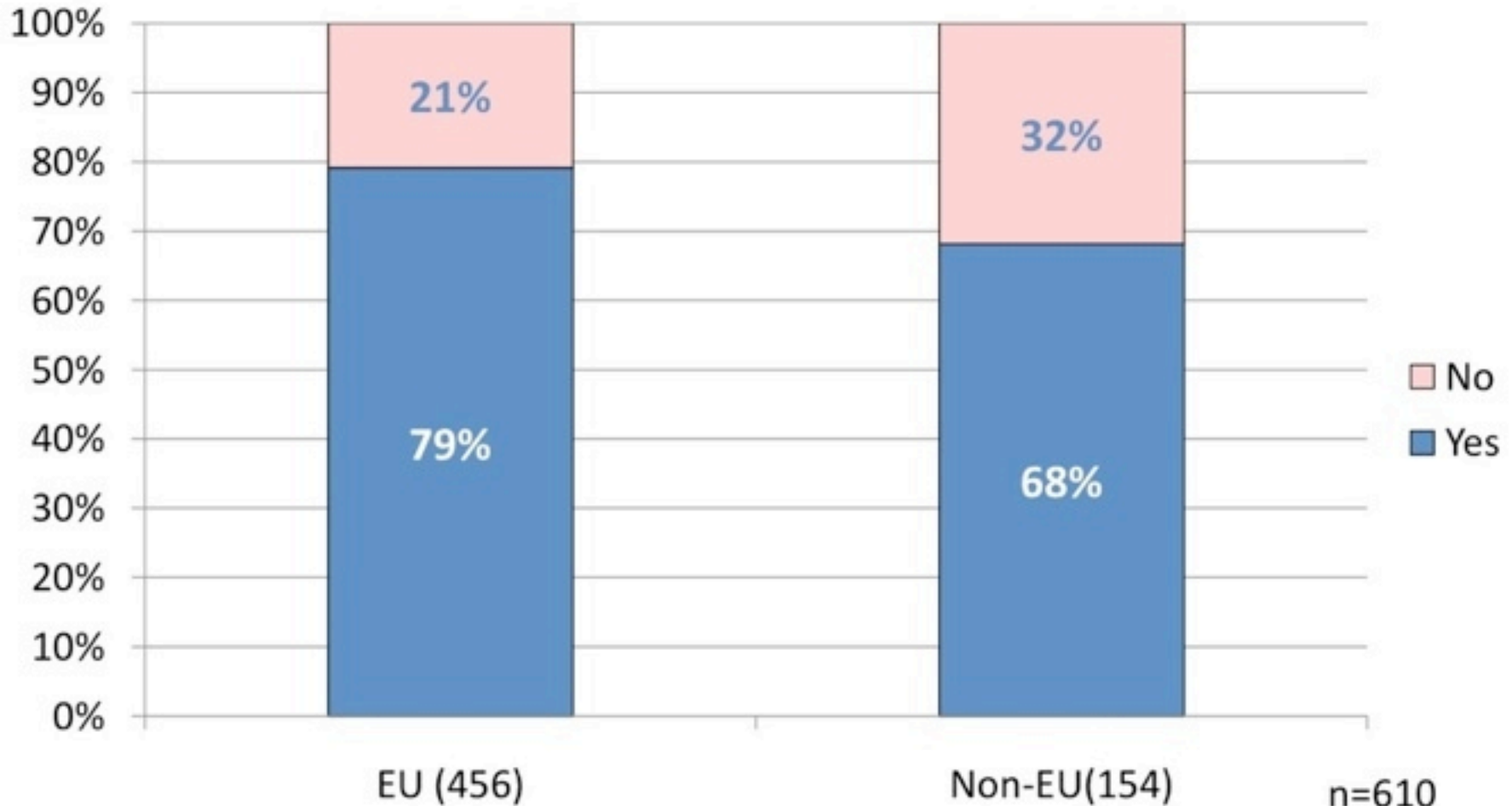
EU Organisations With or Considering an IPv6 Allocation
(By Sector)

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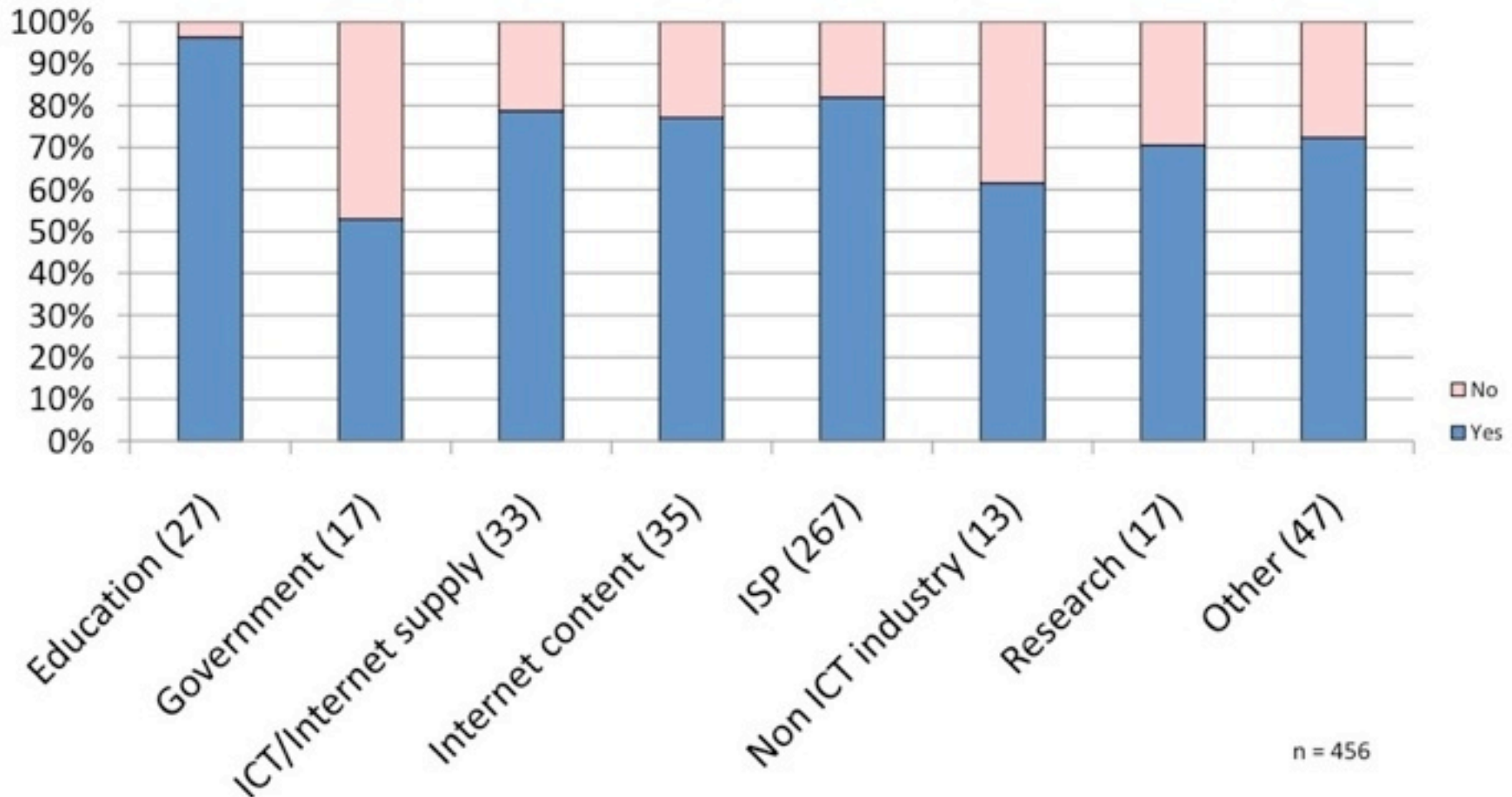
IPv6 Presence (All Respondents)

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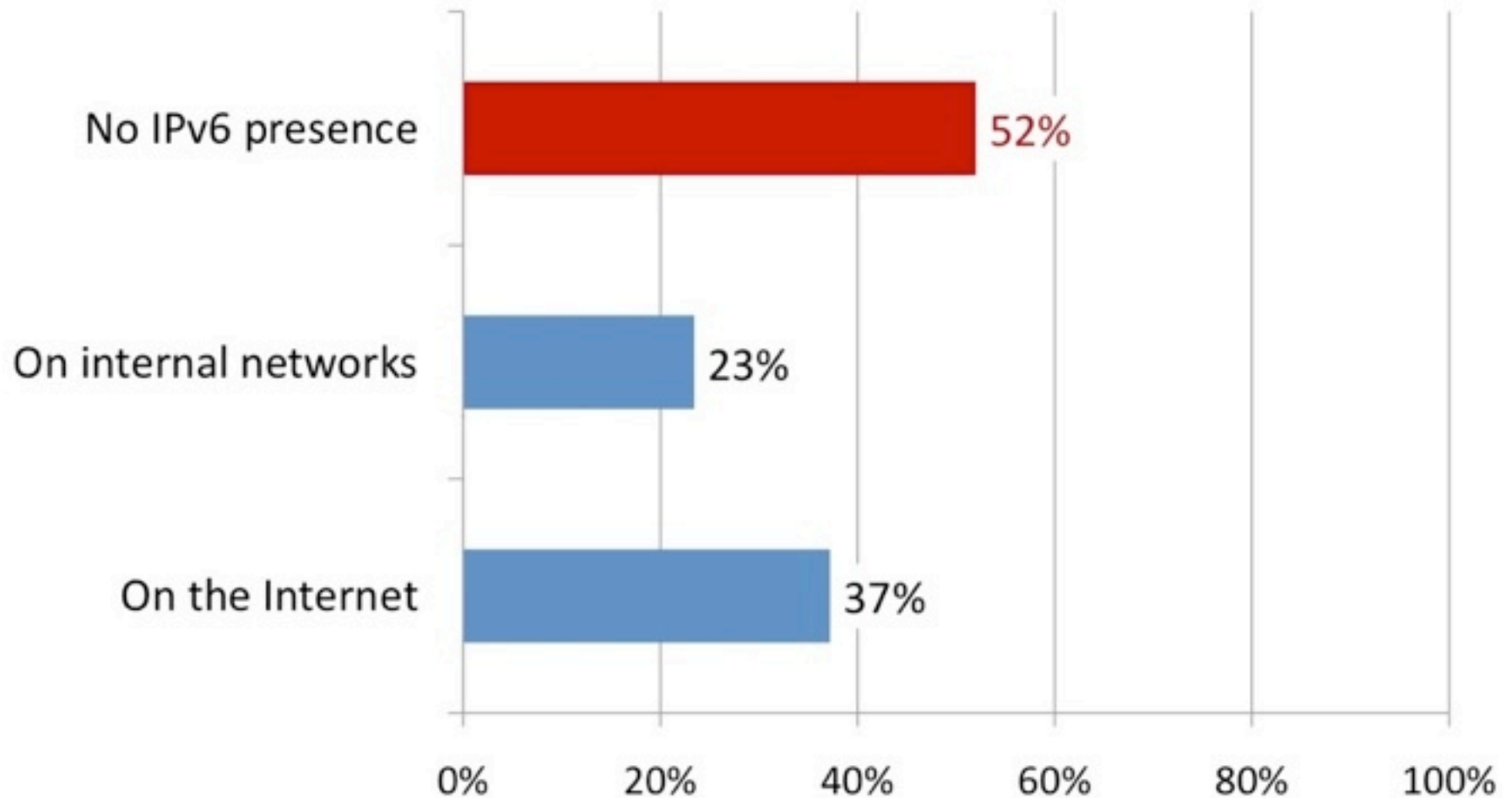
IPv6 vs IPv4 Traffic

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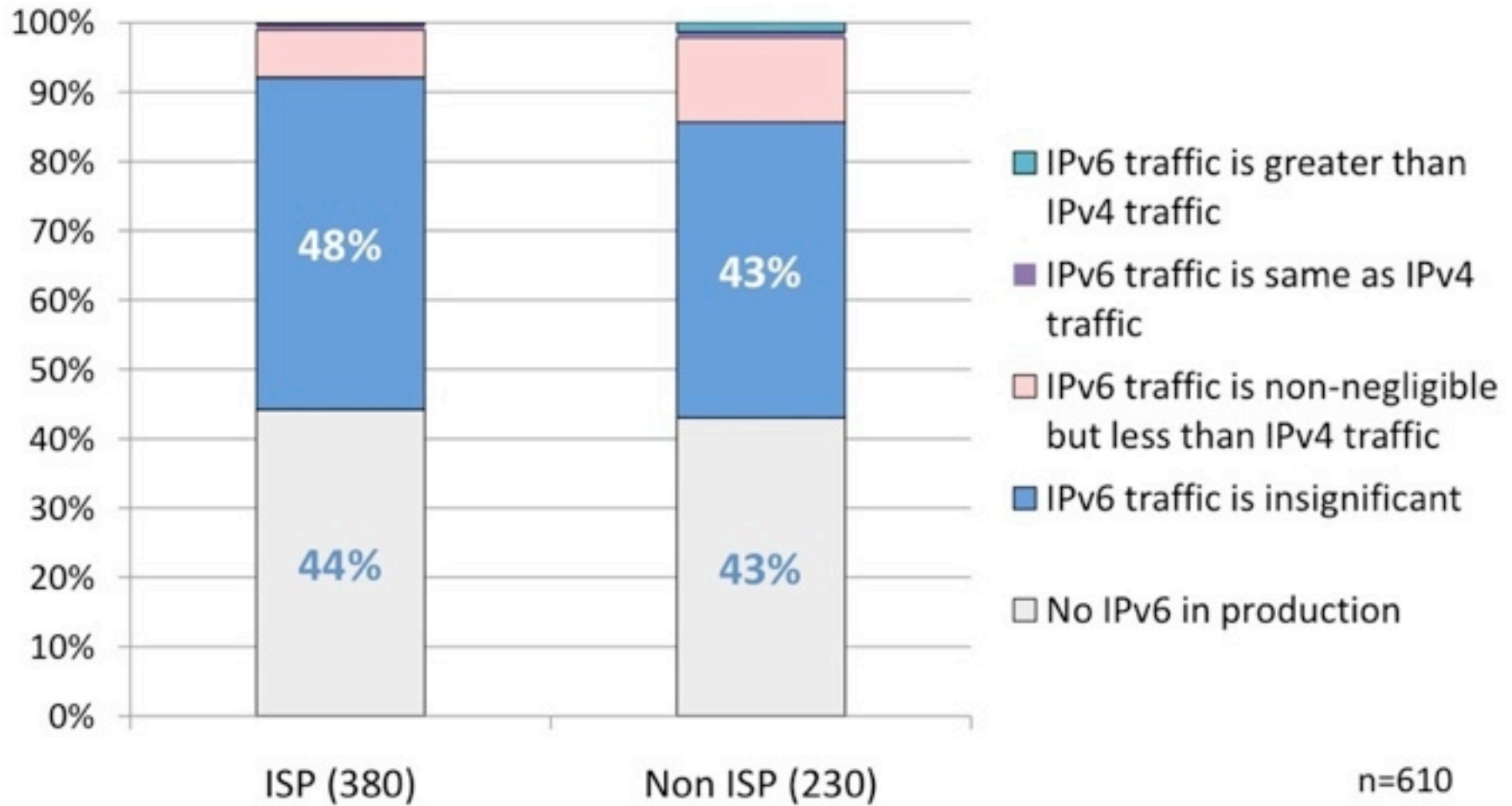
Reasons For Not Considering IPv6

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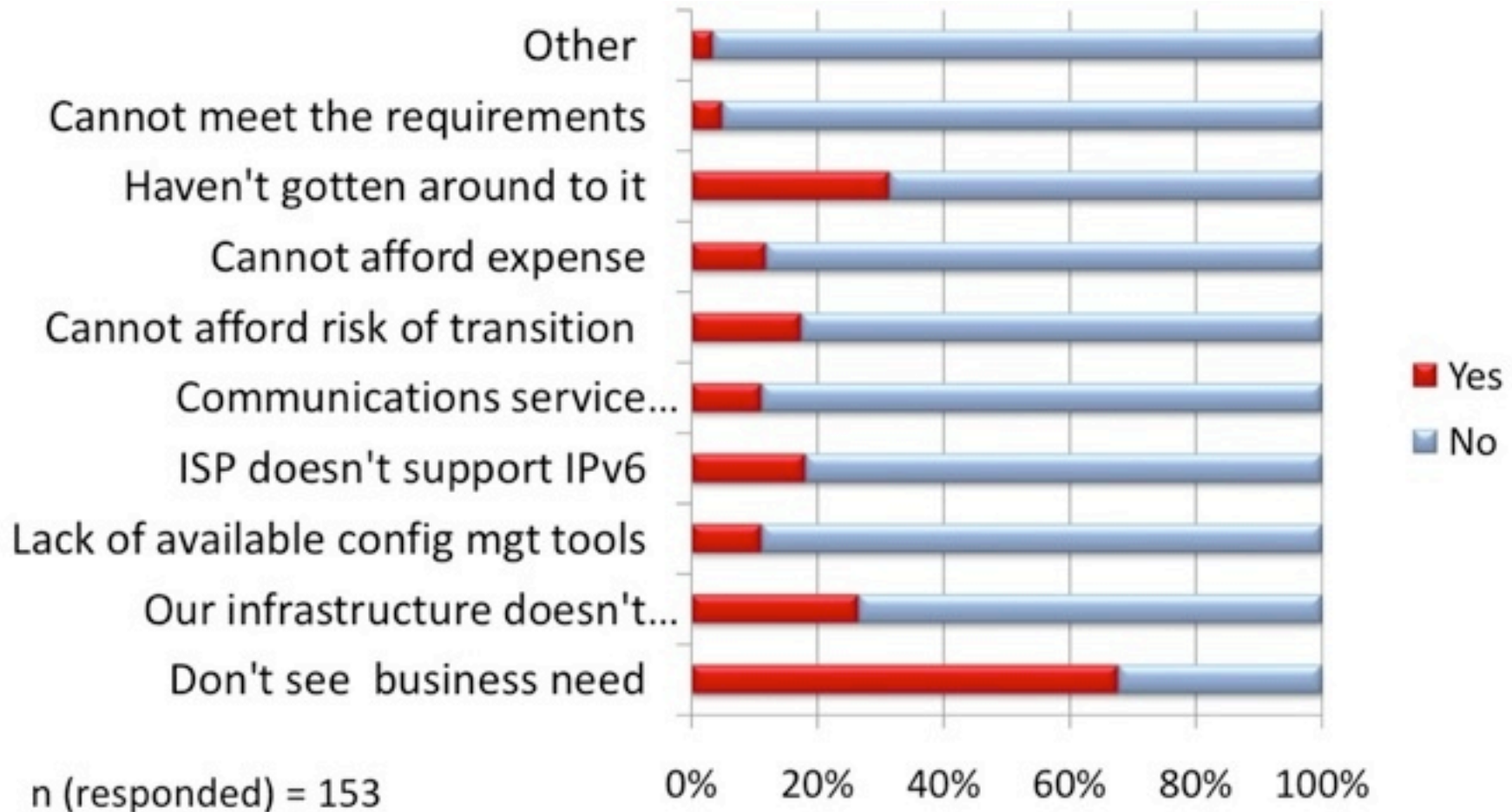
Biggest Problem Experienced in IPv6 Deployment

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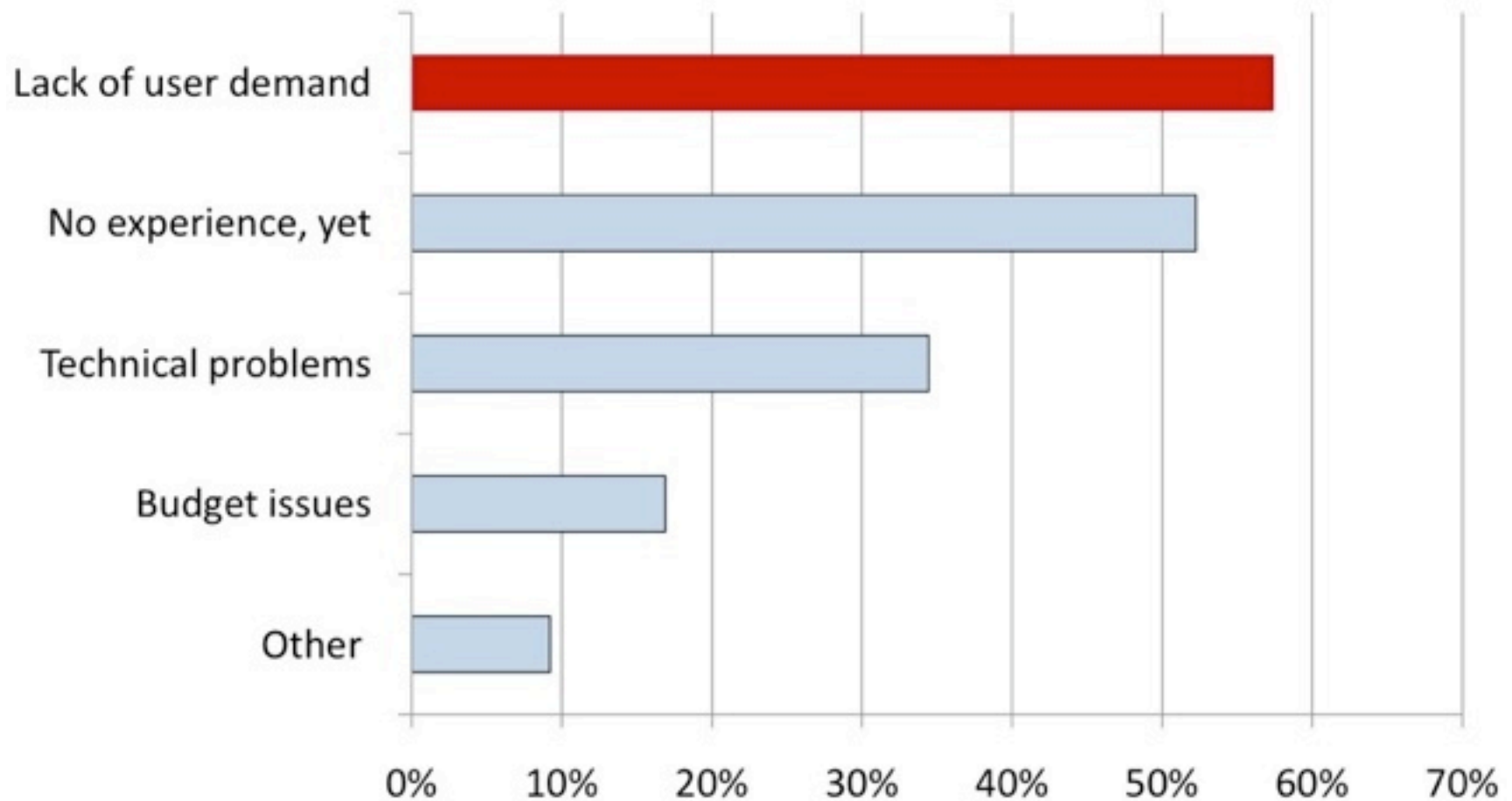
Main Drivers to IPv6 Deployment

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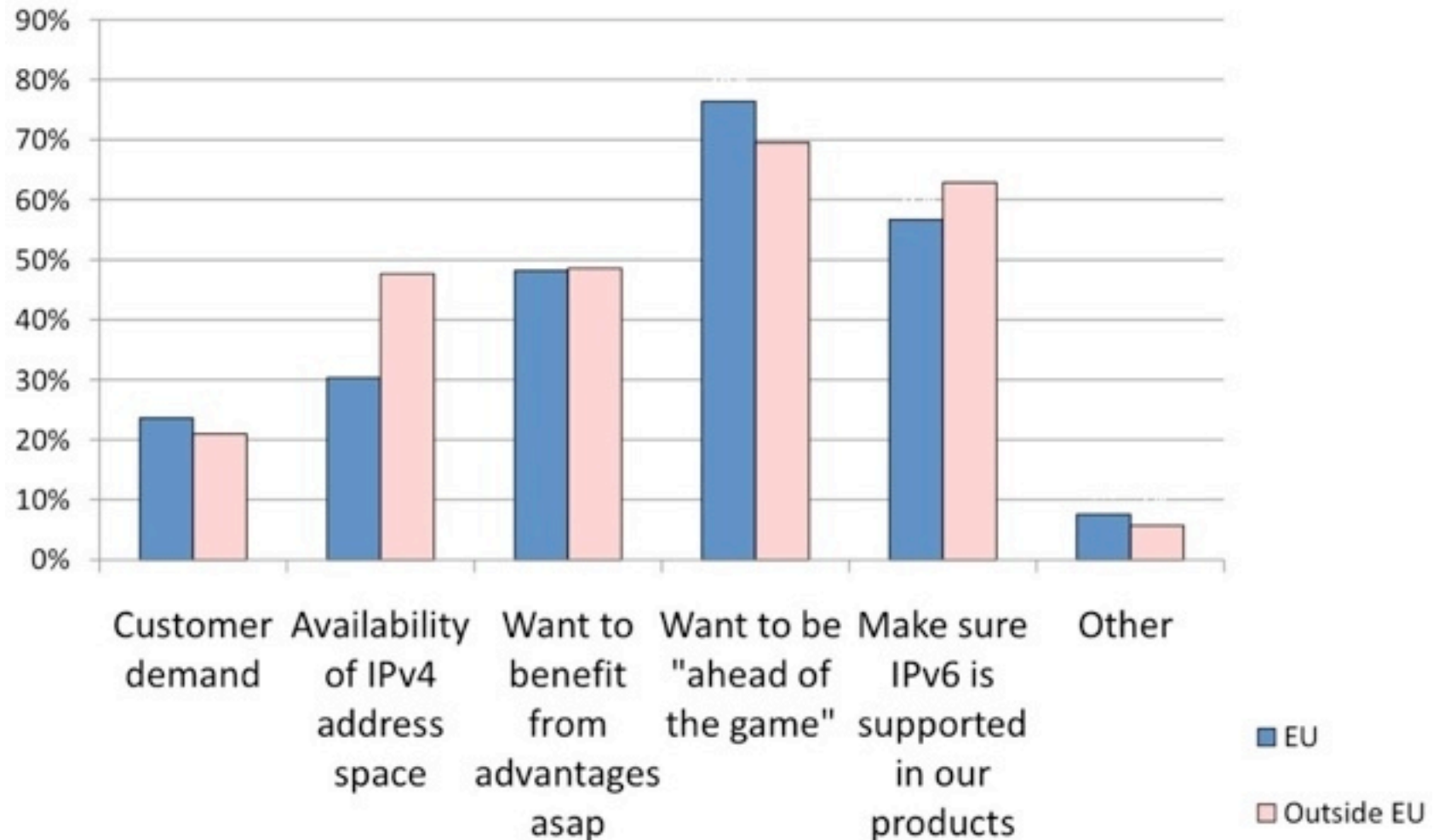
Planning IPv6 Deployment

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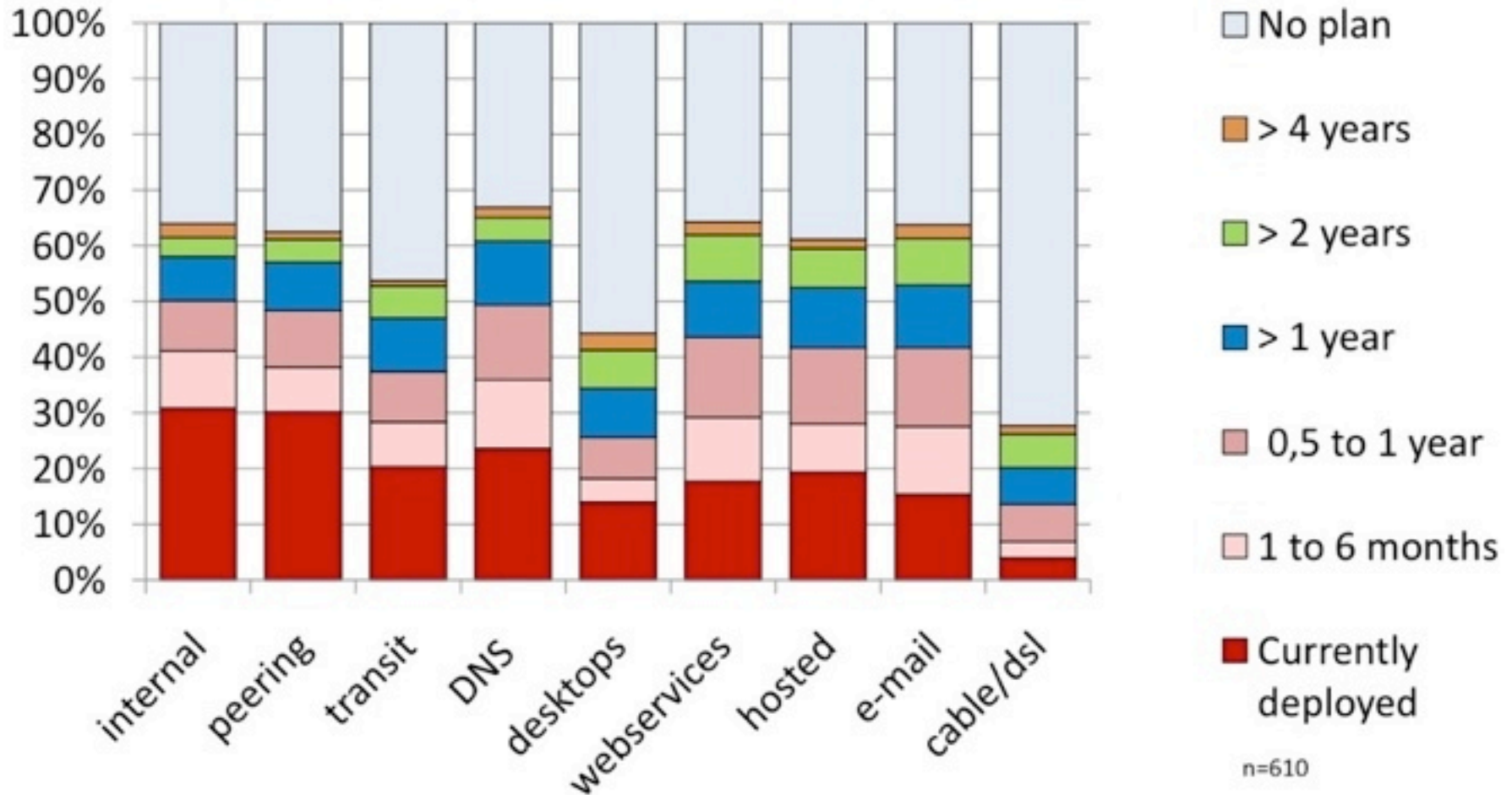
Do You Consider Promoting IPv6 Adoption to Your Customers?

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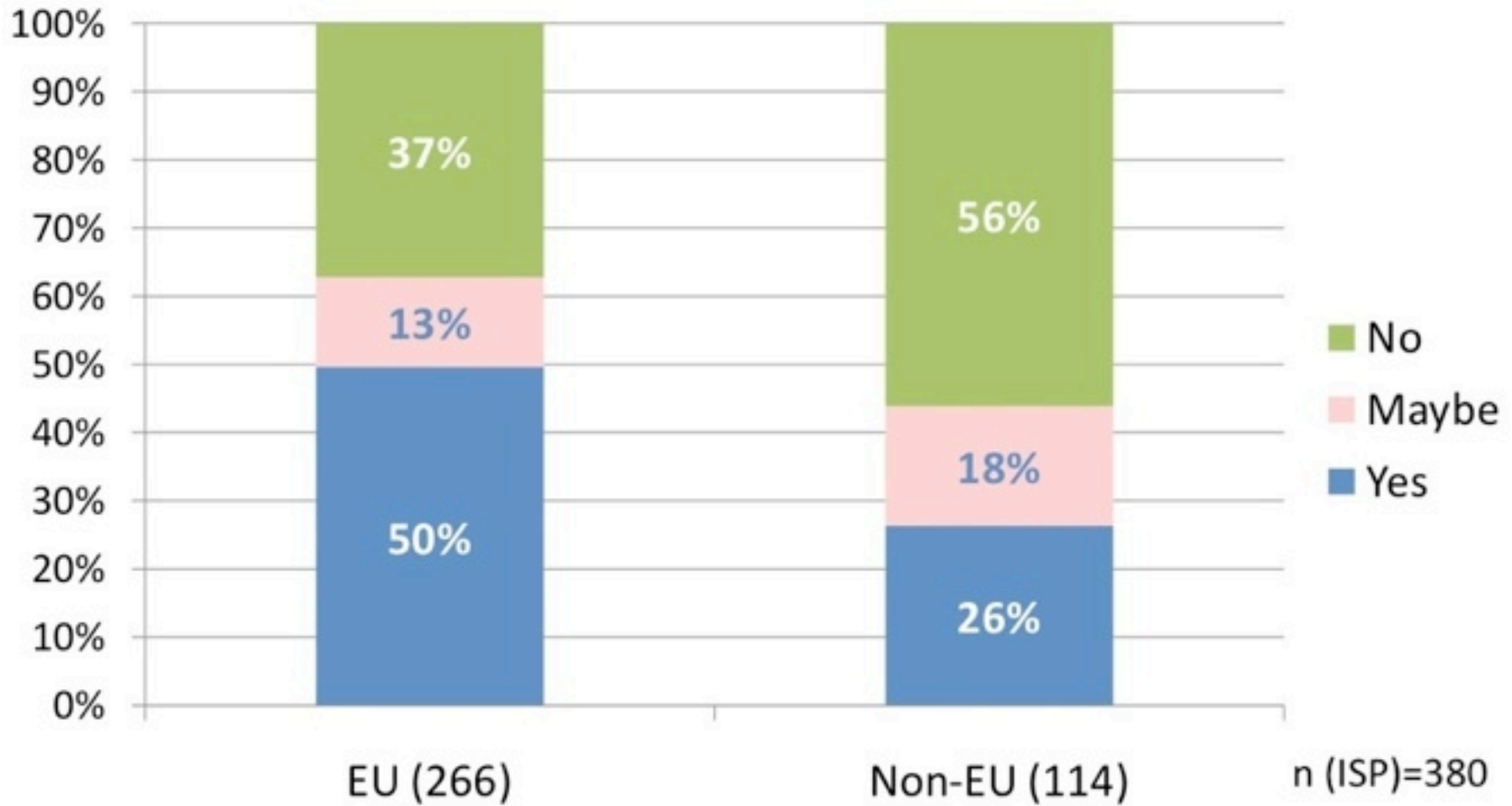
Customer IPv6 Uptake
(By ISP Size)

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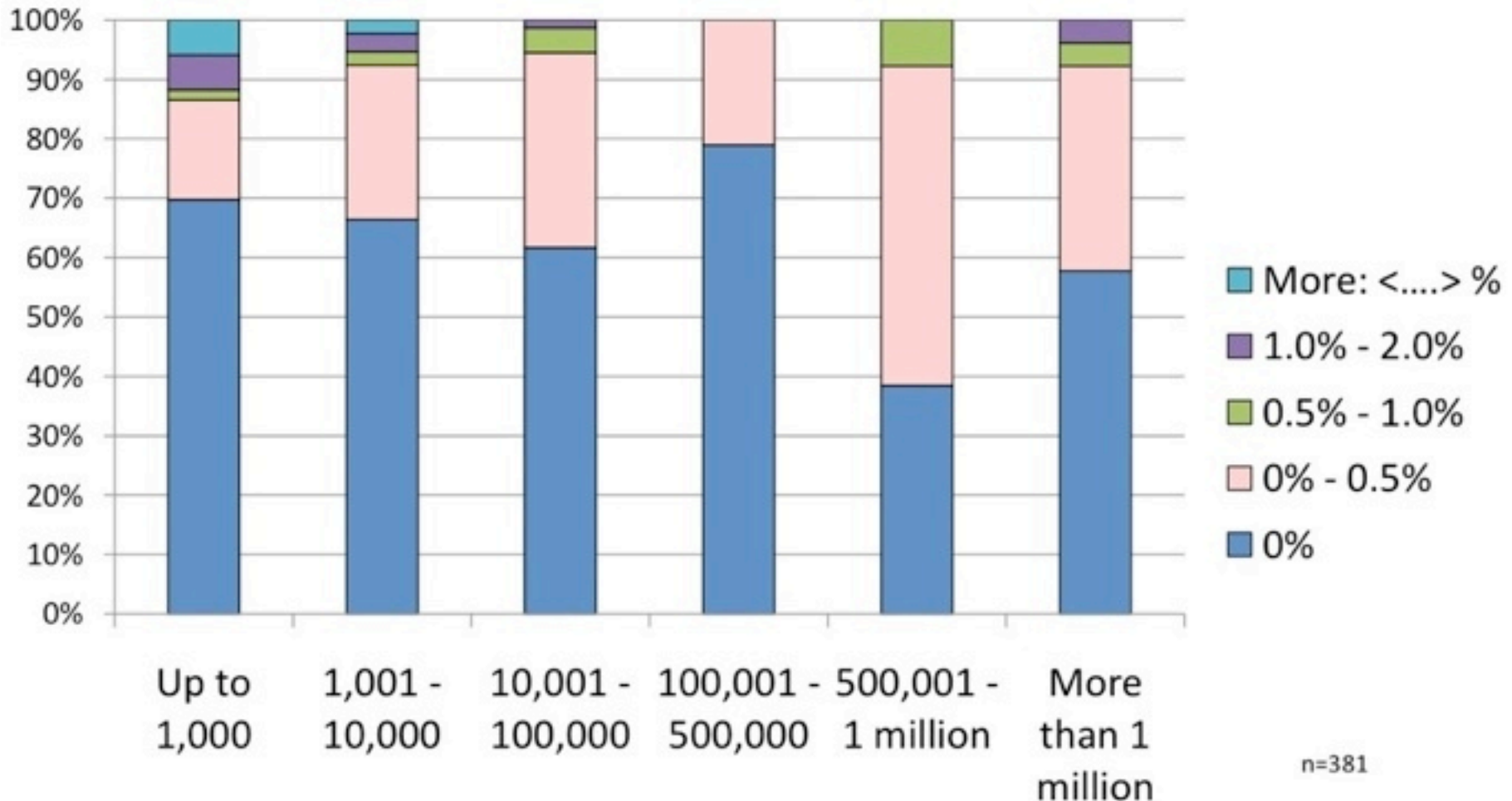
Some Conclusions (1)

- For 17% respondents, IPv6 is already real business, today

- IPv6 traffic still mostly insignificant
  - ISPs with <1000 customers seem to be leading

- ISPs:
  - 82% have, or are considering IPv6
  - 56% have IPv6 already in production
  - 37% of ISPs in Europe don't consider promoting IPv6 to their customers

- Nearly 50% of government respondents still not considering IPv6 adoption

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Some Conclusions (2)

- Reasons not to consider IPv6:
  - Low business priority
  - Lack of user demand

- Hurdles:
  - Lack of vendor support
  - Lack of business case
  - Costs
  - Lack of availability of knowledge

- Main drivers for IPv6:
  - Being "ahead of the game"
  - Ensuring IPv6 is supported in our products
  - Benefiting from the advantages of IPv6 as soon as possible

- Customer demand is the main driver for 20% of EU respondents

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The Future

- 91% of respondents supported conducting this survey again in 2010

- A similar survey has been conducted in the APNIC region: results to be presented at the next APNIC Meeting

- More information available at:

  http://www.ipv6monitoring.eu

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Engaging the Community

- IPv6 Act Now

- RIPE / RIPE NCC events:
  - RIPE IPv6 Working Group
  - RIPE Cooperation Working Group
  - RIPE NCC Government / LEA Roundtables

- Other fora:
  - Internet Governance Forum (IGF)
  - OECD
  - ITU events
  - European Commission (EC)

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www.IPv6ActNow.org

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IPv6 Act Now

- One-stop shop for IPv6 information, launched in June 2009

- Audience includes business, government and technical communities

- Sections include:

  - How To Act Now

  - Community interviews

  - Statistics

  - RSS feed of IPv6-related news and developments

  - Links and information

www.ipv6actnow.org

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How To Act Now

Constanze Bürger of the German Government

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IPv6 Act Now: Interviews

Martin Levy, Hurricane Electric, 2009

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IPv6 Act Now: Interviews

Martin Levy, Hurricane Electric, 2009
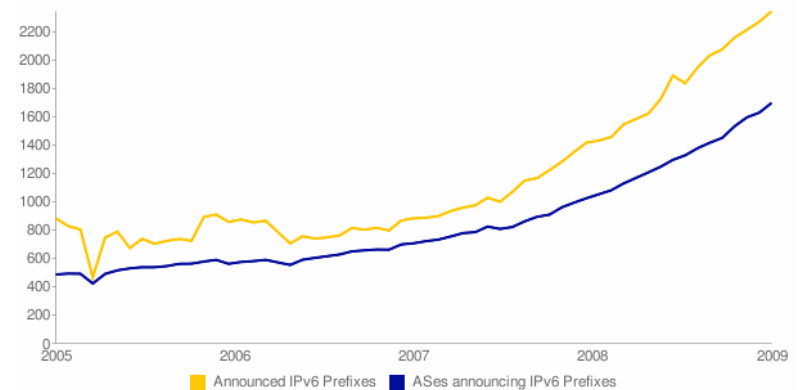
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IPv6 Act Now: Statistics

- Statistics for:
  - Allocations
  - Routing

- Near-realtime
  - Draws on on data from NetSense and INRDB
  - Google Chart API
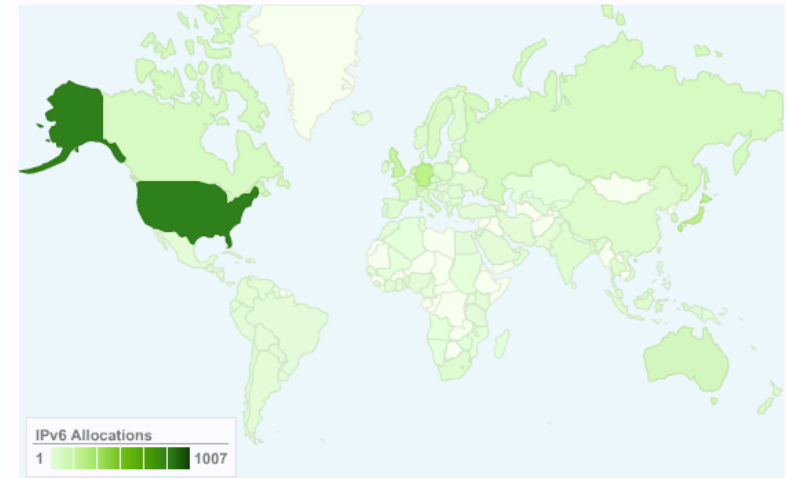
Global IPv6 allocations

IPv6 routed on the Internet

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RIPE IPv6 Working Group

- Launched in 1995 (first meeting at RIPE 22)
- New charter currently in approval process:

IPv6 is the next generation IP protocol. The IPv6 working group exists to promote IPv6 adoption.

The working group activities may be anything useful in helping people to deploy IPv6, and to manage IPv4/IPv6 co-existence. These activities include:

- *Outreach*
- *Education*
- *Sharing deployment experiences*
- *Discussing and fixing operational issues*

The working group will cooperate with operators and others, both inside and outside the networking industry, to share resources and combine efforts.

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RIPE NCC Roundtable Meetings

- Twice a year
  - Eight meetings held since 2005
  - Currently held February and September in Amsterdam
- Participants
  - 40+ Governments representatives from 18+ countries
- Topics covered
  - IPv6 deployment, IPv4 depletion, Internet governance

www.ripe.net/meetings/roundtable/

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RIPE Cooperation Working Group

- Formed in 2008

  - After work by the Enhanced Cooperation Task Force

- Forum for discussion within the RIPE community, focusing on cooperation between private and public sectors

- Intended to encourage participation from stakeholders outside traditional RIPE community

www.ripe.net/ripe/wg/cooperation/

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RIPE NCC Training

- RIPE NCC face-to-face IPv6 training

  - Launched in 2009

  - One-day course about the need for IPv6 and includes basic information on how to plan deployment

- Currently developing an e-learning course

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Other Fora

- ## Internet Governance Forum (IGF)

  - Participating since WSIS and the launch of the IGF

  - Co-organised an IPv6 workshop at IGF 2009 last month

- ## International Telecommunications Union (ITU)

  - Collaborating on various workshops and events

- ## OECD

  - NRO contributed to the Ministerial Meeting in 2008

  - RIPE NCC is a founding member of the Internet Technical Advisory Committee (ITAC)

- ## European Commission

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Questions?

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