



IPv6



IPv6 Deployment Survey

Based on responses from the RIPE
community during June 2009

Why IPv6 Deployment Monitoring?

- The Internet has become a fundamental infrastructure, worldwide, for economic and social activity, and its usage continues to grow exponentially:
 - More users
 - New applications (eg mobile, RFID etc)
- The transition from IPv4 to IPv6 is the only sustainable option, in the long run.
- A smooth transition requires understanding the challenges, and a timely start.



European IPv6 Action Plan

May 2008

- Preparing for the growth in Internet usage and for future innovation
- Maintaining Europe's competitiveness
- So ... what can be done?



http://www.ipv6.eu/admin/bildbank/uploads/Documents/Commision/COM_.pdf

Basically, it's simple

- The European Commission and Europe's Member States are committed to support a smooth transition towards IPv6, for clear public interest reasons
- Yet the IPv6 transition will be driven by the Internet community
 - Providers
 - Users

Therefore this proposition was made to the RIPE community

- *How about making sure the European Commission knows what could be done, usefully, to help ensure that smooth transition?*
 - Really understand the scope of the problem
 - Identify the bottlenecks
 - Propose useful steps to support the transition



IPv6 Deployment Monitoring project: putting the facts on the table



- Measuring:
 - deployment in EU countries (% end users)
These are source address based on passive measurements
 - availability (% IPv6 web-based services)
 - differences between IPv4 and IPv6 performance
These are measurements on quality of service
- Information gathering:
 - Global sources
 - Key informant interviews
 - IPv6 Survey

What about the survey ?



- Aim is to establish the best possible comprehensive view of present IPv6 penetration and future plans of IPv6 deployment
- Best way to establish this is to ask the Internet providers and users, basically: the RIPE participants
- ARIN carried out such a survey with its members in March 2008, a starting point for the currently proposed survey
 - Survey was prepared and carried out by TNO/GNKS in close collaboration with RIPE NCC
 - Survey was kept short, and focused on essentials
 - Privacy is guaranteed
- Right now – APNIC is running the same survey

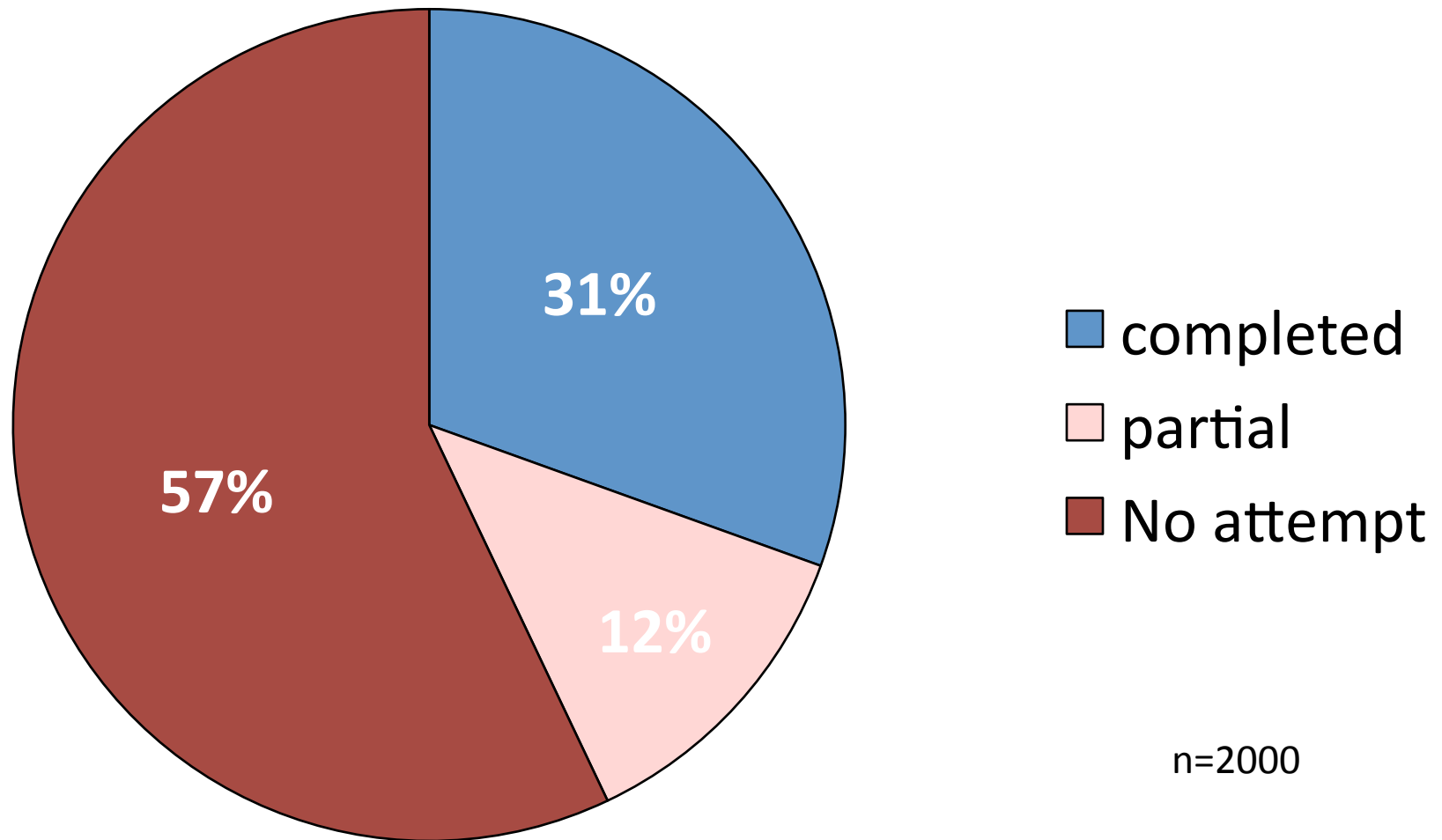
Overview

1. Response profile
2. Perception, experience and plans
3. Final questions
4. Summary and conclusions

Response profile

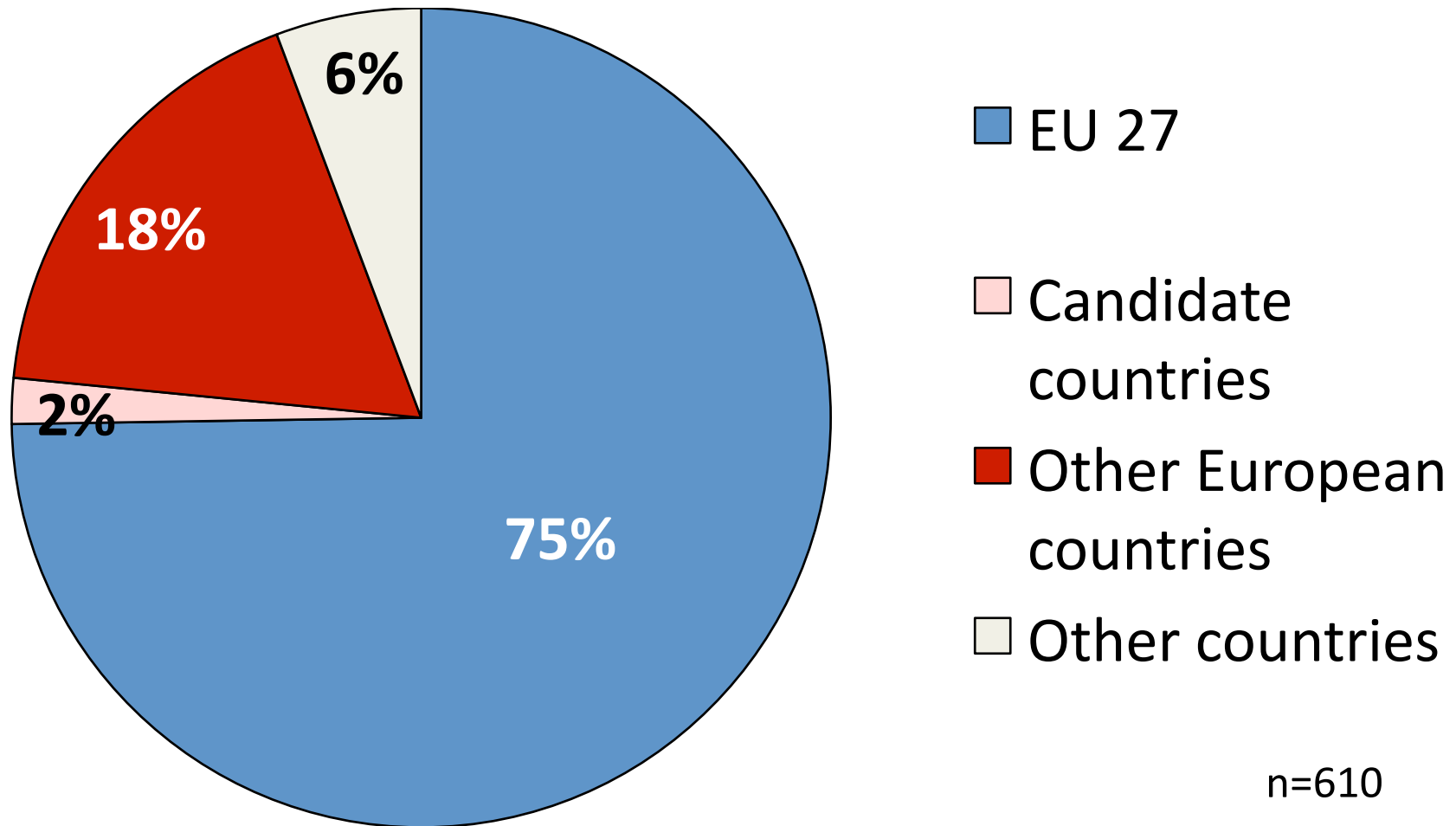
Invitations to participate in the survey have been sent by RIPE NCC to relevant mailing lists, covering a total of around 2000 possible respondents

Response to questionnaire



source: TNO/GNKS 2009

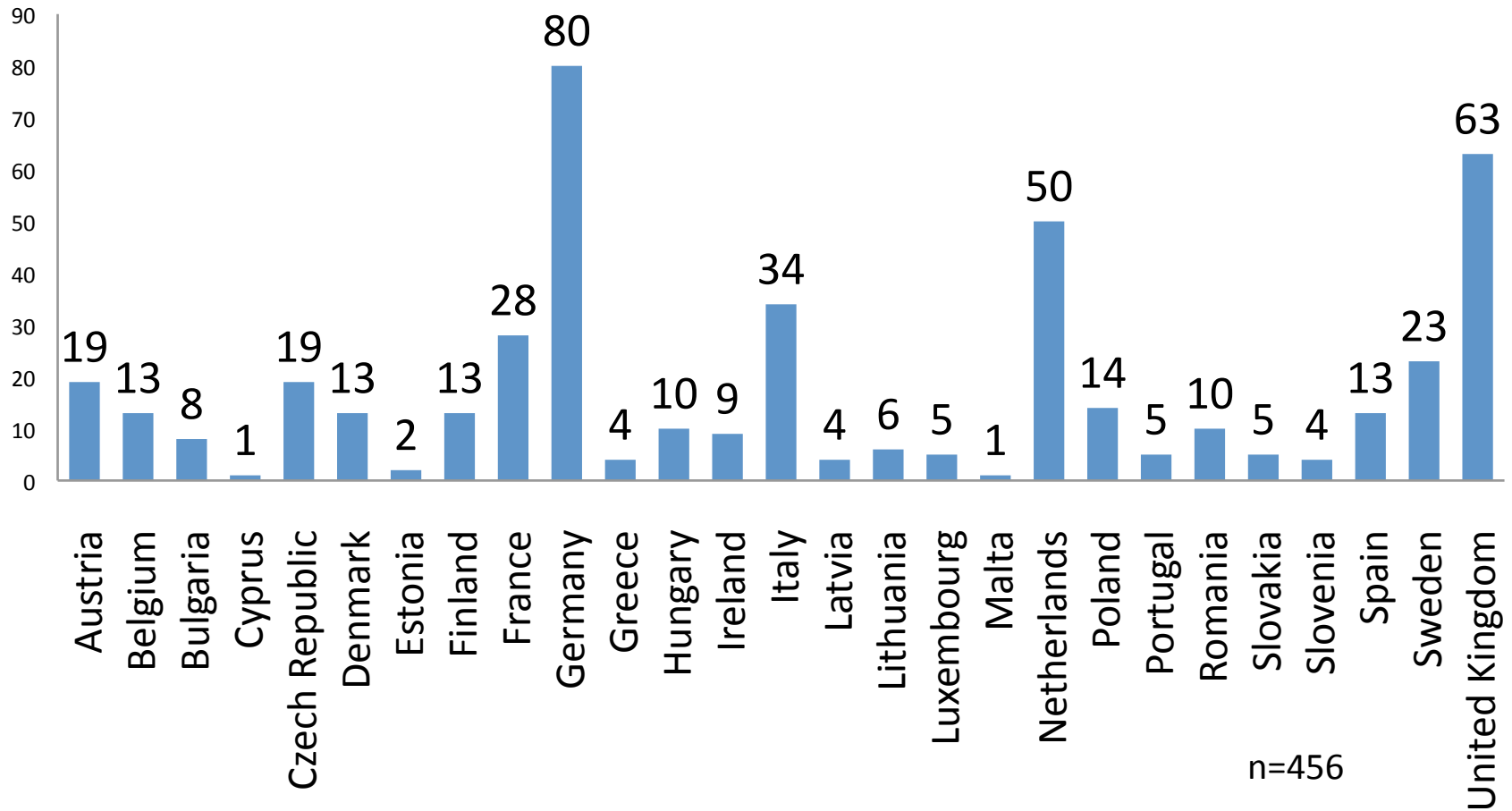
Response per geographic area



n=610

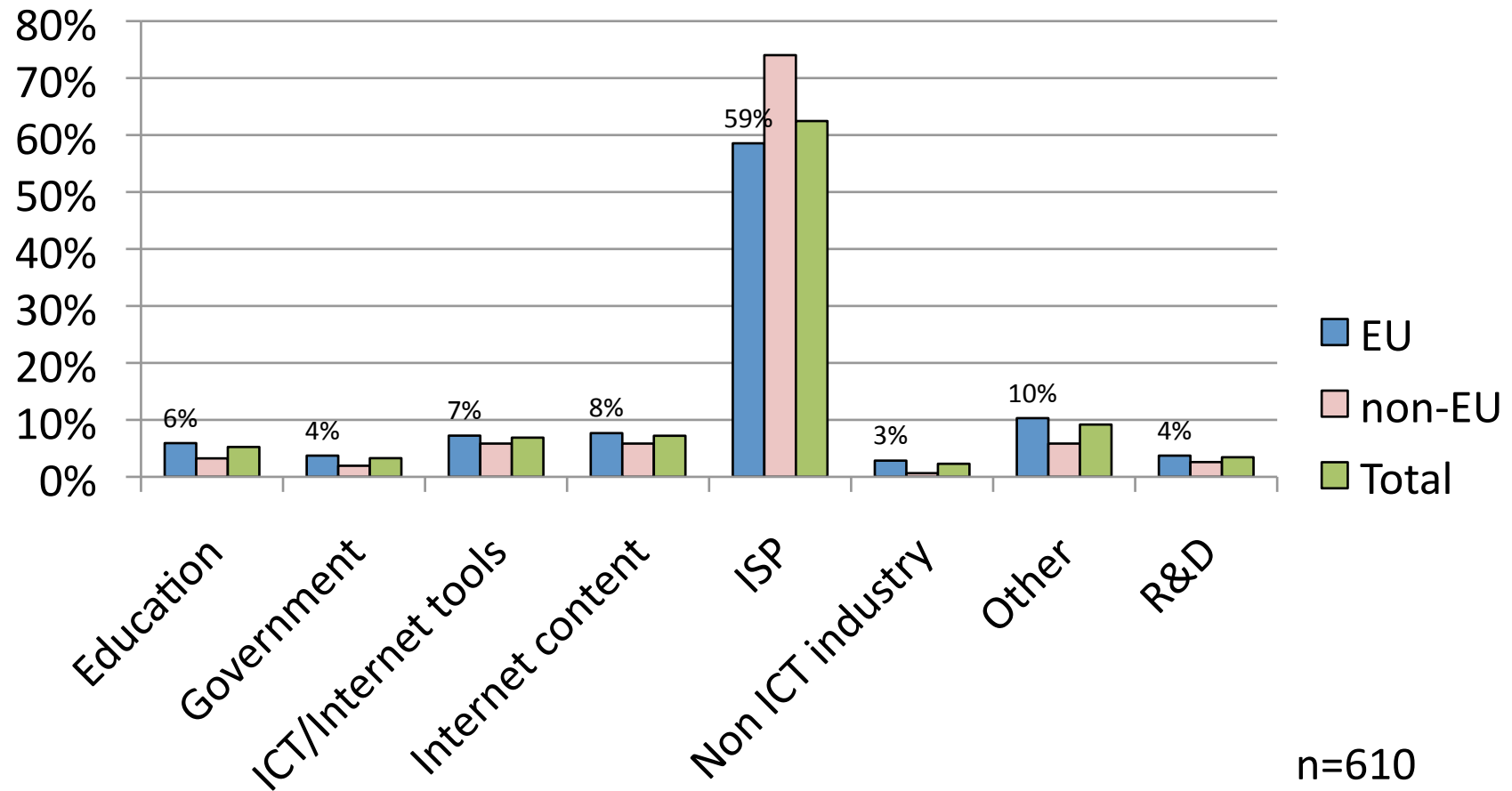
source: TNO/GNKS 2009

Respondents per EU member state



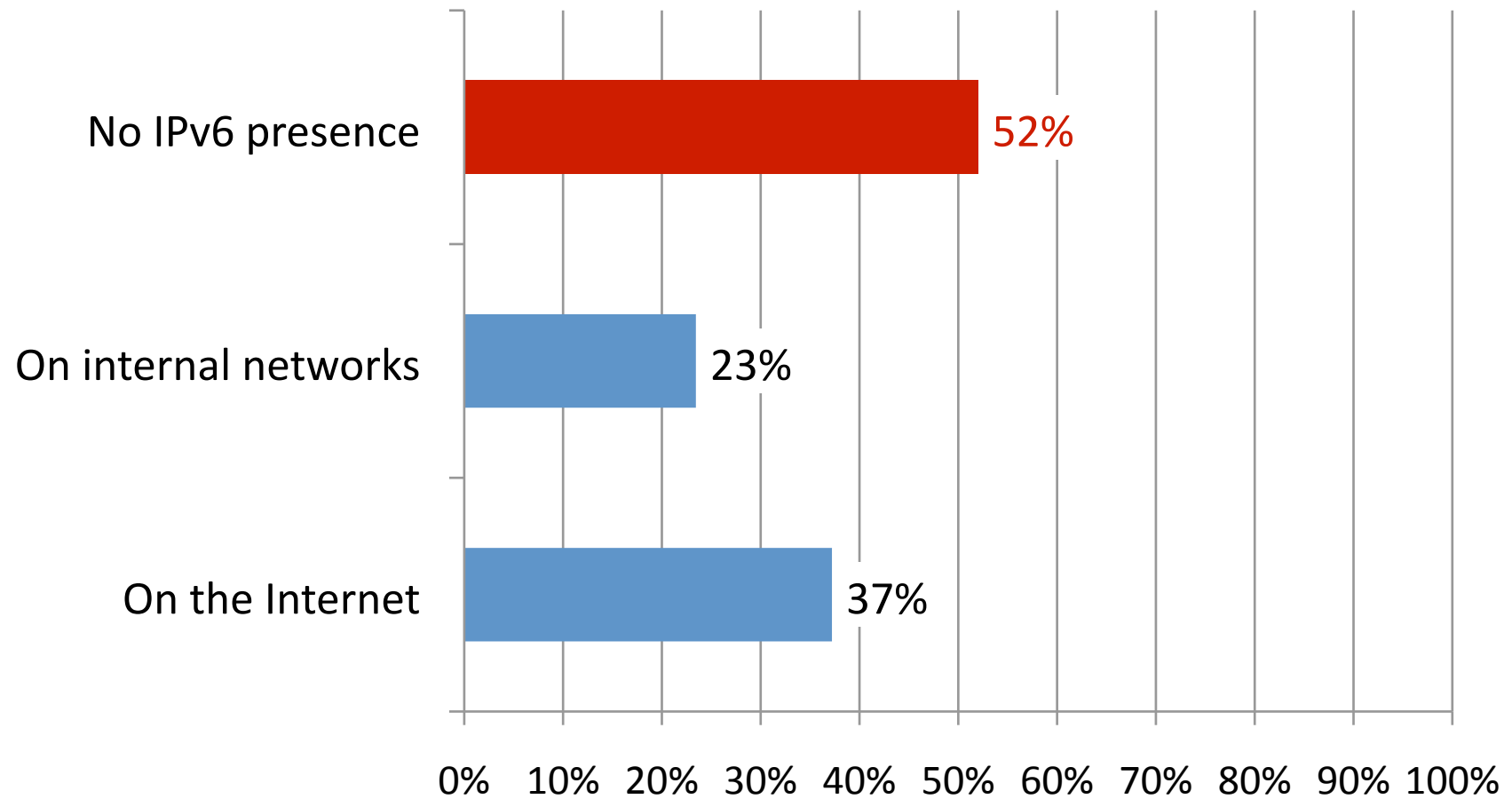
source: TNO/GNKS 2009

Respondent categories



source: TNO/GNKS 2009

IPv6 presence respondents



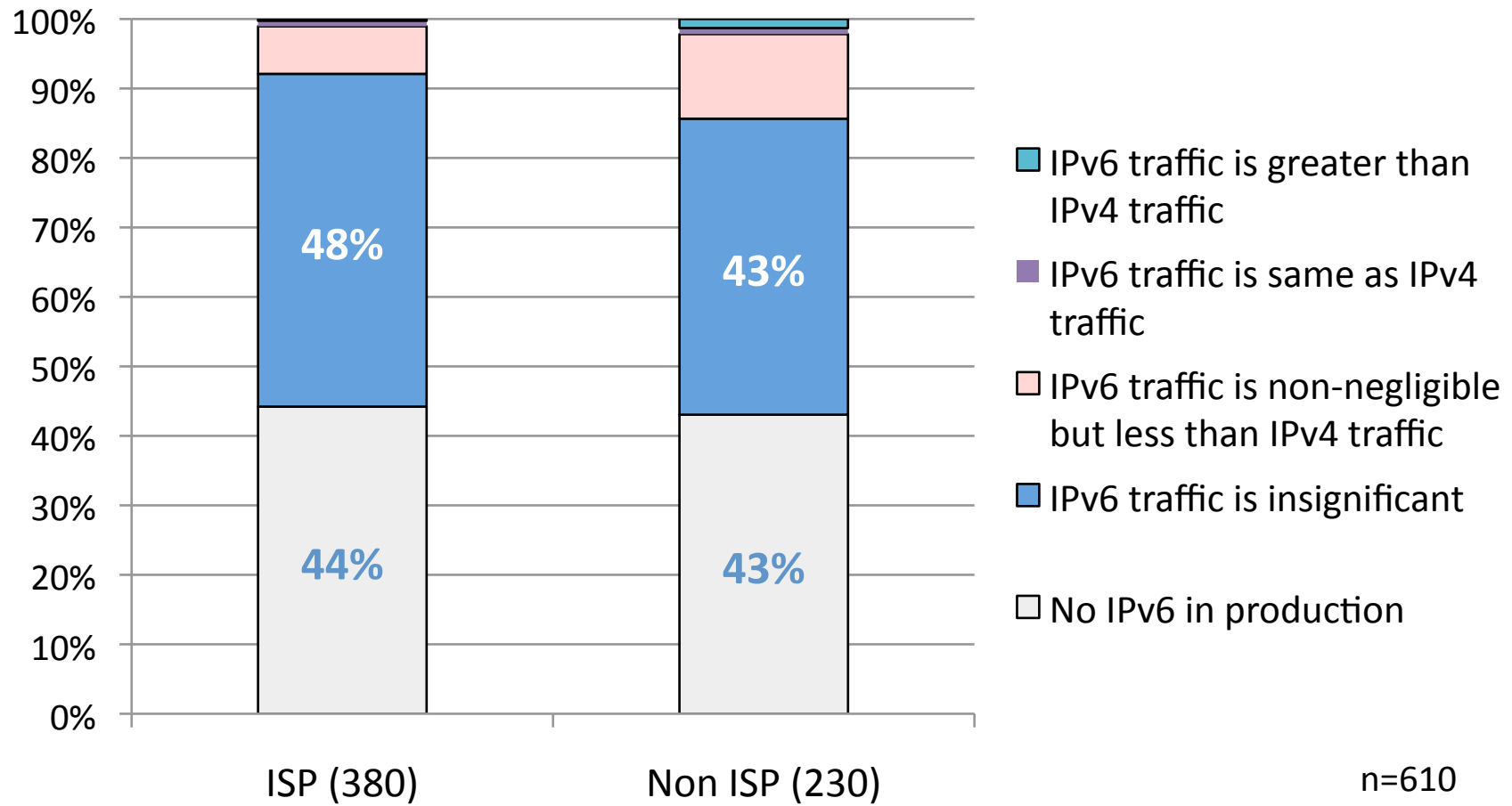
source: TNO/GNKS 2009

Perception, experience and plans

While IPv6 is new for many, several of the respondents already have experiences, and many more have already considered deploying IPv6.

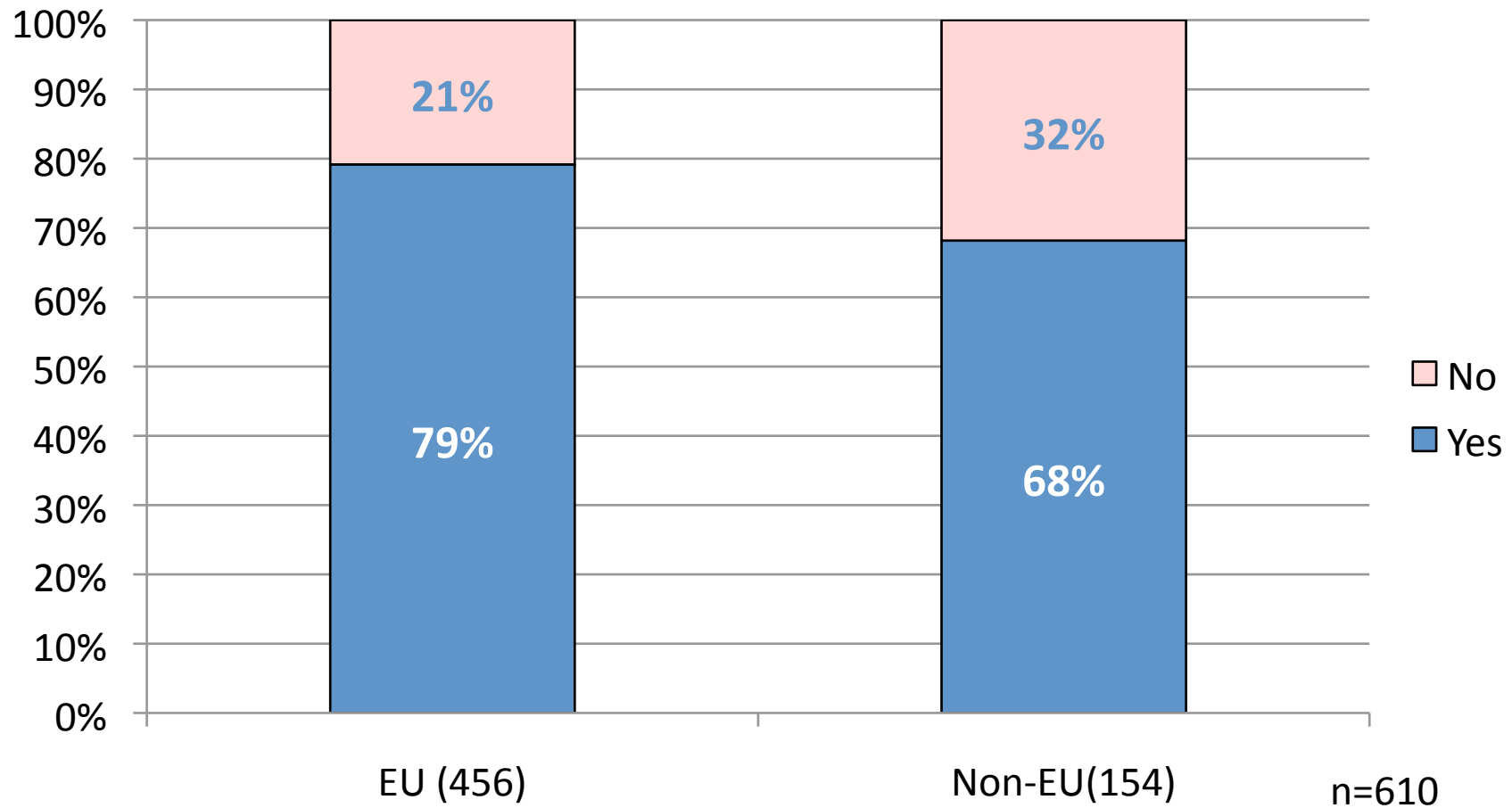
Today, many answers reflect perceptions rather than experiences. Yet perceptions are key towards decisions to truly widely deploy IPv6.

IPv6 vs IPv4 traffic



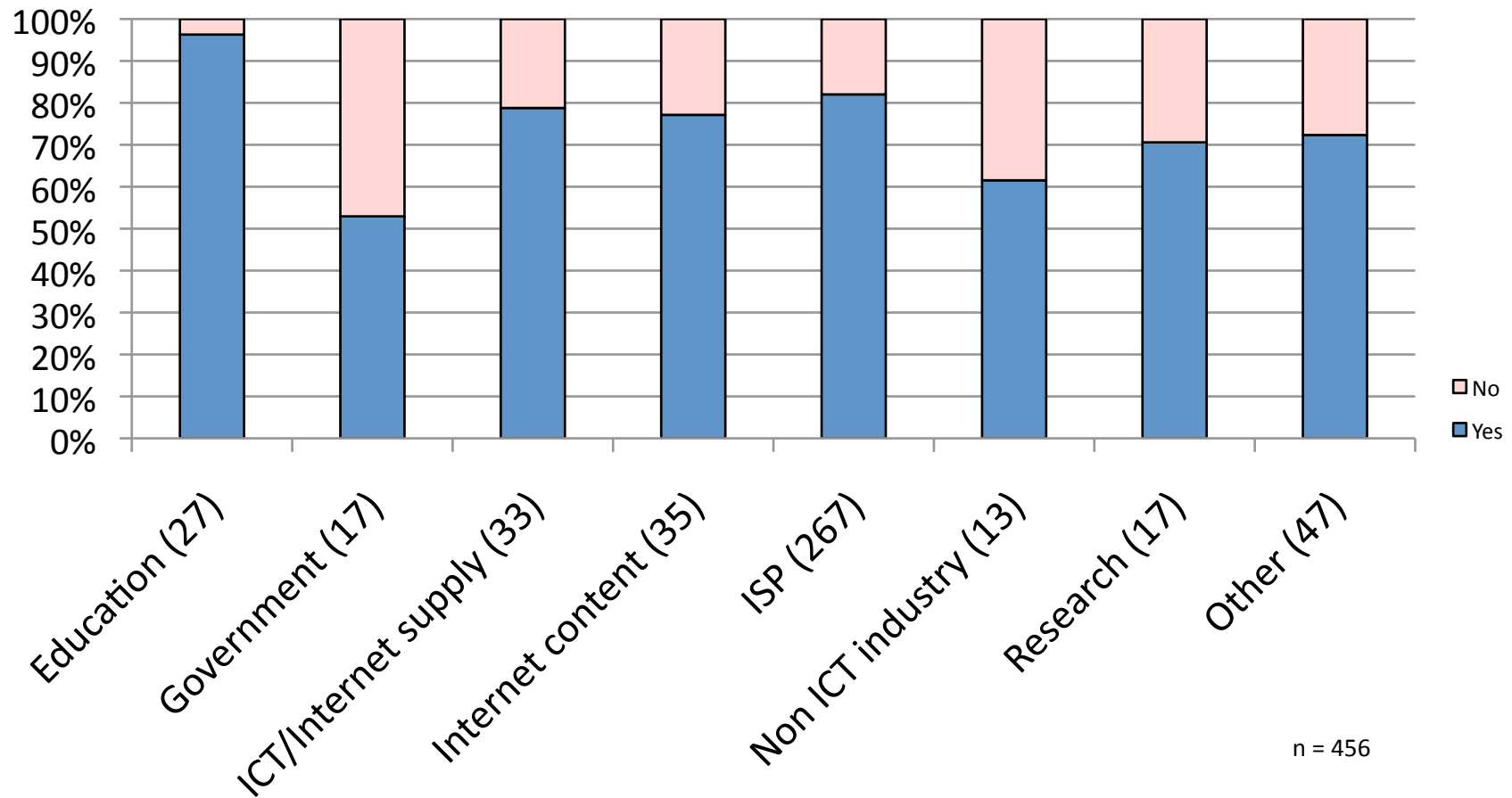
source: TNO/GNKS 2009

Have or consider IPv6 allocation?



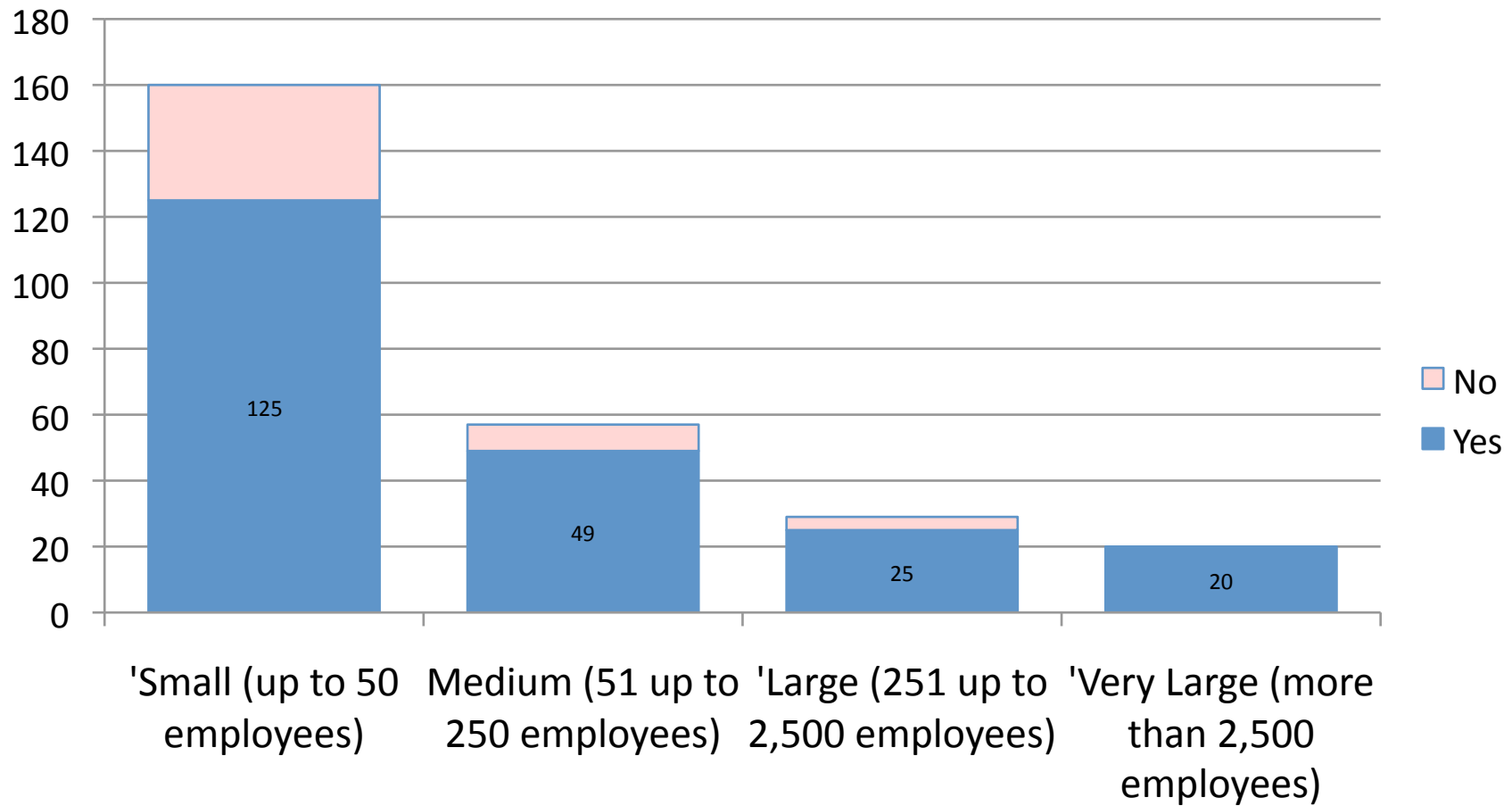
source: TNO/GNKS 2009

EU sector consider having IPv6 allocation



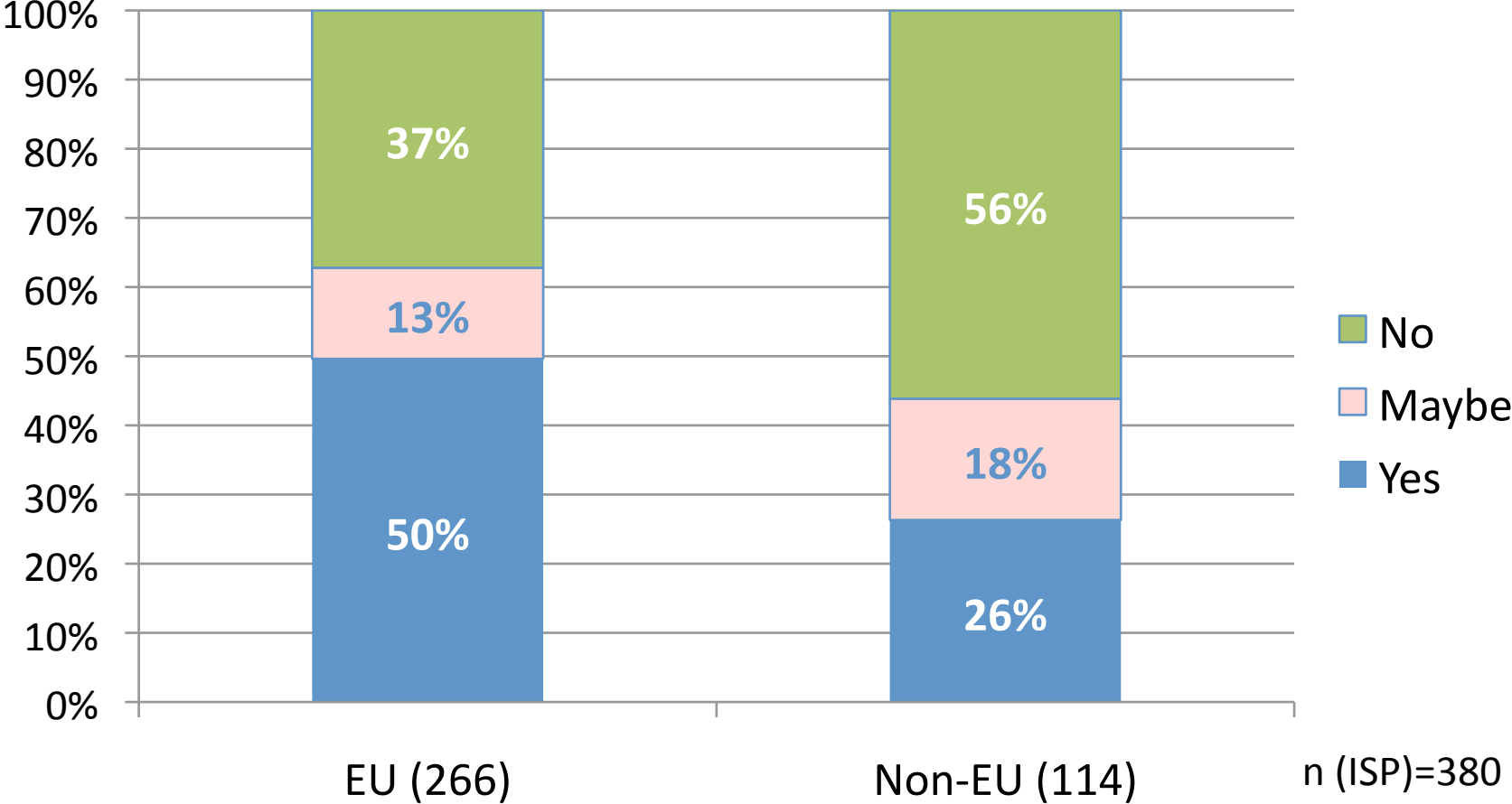
source: TNO/GNKS 2009

EU ISPs consider having IPv6 allocation



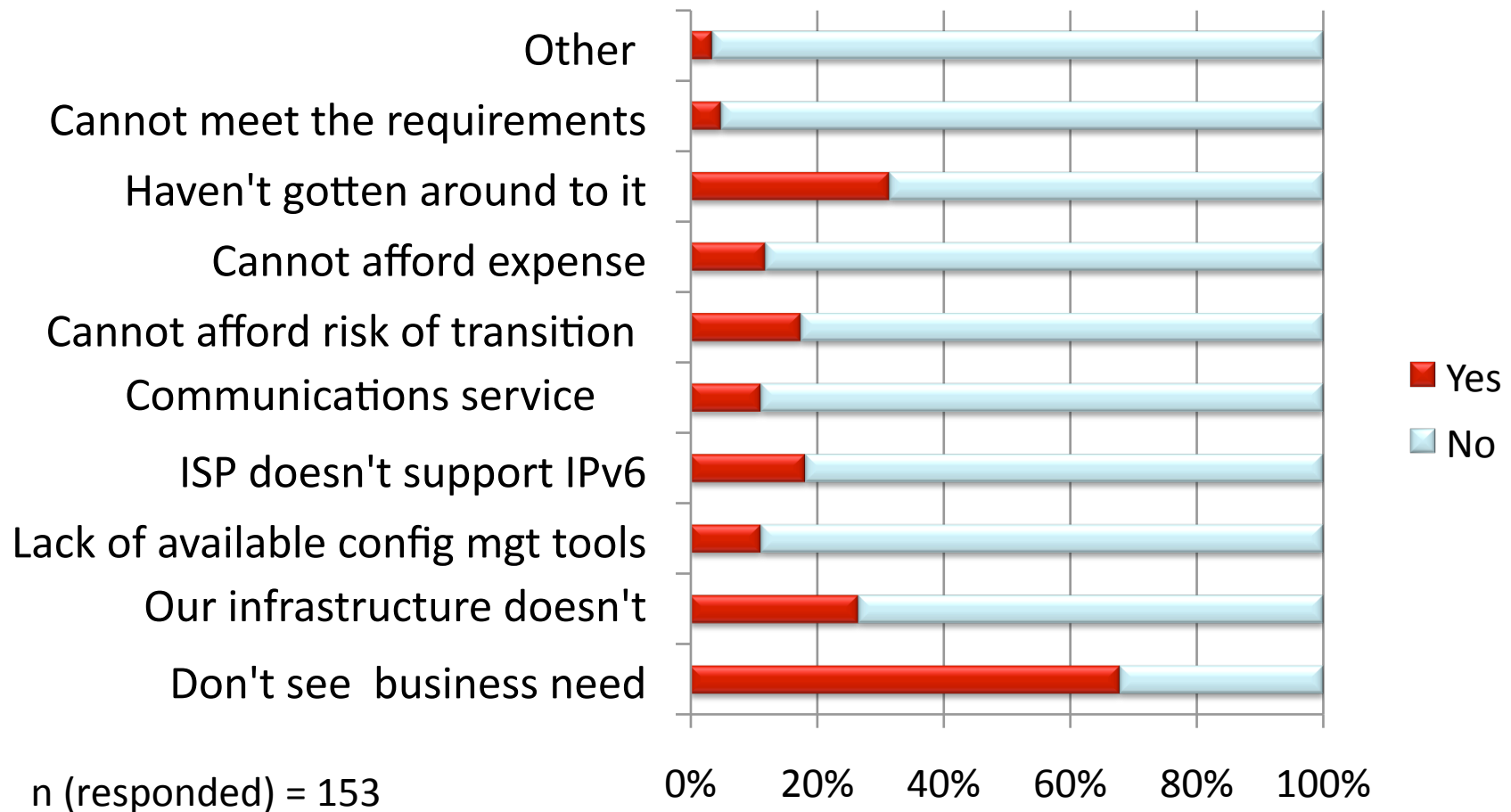
source: TNO/GNKS 2009

ISP, do you considering promoting IPv6 uptake to your customers

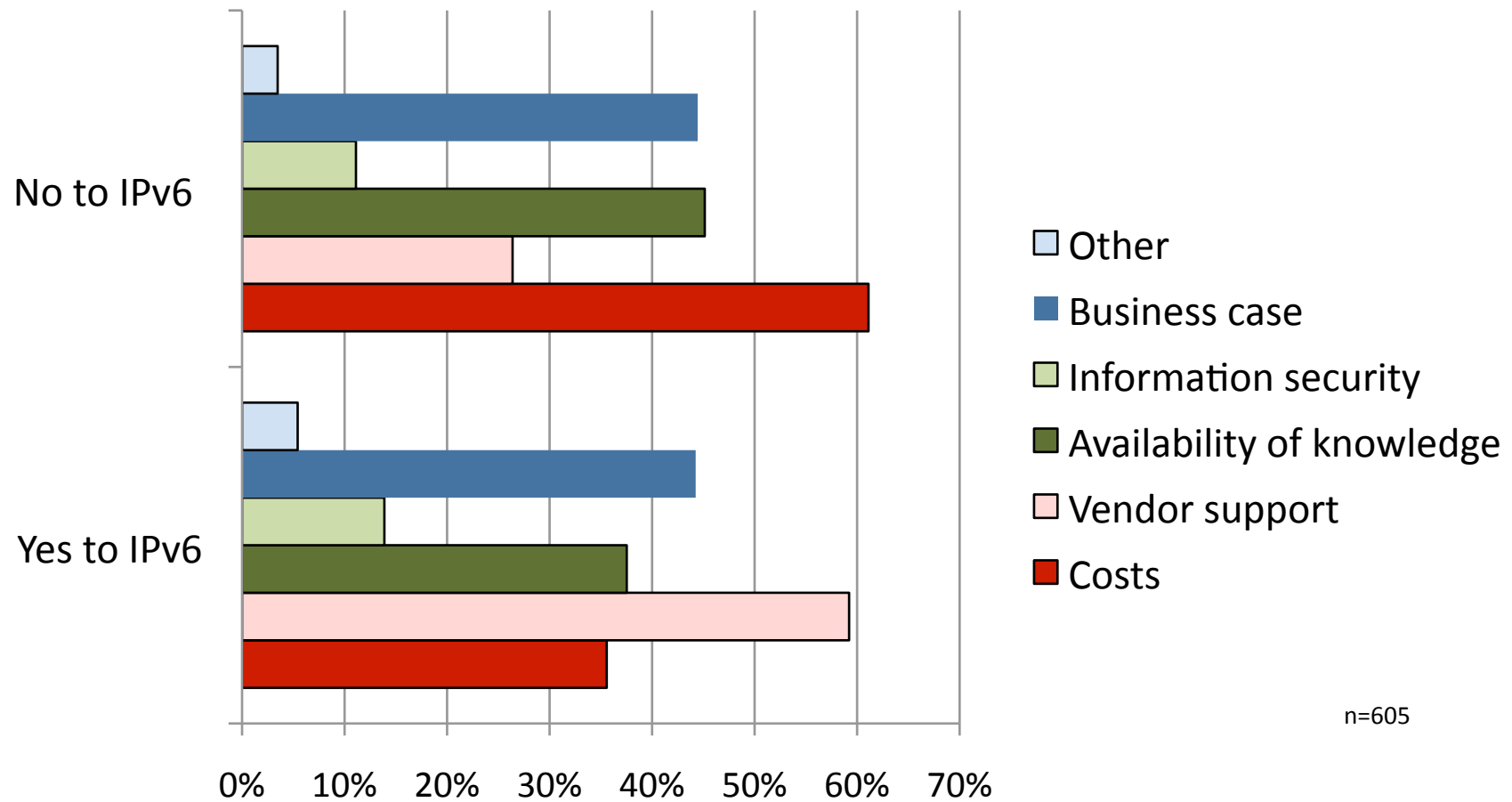


source: TNO/GNKS 2009

Why not considering IPv6?



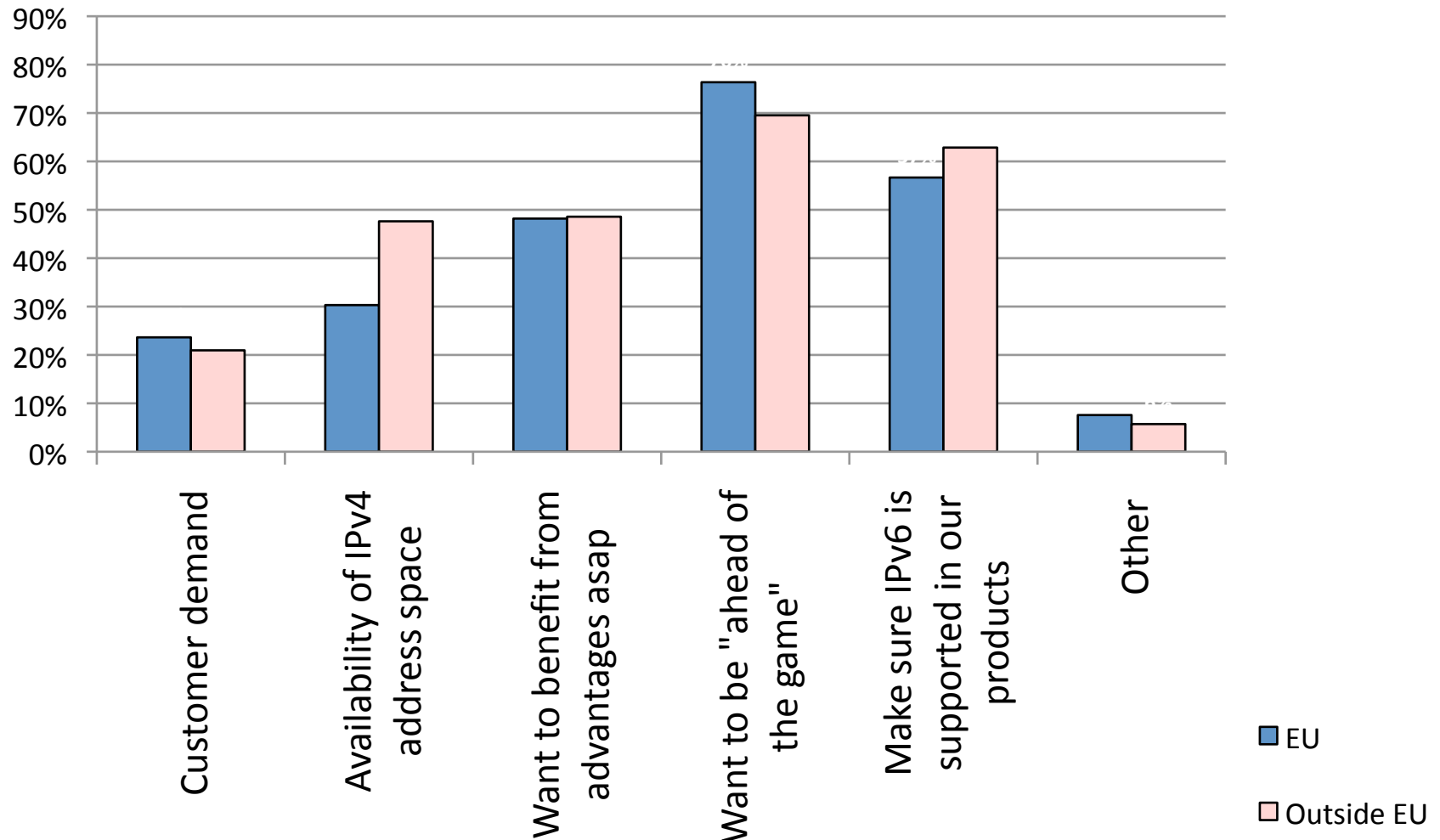
Biggest hurdles



n=605

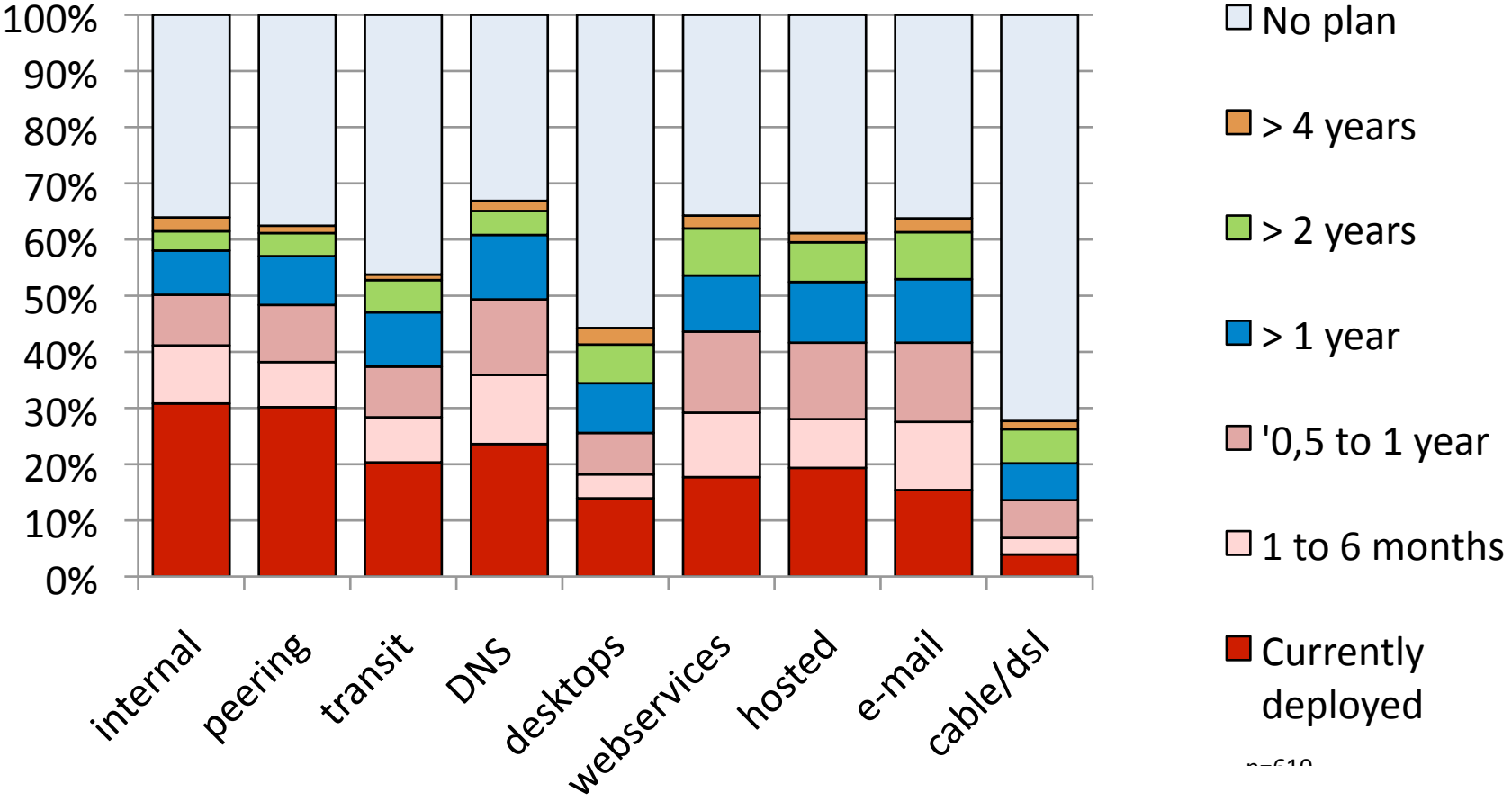
source: TNO/GNKS 2009

Main drivers to IPv6 deployment



source: TNO/GNKS 2009

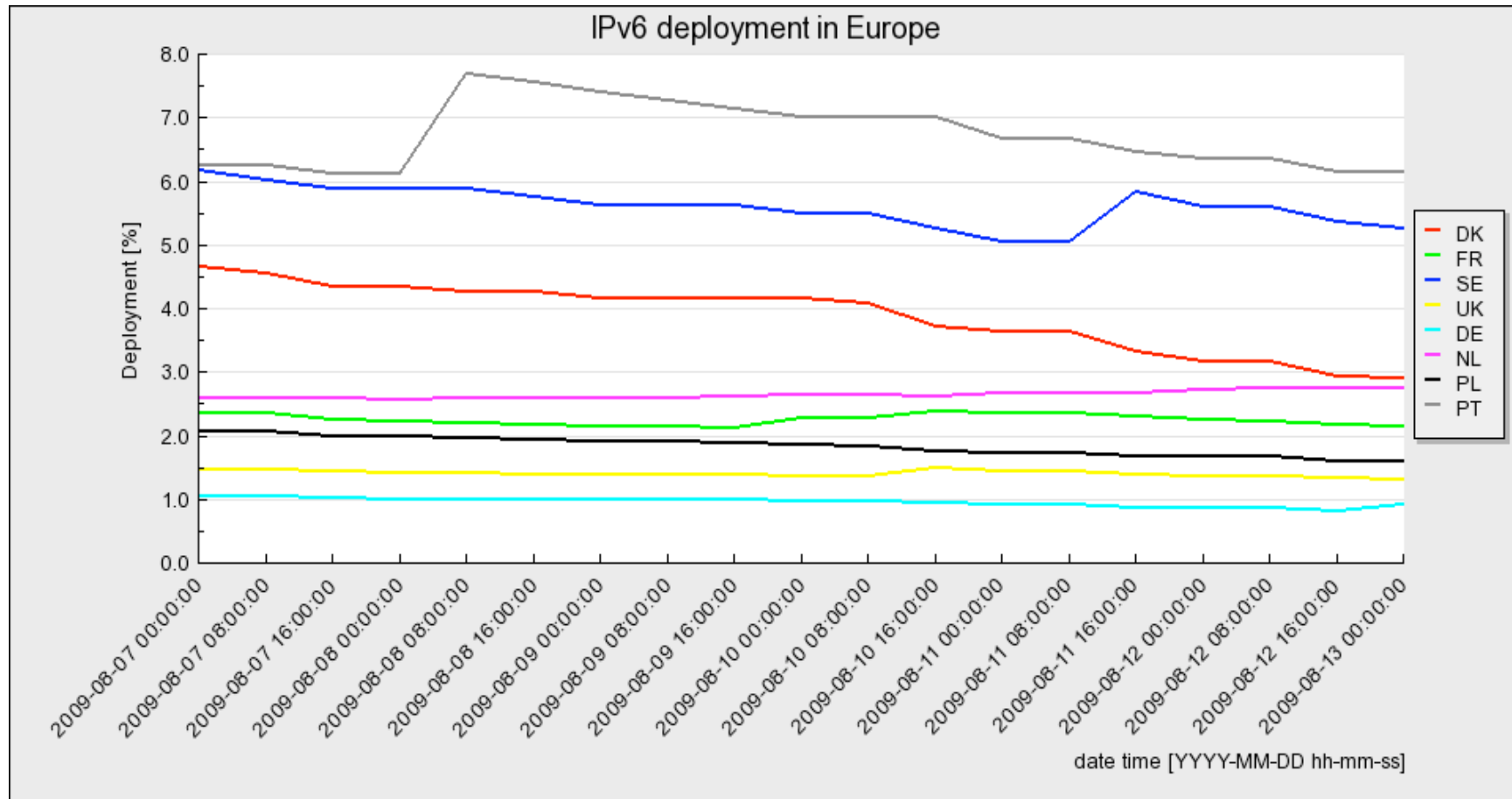
Planning IPv6 deployment



source: TNO/GNKS 2009

Context

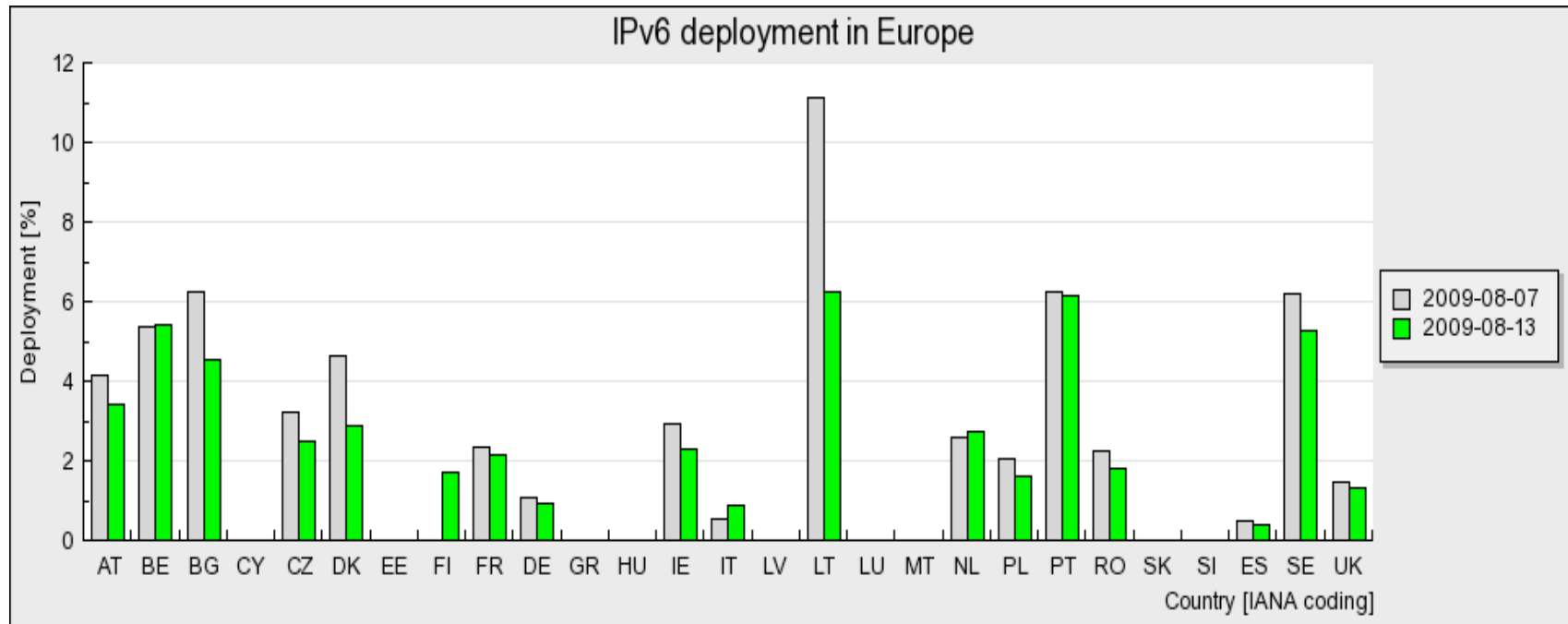
Indication of real IPv6 usage?



Ratio of IPv6/total IP visitors from selected countries

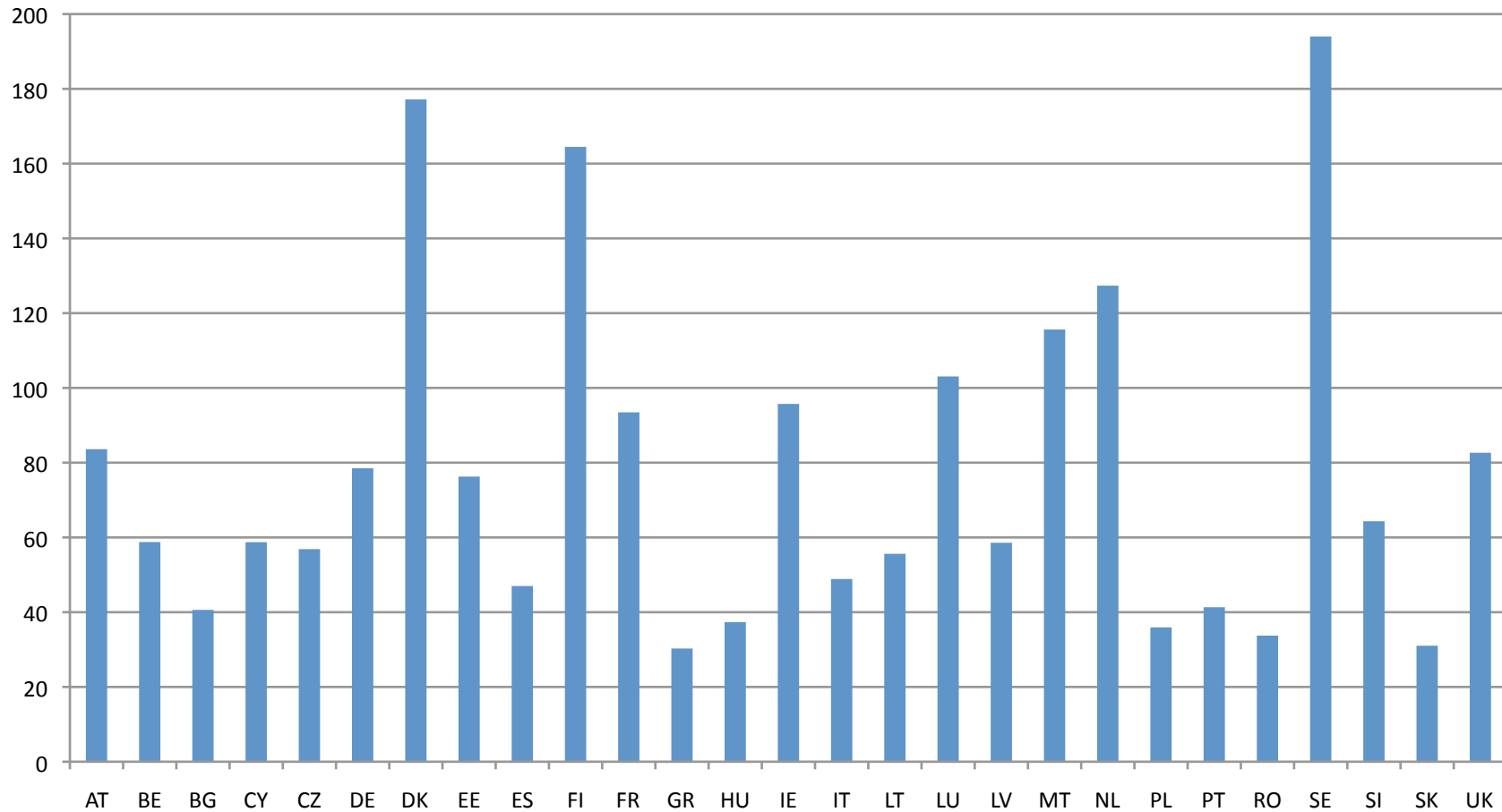
source: TNO/GNKS 2009

Indication of real IPv6 usage?



Ratio of IPv6/total IP visitors from EU countries to measured web sites

Growth foresight ?



Number of advertised IPv4 addresses per 100 inhabitants

source: NII/TNO/GNKS 2009

Conclusions

Main conclusions, overall

- Much more IP addresses will be needed during the coming years
 - If only for other EU countries to get up to the IP maturity levels of Scandinavian countries
 - But also mobile internet, and Internet of Things
- Whatever happens: no new IPv4 addresses available anymore, anywhere in Europe, at some point!
 - IANA source IPv4 will be depleted by 2011
 - RIPE source of IPv4 will be depleted by 2012/2013
 - In some EU countries the need for new IP addresses will be greater than in others

Main conclusions survey 2009 (1/2)

- Need to be careful with drawing conclusions
 - In particular when breaking down the sample to small size categories
 - This group is biased by IPv6 interest, at least
 - How well do respondents know what is really going on within their organisation
- Overall reason for IPv6 not being a priority yet is “lack of business case/lack of customer demand”
 - IPv6 vendor support is still lacking
 - How to turn this around?
- 79% of EU RIPE respondents have, or consider having an IPv6 allocation, today
 - Only 53% of Government respondents consider having IPv6
 - Still 21% of all respondents not convinced of the need to have IPv6 towards the future: why?

Main conclusions survey 2009 (2/2)

- ISPs:
 - 82% has, or considers having IPv6
 - 56% has IPv6 in production
 - 37% of ISPs in Europe *do not* consider IPv6 promotion
 - What is needed to get more ISPs on board
- Web site content
 - Just one out of 27 x Top 30 websites in EU supports IPv6
- Set-up is overwhelmingly dual stack (78%) and native IPv6 (77% of respondents that implemented IPv6)
 - Reality check: dual stack will be the next step as all customers need to be served, at all levels of the chain
 - This can help to focus activities on reduction of uncertainty about costs and security models



<http://www.ipv6monitoring.eu/>

Questions regarding the survey and
this presentation:

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