



IPv6



Towards IPv6 Deployment

Inspired by the outcome of the EU
IPv6 Deployment Survey

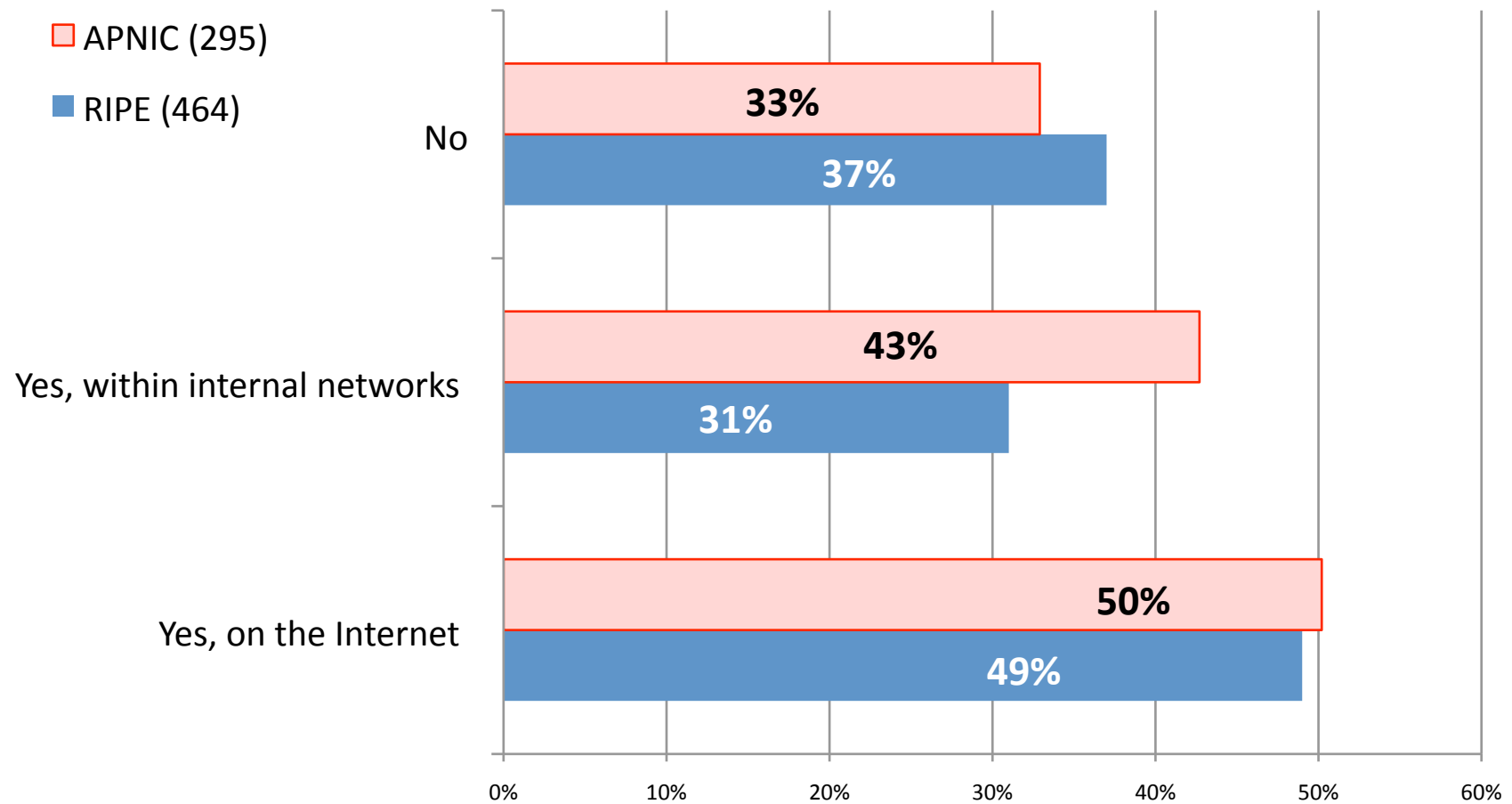
Maarten Botterman

RIPE 59, Lisbon, 6 October 2009

Interactive session

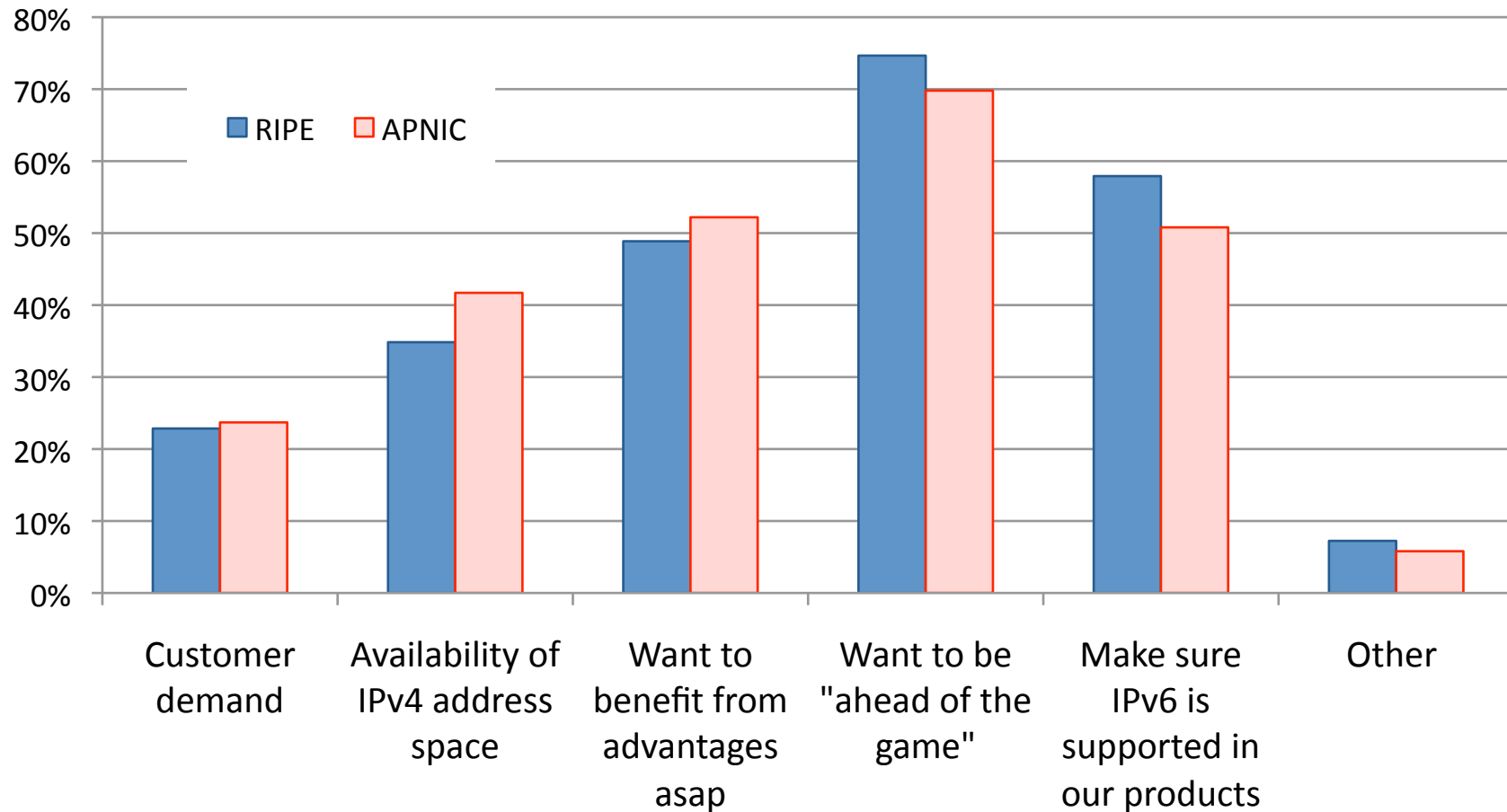
- Introduction
- The Panel
 - Geoff Huston
 - Gerd Doering
 - Kurt Erik Lindqvist
- You ! We will ask you to vote on a number of questions – and take that into a panel discussion

IPv6 presence respondents (~65%)



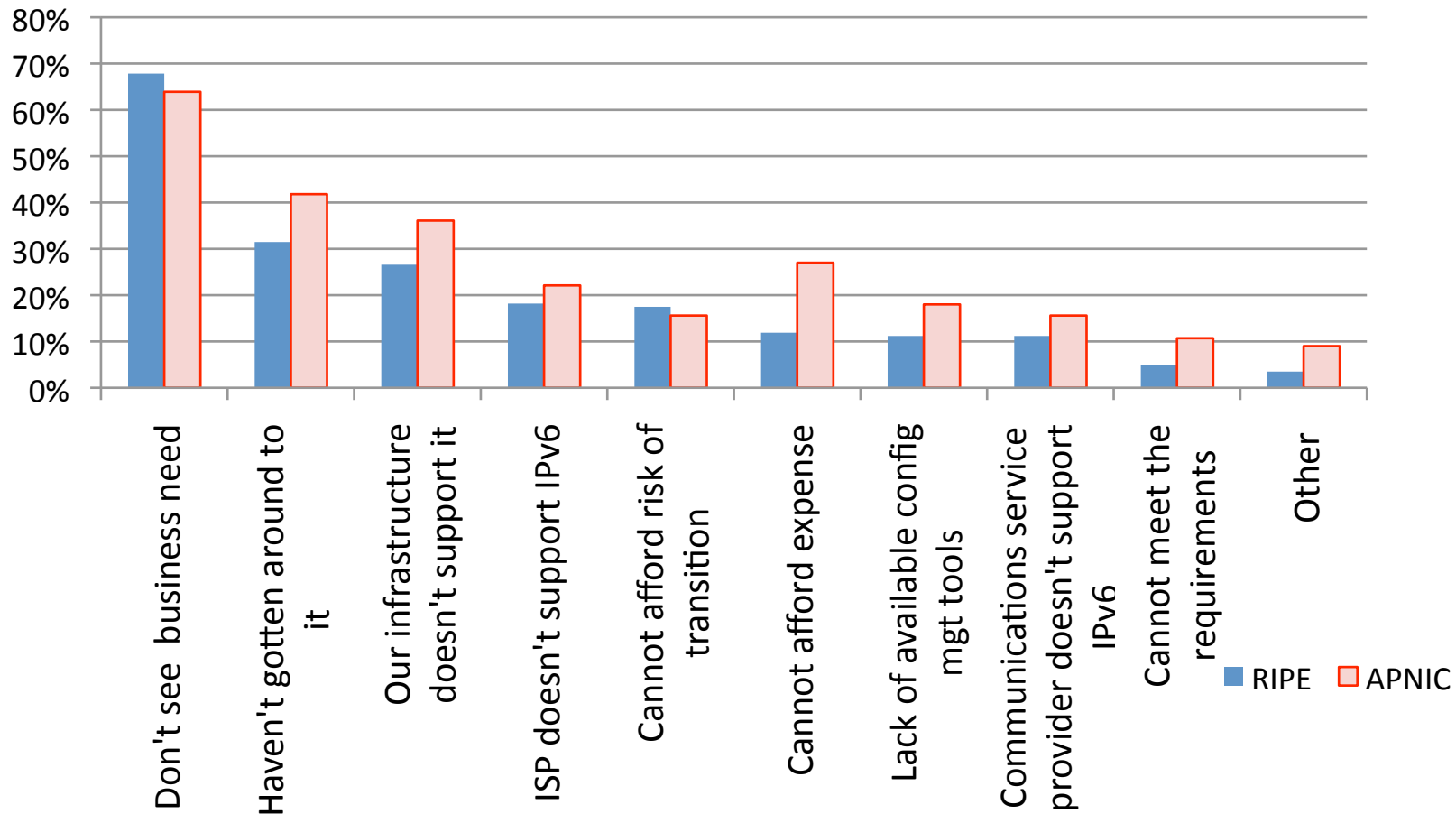
source: TNO/GNKS 2009

Main drivers to IPv6 deployment



source: TNO/GNKS 2009

Why not considering IPv6?

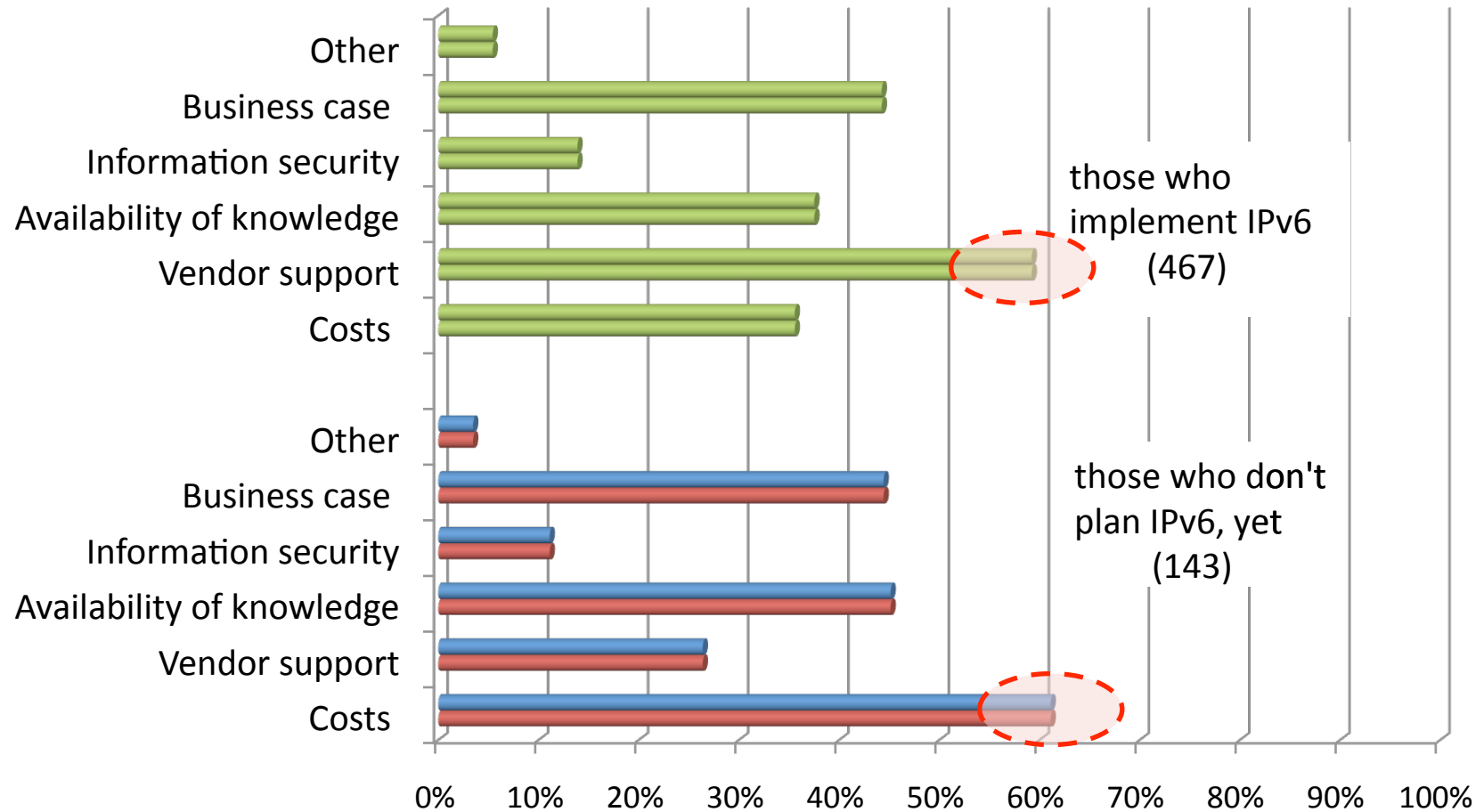


source: TNO/GNKS 2009

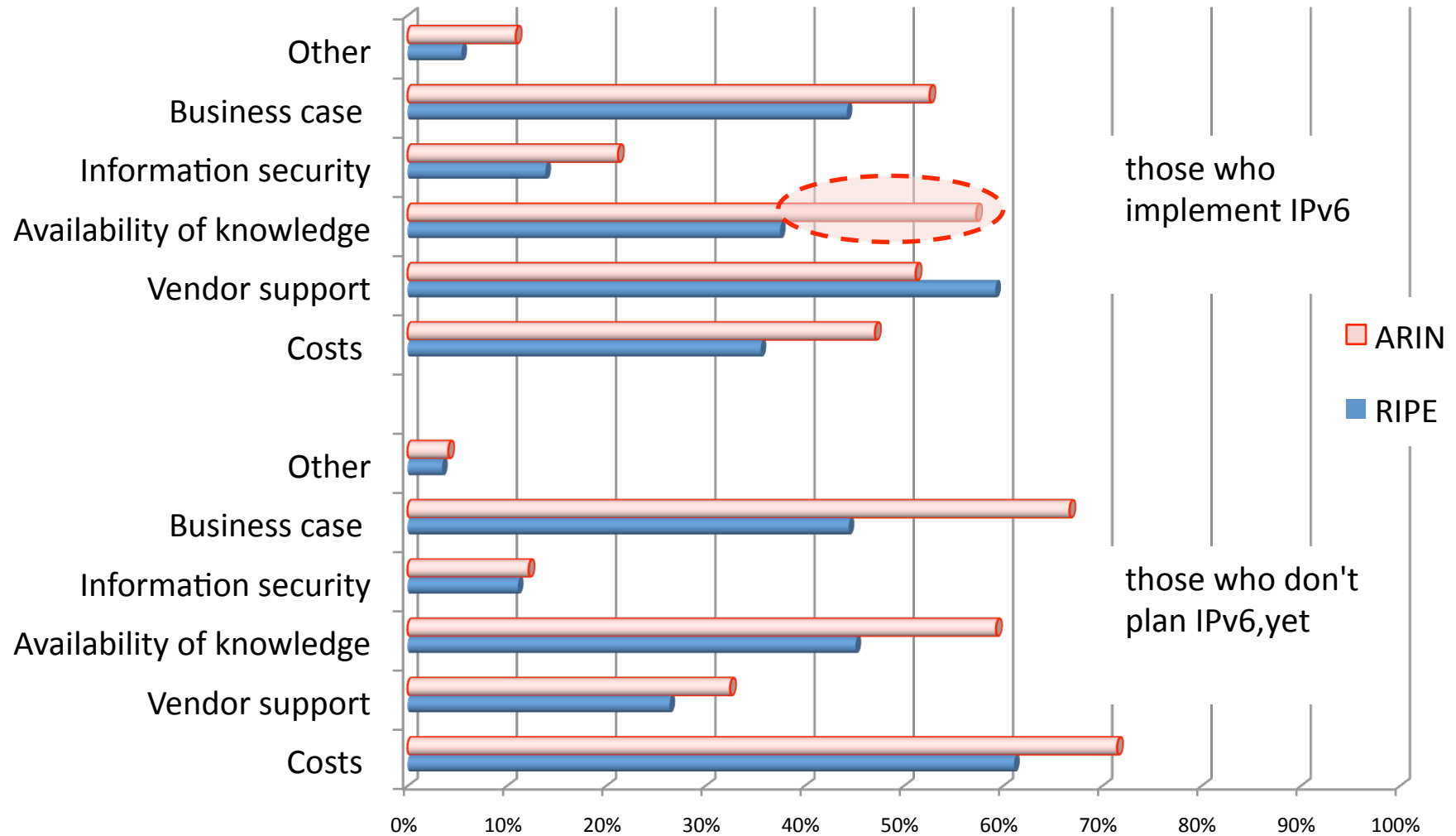
What's under
the surface?



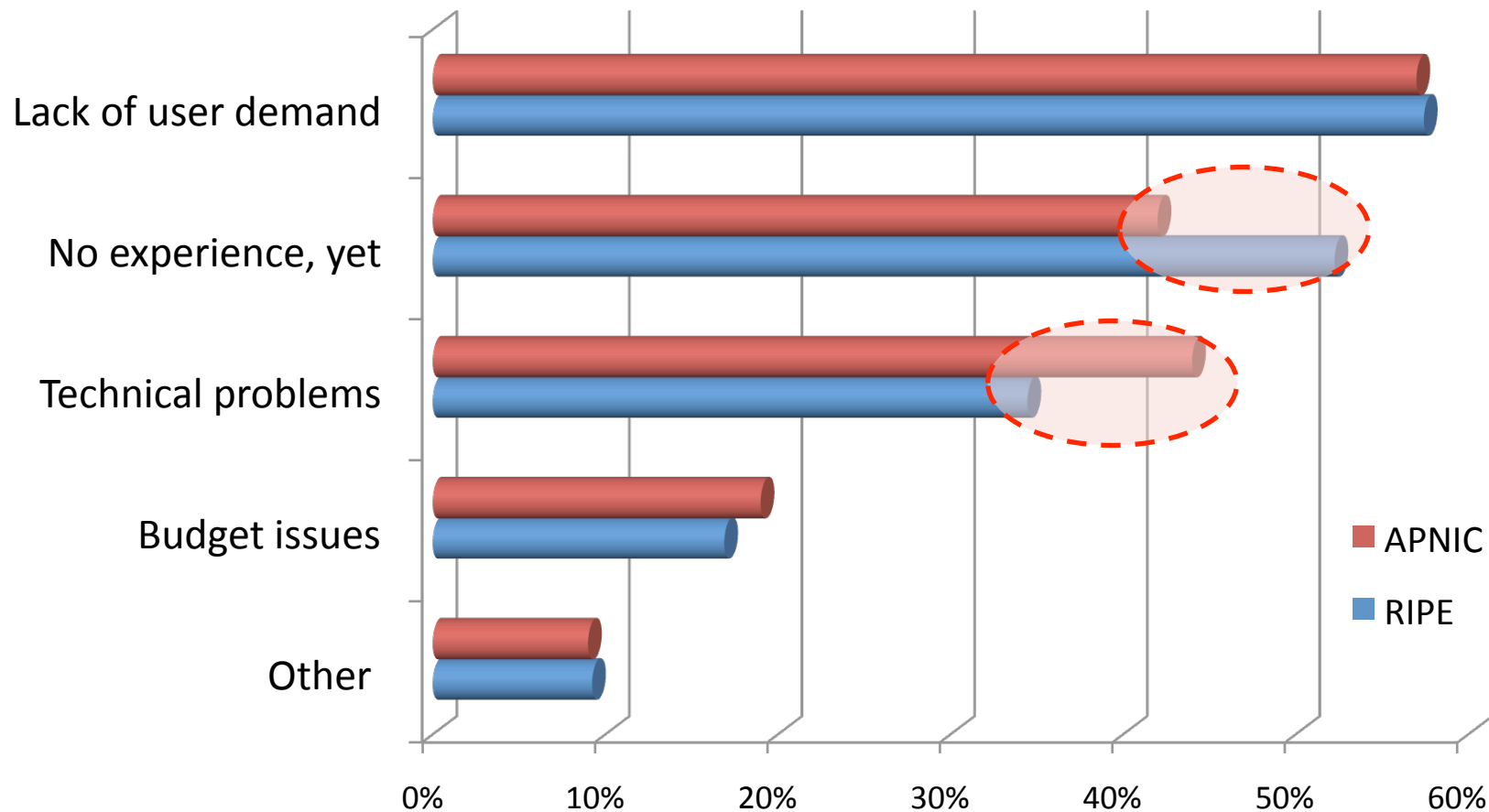
Biggest hurdles



Biggest hurdles



Experience: biggest problems with IPv6 in production?



What people
say ...



We don't need to deploy IPv6

- “IPv6 is not the ultimate solution for the Internet of the future. I will hold out with my current IPv4 with NAT until a better solution is available.”
- “My connection works, why should I use IPv6?”
- “I hear people say that NAT will do the trick. In that case I can keep my current addresses and network infrastructure.”
- IPv6 does not provide backwards compatibility with IPv4. How will my IPv6 network then communicate with IPv4 devices?

IPv6 deployment is cumbersome

- When I access a website on its usual domain name “http://xyz.com”, I am automatically routed to the IPv4 version of the site. To approach the IPv6 version (if it exists), I need to type explicitly “http://ipv6.xyz.com”. This is too cumbersome.
- “My network runs IPv4 and it’s working and I don’t gain anything when implementing IPv6 except increasing costs”
- “When I implement IPv6 in a customer’s network and the network fails more often than my regular IPv4 implementations: why should I get myself into these troubles?”
- “I have no idea how I should migrate my network, is there a roadmap /guideline for that?”
- “IPv4-IPv6 translation mechanisms have not been standardized yet. It is too early to adopt IPv6.”
- “My ISP does not support IPv6 yet, so I’m not able to migrate.”

IPv6 deployment is a security threat

- IPv6 security is less mature than IPv4, there is less experience with IPv6 security and reliability issues. So migrating to IPv6 might lower my security and reliability level.
- Running IPv6 next to IPv4 will make my organisation vulnerable to the sum of both protocol issues. (Also IPv6 might be used to attack IPv4 and vice versa.)
- Security devices (like firewalls, IDS, etc) for the IPv6 world are not available and/or do not offer the same capabilities as their IPv4 functionalities.
- “In IPv6 there is no NAT, therefore an IPv6-network will never be as secure as my IPv4 network. I don’t want my security risk to increase!”
- “Entering IPv6 addresses is much more error-prone than entering IPv4 addresses. This will lead to configuration mistakes and vulnerabilities in routing and security policies.” <http://www.ietf.org/internet-drafts/draft-kawamura-ipv6-text-representation-02.txt>

Can we help?



Please go to the session agenda
and tick on “[take the survey](#)” to
participate to the following
questions

Doing it

- What would you **gain** by postponing, and what would you gain by stepping up to the plate, earlier rather than later? Your current position:
 - By **postponing** deployment of IPv6 I **save costs** now. When the time has come, it will be cheaper to switch;
 - By **postponing** deployment of IPv6 I will be **able to rely on vendors** that are not all ready yet to help me out, today;
 - Postponing? I don't believe we will ever need to make the switch to IPv6;
 - By **stepping up** to the plate I have **time and space** to do the transition, which will allow me to do it gradually and well thought through;
 - By **stepping up** to the plate I will **attract customers** from other suppliers that do not offer IPv6 support, yet
 - By **stepping up** to the plate I confirm my **brand's image** as "state-of-the-art" or "top-of-the-wave"
 - None of the above

Your votes, please



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Hurdles

- There is **perception** and **experience** of/with a number of **hurdles** that seem to be difficult to overcome. Which are important to you:
 - As there is very little customer demand, I **cannot justify** the investment to my management, even if I would like to move;
 - I have the **experience** that **costs** for transition are **substantive**
 - I have the **perception** that **costs** for transition are **substantive**
 - I have the **experience** that it is **technically** very difficult
 - I have the **perception** that it is **technically** very difficult
 - I have the **experience** that my **vendors cannot deliver** what I need
 - I have the **perception** that my **vendors cannot deliver** what I need

Your votes, please



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What do you think?

- IPv6 has **no value over IPv4** for my organization in terms of deployment costs and risks, today
- IPv6 has **value over IPv4** for my organization in terms of deployment costs and risks, today
- The deployment of IPv6 is **unavoidable** for my organization **in due time**
- We will probably **never deploy IPv6**
- Technically, **everything is in place** to deploy IPv6
- Technically, **more needs to be done, urgently**, before we can effectively deploy IPv6

Your votes, please



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Actions that matter



EU IPv6 Action Plan

- Actions to stimulate IPv6 accessibility to content, services, and applications
 - Government information reachable via IPv6
 - Encourage content providers to offer their content via IPv6
 - Encourage standardization bodies and research projects to explore this
- Actions to generate demand for IPv6 connectivity and products through public procurement
 - Governments to take up IPv6 within their own networks, and service contracts
- Actions to ensure timely preparation for IPv6 deployment
 - Awareness campaigns and sharing of best practice experience
 - Standardization processes
 - Take IPv6 knowledge on board of curricula
- Actions to tackle security and privacy issues
 - Disseminate best practices
 - Monitor privacy and security issues arising through consultation of stakeholders
- Other actions than those mentioned in the Action Plan

Your votes, please



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

Questions regarding the survey and
this presentation:

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