



Usage-Based Services

Increase revenue by launching innovative service plans based on perceived value and user behavior



Sandvine's application and network intelligence capabilities can be

leveraged in 5G core and edge environments, delivering critical contextual and slice awareness to feed new service creation and strengthening an operator's position in the 5G value chain for consumer and enterprise markets.

USAGE-BASED SERVICES DELIVERS:

Flexible Quota Options

Accommodate as many users as possible with quotas varying from small to unlimited, with a sophisticated PCC solution

Built-In Quota Counting

Sandvine's Quota Manager enables collection of quota-usage without an OCS via the Gx interface for mobile networks and IPDR for fixed networks, and signals enforcement actions to the PCEF

Powered by SandScript

SandScript, Sandvine's DevOps language, allows unparalleled flexibility and customization for policy and service creation, delivering innovative and compelling plans

Speed Differentiation

Offer high-speed plans for gaming and video to accommodate the enthusiasts of high resolution and bandwidth-hungry applications

Add More Personalization

Deliver more personalization by combining Usage-Based Services with other use case solutions, including Zero-Rating and Application-Based Plans

MARKET OVERVIEW

As the march to 5G continues, the reliance on mobile connections and mobile connectivity continues to grow. Mobile operators are faced with profitability issues and significant network expansions around the corner.

Unlimited data plans gained popularity during the smartphone-surge; this one-size-fits-all approach pushed all customers into the same bucket, leaving no room for service differentiation, which meant mobile operators were left to compete on price. The mobile market is yet to reach the culmination of a rapid growth spurt, in both mobile data traffic and network capacity expansions, but operators are already struggling as declining ARPU and increasing data usage widens the gap between revenue and CAPEX/OPEX.

While unlimited data plans may be attractive to power users with a stable financial status, this plan type fails to accommodate all users due to affordability issues. In comparison, light or new mobile data users are better served by a usage-based plan; it has become evident that mobile data users only want to pay for the data they actually use.

Similar to fixed networks, where plans are differentiated by bandwidth (volume and speed), 5G plans are expected to follow the same pricing approach. However, operators don't need to wait for 5G to differentiate current offerings with volume-based service plans tiered on speed.

Globally, affordability is slowly improving. However, in developing markets with limited coverage on the radio spectrum, every Gigabyte of data usage drives up the price. This creates hesitation for data adoption and reliance. Therefore, mobile operators need to consider customer needs and affordability when launching new data services in these regions; prepaid plans with a volume-based quota are still popular due to cost certainty, which builds loyal relationships for the future. These types of plans can work as an introductory step to mobile data usage and larger plans.

Operators are faced with a two-sided challenge: differentiate themselves from the competition, and accommodate as many people as possible to expand their customer base and overall profitability. To be successful when implementing new service plans, rich analytics are needed to prove usage, trend, and behaviors to driver better plan adoption. New plans need to satisfy real versus perceived needs, while delivering cost certainty.

Bring more value to your subscribers while building satisfaction and loyalty

SOLUTION OVERVIEW

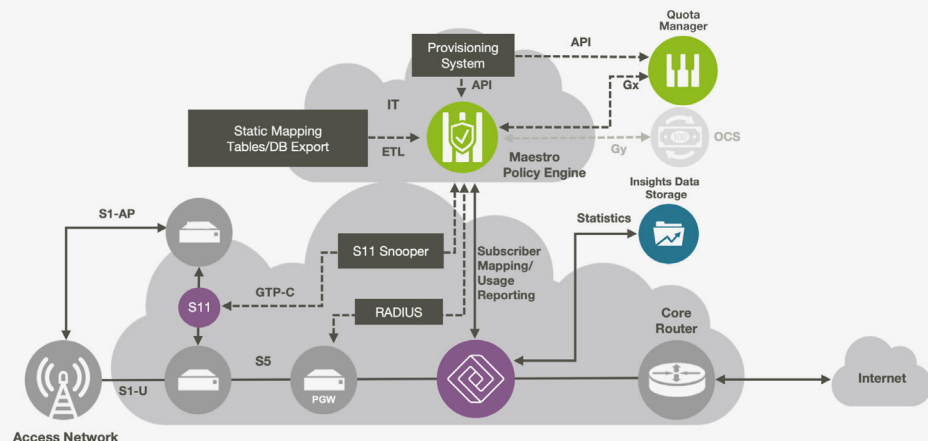
Usage-Based Services is the foundation of the next generation of service plans. Operators can leverage additional Revenue Generation use cases to deliver even more value to their users through other differentiated services for a price that the market will bear.

With Usage-Based Services, operators can offer volume- or time-based quotas with fair usage policies to manage traffic in constrained networks. This approach accommodates as many subscribers as possible while building on subscriber satisfaction and loyalty. In developing markets where affordability is slowly improving and many mobile users still hesitate to use their data, Usage-Based Services can serve as a springboard for the future plans and needs in these markets.

With the next generation of service plans being introduced, subscribers can get a taste of what is coming in 5G. With the IoT taking the stage, operators need to be able to offer plans all over the spectra, from small amounts of volume to really big buckets or even unlimited volume depending on the IoT device. At the same time, the new era of plans and devices come with an ensured delivery time of the data across the network, so the high availability and ultra-low latency that has been promised is achievable.

Figure 1

Typical Usage-Based Services Deployment with Quota Manager

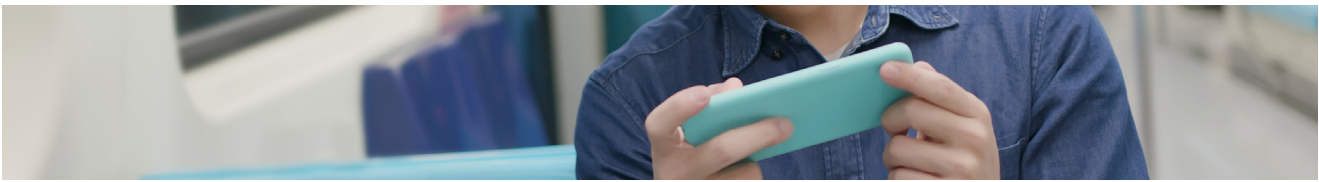


LIMITLESS SERVICE CREATIVITY WITH ADVANCED OPTIONS

Usage-Based Services can be deployed with a third-party Policy and Charging Control (PCC) solution or with Sandvine's Quota Manager. When deployed with Quota Manager, a number of advanced options can be monetized to bring more value to subscribers, increase ARPU, and even help utilize network resources more efficiently.

With Quota Manager, operators can enjoy the industry's lowest total cost of ownership for implementing innovative service plans. Advanced options can be added to both pre-paid and post-paid plans to accommodate as many subscribers as possible while offering limitless service creativity:

- **Speed Tiers:** By implementing plans with differentiated speeds, operators can offer up to unlimited bandwidth for part of the billing period or the whole quota allowance, even on unlimited plans.
- **Speed Pass:** In combination with speed tiers, operators can improve ARPU by offering their subscribers to top-up their plans with additional speed passes.
- **Data Rollover:** Operators can build loyal relationships with subscribers by letting them transfer the data they do not use and add it to the next billing period or longer.



Enable flexible creation of service plans with Quota Manager

- **Roaming Plan:** With compelling roaming offerings, operators can target travelers and businesses with valuable plans to increase ARPU.
- **Time-of-Day and Calendar Promotions:** At certain times of the day or days of the month, operators can offer lower price/GB to give customers more value and utilize existing network capacity when there is low usage overall.
- **Daily Data Pass:** This offers a daily data pass for a flat fee; subscribers who have used their monthly allowance can choose to buy more the day they need the data.
- **Bolt-Ons:** These allow operators to offer the customer the ability to buy more data as needed.

Figure 2

Example of how Usage-Based Services with advanced options can be used to create service plan offerings

Operator Plans	Fixed	Mobile
	GAME ON! 200GB at 50Mbps	STREAM MORE 50GB at 20Mbps
Volume	200GB	50GB
Speed	50Mbps	20Mbps
Calls	Unlimited domestic calls, \$0.25 per minute for international calls	Unlimited domestic calls, \$0.25 per minute for international calls
Text	300 FREE SMS/Month	300 FREE SMS/Month
About	With 50Mbps, you can enjoy gaming in the highest resolution, cloud gaming, and 4K video streaming for 50GB per month. If you exceed your quota, a speed- or data-pass can be purchased directly in your operator application	With 20Mbps, you can enjoy gaming and 4K video streaming for 50GB per month. If you exceed your quota, a speed- or data-pass can be purchased directly in your operator application
Extras	Night Owl Between 10pm and 10am, usage is free of charge. Video is limited to 720p for all users	Free Weekends From 9pm Friday to 11am Sunday, usage is free of charge. Video is limited to 720p for all users

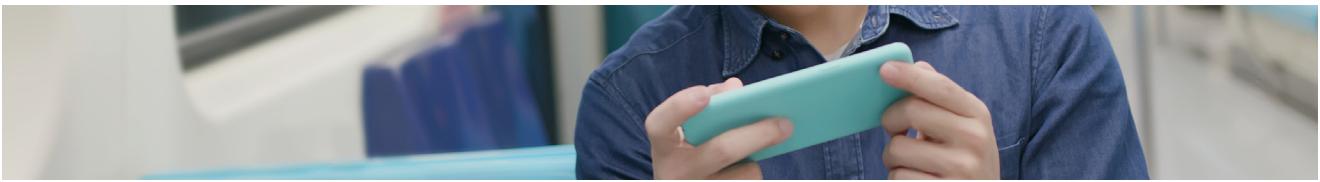
Sandvine's Usage-Based Services Key Capabilities:

Quota Manager

Sandvine's Quota Manager enables flexible creation of service plans using standard Gx to perform real-time usage metering functions, entitlement, quality of service functions, and notifications for bill shock avoidance. By deploying a complete solution without the need to integrate with an OCS, operators not only save money but also time and network resources, since the architecture is simplified.

Configuration with just a few clicks

With Quota Manager's ServiceDesigner, new plans and features are only a few clicks away. Sandvine's configurator tool allows operators to create service logic for new services, bolt-ons, and configure or add features easily, without the need of learning new languages or coding to add new plans, top-ups, and bolt-ons.



Powered with visualizations and actionable analytics

Implementing service plans with next generation technology in mind demands that the success rate can be evaluated. Every Sandvine use case comes with a dashboard inside our Active Network Intelligence Portal that gives operators the visibility and control of planning and launching new services. By understanding the uptake and usage distribution in real-time, network teams receive insights into how and when to manage traffic, and marketing teams gain understanding of each plan's profitability as well as subscriber usage behavior and the volume they consume.

Sandvine's Usage-Based Services provides a foundation for any innovative and personalized service plan, bringing more value to users and increasing profitability for operators, both in 4G and 5G networks.

ABOUT SANDVINE

Sandvine's cloud-based Application and Network Intelligence portfolio helps customers deliver high quality, optimized experiences to consumers and enterprises. Customers use our solutions to analyze, optimize, and monetize application experiences using contextual machine learning-based insights and real-time actions. Market-leading classification of more than 95% of traffic across mobile and fixed networks by user, application, device, and location creates uniquely rich, real-time data that significantly enhances interactions between users and applications and drives revenues. For more information visit <http://www.sandvine.com> or follow Sandvine on Twitter @Sandvine.



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