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HEAVY READING
WHITE PAPER

5G Core Operator Survey (2025 Edition): Scaling 5G SA

A Heavy Reading white paper produced for AMD, Mavenir, and Red Hat

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INTRODUCTION AND KEY FINDINGS

This report presents the results of the Heavy Reading (now part of Omdia) **5G Core Operator Survey (2025 Edition)** conducted in the spring of 2025. Published in June 2025, this is the third edition of the operator survey, which was previously published in January 2023 and March 2021.

Key findings

- **5G standalone (SA) is set to scale worldwide.** Of all operator respondents, 35% say their company is live with SA nationwide, and 20% will be by the end of the year. This is a strong signal that 5G SA is now established across the industry and will scale rapidly as compatible devices enter the user base. A critical mass is building behind 5G SA that will unlock innovation in the wider mobile network services ecosystem. This positive outlook is tempered by the sizable part of the global operator base that is still in the early phases of deployment or is not yet equipped to deploy and scale SA.
- **"New or better services" scored highest as the primary driver for 5G core investment, according to 41% of respondents.** This is a strong signal that operators associate 5G core with an evolution and improvement of their service offer. However, 41% falls short of a majority, and there is a wide range of secondary reasons that will, in combination, be used to help support the investment decision.
- **Network slicing—arguably the canonical new service capability enabled by SA—is a good indicator of the outlook for 5G SA services.** Of all respondents, 11% have deployed their first slicing use case, and a further 15% have started implementation and testing. These two groups make up the vanguard; however, with a combined 26% score, the survey confirms that network slicing is not yet established on an industry-wide basis. Nevertheless, Heavy Reading (now part of Omdia) expects to see more services delivered over network slices in the medium term. In the meantime, the survey indicates that a simplified Data Network Name (DNN) mechanism will be widely used to define service policies and route network traffic.
- **5G core is cloud native technology; telcos are ready and are leaning into cloud.** There has been industry debate as to whether mobile operators are ready to transition to cloud operating models. The survey makes clear that they are, and they will. Asked when most of their 5G core network functions will run on cloud native infrastructure (i.e., as cloud native network functions [CNFs]), 33% say this is already the case, 20% by the end of this year, and 30% by the end of 2026. This does not mean all the challenges are solved; however, it shows that 5G core is one of the domains leading the telco industry transition to cloud native.
- **Experience in 5G core is a major benefit for extending cloud native technology and operating models to the RAN.** About a quarter (26%) have already "created a combined telco cloud team to manage core and vRAN," and a large 39% expect to create a combined team "but have not done so yet." A clear majority, then, expect to extend cloud expertise from the core to the RAN. Only 11% say their organization has no plans for vRAN.

- **A large majority (79%) of respondents expect to separate the cloud stack from the 5G core network function (NF) layer, which is consistent with basic cloud principles.** However, many (51%) want some form of certified, supported integration between server and containers as a service (CaaS) layers. This is a highly practical approach. A fifth of respondents (21%) want all layers—hardware, CaaS, and CNFs—to be disaggregated and independently sourced. This is the cloud purist approach. And a decent proportion (28%) expect a full stack vendor solution, including hardware, from their network equipment provider. This is a practical, low risk approach, but arguably comes at the expense of flexibility and optionality.
- **There is a strong supporting role for public cloud in 5G core**. Operators want the option of being able to use public cloud for 5G core and some view it as highly strategic: About a third (34%) say it is "very important" and that "they need a 5G core that can be 50/50 on-prem and in public cloud, or any combination thereof." A larger group (46%) expects to deploy 5G core on-prem on private telco cloud infrastructure but would like to deploy "a small subset of functions on public cloud."
- **For scenarios ancillary to the main 5G core, the lead use cases for public cloud are** disaster recovery and failover (60%); burst capacity at busy times or at special events (52%); and public cloud for mobile core analytics and artificial intelligence (AI) data processing (49%).
- **Operators must make hard trade-offs between subscriber/traffic density and server performance.** Operators welcome high performance servers but must invest in—and trust—failover and recovery mechanisms to minimize the impact of a server failure. The largest group (42%) considers this trade-off a "very important consideration." Other respondents are either more conservative (29%) in their view on the risks of performance density or are less concerned and score the risk as "important" but not critical (27%). Only 1% are unconcerned and want performance density above all else.
- **There is consensus that 6G should be SA from "day 1," even though there is not yet a clear view on what this means for the core network.** For now, in the Heavy Reading (now part of Omdia) survey, a slim majority of 52% of respondents think 6G core will be "based on an updated 5G core with several new 6G functions," and only 12% on a "new core network." The implication of this view, if it holds, is that investment in today's 5G core network infrastructure—including cloud platforms, CNFs, and operating tools—will carry forward to the 6G era. A quarter (24%), understandably, say it is "too soon to speculate."

SURVEY BACKGROUND AND DEMOGRAPHICS

The **5G Core Operator Survey (2025 Edition)** was conducted online in April and May 2025. The questionnaire was written by Heavy Reading (now part of Omdia) with input from project sponsors AMD, Mavenir, and Red Hat. It was promoted to the Light Reading service provider database and received 95 responses from individuals working at operators with mobile network businesses.

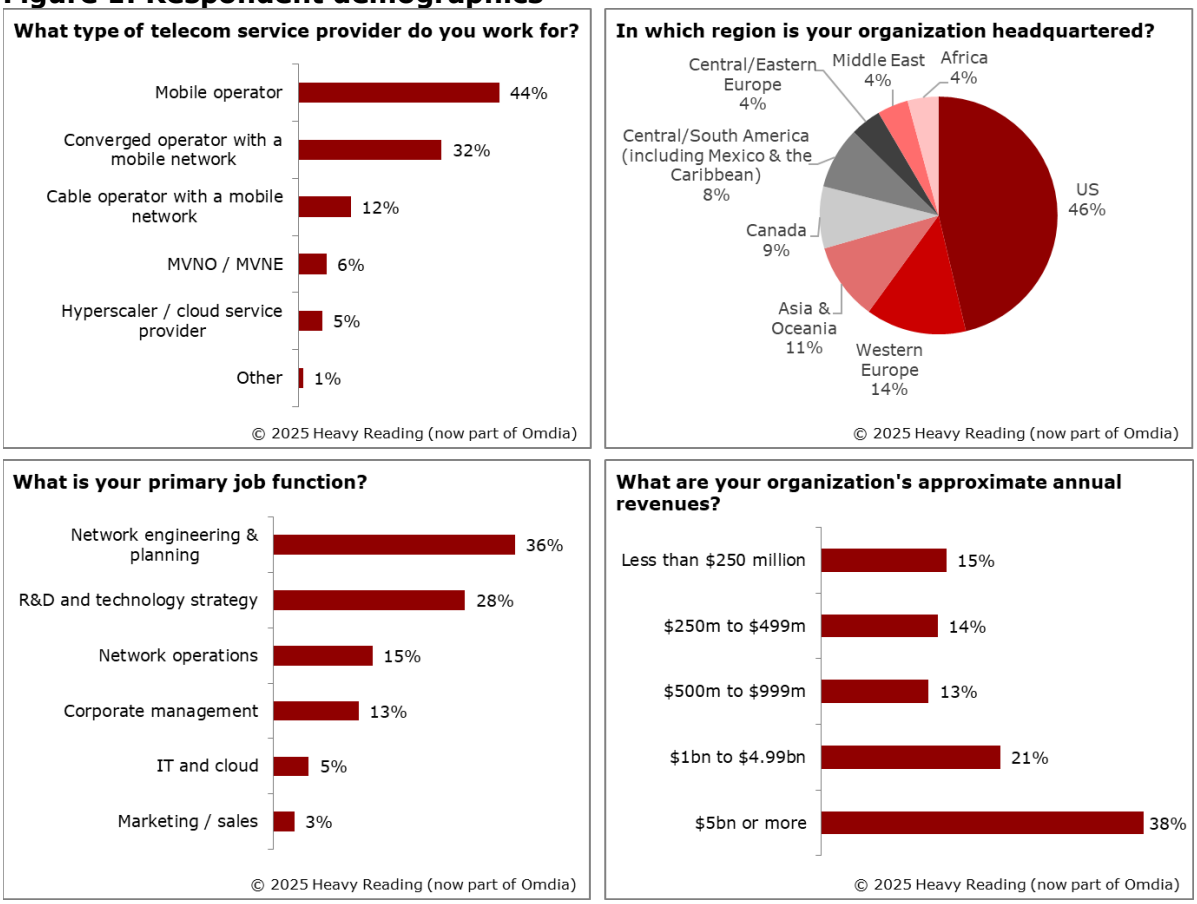
Qualified operator respondents were asked to self-assess their knowledge of their company's mobile core network strategy. Only those that said they have "detailed knowledge" of mobile core networks, or "knowledge at a network strategy level," are presented in this report. The survey, therefore, represents a well-informed respondent base.

All responses are confidential and are only ever presented in aggregate form. Heavy Reading (now part of Omdia) does not share individual names or company names from the survey. The 95 responses represent approximately 55 different operators, depending on how subsidiaries and group companies are counted.

Respondent demographics

Figure 1 shows the respondent demographics. Of all respondents, 44% work at pure-play mobile operators and 32% at converged operators with a mobile network, for a combined 76% of the total. The remainder is from an assortment of operator types.

Figure 1: Respondent demographics



Note: Numbers in figures throughout this report may not total 100 due to rounding. (n=95)
Source: Heavy Reading (now part of Omdia)

The US is the largest market represented, with 46% of the response. This allows Heavy Reading (now part of Omdia) to compare the US to the Rest of World (RoW) with reasonable confidence. Where demographic filters are used in the analysis, it is made clear in the text of the report.

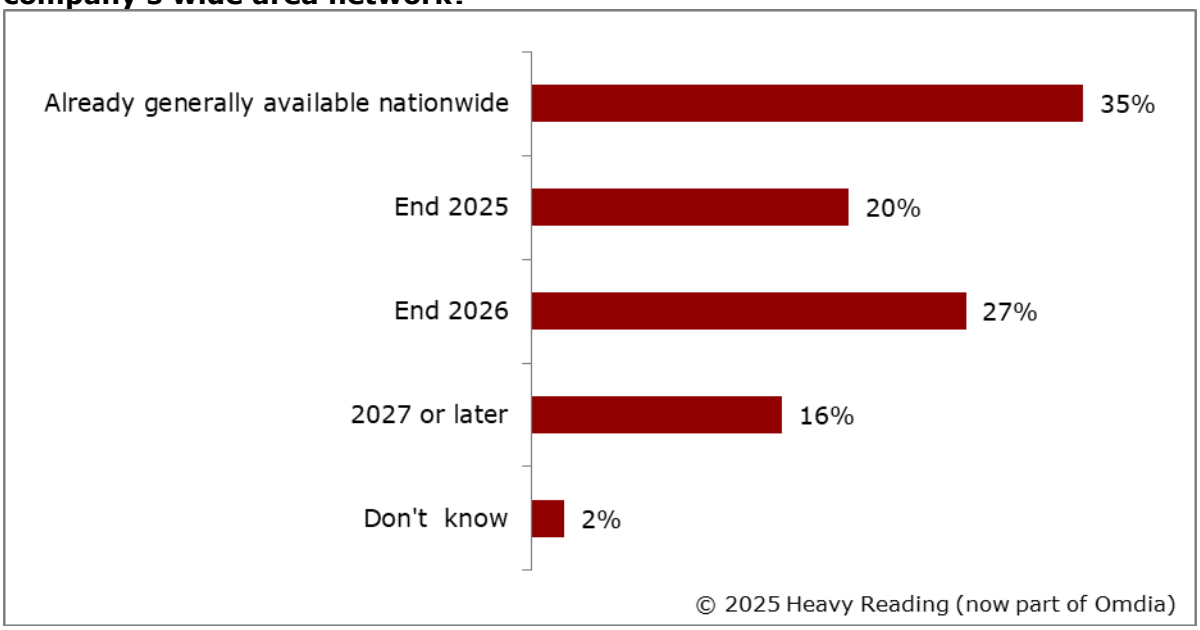
In terms of job roles, network engineering and planning is the largest group, with 36%, followed by R&D and technical strategy roles with 28%.

Operators with more than $5bn in annual revenue (38%) lead the response, followed by 21% with between $1bn and $4.99bn. These represent national-scale operators. However, there are also a good number of smaller-scale operators in the survey base.

5G CORE SERVICE STRATEGIES

The 5G SA architecture requires a 5G core. **Figure 2** asks when 5G SA will be generally available nationwide and is, therefore, a proxy for the deployment of 5G core networks. The survey shows 35% are already live and 20% will be by the end of the year. This is a strong signal that 5G SA is now established industry-wide and will scale rapidly as compatible devices enter the user base.

Figure 2: When will 5G standalone (SA) be generally available nationwide in your company's wide area network?



n=95
Source: Heavy Reading (now part of Omdia)

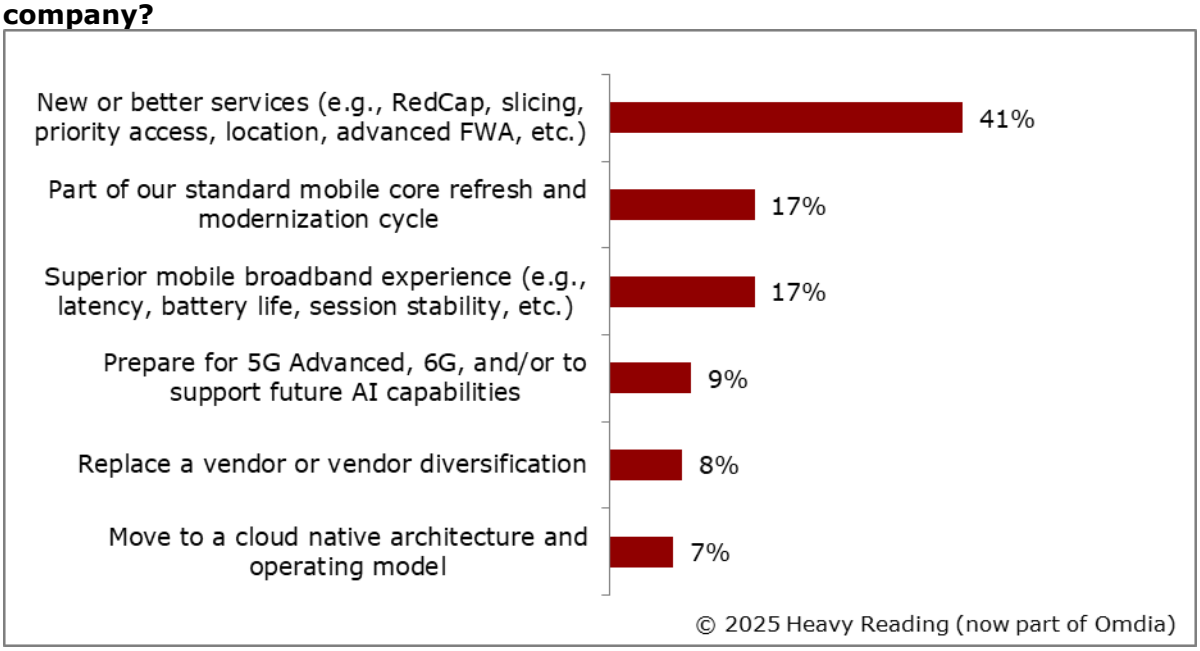
Services capabilities drive 5G core investment … to an extent

Motivation for investment in 5G SA core is important to understand. Upgrading and optimizing the 5G RAN and deploying a 5G core and attendant functions are major investments in capex and engineering resources. To get a sense of what will propel deployment, **Figure 3** asks about the most important driver for 5G core investment.

"New or better services" scored highest, with 41% saying it is the primary driver for 5G core investment. This is a strong signal that operators associate 5G core with a fundamental evolution and improvement of their service offer, rather than as an incremental upgrade.

The even distribution of other responses, however, indicates there will be a wide range of secondary reasons to support the investment decision behind the primary one of service innovation. In combination, secondary reasons account for a majority of the response, and this makes it important to add the caveat that while "new services" are the primary driver for 5G core, there is not across-the-board support for this view.

Figure 3: What is the most important driver for 5G core investment at your company?



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Source: Heavy Reading (now part of Omdia)

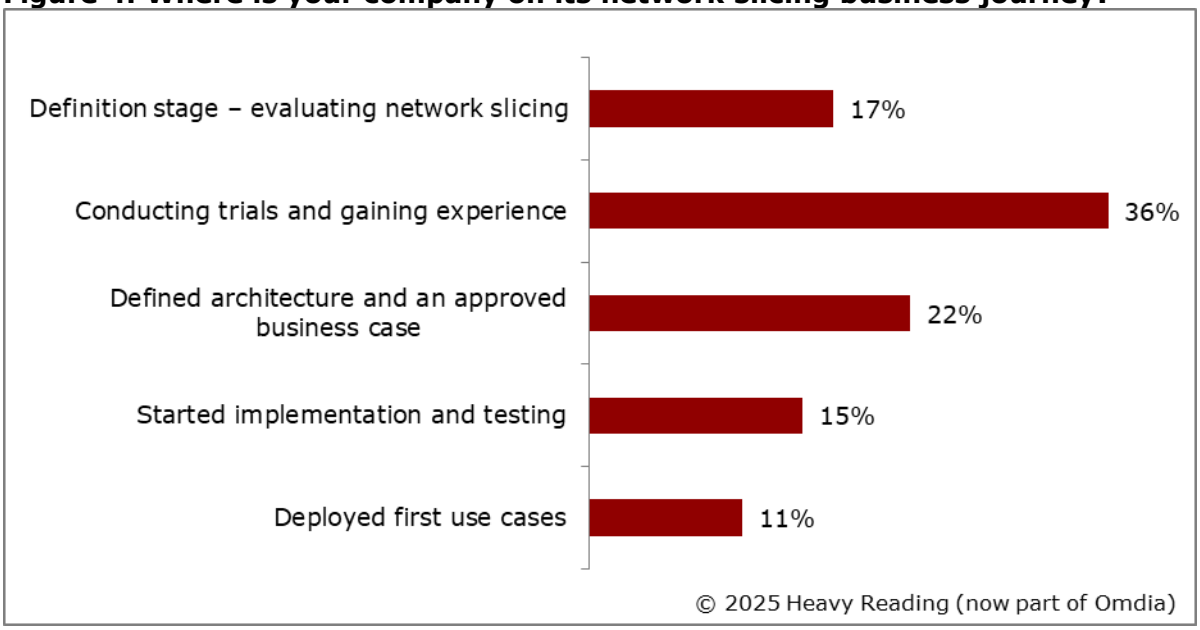
Network slicing commercial readiness

Network slicing is, arguably, the canonical new capability enabled by SA that can be used to create new services. Currently, it is a technology used by leading operators to provide high end, manually provisioned services such as for public safety or government communications. As RAN and handset capabilities evolve, and orchestration, lifecycle automation, and integration with business support systems (BSS)/operations support systems (OSS) occur, Heavy Reading (now part of Omdia) expects to see many more services delivered over network slices.

Figure 4 shows that 11% of respondents have deployed their first slicing use case, which is consistent with news flow from leading service providers. A further 15% have started implementation and testing. In combination, these two groups make up the vanguard; however, with a combined 26%, network slicing is not yet established on an industry-wide basis. It does not yet have critical mass.

A second wave of 22% has a defined architecture and business case, indicating network slicing will be progressively introduced over the next couple of years. A good number (36%) are still in the early phases of conducting trials, and 17% are still in evaluation mode, showing there is indeed a way to go before slicing is a widely deployed capability.

Figure 4: Where is your company on its network slicing business journey?



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Source: Heavy Reading (now part of Omdia)

5G CORE DEPLOYMENT ARCHITECTURE

The 5G architecture incorporates many functions that can be deployed in different combinations, on different technology platforms, and with different options for backward compatibility and future evolution. This section investigates these choices.

Single or multiple core networks for diverse use cases

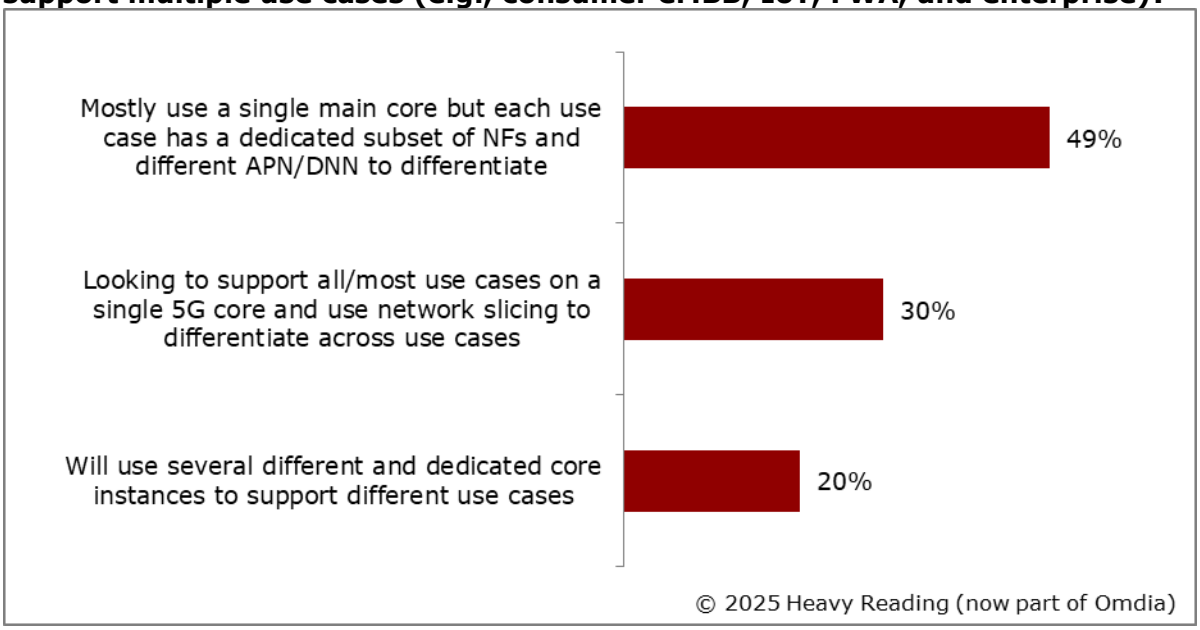
The 5G core architecture offers several ways to support and monetize different service types, device types, and use cases. The simplest approach is to use a DNN mechanism to define the service policies and network path for a data session. A DNN is an evolution of the Access Point Name (APN) concept in 4G. **Figure 5** shows this will indeed be the most popular approach to support diverse use cases in a 5G core, with 49% expecting to use this mode in the first instance.

The next 30% will look to network slicing (which can be used in combination with DNNs) to manage different use cases on a single 5G core. This is a positive outlook for network slicing, and Heavy Reading (now part of Omdia) continues to believe slicing is a critical technology for SA networks, even in light of its complexities. However, as noted above (**Figure 4**), slicing is still immature and is arguably overly complex for many service types relative to simplified DNN-only mechanisms.

A fifth (20%) will run separate cores for different use cases. This method is suited to larger customers such as virtual network operators, government agencies, or large companies with industry-specific requirements (e.g., for security, scalability, control, or observability).

Heavy Reading (now part of Omdia) believes large, sophisticated operators will use a combination of all three modes to support customers.

Figure 5: Does your company expect to have a common 5G core instance to support multiple use cases (e.g., consumer eMBB, IoT, FWA, and enterprise)?



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Source: Heavy Reading (now part of Omdia)

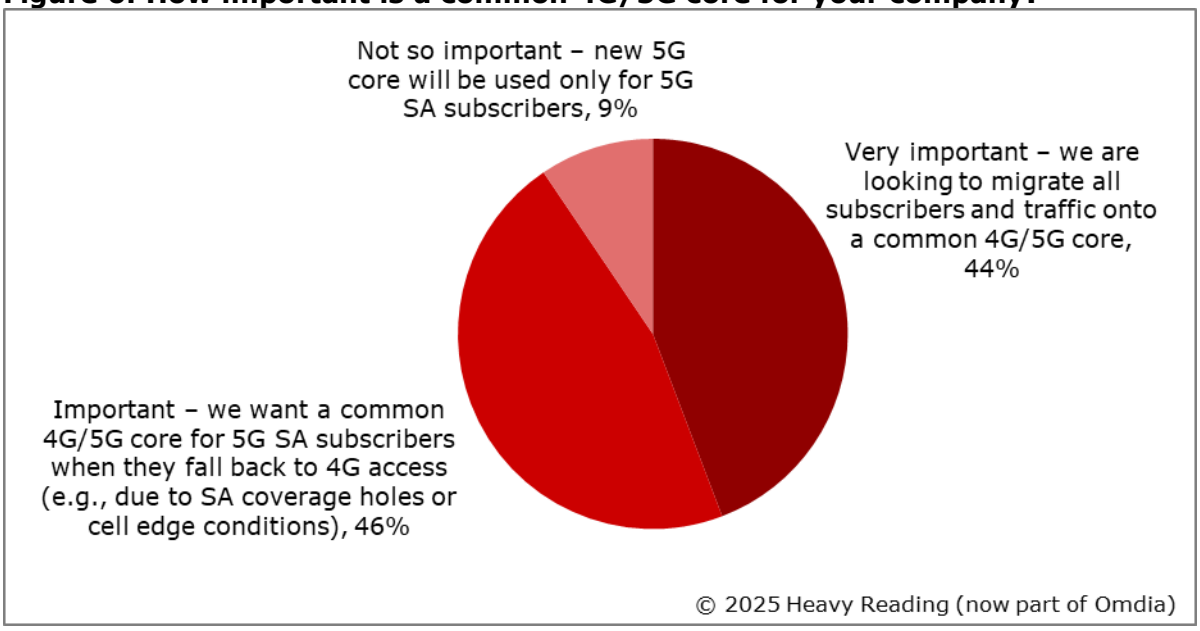
A common, combined 4G/5G core

A fundamental decision for network strategists is whether to create a common core for 4G and 5G users, run separate cores, or some combination of the two modes. **Figure 6** shows strong support for a common 4G/5G core, with only 9% expecting to run a separate 5G-only core. There is, however, a split between those that will run a fully combined 4G/5G core and those that will run a common core for 5G subscribers when they fall back to 4G access.

The 44% that say "we are looking to migrate all subscribers and traffic onto a common 4G/5G core" represent operators that will upgrade and replace their 4G packet core as part of their 5G core deployment. This is, arguably, the more complex option and will likely be phased in over time. Ultimately, most operators are likely to reach this position.

The 46% that say they want a common 4G/5G core for 5G SA subscribers when they fall back to 4G access (e.g., due to SA coverage holes or cell edge conditions) see the user experience advantages of a combined core for 5G users, who are typically their premium customers. The implication is that for 4G-only users, there is no real need to migrate to a new core platform, and that it may be simpler to continue to run the existing 4G core and then gradually phase it down as users migrate to 5G over time.

Figure 6: How important is a common 4G/5G core for your company?



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Source: Heavy Reading (now part of Omdia)

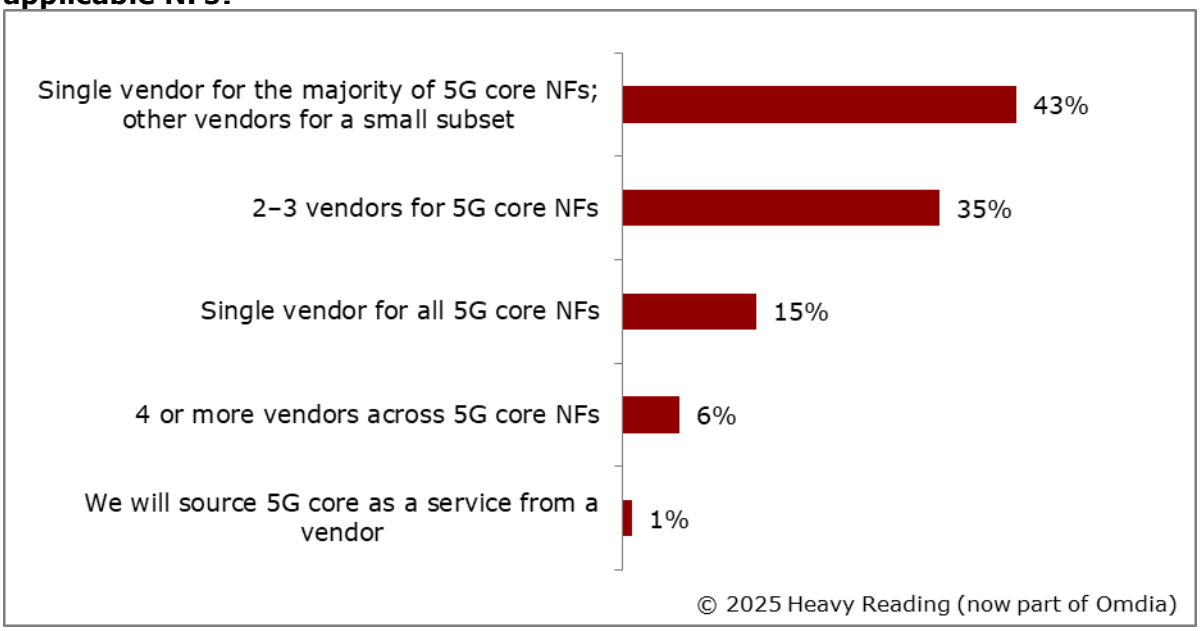
5G core vendor choices

A 5G core is made up of many NFs (arguably, too many!). It is, therefore, natural to ask how many vendors an operator would use to supply these functions. **Figure 7** shows that just 15% will go with a "single vendor for all 5G core NFs," and only 6% expect to use four or more vendors of 5G core NFs.

The largest group is the 43% that expect to use a "single vendor for the majority of 5G core NFs and other vendors for a small subset." This indicates, pretty clearly, that operators will select a prime vendor and commit most of their spending to that supplier.

There is, however, also strong support for multi-vendor 5G core from a combined 41% (based on 35% for two to three vendors and 6% for four or more vendors). This shows there is demand for supplier diversity. Multi-vendor strategies can be useful in many ways (for example, to help maintain commercial tension between suppliers, or to allow an operator to use a trusted or specialist partner for particular functions). However, the work of integrating vendors is generally considered to be harder.

Figure 7: How many vendors will be part of your company's 5G core across all applicable NFs?



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Source: Heavy Reading (now part of Omdia)

Data strategies for AI networking

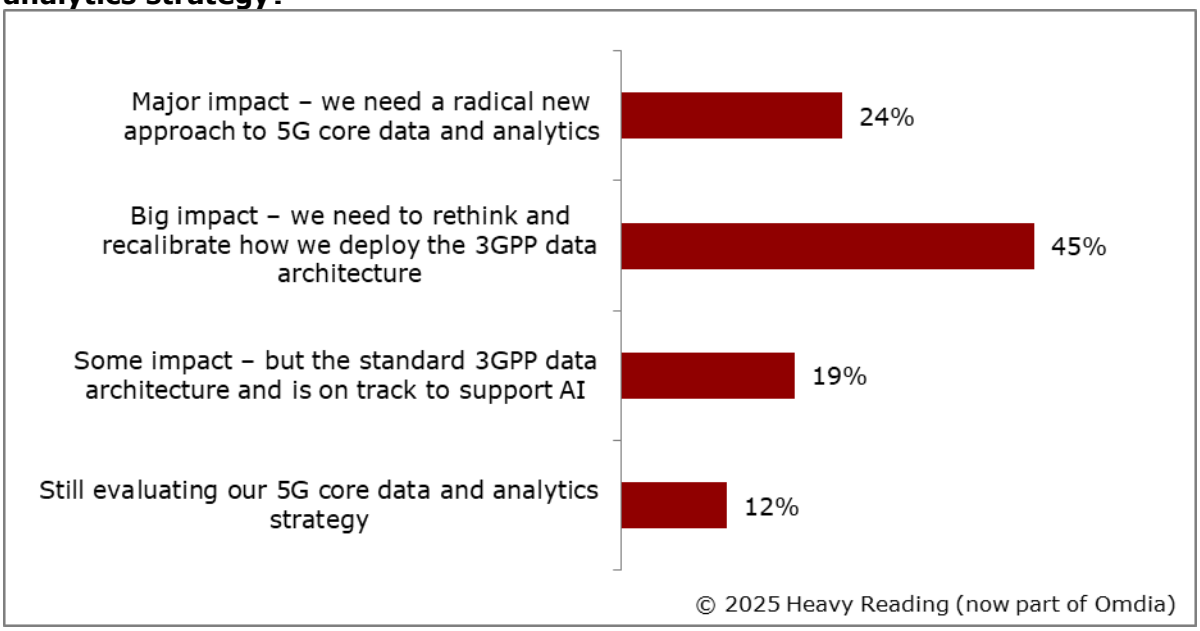
The NFs that make up the 5G core are a critical source of network data that can be used for monitoring, management, and optimization. The 5G core architecture also includes the network data and analytics function (NWDAF), which collects and analyzes data from various NFs to enable data-driven network automation. The NWDAF, for example, was first introduced as a concept in 3GPP in 2017 and then specified in Release 15 at the end of 2018 (3GPP Technical specification 23.501). It has not, however, been widely deployed.

In the meantime, AI has advanced rapidly, and operators are seeking to apply the technology to their networks. **Figure 8** shows how operators think AI might impact their 5G core data and analytics strategies. About a quarter (24%) say AI is having such a major impact that they need "a radical new approach to 5G core data and analytics." This is a disruptive view of data analytics for the 5G core.

A further 45% make a slightly less dramatic assessment, but nevertheless believe AI will have a "big impact" and that they "need to rethink and recalibrate how we deploy the 3GPP data architecture."

The strength of response from these two groups shows that 5G core data strategies are indeed in the creation (or redevelopment) phase. Decisions about the 5G core data architecture are a good opportunity to make the right AI technical choices and investments for the long term. However, AI-centric strategies for 5G core data and analytics are likely to slow decision-making. For example, Heavy Reading (now part of Omdia) is aware of operators that have made their NWDAF selection part of a wider network AI strategy and delayed their decisions as a result.

Figure 8: What impact are AI opportunities having on your 5G core data and analytics strategy?



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Source: Heavy Reading (now part of Omdia)

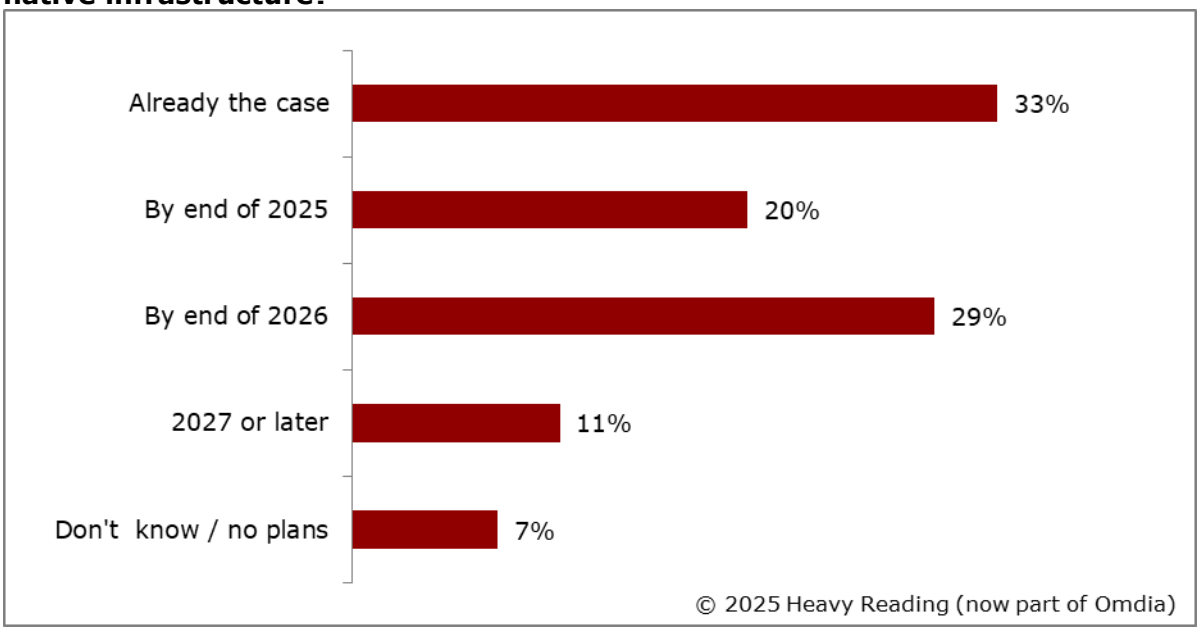
CLOUD INFRASTRUCTURE AND OPERATIONS

There has been some industry debate as to whether mobile operators are ready to transition to cloud operating models. The survey responses make it clear that 5G core is, largely, cloud native technology.

5G core is cloud native

Figure 9 shows when operators expect most of their 5G core NFs to run on cloud native infrastructure (i.e., as CNFs). Of all operators, 33% say this is already the case, 20% by the end of this year, and 30% by the end of 2026. These percentages align very closely with the response to the question on 5G SA timelines discussed in **Figure 2** above. The relationship between SA launch and the transition to cloud native core is almost a perfect match. This does not mean all the challenges are solved; however, it shows that 5G core is one of the domains leading the telco industry transition to cloud.

Figure 9: When will most of your 5G core network functions (NFs) run on cloud-native infrastructure?



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Source: Heavy Reading (now part of Omdia)

5G core cloud technology stack

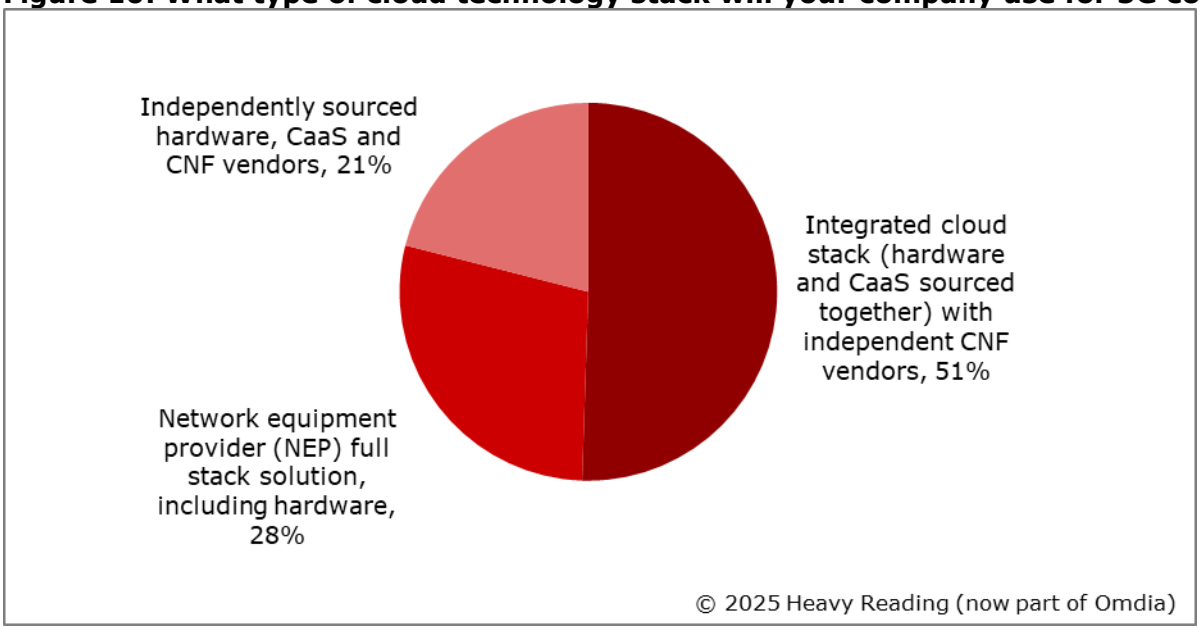
The cloud technology stack for 5G core, and which vendors or open source distributions will be used at which layer of the stack, has been extensively discussed, trialed, deployed, and redesigned, in the five years since 5G has been live.

Figure 10 shows that a large majority of respondents expect to separate the cloud stack from the 5G core NF layer, which is consistent with basic cloud principles. However, many (51%) want some form of integration between the cloud hardware and CaaS software. This does not mean these operators want a single vendor; however, they do want some form of certified, supported integration between server and CaaS layers. This is a highly practical approach.

About a fifth of respondents (21%) want all layers—hardware, CaaS, and CNFs—to be disaggregated and independently sourced. This is the cloud purist approach.

A decent proportion (28%) expect a full stack vendor solution, including hardware, from their network equipment provider. This is a practical, low risk approach, but arguably comes at the expense of flexibility, optionality, and the ability to scale.

Figure 10: What type of cloud technology stack will your company use for 5G core?



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Source: Heavy Reading (now part of Omdia)

Horizontal telco cloud platforms

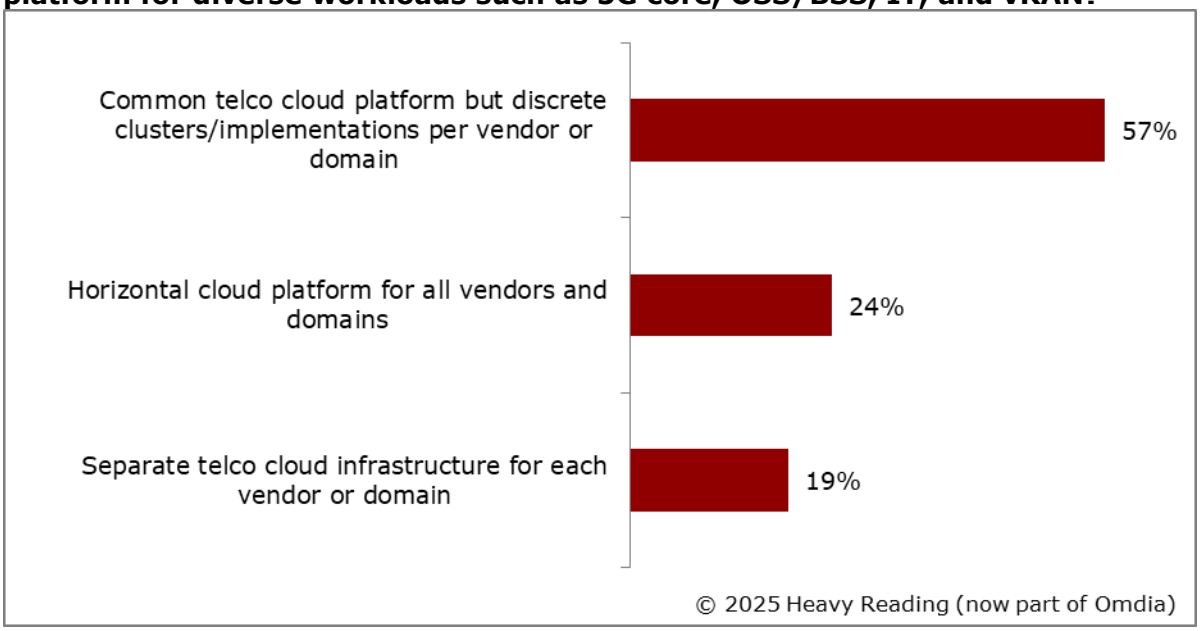
Some years ago, companies in the mobile network and cloud industry proposed horizontal telco cloud infrastructure that could run all types of workloads from many different CNF vendors. This was, at the time, the purist cloud native telco vision. Anecdotally, it appears that this vision has evolved to a model where operators would deploy telco cloud on a common hardware and CaaS layer, but as discrete server clusters implemented on a per-domain or per-vendor basis.

The reasons for discrete cluster implementation are to limit the frequency and severity of failures and to secure better, more integrated technical support from CaaS and CNF vendors. This model makes life more viable for network operations teams and helps ensure they meet their network service availability targets. It also generates economies of scale in hardware, CaaS software, and operating tools/skills. It looks like a sensible place for telcos to "land" their telco cloud vision, for now.

The survey tests this theory by asking operators how they are building common telco cloud platforms for diverse workloads such as 5G core, OSS/BSS, IT, and vRAN. **Figure 11** shows the largest number (57%) say they will deploy a "common telco cloud platform but discrete clusters/implementations per vendor or domain," which strongly supports the thesis.

A notable 24% remain committed to the purist horizontal telco cloud vision. This is a technically advanced strategy and, with sufficient investment in architecture, skills, tools, and so on, should give operators maximum control and flexibility.

Figure 11: What is your company's strategy for building a common telco cloud platform for diverse workloads such as 5G core, OSS/BSS, IT, and vRAN?



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Source: Heavy Reading (now part of Omdia)

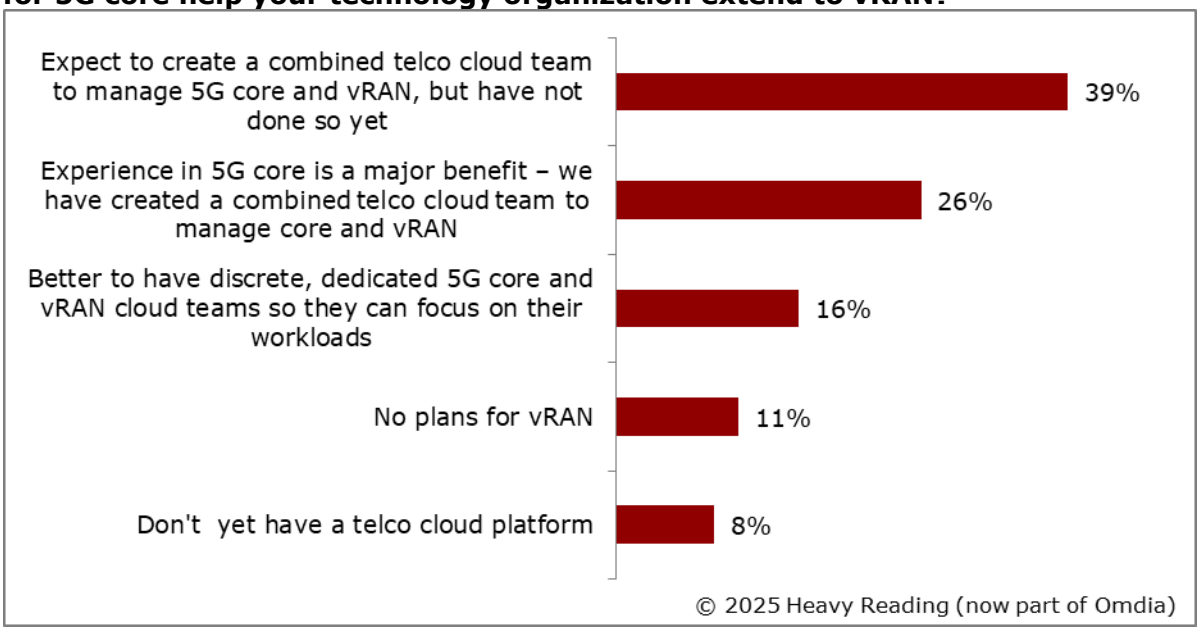
Extending telco cloud core to vRAN

In mobile operators, the network cloud is typically initially deployed for core networks. There is then potential to extend this infrastructure to support virtualized radio access (a.k.a., vRAN or cloud RAN). The survey asks, if operators expect to move to vRAN, will they look to use the same telco cloud team to run operations as they use for the 5G core?

Figure 12 shows that 26% think experience in 5G core is a major benefit and have already "created a combined telco cloud team to manage core and vRAN." A large 39% expect to create a combined team, "but have not done so yet." A clear majority, then, expect to extend cloud expertise from the core to the RAN.

Only 11% say their organization has no plans for vRAN. Since this is a core network survey, respondents may not be fully versed in their company's RAN strategy; nevertheless, it is an indicator that vRAN is set to take a larger role in mobile networks.

Figure 12: How does experience with cloud native platforms and methodologies for 5G core help your technology organization extend to vRAN?



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Source: Heavy Reading (now part of Omdia)

Hybrid private-public cloud for 5G core

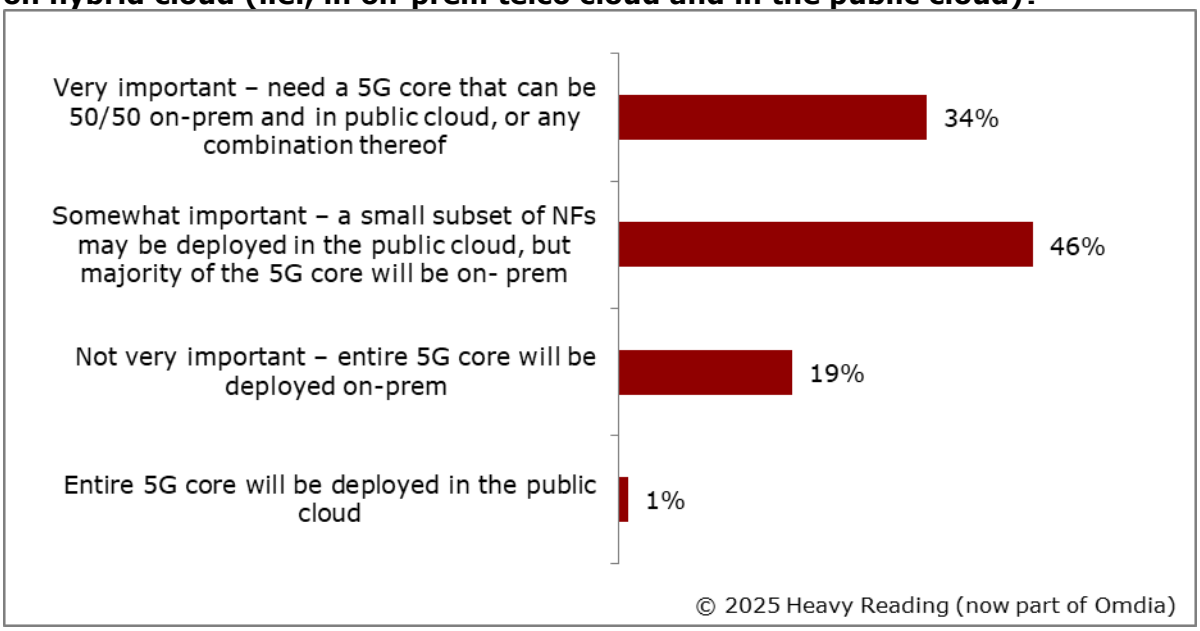
The survey has already established that 5G core will be deployed on private telco cloud infrastructure. A cloud native core implies some level of portability for CNFs across platforms, including to the public cloud. Public cloud offers potential advantages for 5G core, such as scale economics, mature tooling, and so on, and it presents challenges, such as regulation, cost, and control.

Figure 13 shows operators want the option of being able to use public cloud for 5G core, and that some view it as highly strategic. About a third (34%) say it is "very important" and that "they need a 5G core that can be 50/50 on-prem and in public cloud, or any combination thereof." This is a little higher than Heavy Reading (now part of Omdia) had expected and indicates that public cloud providers are becoming established as an important part of the 5G core ecosystem.

To be clear, the larger group (46%) expect to deploy 5G core on-prem on private telco cloud infrastructure but would like to deploy "a small subset of functions on public cloud." And a solid 19% say the entire 5G core will be an on-premises private cloud deployment.

One way to interpret these results is that operators like the optionality and functionality that public cloud offers. They do not necessarily want to depend on it to underpin their networks, but they want to be able to use public cloud infrastructure and services. In combination, these results indicate that for most operators, hyperscalers are cast in more of a supporting role than a leading one.

Figure 13: How important is it that your company's main 5G core can be deployed on hybrid cloud (i.e., in on-prem telco cloud and in the public cloud)?



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Source: Heavy Reading (now part of Omdia)

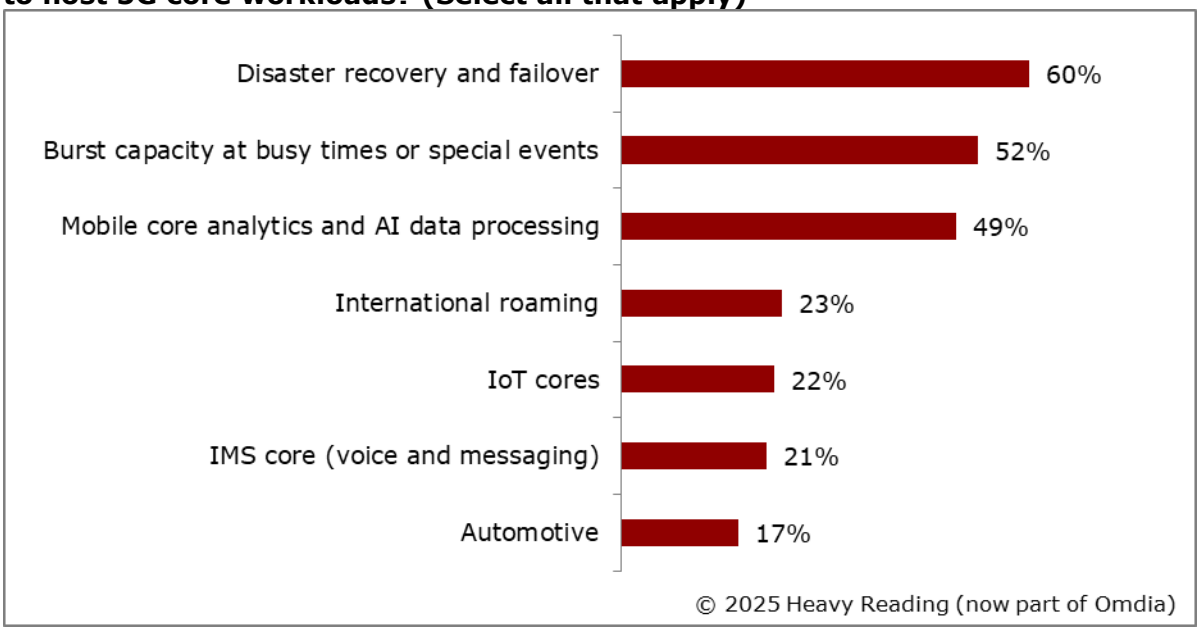
Lead scenarios for public cloud and 5G core

Figure 14 asks about scenarios ancillary to the main 5G core that may be suited to public cloud deployment. Each of the options presented in the question scored pretty well, and the top three stand out as having a critical mass of support.

In the lead is disaster recovery and failover at 60%. Hyperscalers offer highly resilient infrastructure available on a quasi-on-demand basis, and disaster recovery is a logical use case that offers high value to operators. Burst capacity at busy times or at special events (52%) is similarly well suited to the purported "on-demand" model promoted by public cloud companies. In both cases, even with strong intent and supporting logic, a large amount of co-engineering work among operators, CNF vendors, and public cloud companies is required to industrialize this model. Commercial terms also need to be negotiated because the classic "reserved instance" model is likely to be too expensive.

The 49% that plan to use public cloud for mobile core analytics and AI data processing are interesting, especially in light of the prior finding that operators are recalibrating their 5G core AI data strategies in **Figure 8** above. Hyperscale public cloud providers have some of the strongest data management tools and AI models available, and they have well-developed partner ecosystems of specialist data and AI companies. Concerns about data privacy and security notwithstanding, this use case feels like a natural fit for public cloud, and Heavy Reading (now part of Omdia) is a little surprised that only half the respondent base has plans in place to leverage this capability.

Figure 14: In which scenarios does your company plan to use public cloud services to host 5G core workloads? (Select all that apply)



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Source: Heavy Reading (now part of Omdia)

Hardware performance density

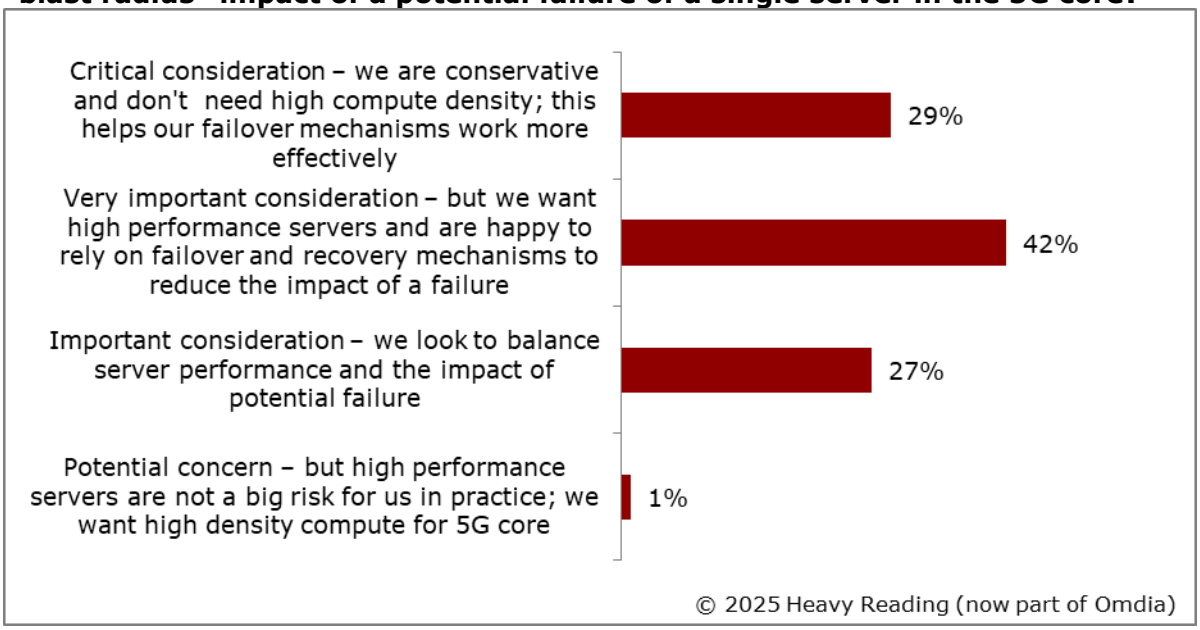
Reliability and resiliency are the most important design criteria in a mobile core. This factor has important implications for cloud deployment, as it introduces new failure modes and new ways to recover, relative to the appliance-based packet core model. Moreover, because user sessions are stateful, failover and recovery require special attention in a cloud deployment.

With advances in silicon performance, vendors have created servers with the capability to support many users and sessions (5G core performance is often expressed in terms of simultaneously connected users or sessions) or high throughput. For core network designers, this is a good thing; however, it raises questions about the appropriate level of subscriber and traffic density on cloud hardware, given the potential impact of failure and the need to recover quickly.

As a general principle, user sessions would be distributed across the infrastructure to mitigate the impact of degradation and failure events. However, modern servers offer performance that can concentrate users on a small number of equipment racks.

The survey asked about the trade-offs between server performance and the "blast radius" impact of a potential failure of a single server, in the 5G core. **Figure 15** shows how operators think about this issue. The largest group (42%) recognizes that the trade-off between blast radius and server performance is a "very important consideration"; however, they nevertheless "want high performance servers and are happy to rely on failover and recovery mechanisms to reduce the impact of a failure." Only 1% say "high performance servers are not a big risk for us in practice; we want high density compute for 5G core."

Figure 15: How does your organization perceive the trade-offs between server performance (e.g., compute density, number of users, and throughput) and the "blast radius" impact of a potential failure of a single server in the 5G core?



n=95

Source: Heavy Reading (now part of Omdia)

Energy consumption and efficiency

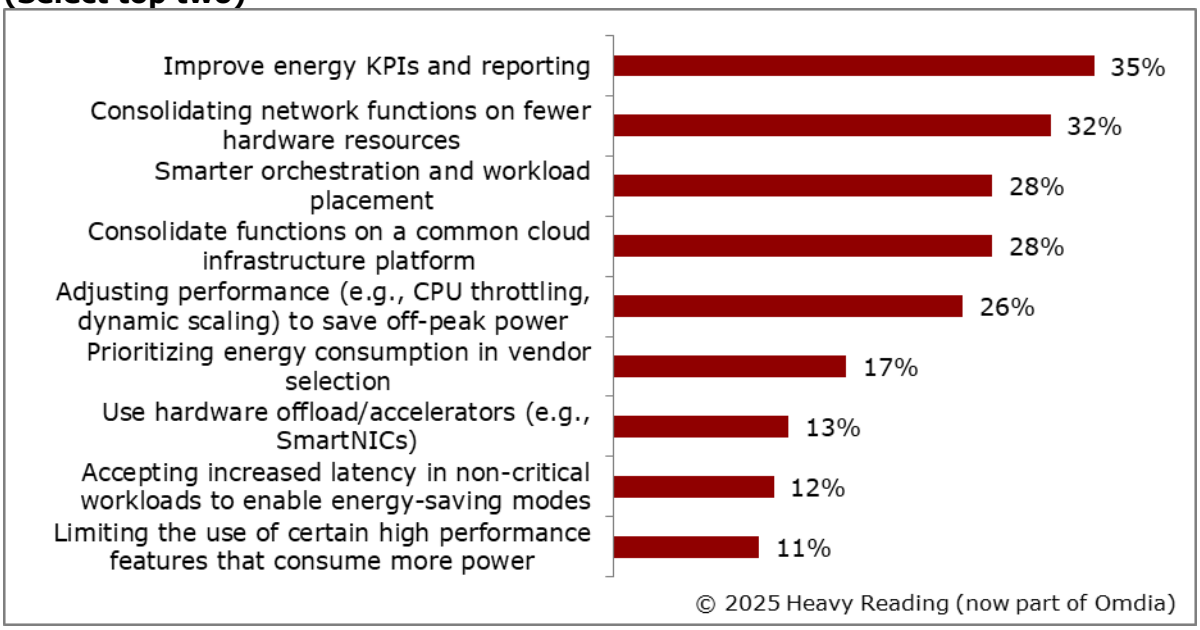
Operators were asked about the power consumption of 5G core infrastructure. **Figure 16** shows the most helpful actions operators believe they can take to reduce power consumption when asked to select from a list of options presented to them. The top five results are within 10% points of each other, and there is no obvious standout action. The key finding, then, is that strategies to reduce power consumption will be multifaceted.

The top result of "improve energy KPIs and reporting" (35%) is logical: without good metrics, understanding usage and efficiency is difficult. This has implications for every part of the stack, from silicon to hardware, cloud software, and CNFs.

There is perhaps a minor contradiction between "consolidating network functions on fewer hardware resources" (32%) to reduce power consumption and concerns about performance density in the prior question. These are difficult choices, however, and this apparent conflict is understandable.

"Smarter orchestration and workload placement" (28%) is a key function of energy key performance indicators (KPIs)/ and cloud orchestration software. Heavy Reading (now part of Omdia) expects this to become more important over time. "Consolidate functions on a common cloud infrastructure platform" (28%) is consistent with the move from appliances to cloud. "Adjusting performance (e.g., CPU throttling and dynamic scaling) to save off-peak power" (26%) underlines the requirements on silicon suppliers.

Figure 16: Which of the following will most help your organization meet its environmental goals and reduce power consumption for 5G core infrastructure? (Select top two)



n=94

Source: Heavy Reading (now part of Omdia) [Please note: Hyphenated terms should be "closed up," and no hyphen in high performance.]

5G network edge cloud

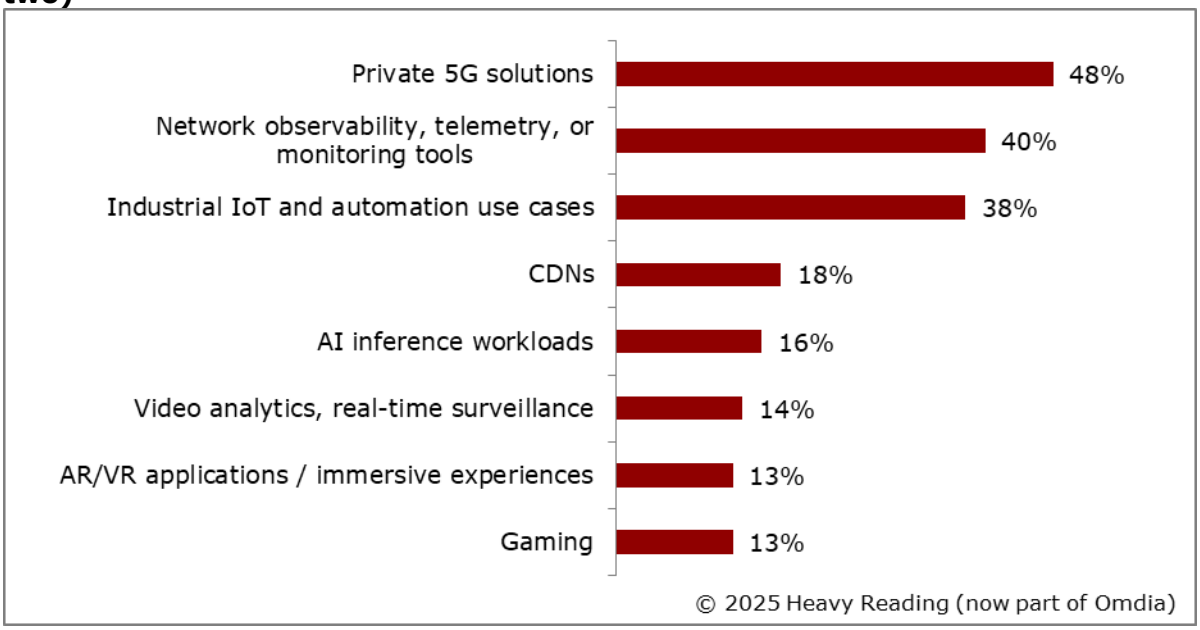
5G functions primarily run in large, relatively centralized data centers. Even so, deployments are often somewhat more distributed than the 4G core equivalent, with functions often deployed at key regional or metro sites. The 5G architecture makes it relatively easier to distribute functions such as the user plane function to network edge locations, and operators remain interested in extending their network cloud closer to customers.

Figure 17 shows which workloads operators believe are most attractive to network edge locations. The question specifies the metro edge or regional edge as example locations to distinguish from far-edge locations such as cell sites, aggregation hubs, or customer sites, and it specifies "on-prem" to make it clear that it refers to deployments hosted on or alongside telco infrastructure.

The most popular workload for network edge cloud is private 5G solutions, with 48%. This is logical in that so-called hybrid private 5G networks would have some functions hosted in the operator network (e.g., 5G core delivered as a service [i.e., 5G core SaaS] can support radios deployed at the enterprise site).

Notably, AI inferencing does not score highly at just 16%. There is a fair amount of media coverage and attention paid to this use case at industry conferences and the like. For now, it does not appear that 5G core network strategists view it as commercially attractive, though this may change.

Figure 17: What are the most attractive workloads to deploy on-prem at 5G network edge locations (e.g., in the metro edge or regional edge)? (Select top two)



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Source: Heavy Reading (now part of Omdia)

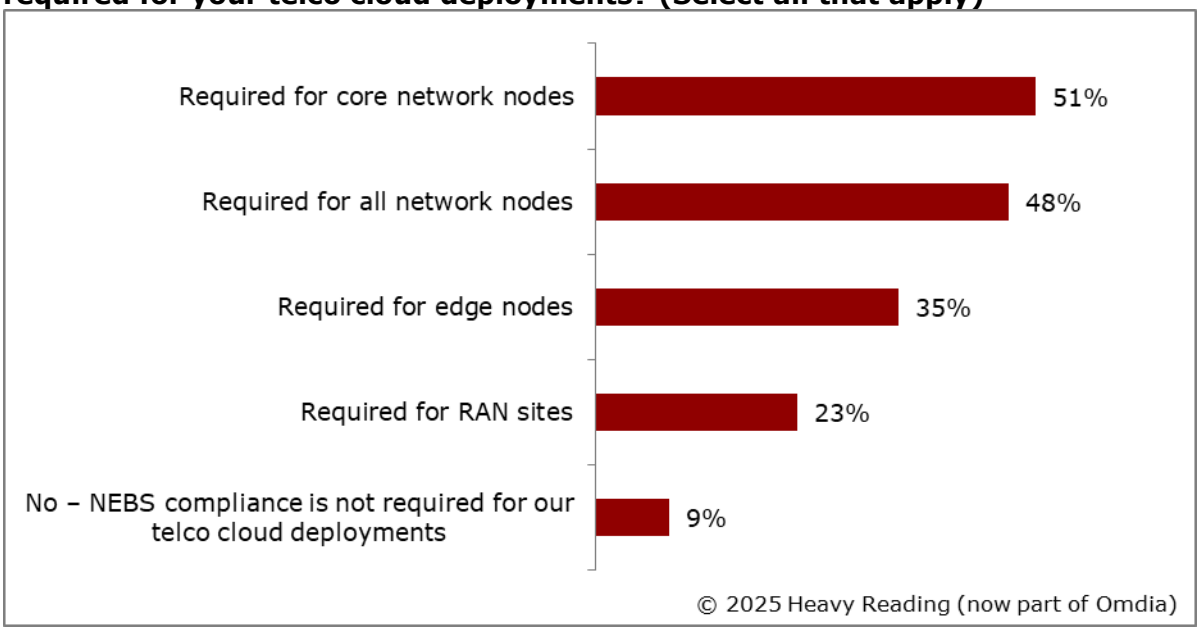
NEBS compliance, or equivalent

In a cloud native architecture using standard commercial hardware, there is some debate about whether Network Equipment Building System (NEBS) compliance remains critical. In the US, NEBS is specified to ensure the reliability and durability of equipment in telecom environments. Other regions have equivalent safety and environmental guidelines. This is particularly important for core network components that are critical to network operations.

However, these telecom equipment regulations were specified in a previous era. And while they remain highly relevant and important, commercial hardware is not necessarily compliant "off-the-shelf" because they are not used in modern non-telecom data centers.

Figure 18 below shows that NEBS remains a requirement for a majority of respondents, with 51% "required for core network nodes" and 48% for "all network nodes." In general, NEBS is less of a requirement for edge locations.

Figure 18: Is NEBS compliance, or equivalent safety and environmental guidelines, required for your telco cloud deployments? (Select all that apply)



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Source: Heavy Reading (now part of Omdia)

EVOLUTION TOWARD 6G CORE – TOO SOON?

With some notable exceptions, widespread deployment of 5G core has taken longer than many in the industry anticipated when 5G was launched in 2020. Only recently, after five years, has the mainstream in advanced markets started to scale SA. In the meantime, the industry has begun work on 6G requirements and architecture. The 3GPP is developing a schedule for standardization that would enable 6G to launch in 2030.

6G standalone day 1

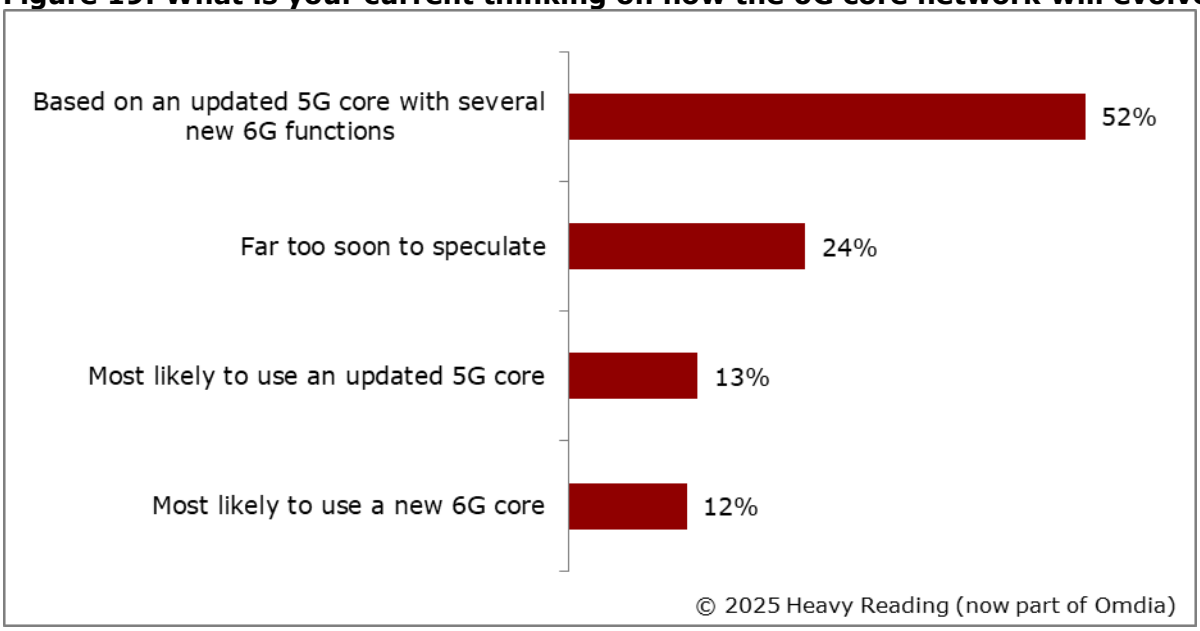
As part of the preparation for 6G standards development, industry participants (e.g., operators, vendors, and research institutes) have shared their views on architecture priorities and on potential core network types in forums such as the 3GPP and the Next Generation Mobile Networks Initiative. There is agreement that the "day 1" architecture should support 6G SA and that the industry should not repeat the 5G debate about multiple architecture options.

Beyond the "day 1" view, there is not yet a clear consensus on what 6G SA means in terms of core networks. Many operators see 6G core as an extension of 5G core and advocate for a smooth evolution. A smaller number of large, influential operators (notably from China) argue for a new 6G core. There are reasonable arguments for both positions.

The survey asked operators for their views on how the 6G core network might evolve. This is, obviously, a speculative question, and it is entirely plausible that operators will think differently in a few years' time. **Figure 19** shows that, for now, a slim majority of 52% think 6G core will be "based on an updated 5G core with several new 6G functions" and only 12% on a new core network. The implication of this view, if it holds, is that investment in today's 5G core network infrastructure (including cloud platforms and CNFs) and operating tools will, in some form, carry forward to the 6G era. About a quarter (24%) understandably say it is "too soon to speculate."

Leaving aside the debate and 6G core NFs and architecture, Heavy Reading (now part of Omdia) believes that cloud platforms being deployed and scaled to run 5G core workloads are likely to be used to support 6G core. In this sense, there will likely be reuse of the investment in telco cloud deployed for 5G core, regardless of the specific decisions about 6G core functions.

Figure 19: What is your current thinking on how the 6G core network will evolve?



n=93

Source: Heavy Reading (now part of Omdia)

BACKGROUND TO THIS STUDY

The Heavy Reading (now part of Omdia) **5G Core Operator Survey** was conducted in April and May 2025. This analysis was written and published in June 2025. The online survey generated 95 responses from individuals working at communications service providers after non-qualified responses were deleted from the survey. Respondents were asked to self-assess their knowledge about 5G core. Those that reported "no direct knowledge" or only "a little knowledge" of their company's 5G core strategy were excluded from the survey, and their responses are not considered in this analysis.