



Policy control: Keeping pace with network evolution

The deployment of 3G/HSPA networks and the wide availability of devices, such as smartphones and netbooks, have made mobile broadband a reality — and now, says Gareth Senior, communications service providers (CSPs) worldwide are attempting to manage unprecedented usage.



The author is Gareth Senior, Chief Technology Officer, Comptel Corporation

According to a June 2010 report from **The Global mobile Suppliers Association (GSA)**, **Vodafone Group** saw data traffic on its European networks grow by more than 100% over the past year, and **Telekom Austria Group** witnessed its mobile broadband customer base increase by more than 130%, while **AT&T** realised a more than 5,000% increase in usage over the past three years. Many other operators across the globe have also recently experienced similar uptake growth.

CSPs are challenged with handling not only the heavy burden the data explosion places on network capacity and the overall management of bandwidth, but also the more personalised nature of these lifestyle services, which might involve everything from network access, service definition and payment plans to the type of media and entertainment content involved.

Meeting demand

In order to keep up with the demand for mobile broadband, operators have to strike a balance between ensuring customer satisfaction and extracting more money from them, while guaranteeing that resources and capacity remain in check. Ideally, CSPs would like to keep customers happy enough, and for them to spend as much as possible and use as few resources (such as bandwidth) as possible. Customers, on the other hand, want total satisfaction — they

want to use as much capacity and pay as little as they can.

To achieve this, CSPs have begun to realise the power of policy control. A recent *TeleSemana* report, co-sponsored by **Comptel**, confirmed that the main drivers for Latin American operators implementing policy control are the personalisation of services (33%), the reduction of the OpEx of traffic (27%), and the limiting of excessive bandwidth usage (17%). (See Fig.1)

Meanwhile, *Heavy Reading* recently surveyed CSPs across the globe, and found that they see policy control as critical for applying “fair usage” management techniques to better handle network congestion, improving the quality and depth of network traffic, as well as offering tiered or customised services to different customer segments.

Until quite recently, the main tool at the disposal of CSPs to balance these potentially conflicting requirements was billing or charging. Pricing for services was used to optimise revenue and customer satisfaction, as well as limit access to resources (rather premium pricing for premium services). But now, with the deployment of 3G/HSPA networks and mobile broadband offerings, policy control is proving to be a formidable component within the armoury of ▶



CSPs — particularly when the capabilities are tightly coupled with charging.

More attractive services

Real-time charging when linked with usage control, for example, is enabling operators to monetise certain network investments through more attractive customer service offerings that involve content from multiple sources. CSPs are realising that this combination allows them to provide a high-quality customer experience (and give them control over what services are delivered, how and at what price) within the constraints of their service network.

In all, 63% of respondents to the *TeleSemana* study thought that it was very important to combine policy control with charging or billing, and an additional 27% thought it was important. Likewise, 97% of respondents to the *Heavy Reading* survey thought it was essential or important.

In fact, the 3rd Generation Partnership Project (3GPP) has recognised policy control's connection with charging, and its specifications are now emerging as the *de facto* standards for policy control. Originally drawn up in the context of IMS (IP Multimedia Subsystem), the 3GPP standard for policy control defines a number of key components, including the Subscriber Profile Repository (SPR), the Policy and Charging Rules Function (PCRF – the part of a policy control solution that makes the decisions), the Policy and Charging Enforcement Function (PCEF – the part that implements the decisions), as well as the Offline Charging System (OFCS) and Online Charging System (OCS) to handle post and pre-paid charging, respectively.

When these components work interactively, CSPs can implement more attractive, price-based service options, such as dynamic bundles, defined spending limits and even advertising subsidisation — all to maximise revenue potential.

LTE and 4G are coming fast

If CSPs are to further capitalise on the unrelenting upsurge of mobile broadband, with the ever-growing use of smartphones, netbooks and other advanced devices, they need to consider the imminent arrival of LTE and other 4G technologies. In another June 2010 report, the GSA said that 80 operators have made firm commitments to deploy LTE networks in 33 countries, and the association anticipates that nearly 22 networks will be in service by the end of this year, and at least 45 networks will be in service by the end of 2012.

This strong momentum for LTE not only opens up the potential for further growth and other opportunities for CSPs, but also demonstrates the even more critical role that policy control plays in the deployment of next generation networks. Nearly two-thirds of operators that responded to the *Heavy Reading* survey see LTE having a major impact on their approach to policy control; however, they are not fully aware as to how it will affect them.

Operators still face many of the same challenges: How can they make money from their network investments? How can they become a smart pipe? How can they manage increased traffic and bandwidth usage? How can they create services that utilise the all-IP nature of LTE and integrate with legacy and 2G/3G networks — and continue to provide a seamless customer experience? And, the evolution to LTE is not a simple path from 3G/HSPA.

End-to-end OSS is critical

A real-time, end-to-end OSS that controls all of the LTE service architecture layers – from CRM and billing to subscription management to service and configuration management – is critical for CSPs. As the intelligent network (IN) (where policy control and charging typically functions) potentially disappears with LTE, every transaction must be 'policed' – or controlled and charged.

From a business level perspective, this can be done to ensure a better customer experience, for example, when it comes to fair usage, and to offer and deliver measurable quality. Operators can also use policy control for the charging of third-party products and for upselling.

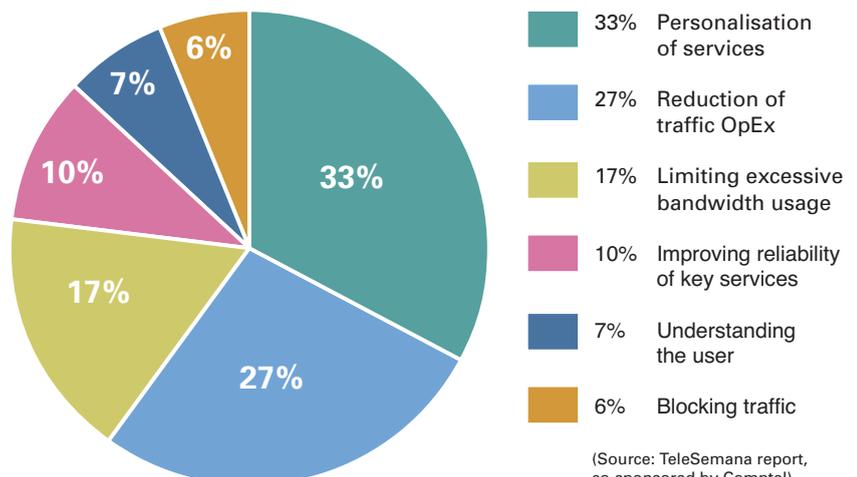
With LTE, virtually every end-user transaction travels through the policy control engine, and every subscriber effectively needs to be treated as pre-paid. Clearly then, PCRF and charging will need to be able to scale to handle all of these transactions.

In order for CSPs to monetise their mobile broadband network investments (whether it be 3G or LTE) and avoid being a flat-fee bit pipe, active, end-to-end policy control is key. Whether it be used for ensuring better quality of service through bandwidth management, driving revenue from innovative, personalised offerings or creating and charging successful and manageable service packages, policy control should be top of mind for CSPs today — and in the future, as networks continue to evolve.

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- Gareth Senior, Comptel Corporation

Fig 1. The main drivers for Latin American operators implementing policy control



(Source: TeleSemana report, co-sponsored by Comptel)