5G Adoption Analysis

Track 5G uptake for seamless transition to 5G standalone networks

5G ADOPTION ANALYSIS DELIVERS:

- Application service continuity across LTE and 5G access

- Seamless transition path to a common 5G core by supporting both a 4G/5G NSA and a 5G SA network

- 5G early adoption from the 4G market by creating analytical insights that can be used to promote the uptake (from existing customers and from competitors)
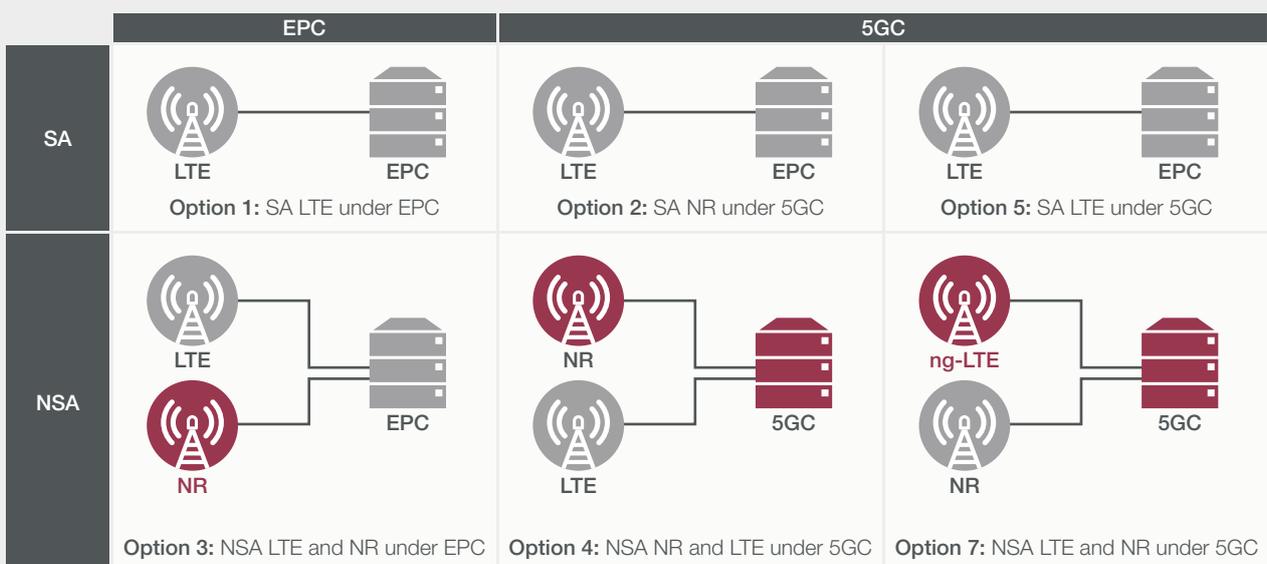
MARKET OVERVIEW

5G represents a game-changer for mobile operators, as it will disrupt existing service plans and the traditional role as a connectivity provider, and create an opportunity to add value in the new 5G-based digital economy.

5G networks are coming online across the world at an unprecedented rate, with 5G cementing itself as the fastest-growing wireless generation to date. Largely, this adoption is driven by the wide number of 5G-capable devices on the market and the 5G promise of better reliability and speed.

As with any other tech turn the 5G transition journey is complex. The path for operators to achieve a single 5G core network is not straight or singular – many different options are available (**Figure 1**).

Figure 1

Six 5G deployment options (Source: GSMA)

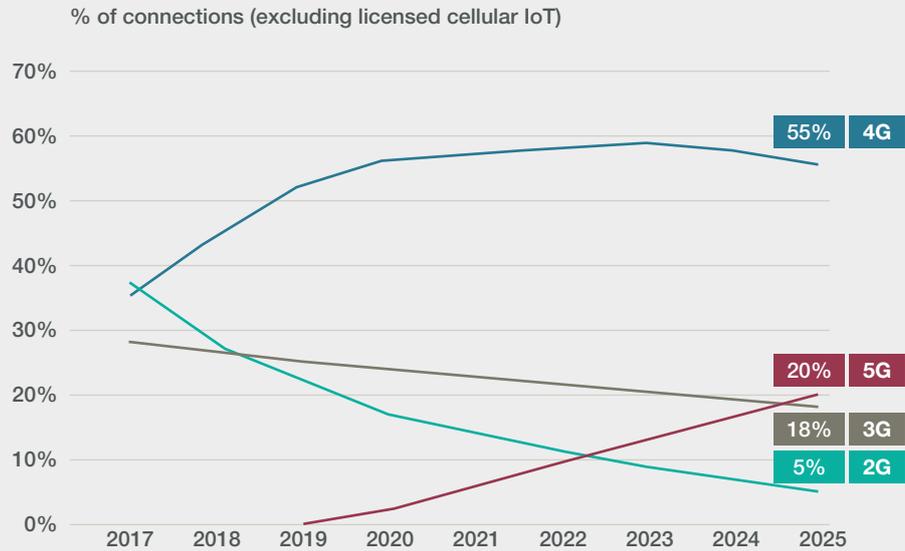|	EPC	5GC	
SA	**Option 1:** SA LTE under EPC	**Option 2:** SA NR under 5GC	**Option 5:** SA LTE under 5GC
NSA	**Option 3:** NSA LTE and NR under EPC	**Option 4:** NSA NR and LTE under 5GC	**Option 7:** NSA LTE and NR under 5GC

The challenge is further compounded as operators will have to support both 5G dual mode (non-standalone) and 5G standalone devices, along with existing 4G devices – totaling in the hundreds of millions – for several years (**Figure 2**).

Predicted support for multiple device generations

% of connections (excluding licensed cellular IoT)

Multi-G support will be needed for a while

Source: Statista, A Mobile Connected World 202

At the same time, in order to recoup investment and propel 5G networks to profitability as well as meeting customers' 5G expectations, transitioning must be completed with ease and careful consideration. This thoughtful approach will require visibility into the subscriber penetration, 5G-capable device adoption, and the quality of experience across 3G, 4G, and 5G radio access.

With this information, operators can optimize network investments and know when to reallocate resources, as well as know when to take the leap and build out a full 5G standalone network. By taking this approach, operators can ensure service continuity and customer satisfaction, and allow for them to shift from connectivity provider to value-added participant.

SOLUTION OVERVIEW

Sandvine's 5G Adoption Analysis use case answers the fundamental question for 5G operators: "How fast are my customers migrating to my 5G network?"

More than that, it is an important tool for operators as they embark on their 5G journey, arming them with the visibility needed to ensure the transition is seamless, efficient, and delivers a performance expected by customers.
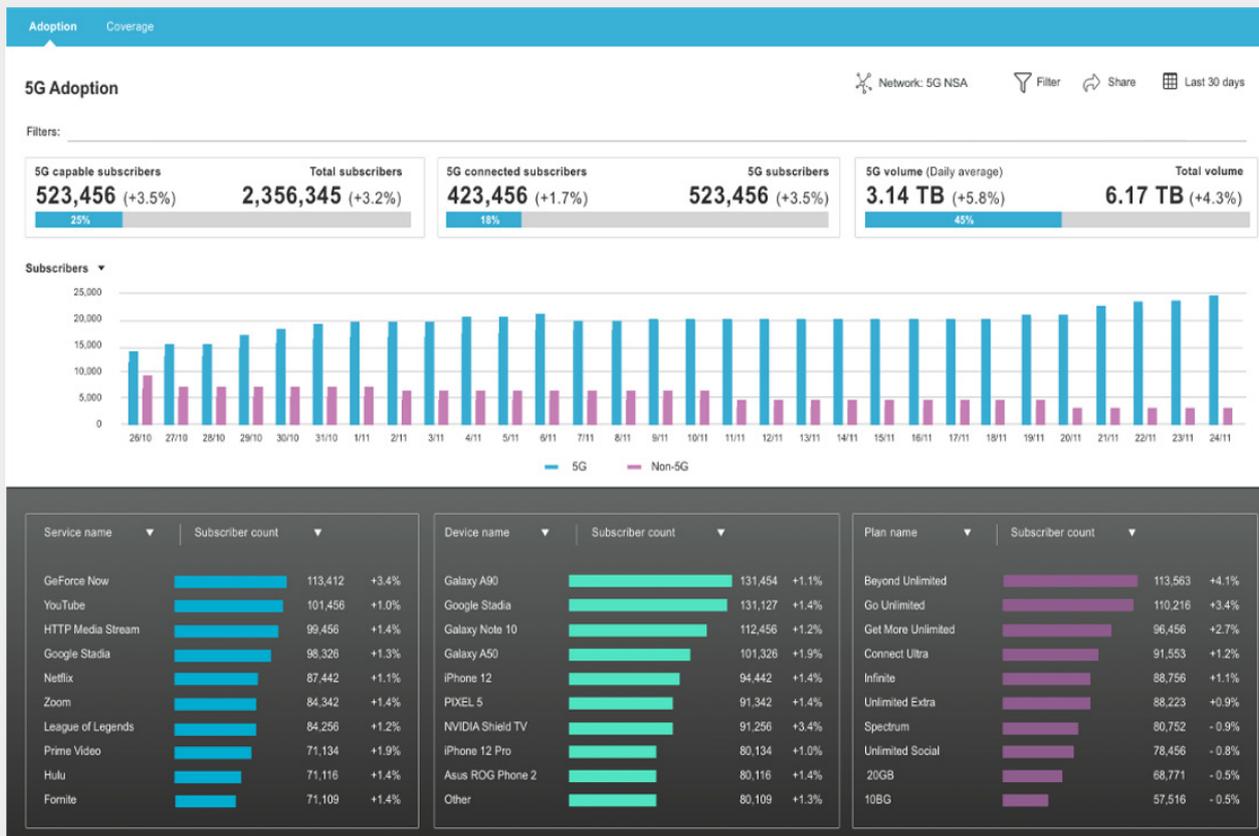
This use case leverages Sandvine's existing industry-leading classification capabilities to provide a comprehensive view of 5G adoption, including:

- Number of 5G-capable devices
- Percentage of 5G -capable devices versus total devices
- Number of 5G connected subscribers
- Percentage of 5G-connected subscribers versus total subscribers
- 5G traffic volume
- Total number of subscribers
- Total volume
- Number of connections associated with 5G by each service, plan, or access device
- Latency by each service category, service, plan or access device
- Packet loss

More importantly, it tracks this over time (as little as the last 7 days and up to 12 months) and location, providing the overall trends to determine when and how further investments should be made to be best serve customers. All of this important data is visualized in Sandvine's Active Network Intelligence Portal (**Figure 3**), giving an overall view with an option to drill down further.

Figure 3

5G adoption view in the ANI Portal

Adoption	Coverage				

5G Adoption Network: 5G NSA · Filter · Share · Last 30 days

Filters:

5G capable subscribers	Total subscribers	5G connected subscribers	5G subscribers	5G volume (Daily average)	Total volume
523,456 (+3.5%)	**2,356,345** (+3.2%)	**423,456** (+1.7%)	**523,456** (+3.5%)	**3.14 TB** (+5.8%)	**6.17 TB** (+4.3%)
25%		18%		45%	

Subscribers ▾

Service name ▾	Subscriber count ▾		Device name ▾	Subscriber count ▾		Plan name ▾	Subscriber count ▾	
GeForce Now	113,412	+3.4%	Galaxy A90	131,454	+1.1%	Beyond Unlimited	113,563	+4.1%
YouTube	101,456	+1.0%	Google Stadia	131,127	+1.4%	Go Unlimited	110,216	+3.4%
HTTP Media Stream	99,456	+1.4%	Galaxy Note 10	112,456	+1.2%	Get More Unlimited	96,456	+2.7%
Google Stadia	98,326	+1.3%	Galaxy A50	101,326	+1.9%	Connect Ultra	91,553	+1.2%
Netflix	87,442	+1.1%	iPhone 12	94,442	+1.4%	Infinite	88,756	+1.1%
Zoom	84,342	+1.4%	PIXEL 5	91,342	+1.4%	Unlimited Extra	88,223	+0.9%
League of Legends	84,256	+1.2%	NVIDIA Shield TV	91,256	+3.4%	Spectrum	80,752	- 0.9%
Prime Video	71,134	+1.9%	iPhone 12 Pro	80,134	+1.0%	Unlimited Social	78,456	- 0.8%
Hulu	71,116	+1.4%	Asus ROG Phone 2	80,116	+1.4%	20GB	68,771	- 0.5%
Fornite	71,109	+1.4%	Other	80,109	+1.3%	10BG	57,516	- 0.5%

This use case enables operators to:

- Differentiate and compare 5G-connected subscribers with subscribers connected via other access technologies like 4G

- View into different stages of 5G transition to help facilitate the journey

- Ensure 4G/5G-NSA/5G-SA service continuity

- Monitor usage and quality trends

- Understand the impact on service plans and different customer segments

- Create 5G-specific plans based on what is wanted by consumers

All of which positions operators to roll out profitable, efficient, valuable 5G networks that allow for a better role in the 5G value chain.

ABOUT SANDVINE

Sandvine's market-leading, cloudified Service Innovation and Intelligence portfolio helps customers deliver exceptional digital experiences and grow revenues.Our ability to classify over 95% of network traffic across mobile and fixed networks by user, application, device, location and other parameters creates uniquely rich, real-time network and service data. We then apply machine learning-based contextual insights to improve performance and enhance digital services. For more information, visit **http://www.sandvine.com** or follow Sandvine on Twitter **@Sandvine**.

USA
5800 Granite Parkway
Suite 170
Plano, TX 75024
USA

EUROPE
Svärdfiskgatan 4
432 40 Varberg,

Halland
Sweden
T. +46 340.48 38 00

CANADA
408 Albert Street,
Waterloo,
Ontario N2L 3V3,
Canada
T. +1 519.880.2600

ASIA
RMZ Ecoworld,
Building-1, Ground Floor,
East Wing Devarabeesanahalli,
Bellandur, Outer Ring Road,
Bangalore 560103, India
T. +91 80677.43333

SANDVINE.COM