The challenge for service providers extends beyond time to market, writes Ann Hatchell. It's now about the extent to which data services can be customised and scaled to meet segment-specific requirements

Fine-tuning data plans for enterprise and M2M with virtualized policy control

Ann Hatchell

Fast delivery of data services has long been a challenge for service providers —whether for their small and medium-sized business (SMB) customers, large enterprises, or new segments such as machine-to-machine (M2M). Today, it can take several weeks to turn up a new data plan for an enterprise customer and often it is one largely based on existing consumer price plan offers.
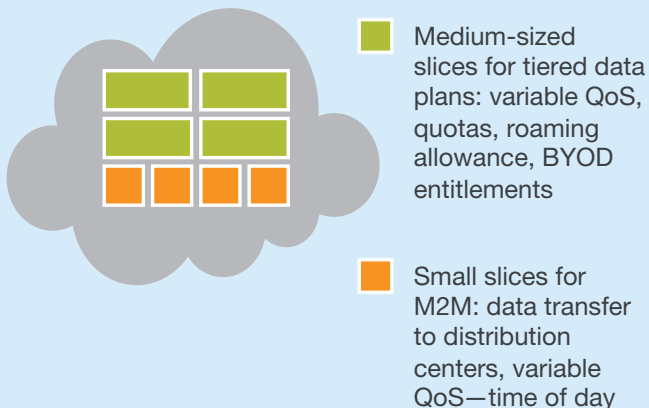
Enterprise, SMB and M2M data plan needs are different and highly diversified. Some enterprises and SMBs need to support a dynamic mobile workforce, different departments, varying data consumption needs, and roaming support. An M2M application may require dynamic scalability and availability for a large number of devices in static locations, but using small amounts of data.

So when it comes to the data services consumed by enterprise, SMB employees or M2M devices, such as data quota, speed, security and quality of service around voice over LTE (VoLTE) and video services, the challenge extends beyond time to market. It's now about
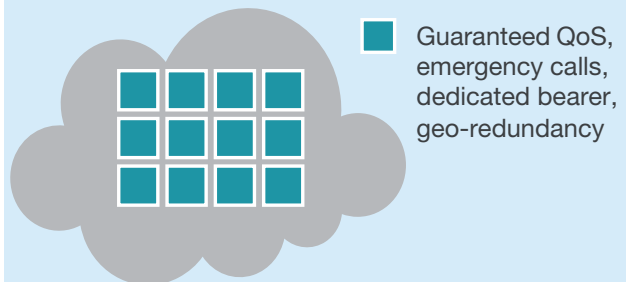
Moca Private Cloud with Dedicated Policy Control (PCRF) Clusters

PCRF Cluster 1—Basic Data Services

■ Medium-sized slices for tiered data plans: variable QoS, quotas, roaming allowance, BYOD entitlements

■ Small slices for M2M: data transfer to distribution centers, variable QoS—time of day

PCRF Cluster 2—VoLTE Services

■ Guaranteed QoS, emergency calls, dedicated bearer, geo-redundancy

A virtualized policy control solution allows service providers to support highly-tuned data services. Policy control clusters can be dedicated to mission-critical services such as VoLTE or to specific enterprise customers. Clusters include PCRF slices based on varied capacity increments that provice a cost-effective approach to scaling capacity

the extent to which these data services can be customised and scaled to meet segment-specific requirements.

With new 4G data speeds and efficiencies, there are even more opportunities for service providers to leverage enterprise applications efficiently and customise data access even further, based for example on location, service quality prioritisation based on application and so forth.

However, currently there is no cost-effective way for service providers to offer these kinds of differentiated segment data services on top of the consumer mobile network. And it's a market worth seizing, with Gartner estimating the global enterprise telecom services opportunity at $1.6 trillion.

Policy control functionality, specifically the policy and charging rules function (PCRF), is a technology at the heart of data monetisation to manage and meter data consumption, differentiate enterprise applications from personal application usage, and enable variable charging and temporary add-ons such as data passes, roaming plans.

With LTE, it's an essential network service quality engine for performance-critical applications such as VoLTE and high definition mobile video.

As a result, capacity planning around PCRF resources and data services becomes much less onerous and more cost-effective.

Meet Moca, an enterprise consumer goods enterprise. They want HD voice for all employees, and departmental-specific data plans and quotas to better manage their costs and ensure that employees have access to the network service quality they need in order to do their jobs.

In addition, they manage replenishment of drink machines on their customers' premises using a telematics application between the individual machines and Moca inventory systems, including sensors.

Their service provider has dedicated two PCRF clusters to Moca to serve their needs. One cluster is dedicated to HD quality voice, with guaranteed quality of service, prioritised emergency calling, deployed in a geo-redundant configuration to guarantee five-nines reliability.

The other PCRF cluster supports differentiated data quotas and shared departmental plans, roaming allowances for sales, bring your own device (BYOD) detection, turbo boosts when accessing sales training video materials.

> ## "The deployment flexibility of a virtualized PCRF solution gives service providers a new way to approach enterprise and M2M markets by providing the data service customization tools in a more cost-effective and operationally efficient way, using the power of virtualized software as opposed to traditional architectures."

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And in terms of policy control, enterprise, SMB or M2M data services bring a whole new set of complexities to support. They need the ability to apply finer grained controls around per user or per department services and to be able to change these easily.

They must also easily scale up to add temporary capacity on demand — for, say, a global sales meeting where HD video streaming is prominent, or for customer training sessions.

This is where virtualisation comes in and specifically the role of a virtualised policy control solution in tuning data plan services on a per customer/ enterprise basis. Virtualised policy control slices are individual instances of a PCRF solution that can be combined as a single cluster and dedicated to an enterprise customer, M2M application, or to specific services like VoLTE.

Importantly, a PCRF slice is not uniform — it can be sized to different capacity increments related to transaction-per-second processing.

In the past, expanding PCRF capacity often required a large upgrade with new hardware that would yield significant incremental capacity, even when only a bit was needed at that time. Using variable sized PCRF slices, scaling of resources can be accommodated on a gradual basis by adding smaller slices for some capacity expansion, or larger slices to support, for example, new data services that will boost transaction levels significantly.

The telematics application gets basic quality of service (QoS) applied to replenishment updates during off-peak access, with immediate prioritised access quality in the event of a machine failure.

Capacity can easily be scaled automatically by adding new PCRF slices to the Moca cluster as needed to support variable data usage volumes, and always with the guaranteed QoS needed for HD voice. What once often required a forklift upgrade to the PCRF system to increase capacity can now be added the same day based on what is actually needed. Capacity thresholds can also be set for automated scaling on demand.

Many service providers are evaluating creating new virtualised overlay networks featuring virtualised policy control and packet core elements that sit alongside the existing mobile network to address the segment-specific needs of enterprise, SMB and M2M customers.

And, instead of taking months to introduce a data service, this can be accomplished in a matter of hours.

Virtualised policy control is the essential network service quality engine that is at the heart of how mission-critical IP services are delivered. The deployment flexibility of a virtualized PCRF solution gives service providers a new way to approach enterprise and M2M markets by providing the data service customization tools in a more cost-effective and operationally efficient way, using the power of virtualized software as opposed to traditional architectures. ∎