# DSP LEADERS REPORTS

# QUANTUM-SAFE NETWORKING PERCEPTION REPORT

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# INTRODUCTION

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Welcome to the latest DSP Leaders report, which focuses on the telecom sector's view of quantum-safe networking.

As the quantum computing era approaches, network operators will need to consider how to revise their security strategies to deal with the potential threats that will arise as 'bad actors' use quantum computers to crack current encryption standards.

Some network operators are already quite well advanced with their approaches to quantum-safe networking – which is also referred to as quantum-secure networking, quantum-resistant networking and post-quantum networking – but, in general, the sector is still in the very early stages of deciding how and when to protect their systems and customers in the future.

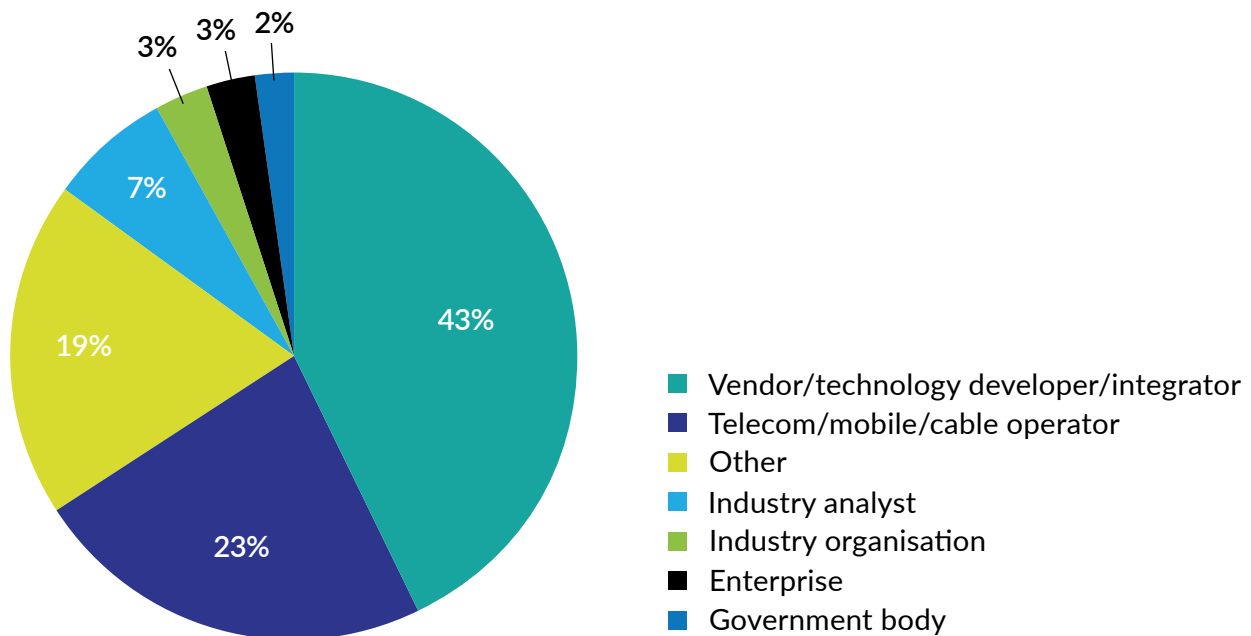Now, though, seems like a good time to lay the groundwork.

So we decided to survey the industry to gauge the current perception of the quantum-safe networking sector.

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# METHODOLOGY

We asked the TelecomTV community to complete our survey (and, indeed, share it with anyone else in the industry) and stressed that their responses would be anonymised. The survey was conducted during April 2024.
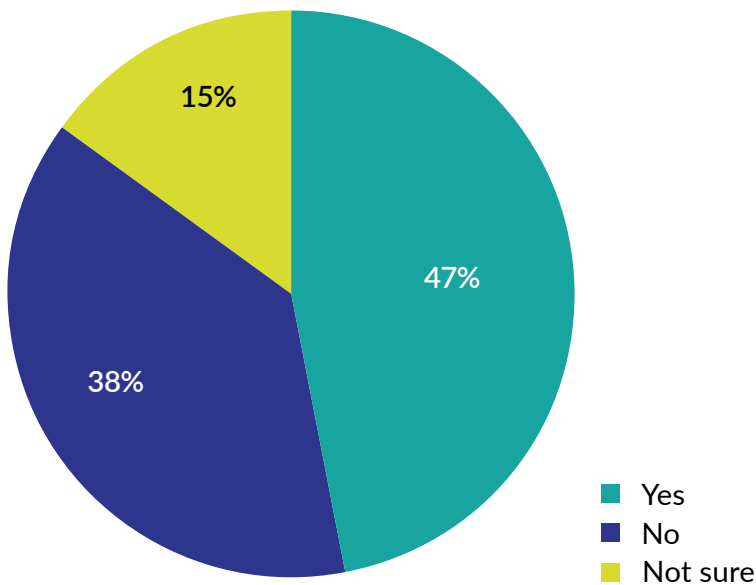
We received usable responses from 336 respondents, representing hundreds of companies from all sectors of the industry and from all regions of the world. Vendor respondents accounted for 43% of the total, network operators 23%, industry analysts 7%, enterprises 3%, industry organisation representatives 3%, government bodies 2% and 'other' 19%.



- Vendor/technology developer/integrator
- Telecom/mobile/cable operator
- Other
- Industry analyst
- Industry organisation
- Enterprise
- Government body

So let's look at the survey results and some of the key takeaways.

# INDUSTRY ACTIVITY

First of all, we wanted to know if our respondents work at companies that have some level of activity in this area, so we asked, **Does your company have a team that is exploring the development or deployment of technology that enables quantum-safe networking?**



Legend:
- Yes
- No
- Not sure

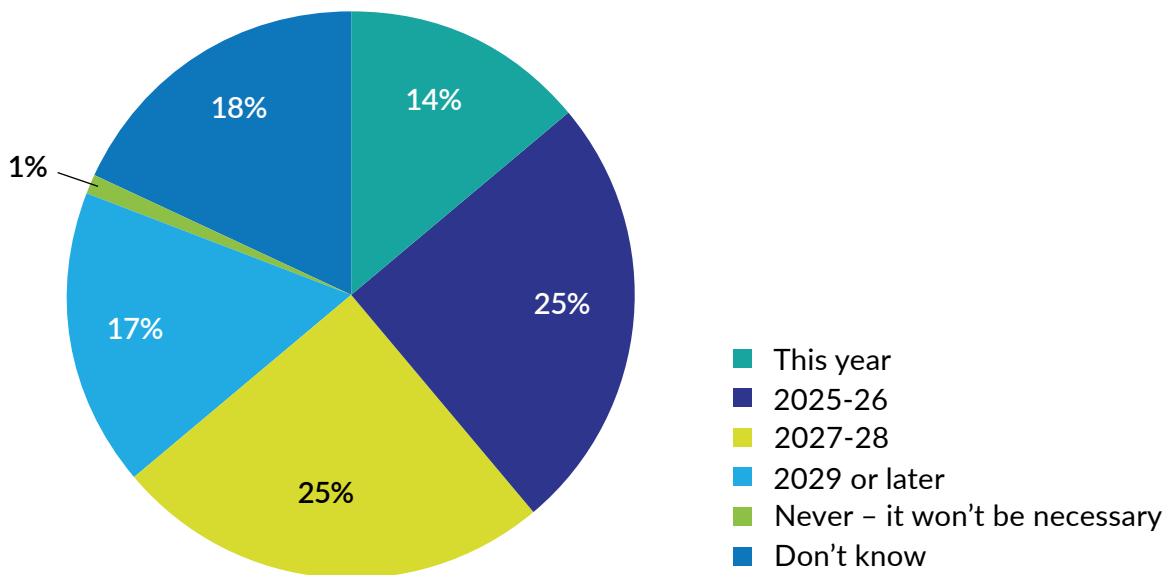(Pie chart values: 47%, 38%, 15%)

As with any such survey that's open to anyone to complete, it's always more likely that those with an interest in the topic in question will respond. With that in mind, you can see that 47% of our respondents answered yes, 38% said no and 15% weren't sure.

# A TIMELINE FOR QUANTUM-SAFE NETWORKING IN THE TELECOM SECTOR

One of the big challenges facing the network operator community (always!) is deciding which technology developments should be prioritised in terms of strategy and investment, and there are always arguments for and against being an early mover when it comes to emerging technology.

So we asked, **When do you think telecom operators should deploy technology that enables quantum-safe networking?**



Legend:
- This year
- 2025-26
- 2027-28
- 2029 or later
- Never – it won't be necessary
- Don't know

The main takeaway is that there isn't a clear consensus on when telcos should fire up their quantum-safe networking, though it's clear that most of our respondents believe this is something that needs to happen within the next five years.
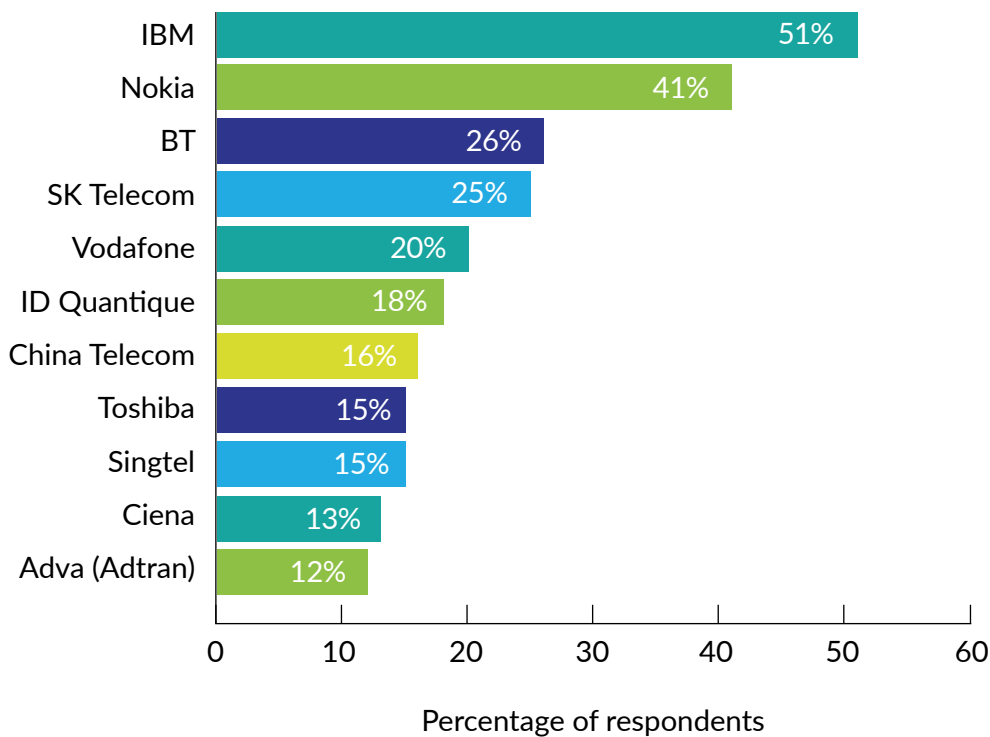
A not insignificant 14% believe telcos should be deploying the relevant technology this year, while 25% voted for 2025-26 and the same proportion voted for 2027-28. The '2029 or later' option attracted votes from 17% of our respondents, while 1% believe such deployments will never be needed! Just 18% of those who completed the survey opted for the 'Don't know' option.

It's clear, then, that if our respondents had their way, capex for the technology that enables quantum-safe networking will need to be allocated within the next few years.

# THE INDUSTRY EXPERTS

For those who are keen to figure out what to do next, who should they turn to for insight, advice, technology and inspiration? Which companies are already regarded as the experts? To find out, we asked, **Which, if any, of the following companies do you recognise as leaders in the development of technology that will enable quantum-safe networking?**

Respondents were able to select as many of the options we provided as they wished, as well as suggest others that we hadn't offered up.

| Company | Percentage |
|---|---|
| IBM | 51% |
| Nokia | 41% |
| BT | 26% |
| SK Telecom | 25% |
| Vodafone | 20% |
| ID Quantique | 18% |
| China Telecom | 16% |
| Toshiba | 15% |
| Singtel | 15% |
| Ciena | 13% |
| Adva (Adtran) | 12% |

Percentage of respondents

It shouldn't come as a surprise to many that IBM received more votes than any of the other options we provided for our respondents: The company has been involved in quantum computing research and development for decades and is already involved in multiple initiatives in the telecom sector related to quantum-safe networking, and that is reflected in its 51% score.

Nokia ranked second, attracting votes from 41% of our respondents. Again, it is a company with plenty of history and experience in this field both through the work undertaken at Bell Labs over the past few decades and its existing offers to the telecom sector.

Interestingly, the next three companies on our ranking are network operators – the UK's BT (26%), South Korea's SK Telecom (25%) and the UK/Europe's Vodafone (20%). ➔

This represents the level of involvement they have already had with standards developments, trials, deployments and early end-user engagements, as well as their willingness to disclose and discuss their developments (not all are so keen).

Also worthy of mention is the 18% that identified ID Quantique as a leader in this sector: The Swiss specialist, in which SK Telecom holds a significant stake, has been developing quantum-safe security solutions for more than two decades already and is a partner to many companies in the communications networking sector.

You can see the rest of the rankings in the graph on page 6.

We also asked our respondents to identify other companies they regarded as leaders in this sector: Cisco, Deutsche Telekom, Ericsson, Google, Intel, HPE, Orange, Juniper Networks and Microsoft received multiple mentions.

If you have any questions about the council or our surveys, please do shoot me an email at ray@telecomtv.com

# UPCOMING EVENTS

Our year-round programme of online and in-person events, expands on the crucial topics of interest to the DSP Leaders community. For more information and to sign up visit: www.telecomtv.com/events/

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|---|---|
| DIGITAL SUPPORT SYSTEMS | OPEN RAN |

| 5-6 JUNE 2024 | 17-19 SEPTEMBER 2024 |
|---|---|
| DSP LEADERS \| WORLD FORUM | CLOUD NATIVE TELCO |

| 15-16 OCTOBER 2024 | 12-13 NOVEMBER 2024 |
|---|---|
| THE AI-NATIVE TELCO | OPEN TELCO INFRA |

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