

Publication date:
15 Jan 2021
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Mobile Operators Have Many 5G Network Vendor Options



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Summary

Market consolidation among mobile network vendors is not as great as some have portrayed it. Nor is consolidation a permanent state. For example, LTE saw market consolidation among RAN vendors with the demise of Alcatel-Lucent and Nortel. But early on, 5G has reversed that, with the number of available RAN suppliers increasing.

Of course, many of these new entrants currently have minimal market share, but market share alone does not reflect market decision options. Market share only reflects commercial outcomes.

This white paper identifies network vendors across five network domains that make up the mobile network: radio access network (RAN), transport, core, OSS/BSS, and mobile edge compute (MEC). This white paper also looks at the number of vendors currently being used in five different countries for 5G networks across each domain. All five countries currently have some vendor restrictions, but still illustrate diversity of supplier choice. The number of suppliers used in each country does not come from any government mandate or policy, but instead reflects the results of existing market forces.

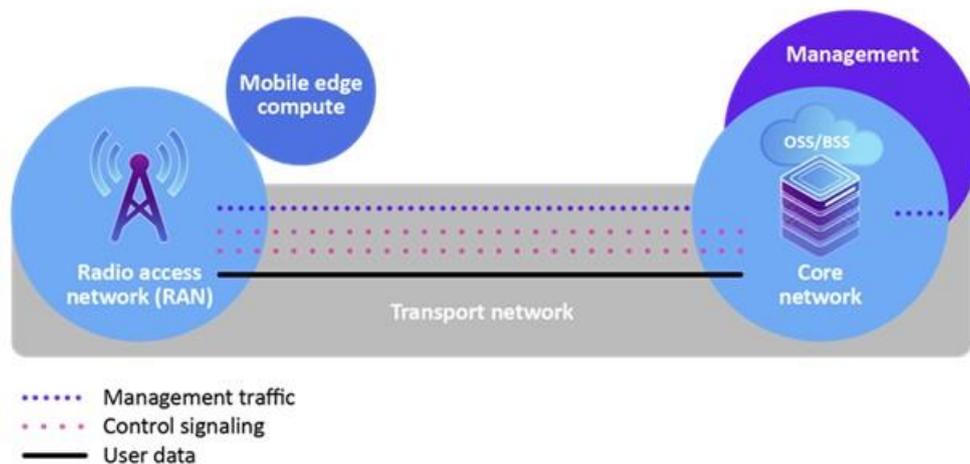
5G network is much more than the RAN

Much of the future 5G service enablement will take place outside the base station

When talking about mobile networks, most of the attention is given to the radio access network (RAN), also known as base station, and the RAN suppliers. There are two main reasons for this. One is that the RAN is what makes mobile, mobile – it’s where the wireless part comes into play. The other is that, historically, the RAN was the biggest difference between one mobile generation and the next. This, however, only tells part of the mobile network story.

The entire network consists of several network domains, as illustrated in **Figure 1**. Those domains include not only the RAN but also mobile edge compute (MEC), and transport network including backhaul, core network, and network management.

Figure 1: 5G mobile network topology



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Source: Omdia

As operators transition to 5G, much of the vendor discussion has once again been focused on RAN suppliers. This focus, however, misses the broader 5G network picture.

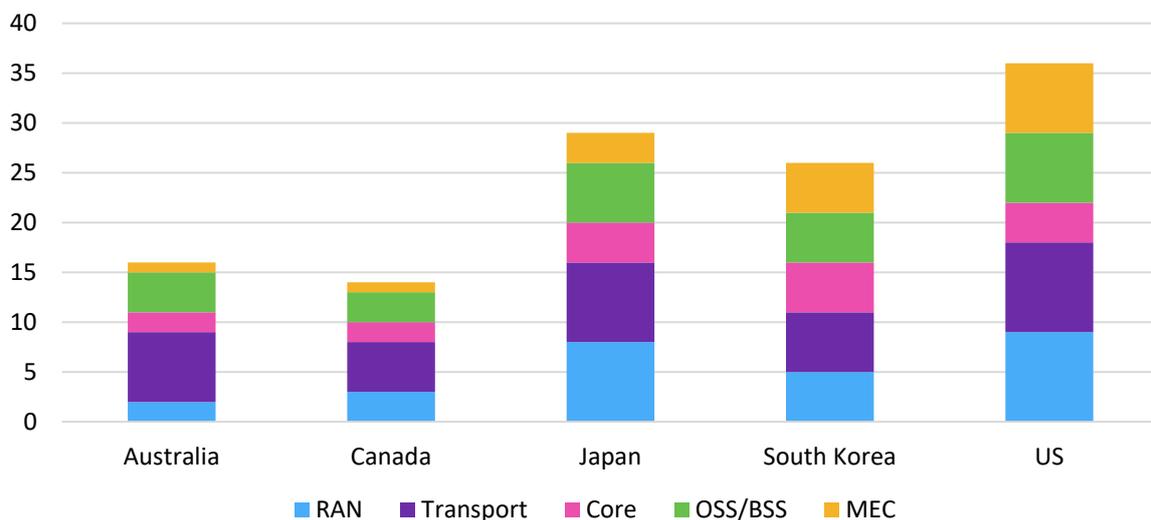
The biggest changes that come with 5G take place outside the RAN. New classes of services requiring low latency or network slicing will rely just as heavily on MEC, core network, and network management software as they do on the RAN. Because of this, an examination of 5G vendor diversity needs to include all network domains, not just the radio access network.

5G vendor diversity spans five distinct domains

Initial commercial activity reflects the wide number of active mobile network vendors

A multitude of vendors across the five network domains are currently supporting live commercial 5G networks. The vendor makeup varies from country to country, as shown in **Figure 2**. Omdia has identified five key countries where 5G network rollouts are in advanced stages: Australia, Canada, Japan, South Korea, and the US. The network domains include RAN, transport, core, network management (OSS/BSS), and mobile edge compute (MEC).

Figure 2: Active vendor partnerships in commercial 5G networks by country and domain



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Source: Omdia

Active vendor data was gathered in part by utilizing [Omdia's Telecoms Vendor Contract Database](#) which captures publicly available service provider contract information. Several vendors provide products and solutions across several 5G network domains. Vendors that operate in multiple domains are counted for each domain where we have identified an active partnership.

Overall, as of mid-January 2021, the US has 36 active vendor partnerships across the five 5G network domains, Japan has 29, South Korea 26, Australia 16, and Canada 14. MEC, which is a newer network element than the other four domains, currently has the lowest level of commercial activity. However, we think that as MEC and 5G networks mature, this will change.

The 5G network vendor ecosystem

Single standard approach to 5G helps ensure breadth of vendor options

The transition from one mobile generation to the next has historically been a time when mobile operators evaluate their current suppliers and explore new ones. Vendors see this transition period as an opportunity as well, allowing them to enter new markets and build new relationships with mobile operators.

With 5G, unlike previous generations, there is unified agreement on what 5G technology should be. There are no LTE versus WiMAX or CDMA versus WCDMA debates. For mobile operators this helps guarantee a strong ecosystem of vendors to work with. In the past, when there were competing standards, not all vendors supported all options, limiting vendor options for those standards. 5G does not have that problem. The 5G ecosystem provides operators with many vendor choices, as illustrated in **Table 1**.

Table 1: Examples of current 5G network solution suppliers

RAN	Transport	Core	OSS/BSS	Edge
Airspan	Adtran	Affirmed	Amdocs	Amazon
Altiostar	Airspan/Mimoso	Casa	Cerillion	Dell
Casa Systems	Aviat Networks	Cisco	Cisco	Google
Commscope	Ceragon	Ericsson	Comarch	Huawei
Corning	Ciena	HPE	CSG	Intel
Ericsson	Cisco	Huawei	Ericsson	Microsoft
Fujitsu	Commscope	Mavenir	HPE	QTC
Huawei	DragonWave-X	Microsoft/(Metaswitch)	Huawei	Radisys
Nokia	Ericsson	NEC	NEC/Netcracker	Red Hat (IBM)
Mavenir	Huawei	Nokia	Nokia	
NEC	Juniper	Oracle	Openet	
Parallel Wireless	Nokia	Samsung	Optiva	
Samsung	Siklu	ZTE	Sigma Systems	
ZTE	ZTE		ZTE	

Source: Omdia

Within each of the network domains represented in Table 1, not only are there many different vendor options, but many of those vendors have a different approach to 5G. For example, in the RAN domain, some vendors might provide a full radio portfolio while others concentrate on more specific solutions like indoor coverage with small cells. Furthermore, some vendors are focused on providing RAN software while others provide the entire base station system. Different approaches can be found in the other network domains as well. So not only is there a diversity of vendor choices per network domain, there is even a diversity of solution types within each domain.

Market share represents results of operators' commercial decisions

When discussing network vendor options, market share is often cited as a measure of breadth of choice. It should not be. Market share reflects the results of operator selection process, not the number of vendors it considered before making the selection.

Lots of factors go into an operator's vendor selection process. Some of those factors include solution performance and portfolio roadmaps. Others include the operator's previous experience working with a vendor and a vendor's reputation. And operator strategy also plays a role. Some operators specifically use their purchasing decisions to diversify vendors while others want to consolidate their supplier list. All these factors can skew market share to make a market appear to have fewer options than it does.

So, while operators may generically complain about a lack of vendor options, their commercial decisions do not always support greater diversity. Ultimately, vendor diversity ends with an operator's commercial considerations.

Appendix

Methodology

This report was prepared with data from Omdia's Telecoms Vendor Contract Database, which shows publicly announced carrier–vendor contracts around the world, along with analyst expertise. The database is searchable by region, quarter, year, operator, vendor, and equipment segment. Countries were selected for analysis based on the advanced status of commercial 5G network rollout. Country-level contract data was further segmented by 5G network domain – radio access network (RAN), transport, core, OSS/BSS, and mobile edge compute (MEC) – and collectively named active vendor partnerships.

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