NEUTRAL HOSTS: THE ANSWER TO 5G DENSIFICATION IN DELIVERING AN INTERCONNECTED FUTURE

5G densification report

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At a glance

Confidence in 5G is growing

Confidence in 5G technology is growing. 71% of decision-makers in telecoms operators, public and private sector organisations in the UK, Ireland and US are now more confident in 5G than ever before.

A need for 5G densification

Public and private sector experts believe that the availability of 5G is important to the performance of their organisations, and it's also generally recognised by the wider industry as being crucial for digital equity, as well as encouraging business investment. It follows that the densification of 5G networks in urban, suburban and rural environments is critical to organisational success. However, full 5G rollout is expensive and 8 in 10 organisations think they'll exceed their planned spend.

Are neutral hosts the answer to densification strategies?

92% of telecoms operators, public and private sector organisations are likely to work with neutral hosts to remove the challenges associated with 5G densification. The major drivers are cost effectiveness, sustainability, time effectiveness and simplicity.

Executive summary

It's roughly four years since 5G became widely available in major cities around the world. Since then, the rollout of macro networks has continued – albeit disrupted by the COVID pandemic.

5G was, first and foremost, a technology to serve businesses. An advanced generation of connectivity that would bring huge financial and operational benefits, influencing future business models and creating enormous value. But where are we now and where do we go next? What are the current perceptions of 5G amongst public and private organisations, and the operators themselves? What are the challenges and the blockers to realising an interconnected 5G future? What are the paths different types of organisations are taking to get there? Our first 5G Densification report examines the views of 600 telecoms executives, enterprise, and public sector IT decision makers across the US, UK and Ireland (UK&I).

Positivity around 5G is ramping up.

71%

of technology decision-makers at public and private sector organisations today feel more confident in 5G than ever before, as do operators.

88%

of US-based public and private companies say that 5G has a direct impact on the performance of their organisations, 64% in the UK&I.

And they're confident that, over the next year, urban, suburban and rural environments will gain optimal 5G performance.

But that's not going to be easy to deliver.

96%

of respondents have faced challenges deploying 5G infrastructure.

This could easily impair rollout and, in turn, business performance. CAPEX, achieving ubiquitous connectivity, and laying new fibre are reported as the big three challenges. And with nearly half of organisations surveyed seeing densification in all environments as a major priority, it's deeply concerning that 80% admit they're likely to exceed their planned spending on 5G rollout.

This situation is driving a re-evaluation of the models used to deliver 5G densification. Neutral host is one of those models and, once explained, proved very popular. Neutral host infrastructure could well be the answer to 5G densification that telecoms companies and customer organisations are looking for. It proves especially beneficial in overcoming the common hurdles 5G densification brings.

The appeal of a neutral host is broad – its cost effectiveness, sustainability advantages, time efficiency and simplicity.

92%

of respondents – both operator and customer – are likely to work with neutral host providers if they can remove the challenges associated with 5G densification.

Half of respondents from public and private sectors see 5G as the biggest digital disruptor over the next five years. 3 in 4 say that 5G has a big impact on their organisation's performance. The drive and desire for an interconnected 5G future is clear. If neutral hosts can overcome the challenges of 5G densification, then the sector can help deliver on the promise of 5G.

The current state of play

On both sides of the Atlantic the future of 5G networks has been under the spotlight. It was, first and foremost, intended as a technology to serve businesses. A technology that would deliver an interconnected society, bring huge financial and operational benefits, influence future business models and create enormous value.

For telcos, 5G promised to drive new revenue through enhanced services to a business-to-business audience - both public and private sector. Given these claims, there has been much excitement, anticipation and trepidation surrounding the roll out of 5G.

A brighter 5G future is in store. This is especially the case for public and private sectors, where the expectations of 5G have been closely linked to meeting ever-evolving user and customer expectations. Indeed, 5G availability is rapidly growing in importance among enterprise and public sector IT decision makers. 86% of US respondents and 64% of UK&I respondents state 5G availability has a direct impact on performance within their organisation today. 97% and 98% respectively believe that it either does today or will within the next two years. High 5G availability really matters for public and private organisations.

QUESTION: Does the availability of 5G have a direct impact on performance within your organisation?

	Audience			
	UK&I Public Sector ITDMs	**US Public Sector ITDMs**	**UK&I 5G Enterprise Experts**	**US 5G Enterprise Experts**
Yes, it has a direct impact	63%	92%	65%	80%
No, it doesn't currently have a direct impact, but it will within the next 2 years	31%	6%	30%	17%
No, it doesn't have a direct impact	6%	2%	5%	3%

Confidence in a 5G future

71%

feel more confident in 5G than ever before

78%

believe that 5G will deliver optimal performance within the next 12 months

While the roll out of 5G has been met with mixed feelings, confidence in the future of the technology appears to be rising significantly. In fact, expectations of the future performance of 5G have positively shifted as roll out has progressed, with 71% of respondents feeling more confident in the technology than they have done previously. This figure varies between the respondents, with telecoms decision makers feeling slightly more confident at 76%, compared to 69% for private and public sector IT decision makers. But the story rings true across the board: confidence in 5G is ramping up.

QUESTION: Have your expectations of 5G technology changed as roll out has progressed?

	Audience						
	UK&I Public Sector ITDMs	US Public Sector ITDMs	UK&I Telecoms DMs	US Telecoms DMs	UK&I 5G Enterprise Experts	US 5G Enterprise Experts	Total
BASE	100	100	100	100	100	100	**600**
Yes, they've diminished — I'm less confident in the technology than ever before	17%	8%	10%	7%	7%	3%	**9%**
Yes, they've increased — I'm more confident in the technology than ever before	52%	83%	72%	79%	64%	78%	**71%**
No, they've stayed the same — I'm just as confident in the technology as I was before	31%	9%	18%	14%	29%	19%	**20%**

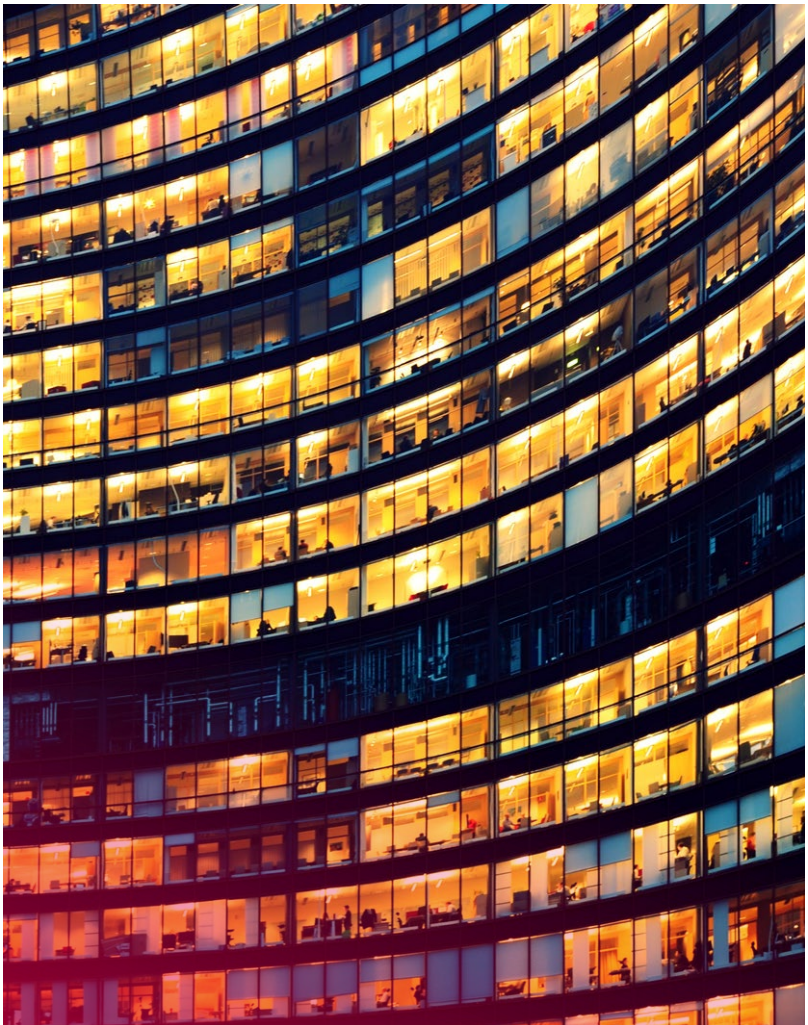
In a similar vein, there is palpable confidence in the timelines for reaching optimal 5G performance. In the US, almost two thirds of public and private sector organisations believe 5G will be able to deliver optimal performance in relevant urban areas in the next 6 months. 85% believe it will happen within the next 12 months. In the UK and Ireland, 31% of public and private sector organisations expect optimal urban 5G performance within six months, 61% within 12 months and 80% by early 2025.

QUESTION: **Based on current progress, when do you think 5G will be able to deliver optimal performance in areas relevant to your organisation?**

	Audience						
	UK&I Public Sector ITDMs	US Public Sector ITDMs	UK&I Telecoms DMs	US Telecoms DMs	UK&I 5G Enterprise Experts	US 5G Enterprise Experts	Total
BASE	100	100	100	100	100	100	**600**
In the next 6 months	33%	68%	51%	75%	29%	50%	**51%**
In the next 12 months	28%	26%	35%	19%	31%	25%	**27%**
In the next 18 months	20%	2%	7%	2%	19%	10%	**10%**
In the next 2 years	16%	3%	6%	4%	18%	12%	**10%**
In over 2 years	3%	1%	1%	—	3%	3%	**2%**

Telecoms executives in the US are particularly enthusiastic: 75% believe optimal 5G performance is just 6 months away. Confidence was a little lower in the UK and Ireland. Just over half of telecoms executives predict optimal urban 5G performance within 6 months, and 86% within a year.

Increased confidence in 5G helps to promote buy-in from decision makers, but there is still work to be done. There are significant challenges which must be addressed to ensure 5G delivers on its much-anticipated promises.



The challenge of 5G

96%

have faced challenges with deploying 5G infrastructure

The top three challenges for deploying 5G infrastructure are CAPEX requirements, achieving ubiquitous connectivity and laying new fibre

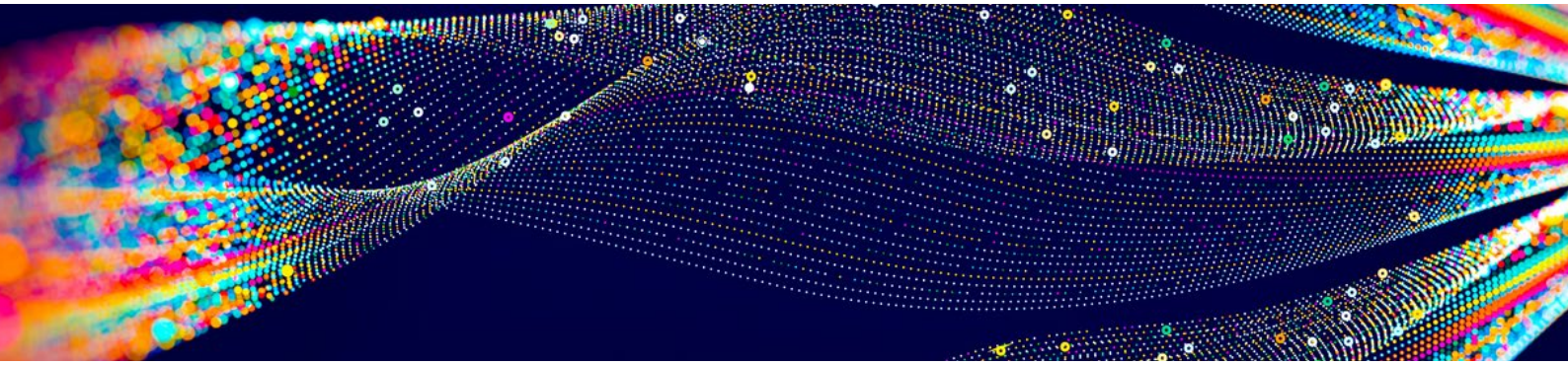
47%

claimed that increasing deployment of macro cells or small cells was a priority

Rolling out 5G is no easy feat. In fact, 96% of respondents have faced challenges with deploying 5G infrastructure. Some respondents even claimed that their challenges associated with 5G could impede its future success.

QUESTION: What do you think is the main factor today standing in the way of the industry making good on 5G expectations?

	Audience						
	UK&I Public Sector ITDMs	US Public Sector ITDMs	UK&I Telecoms DMs	US Telecoms DMs	UK&I 5G Enterprise Experts	US 5G Enterprise Experts	Total
BASE	100	100	100	100	100	100	**600**
Cost – it is extremely CAPEX intensive to roll out the right infrastructure	26%	28%	25%	23%	31%	38%	**29%**
Achieving ubiquitous connectivity – 5G expectations will only be met if everyone has access to the same level of connectivity	25%	22%	26%	30%	28%	32%	**27%**
Laying new fibre – this is very time-intensive due to regulatory obstacles and physical obstacles (i.e. digging up roads)	30%	26%	28%	23%	26%	13%	**24%**
Deploying additional equipment – the number of small cells required is massive	19%	24%	21%	24%	15%	17%	**20%**



Perhaps unsurprisingly, almost a third (29%) of organisations reported 5G's CAPEX-intensive nature as the main factor standing in the way of making good on 5G expectations. This was closely followed by achieving ubiquitous connectivity at 27% and laying new fibre at 24% (which is another CAPEX-intensive undertaking). Considering that 80% of respondents are likely to exceed their planned spend in rolling out 5G it's no wonder that CAPEX ranks high on their list of concerns.

For telcos, public sector organisations and private enterprises, the biggest challenges standing in the way of 5G success were similar:

1. The need for more fibre in the ground at 41% overall (40% for public sector and private enterprises, 43% for telcos)
2. Justifying CAPEX spend when use cases are unclear at 31% overall (31% for public sector and private enterprises, 32% for telcos)
3. Navigating the political and regulatory environment at 30% overall (31% for public sector and private enterprises, 28% for telcos)
4. Just 4% of respondents have not faced any challenges in deploying 5G infrastructure

QUESTION: What are the biggest challenges, if any, facing your organisation / your network builder when it comes to deploying 5G infrastructure?

	Audience						
	UK&I Public Sector ITDMs	US Public Sector ITDMs	UK&I Telecoms DMs	US Telecoms DMs	UK&I 5G Enterprise Experts	US 5G Enterprise Experts	Total
BASE	100	100	100	100	100	100	**600**
Requirement for more fibre in the ground	33%	42%	44%	42%	40%	43%	**41%**
Justifying CAPEX spend when use cases are still unclear	32%	32%	27%	36%	27%	29%	**31%**
Navigating political and regulatory environments	31%	37%	25%	30%	27%	30%	**30%**
Requirement for different core network technologies	24%	28%	32%	29%	26%	36%	**29%**
Requirement for more small cells	25%	23%	20%	21%	22%	21%	**22%**
Requirement for more macro cells	12%	22%	26%	27%	16%	22%	**21%**
Other	—	—	1%	—	1%	—	**0%**
We haven't faced any challenges	10%	2%	1%	3%	6%	3%	**4%**

The concerns surrounding 5G and CAPEX trickle down into priorities for overcoming deployment challenges. For public and private organisations, the main challenge was finding the right use cases to justify the high spend at 34%.

Another key priority and hurdle to overcome was the need for 5G densification. Overall, 47% of organisations claimed that increasing deployment of macro cells or small cells was a priority, with all respondent groups - telcos, and public and private sector organisations in the US and UK and Ireland - agreeing.

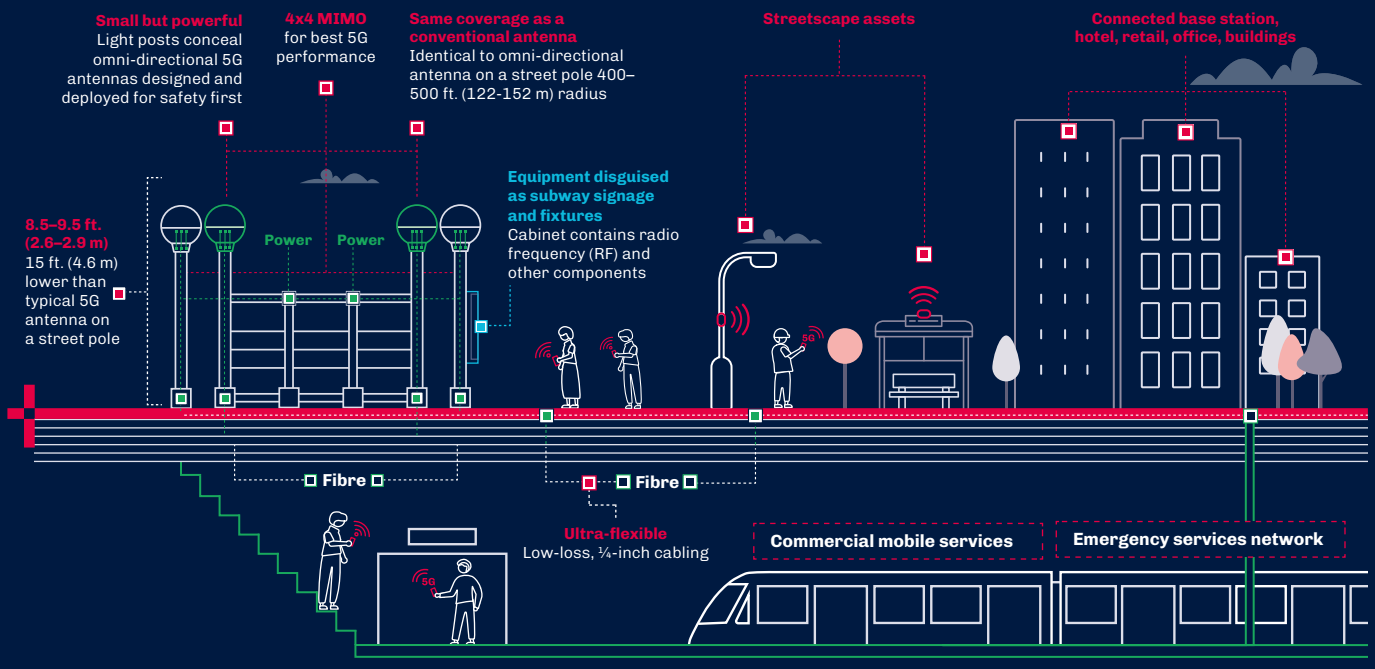
5G densification will be crucial in enhancing the availability of connectivity, which will have significant benefits for wider society and the economy.

For example, the increased availability of 5G will be crucial for digital equity, as well as encouraging business investment.

5G densification versus 5G roll out - what's the difference?

In its simplest form, 5G densification is the process of adding more 5G cell sites to increase availability and capacity. Network densification can also refer to increasing the number or volume of signals that can be carried on wireless networks. The fundamental aim is to make 5G networks more available, faster and to minimise latency.

Virtually any urban street furniture can be used to quickly and economically deploy small cells with minimal environmental impact, enabling the rapid coverage expansion and densification needed to deliver the full promise of 5G.



The need for 5G densification

Respondents believe that 5G densification is critical in urban, suburban and rural areas

60%

have a clear network densification strategy

As confidence in 5G increases, there is a clear need for network densification to ensure it can deliver upon its initial promises. This need is felt by both operators and their public and private sector customers across urban, suburban and rural environments.

And it's a similar story for telcos. They also believe that 5G densification will be most important in urban environments (93%), followed by suburban environments at 89% and rural environments at 77%.

Densification on this level, across the entire network, will come with a significant price tag. It will require enormous investment — a concern for most organisations today. However, that doesn't seem to be holding them back.

More than

92%

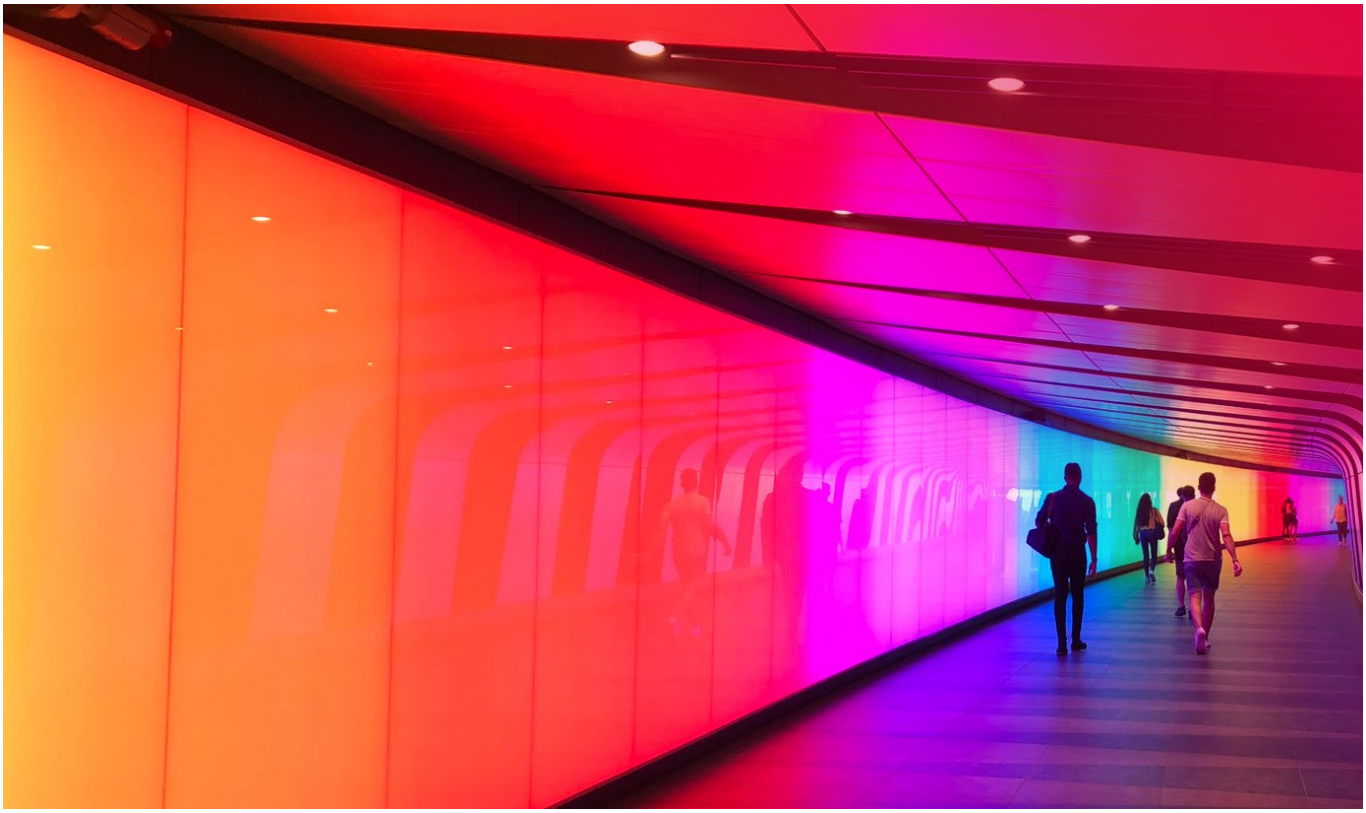
of the public and private sector respondents believe that densification will be most important in urban areas, 90% in suburban and 78% in rural environments.

An impressive 60% of respondents have a clear network densification strategy. One might expect telcos to be far more advanced in their densification approaches than their customers, but this is not the case.

While 73% of US telcos have clear 5G densification strategies, only 65% of UK&I operators do. This geographical dichotomy is clear amongst customers as well. 72% of US public sector respondents have a clear densification strategy, trailed by their private sector counterparts at 69%. In UK&I, just 40% of public sector organisations and 43% of private enterprises have clear densification strategies.

4%

of respondents say 5G densification is not a priority and don't have a clear densification plan for the next year.



QUESTION: **Does your organisation have a clear understanding of what that network densification plan looks like over the next year?**

	Audience						
	UK&I Public Sector ITDMs	US Public Sector ITDMs	UK&I Telecoms DMs	US Telecoms DMs	UK&I 5G Enterprise Experts	US 5G Enterprise Experts	Total
BASE	100	100	100	100	100	100	**600**
Yes, we have a clear densification strategy	40%	72%	65%	73%	43%	69%	**60%**
Somewhat, we understand the need to densify but are yet to establish a clear strategy	54%	28%	33%	26%	50%	25%	**36%**
No, densification isn't a priority and we do not have a clear strategy	6%	—	2%	1%	7%	6%	**4%**

Most of those customer organisations who don't have a clear strategy are unclear how to go about deploying macro and small cells (US public sector 79%, US private enterprise 56%, UK&I public sector 46%, UK private sector 48%), something shared with telcos (65 % US operators, 67% UK&I operators).

Neutral host – the answer to 5G densification?

73%

were likely to consider neutral hosts as an alternative 5G deployment method

Cost effectiveness, sustainability credentials and time efficiency were the most popular reasons neutral hosts appealed to respondents

92%

were likely to use neutral hosts to remove the headaches associated with 5G densification

What is a neutral host?

A company that deploys and operates connectivity infrastructure and leases it to telecoms service providers and public and private sector organisations. This provides customers with access to reliable, advanced connectivity they can use to deliver their own services and accelerate 5G adoption without the costs of building and maintaining their own infrastructure. Aspects of the infrastructure investment can be shared on a neutral basis across several customers – resulting in reduced costs for each.

The basic principles of a neutral host approach address the key challenges outlined in this research, including alleviating MNO/ customer burden of heavy CAPEX investment, navigating political and regulatory landscape, accelerating infrastructure deployment and associated customer benefits.

Once the concept of neutral host infrastructure was explained, those respondents that do not currently work with neutral host providers expressed high levels of interest in using the model to support 5G densification. The most enthusiastic group is US public sector companies - 88% are likely to pursue an alternative deployment method using a neutral host provider. This is followed by UK&I telcos at 80%, US telcos at 79%, US enterprises at 74%, UK&I enterprises at 65% and finally UK&I public sector organisations at 62%.

QUESTION: **If you were to pursue an alternative deployment method, how likely are you to consider a neutral host provider for 5G deployment?**

	Audience						
	UK&I Public Sector ITDMs	**US Public Sector ITDMs**	**UK&I Telecoms DMs**	**US Telecoms DMs**	**UK&I 5G Enterprise Experts**	**US 5G Enterprise Experts**	**Total**
BASE	63	42	49	33	66	42	**295**
Very likely	11%	29%	22%	18%	9%	17%	**17%**
Likely	51%	60%	57%	61%	56%	57%	**56%**
Unlikely	8%	5%	12%	21%	26%	24%	**16%**
Very unlikely	—	2%	—	—	3%	2%	**1%**
Unsure	30%	5%	8%	—	6%	—	**10%**
% Likely	62%	88%	80%	79%	65%	74%	**73%**

There are many reasons as to why neutral host deployment appealed to the respondents. The main reason for 40% of respondents was cost effectiveness. The second most popular reason was the impact of the neutral host model on sustainability. Time efficiency came in third at 19%. Finally, the simplicity of the model was important for an average of 18% of respondents.

QUESTION: **What is the main reason you are likely to consider a neutral host provider?**

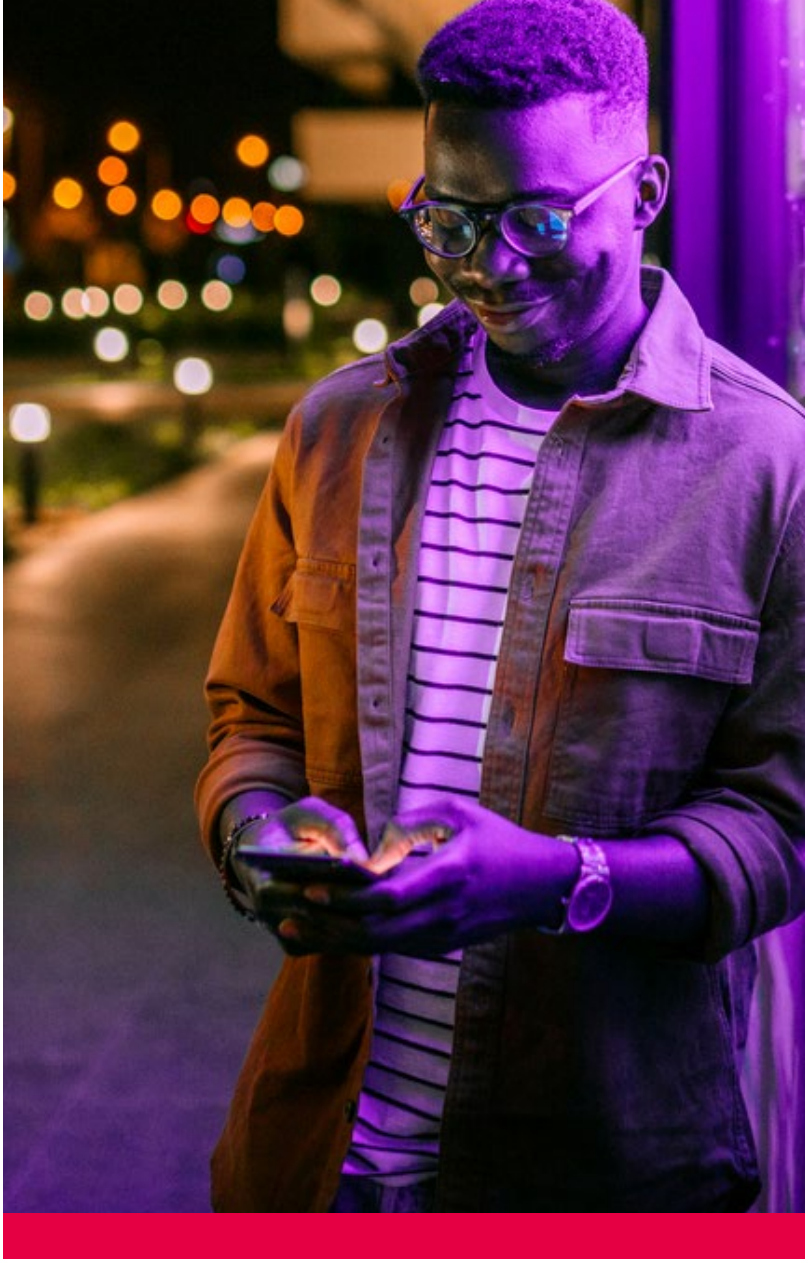
	Audience						
	UK&I Public Sector ITDMs	US Public Sector ITDMs	UK&I Telecoms DMs	US Telecoms DMs	UK&I 5G Enterprise Experts	US 5G Enterprise Experts	Total
BASE	39	37	39	26	43	31	**215**
Cost-effective	44%	41%	33%	35%	47%	42%	**40%**
Sustainable	18%	32%	28%	23%	12%	19%	**22%**
Time-effective	21%	11%	21%	27%	16%	23%	**19%**
Simpler deployment	18%	16%	18%	15%	26%	13%	**18%**
Other	—	—	—	—	—	3%	**0%**

Most interestingly, a staggering 92% of respondents were likely to choose a neutral host approach if it could remove the headaches associated with 5G densification. This enthusiasm was highest among US public sector companies (98%), followed by UK&I telcos (96%), US telcos 95%), US enterprises (90%), UK&I enterprises (89%), and UK&I public sector (84%). It seems that, regardless of sector, if neutral host providers can smooth the densification of 5G, the future is bright.

QUESTION: **If you were told that neutral host providers could remove some of the headaches associated with 5G densification, how likely would you be to pursue this option for network deployment?**

	Audience						
	UK&I Public Sector ITDMs	US Public Sector ITDMs	UK&I Telecoms DMs	US Telecoms DMs	UK&I 5G Enterprise Experts	US 5G Enterprise Experts	Total
BASE	100	100	100	100	100	100	**600**
Very likely	35%	44%	43%	53%	34%	44%	**42%**
Likely	49%	54%	53%	42%	55%	46%	**50%**
Unlikely	4%	2%	2%	4%	9%	6%	**5%**
Very unlikely	—	—	—	—	1%	3%	**1%**
Unsure	12%	—	2%	1%	1%	1%	**3%**
% Likely	84%	98%	96%	95%	89%	90%	**92%**

Delivering on the promises of 5G through neutral host networks



As confidence grows and the future of 5G looks brighter, there is an obvious and essential next step: densification.

90% of organisations surveyed have a functional area which focuses on network development, implying its importance, with the majority (92%) looking at a maximum of five-year network development cycle.

52% see 5G as the biggest digital disruptor in the next five years, on a par with AI. It's clear there is an urgent need for enhanced network densification strategies as organisations look to make the 5G dream a reality.

Embracing neutral host networks proves especially beneficial in overcoming the common hurdles 5G densification brings. The right neutral host partner can alleviate the up-front costs associated with new infrastructure roll out for both telcos and public and private sector organisations. They can also help to overcome technical and regulatory challenges that can sometimes stifle projects before they've begun.

Neutral host networks could be the answer the industry is looking for to densify the 5G networks on which the performance of the public and private organisations depends. To deliver the increased 5G availability and capacity that's not only important to the performance of their organisations, but also crucial for digital equity and the promise of an interconnected future.

Methodology

Boldyn Networks commissioned Sapio Research to conduct this research. The survey was conducted among 200 telecoms decision makers, 200 5G enterprise experts and 200 Public Sector IT decision makers in the UK and Ireland (50%) and US (50%), from organisations with 100 to 5000+ employees. The respondents were all decision-makers with varying levels at seniority, including:

- 38% were owners, founders or directors
- 9% were C-Level executives
- 48% were managers
- 4% were consultants or advisors

The interviews were conducted online using an email invitation and an online survey, and via telephone using CATI by Sapio Research in August 2023.

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