

# The elegant way to ensure fair network use



Quality of Service (QoS) differentiation plays a role in ensuring fair use and sufficient capacity, benefiting users and helping CSPs maximize their revenues. It's the solution taken up by Elisa.

As mobile broadband's popularity grows, communications service providers (CSPs) are looking at how to tackle the problem of congestion without over-dimensioning their networks. If a customer exceeds his or her monthly broadband quota, a CSP typically throttles back their access speed or makes the customer pay an extra charge to continue using the service.

A fair use policy with Quality of Service (QoS) differentiation is a much more elegant solution. Once the user goes over the monthly quota, a lower priority is allocated to their subscription. They can continue to use the service and the change is only apparent during peak hours if there is network congestion. This enables spare off-peak capacity to be used more efficiently because it encourages heavy users to access their connections during off-peak hours when there is no congestion.



Subscriber differentiation enables CSPs to create different types of contract for different users, such as premium packages with QoS priority for business users or high-volume affordable packages with low QoS priority for private users. Service differentiation enables CSPs to give higher priority to their own services than Internet applications, for example, or to give top priority to new services to increase the perception of quality among users.

## Elisa moves ahead

The solution was implemented by Finland's Elisa in May 2010 when it deployed flexible QoS. "We were looking for an effective way to manage network resources cleverly to guarantee a better experience for specific customers and to avoid letting some users spoil the experience of all others" explains Timo Sippola, Head of Radio Network Planning at Elisa. "Because the radio interface is a major investment in mobile networks and its use should be optimized, Elisa will restrict data rates only when needed because our business model is to sell all-you-can-eat mobile broadband subscriptions".

QoS differentiation does not replace the need for good mobile broadband capacity and coverage, but instead minimizes the effect on the network of excessive data use and helps in occasional busy hour congestion situations, thus improving the customer experience.

Sippola continues: "Currently QoS is used by different HLR profiles to give more bandwidth to customers that pay more when the radio path is congested.



Otherwise the effect of QoS is not visible. We are also willing to identify non-desirable usage like peer-to-peer and lower the priority of such traffic if it leads to congestion."

When asked what advice he has for CSPs considering deploying QoS mechanisms in their network, Sippola says: "Everything starts from the need. So, you must define first what you want and then find the proper solution and what resources you'd like to manage. Regarding QoS there are lots of solutions, but most cannot co-operate with the radio interface in real time, meaning control in milliseconds. Managing core capacity or just blocking traffic is a different thing and even though that may also help radio congestion, there is no guarantee at the cell level that you can use your radio resources in an effective way without radio QoS.

"In my mind QoS is a must. Otherwise the CSP must add more capacity all the time and still the customers are not happy as there is no fairness. I'd say that the fairness is the starting point. That there is a guarantee that all customers are always served according to their subscription and their need at that moment," he concludes.