

Private 5G Networks: Defying Expectations

A Survey Report

Bob O'Donnell
President and Chief Analyst



5G

Definition

A private cellular network (PCN) is a local area network (LAN) that uses the same LTE or 5G technology as the public mobile operators but scaled down to provide a wireless network within the premises of the enterprise. It is *not* the use of enterprise devices on major public telco networks (e.g., AT&T, T-Mobile, Verizon etc.)

"Defining the benefits and expectation would not be easy at this time, for example it is not yet clear in which applications we would be using private 5G networks, but certainly it will reduce our reliance on wireless service providers."—Survey Respondent

The Private 5G Opportunity is Real, But....

- ...Real-world usage and expectations from those planning to deploy the technology doesn't always match the industry hype

"It will be a challenge for us as a team to successfully deploy a Private 5G network. It will require a highly skilled multi-vendor team to overcome the technical complexity challenges and also to integrate our legacy systems with 5G."—Survey Respondent



technalysis
RESEARCH

Private 5G Seen Taking Two Key Paths

Advanced General-Purpose Network

- *“Business entities can accelerate their digital transformation by implementing 5G private networks to provide secure connectivity, while simultaneously managing massive amounts of business-critical data.”—Survey Respondent*
- *“We expect Private 5G to overcome the constraints of existing LTE, Wi-Fi and ethernet technologies by allowing better mobility, higher bandwidth, more reliability and easy maintenance.”—Survey Respondent*

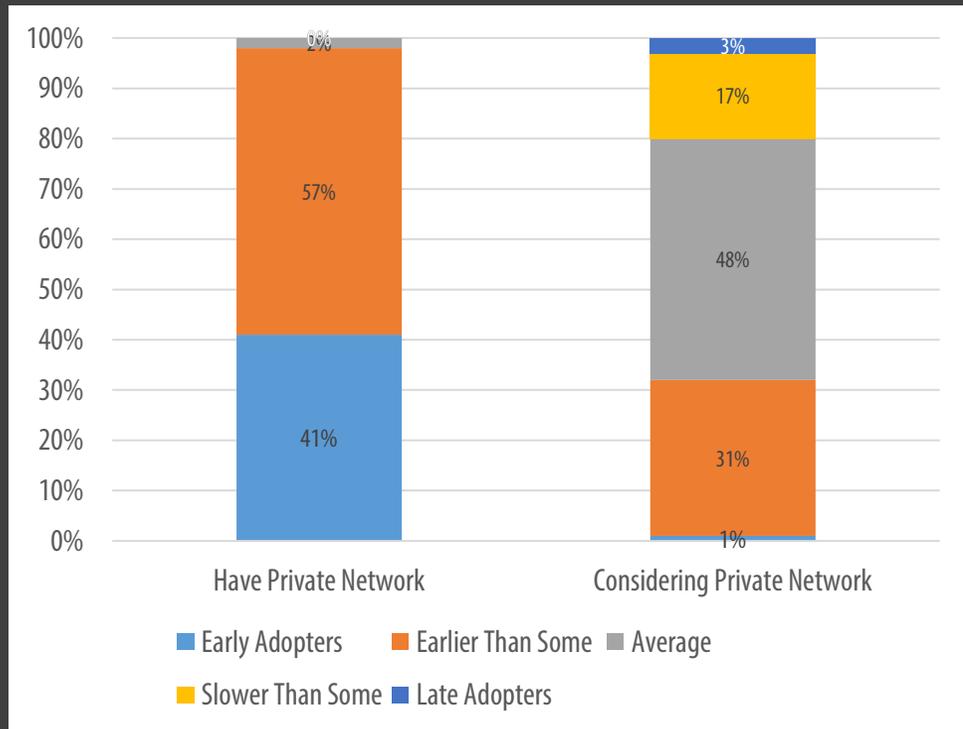
Technology Enabler for IoT and Other Advanced Applications

- *“The private 5G networks will be simple to scale and will manage large numbers of IoT-connected sensors and devices.”—Survey Respondent*
- *“It will enhance and improve the use cases for emerging technologies like AI, AR/VR.”—Survey Respondent*

“Private 5G networks give companies total control over data, security, and networks. The networks also offer ultra-reliable, low-latency use cases such as industrial IoT and robotics.”—Survey Respondent

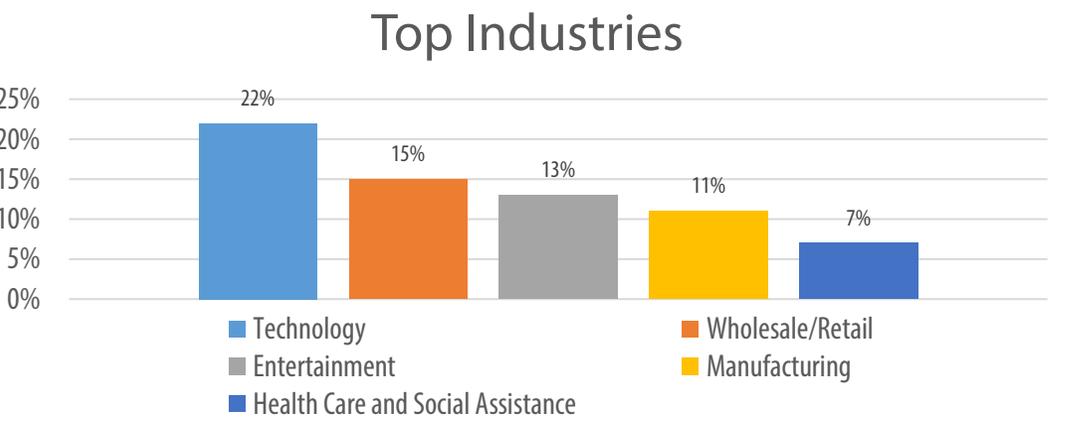


Private Cellular Primarily for Early Adopters

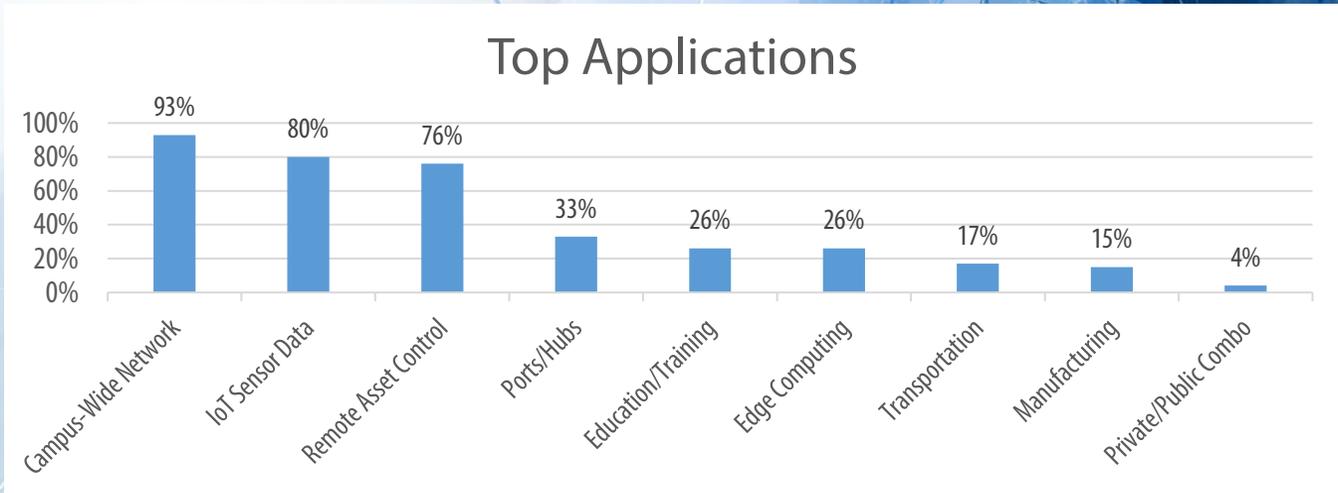


Existing Private Networks

4.2
Overall Satisfaction (5 Scale)

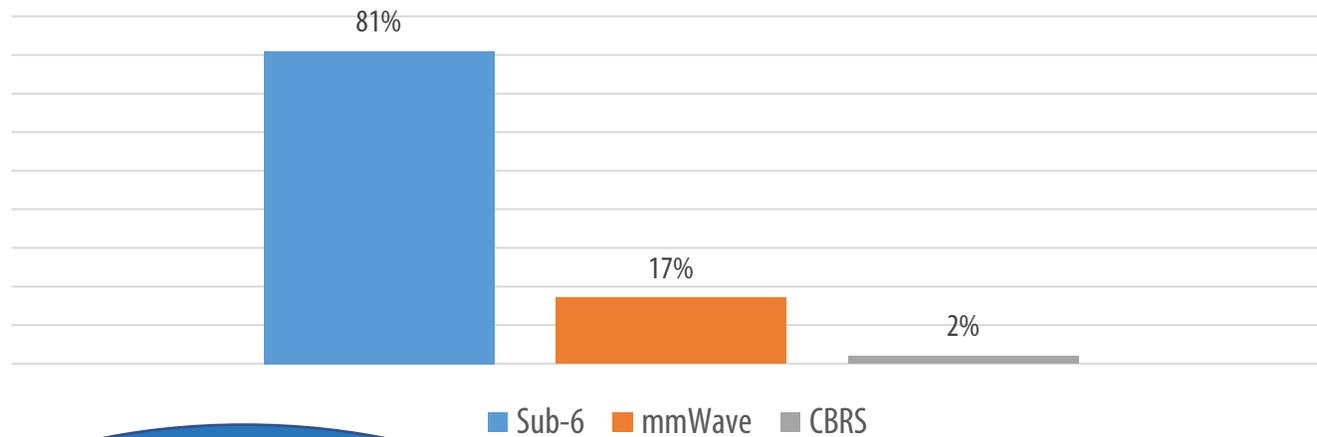


100%
Use 4G LTE



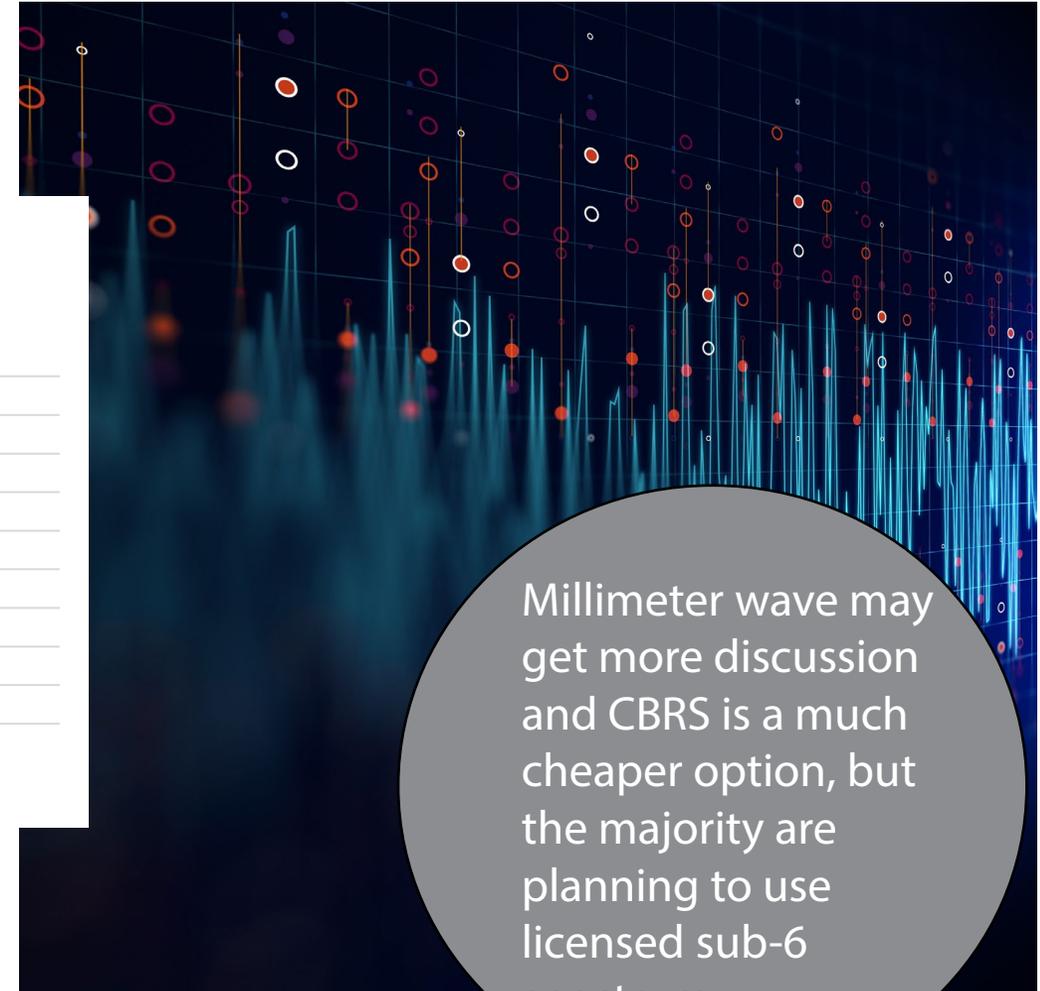
Spectrum Realities

Spectrum Expected to be Used for Private 5G Network



51%

Expect to acquire spectrum from telcos

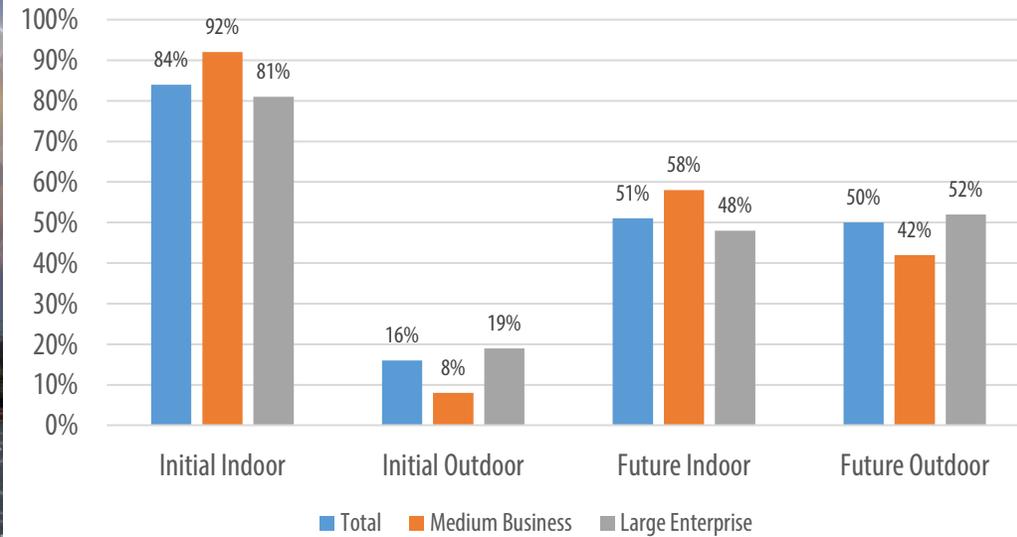


Private Network Coverage Expected to Start Small, But Grow

66%

Expect to deploy in multiple buildings 18 months after launch

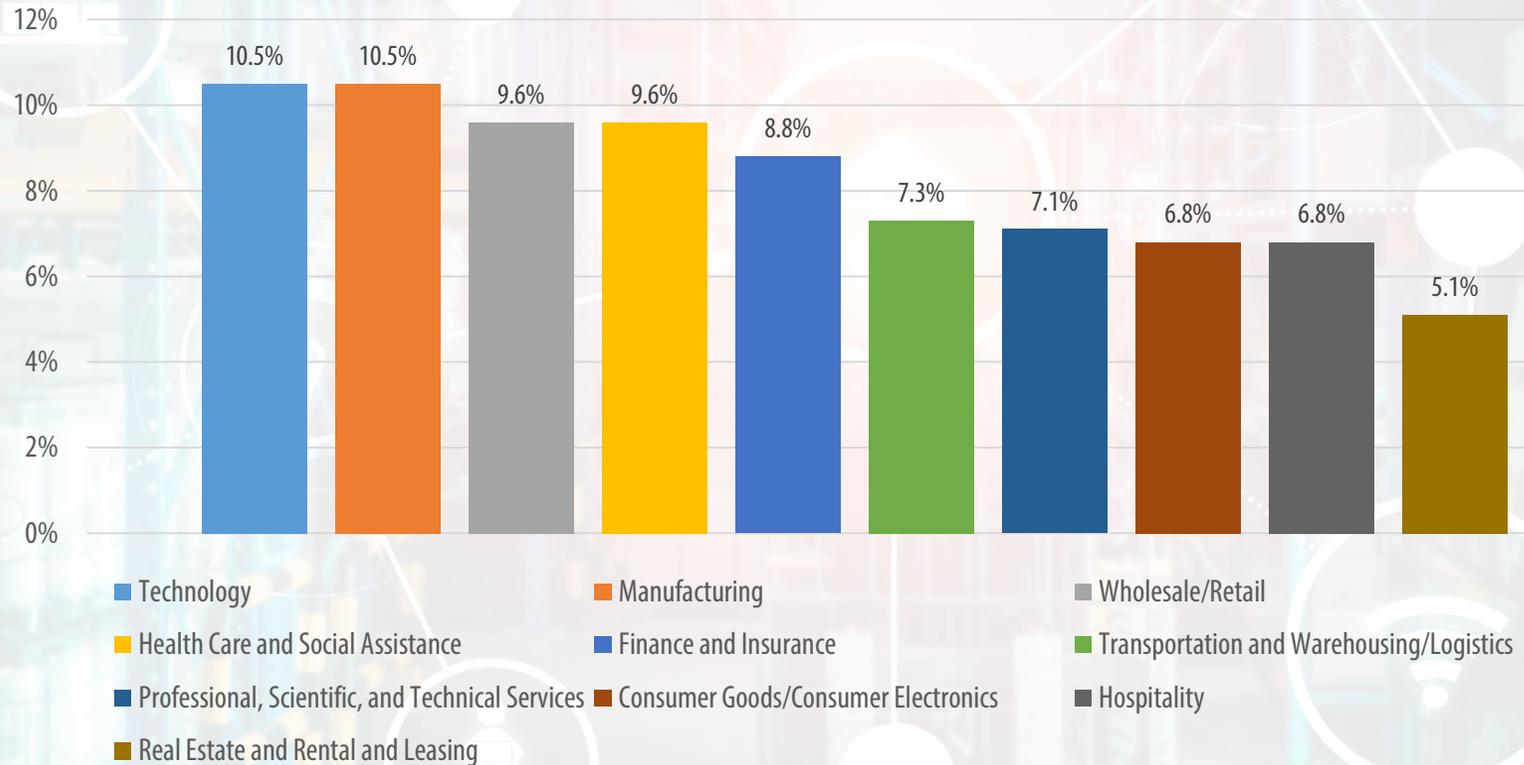
Network Locations



Industry Opportunities

- Tech-focused companies see 5G as a future-looking technology
- Manufacturing, retail and health care looking at it to solve practical problems

Top 10 Industries Interested in Private 5G

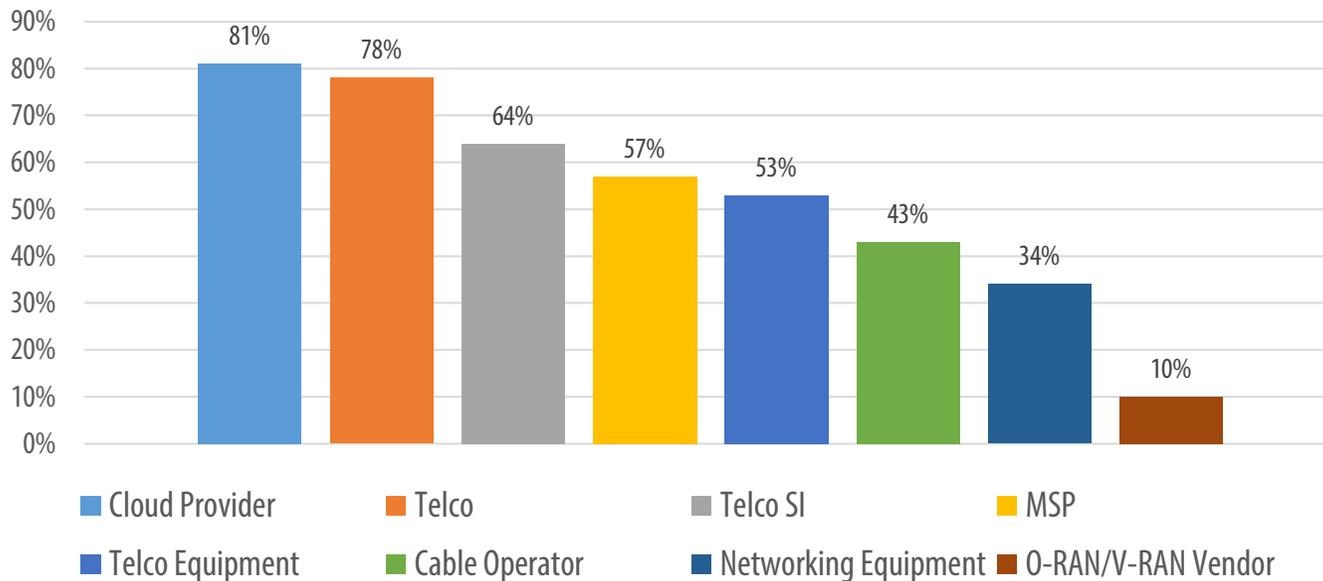


Top Partner Choice is Not Telcos

3.9

Average Number of Partners Expected

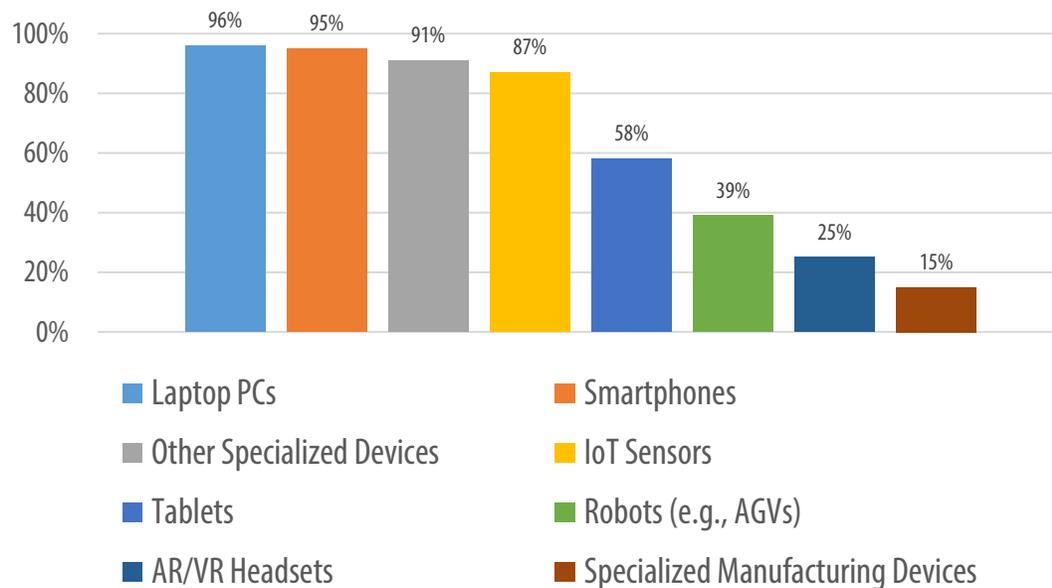
Preferred Partner for Upcoming 5G Network



Top Connected Device is Not Smartphones



Top Devices Expected on Private 5G



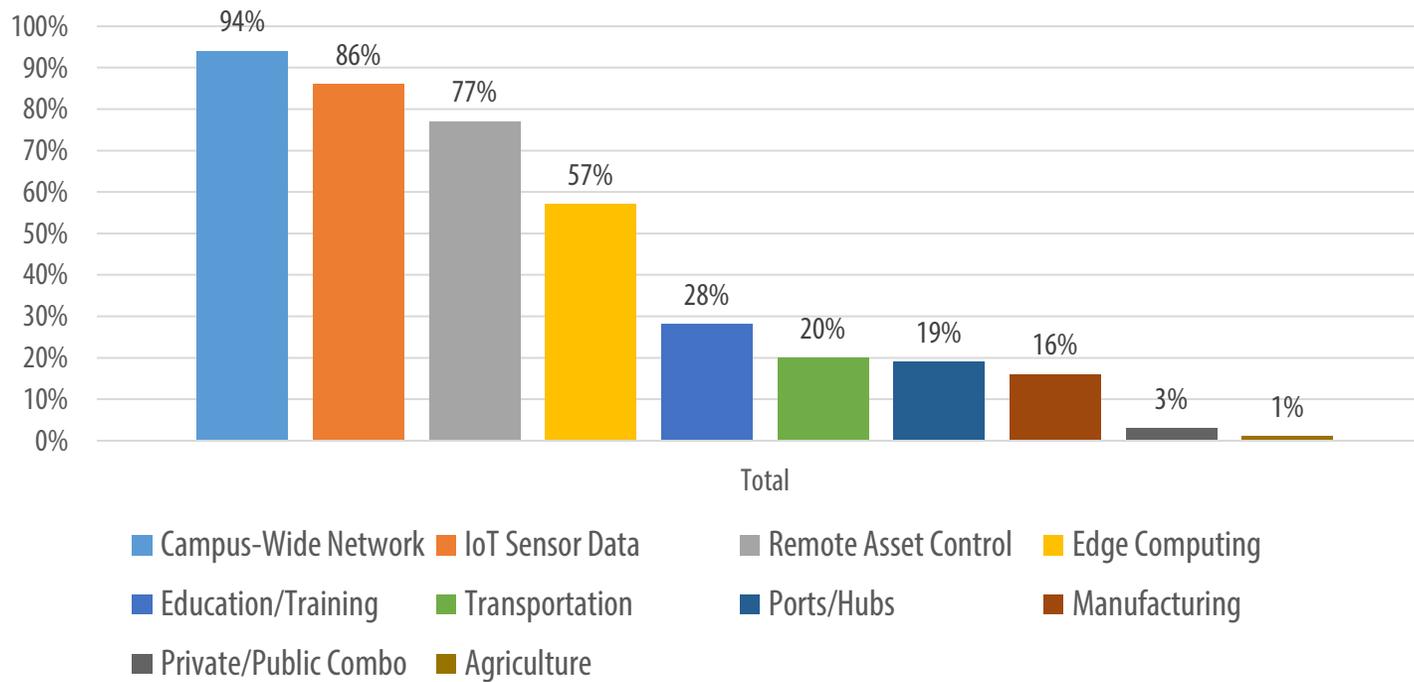
Company Size	Initial Connected Device Numbers	Connected Devices in 18 Months
Medium Business	1,337	6,114
Large Enterprise	4,423	10,060



technalysis
RESEARCH

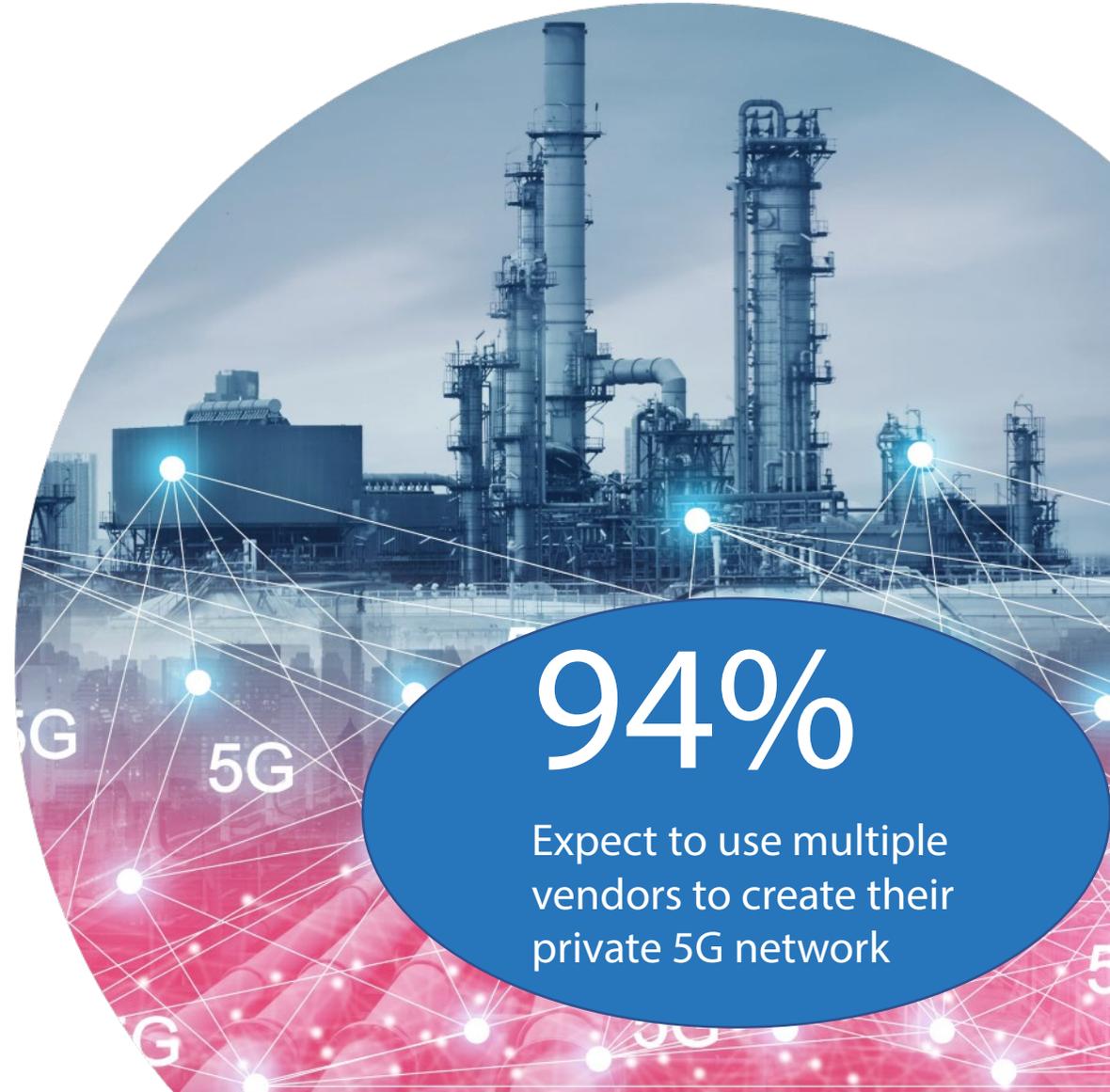
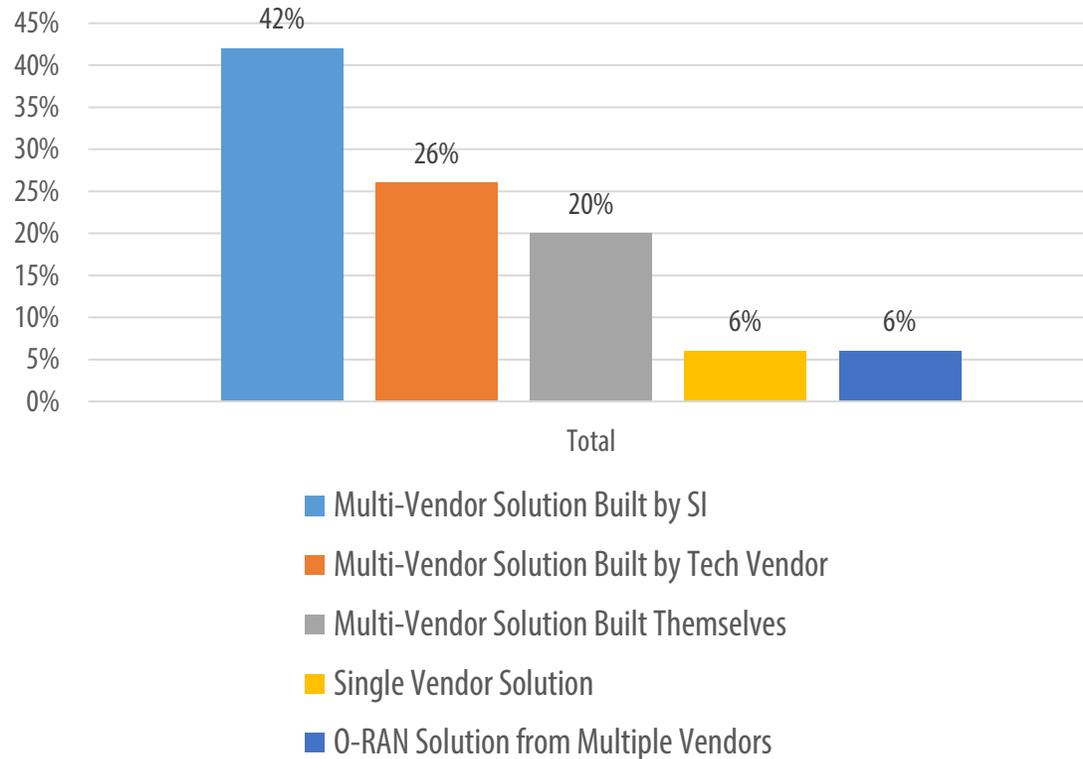
Key Applications

Top Applications Expected for Private 5G



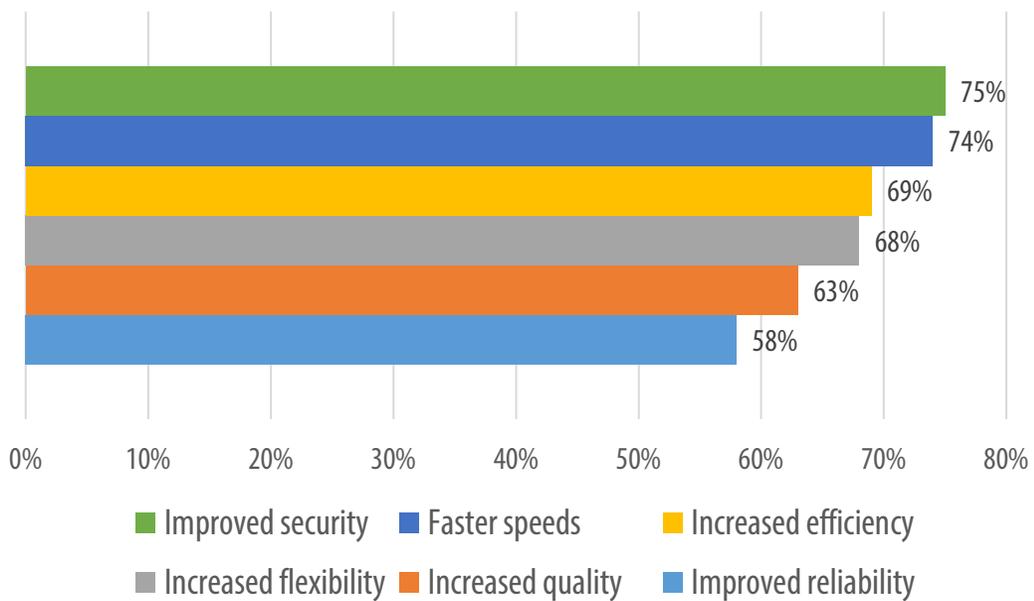
Most common expected use is for a general-purpose network, while IoT, device management and edge computing are also planned by most respondents

Types of Solutions

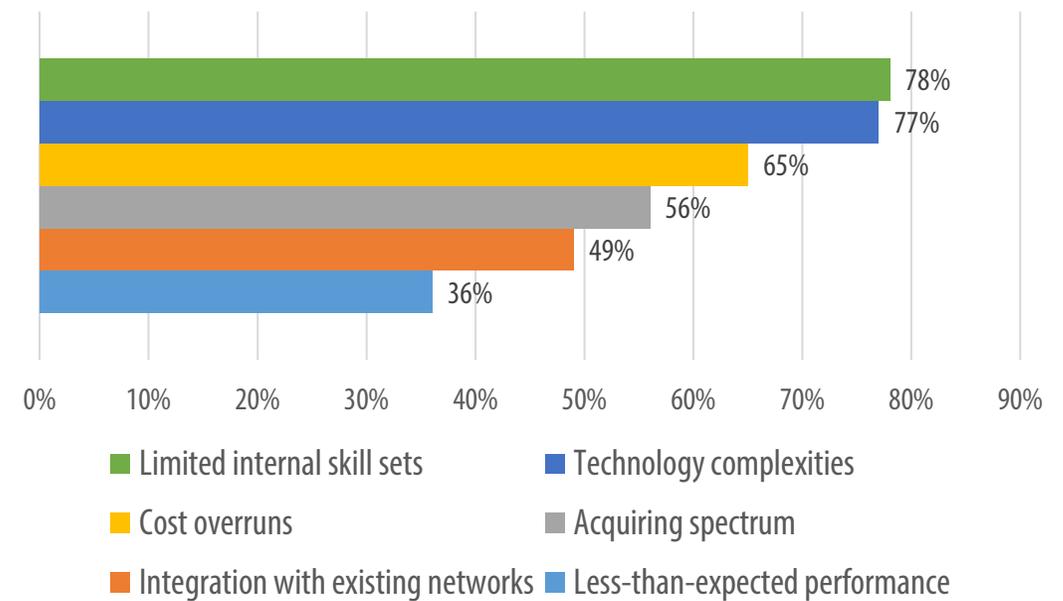


Benefits vs. Challenges of Private 5G

Top Expectations

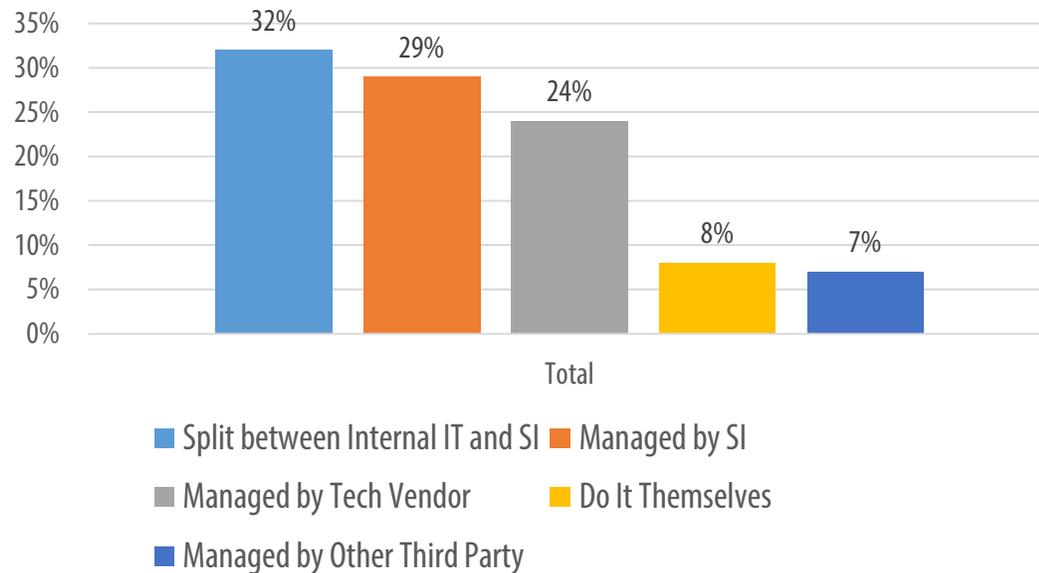


Top Concerns

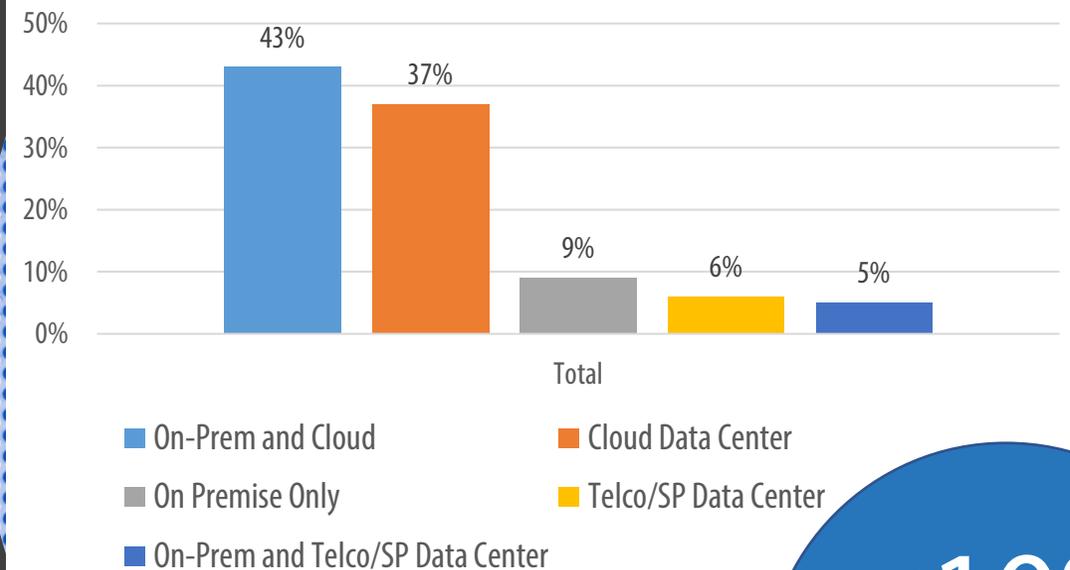


Outsourced Management and Equipment

5G Network Management



5G Hardware Location

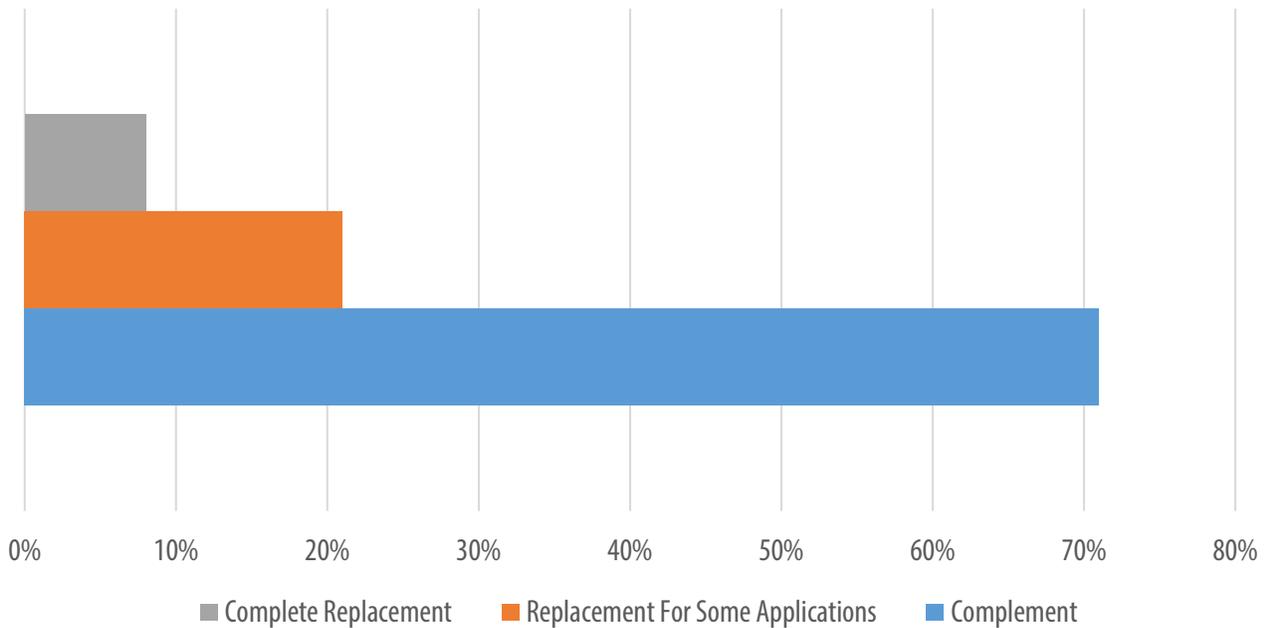


<10%

Plan to Manage or Host 5G Network Themselves

Wireless Battle?

Will Private 5G Complement or Replace WiFi?



Top reasons for replacement

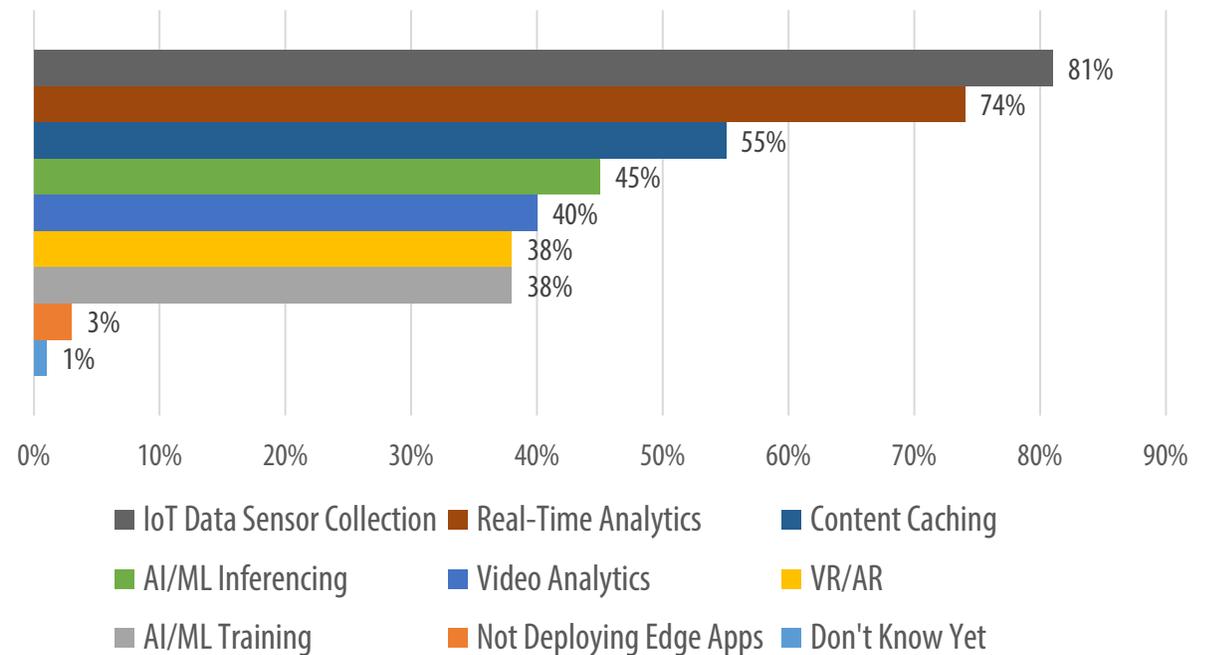
- Speed
- Security
- Latency



Big Expectations for the Edge

IoT-focused edge applications dominate, highlighting the perceived link between private 5G and OT applications

Types of Edge Computing Applications



Conclusions

- Private 5G is primarily seen as an additional means of connection and as a means to a practical end
 - Integration with existing networks a big concern
- Technological and educational challenges remain a major concern
 - Excitement for the potential speed and security benefits, however, is palpable
- Industry expectations on technologies, timelines, partners and more don't match real-world expectations
 - Indoor networks based on sub-6 spectrum in partnership with cloud providers a top choice



5G

Contact



Bob O'Donnell
President and Chief Analyst
TECHanalysis Research, LLC
1136 Halsey Blvd.
Foster City, CA 94404

bob@technalysisresearch.com

(650) 224-2355

[@bobodtech](https://www.instagram.com/bobodtech)

www.technalysisresearch.com



The complete 96-slide version of this study is available separately for purchase. Please contact me directly if you are interested.