

QOS-BASED PRICING MODEL AND SCHEDULING FOR IP BASED CELLULAR NETWORKS

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Mobile network traffic has grown exponentially in recent years, and it is expected that this trend will continue in the future. Important driving forces include new affordable smartphones, and the many new connected devices on the market. Also, the rollout of faster HSPA+ and LTE networks is expected to improve the customer experience. Therefore, it is critical to examine feasible ways to manage the huge traffic increase and the hunger from new Internet service applications, especially video or other rich media, to prevent congestion and customer dissatisfaction. One of the alternatives is to increase the capacity by using more bandwidth, but this too is limited by the available spectrum. We expect that at some point, the demand will exceed the capacity. In this work, we have tried to address the above issue by proposing a dynamic and flexible pricing model that limits the network congestion and enhances the service quality for the user while allowing wireless operators to make a profit even when capacity becomes limited. It differentiates between different service plans based on the QoS Class Indicator (QCI) requirements of the applications. Application and service differentiation enables optimal management of precious network resources while providing desired QoS to the end user. We also propose a simple scheduling algorithm that is designed to support the implementation of the above pricing model.